

Higher Secondary Course

**HOME SCIENCE**

Class **XI**



Government of Kerala  
Department of Education

State Council of Educational Research and Training (SCERT),

KERALA  
2016

## The National Anthem

Jana-gana-mana adhinayaka, jaya he  
Bharatha-bhagya-vidhata.  
Punjab-Sindh-Gujarat-Maratha  
Dravida-Utkala-Banga  
Vindhya-Himachala-Yamuna-Ganga  
Uchchala-Jaladhi-taranga  
Tava subha name jage,  
Tava subha asisa mage,  
Gahe tava jaya gatha.  
Jana-gana-mangala-dayaka jaya he  
Bharatha-bhagya-vidhata.  
Jaya he, jaya he, jaya he,  
Jaya jaya jaya, jaya he!

## PLEDGE

India is my country. All Indians are my brothers and sisters.  
I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.  
I shall give my parents, teachers and all elders respect, and treat everyone with courtesy.  
To my country and my people, I pledge my devotion. In their well-being and prosperity alone lies my happiness.

*Prepared by :*

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Dear Students,

State Council of Educational Research and Training is happy to introduce a new textbook for Home Science for Class XI this year. Two areas are mainly included in this textbook viz. 'Human Development' and 'Family Resource Management'.

Details on the importance of human development from the pre-natal stage to old age is sequentially presented in the first seven units of this textbook. One unit is solely devoted to vaccine preventable diseases among children. The last four units describe how resources like time, money, space, energy etc. ought to be managed.

The activities included in every unit enable the learner to approach problems critically and construct knowledge through activity-oriented modes of learning. Hope you use them fruitfully to enliven the classes on the subject and convert your knowledge to vital purposes both for your progress and for the betterment of society at large.

I am quite sure that this textbook can make the learning of Home Science a delightful and enriching experience.

SCERT appreciates the hard work done by the Textbook Development Committee of this book.

As an organization committed to systematic reform and continuous improvement in the quality of its products, SCERT welcomes comments and suggestions for further revision and refinement.

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**Certain icons are used in this  
textbook for convenience**



**Activities**



**ICT based activities**



**Do you know! (Additional information)**

## CHAPTER

# 1

## HOME SCIENCE: CONCEPT AND SCOPE

### KEY CONCEPTS

- 1.1 Evolution of the Discipline Home Science
- 1.2 Meaning and Importance of Home Science Education
- 1.3 Major Areas in Home Science.
- 1.4 Scope of Home Science-Educational and Vocational.

The concept of Home Science is based on the ardent desire to improve the well being of the community through every home. This can be achieved through the systematic arrangement of resources. Home Science can take a prominent role in developing good individuality and a good sense of personality in a person. Through modern scientific knowledge, an individual's potentialities can be utilized to the maximum.

The modern concept of Home Science is to bring up homes where peace, prosperity and progress prevail. One factor which has influenced the concept of Home Science is the awakening of women's issues. The philosophy of Home Science is to provide equal opportunities for both sexes, to achieve best familial and professional lives. The imbalance between the roles of man and woman can be avoided thus. Along with material and economical achievements, physical, spiritual and moral aspects of family living have to be promoted. This is one of the underlying principles of Home Science education. The home implants moral values of honesty, truthfulness, dependability and objectivity in a person.

## 1.1 Evolution of the Discipline of Home Science

Home Science is a new area of science. Its history is short. During the British Rule between 1920 and 1940, the then rulers introduced Home Science in some schools and colleges. In the beginning Home Science was referred to as Domestic Science. The princely state of Baroda was one of the first states to introduce Home Science in Schools, in Maharani Girls High School. The subject remained in the school curriculum in several states. After won independence India in 1947, many changes were brought about in its curriculum.

In the sixties and seventies, Home Science and related subjects were fused together at the school level. A stream was developed at the higher secondary level in Gujarat and some other states. Gradually Home Science became a popular subject in Delhi, Uttar Pradesh, Madhya Pradesh and some southern states. But courses were not offered at the college level at that time. Hence many institutions faced problems of providing further opportunities for students who completed Home Science at the secondary level.

In 1932 Home Science was started at the college level at in Lady Irwin College at Delhi. From 1938 onwards Madras University offered Home Science at the degree level. Queen Mary's College and Women's Christian College at Madras started

Home Science in 1942. The Agricultural Institute of Allahabad also started a Home Science Diploma course in 1935. In 1945 it turned into a University Department.

By 1950 Baroda became a significant nucleus of Home Science education. Since 1950 outstanding Home Science Colleges were started at Coimbatore (Tamil Nadu) Ludhiana (Punjab) Bombay (Maharashtra) New Delhi, Udaipur (Rajasthan) and Tirupathi (Andhra Pradesh)

In the mid 1960's and 1970's Agricultural Universities were established in most of the states. Teaching of Home Science was recognized in most of the Agricultural Universities. There is a steady progress of Home Science education in India at the school and college levels. In 1920 only few students enrolled in Home Science. By 1980's many prestigious institutions in India offered B. Sc, M. Sc and Ph. D degrees in Home Science. At present thousands of post graduates and Ph. D degree holders are in prominent positions in prestigious institutions all over the country.

Home Science has now been claimed to be one of the important subjects in the school curriculum because it offers the fundamental opportunities to develop their best for promoting society.



In 1951 the Home Science Association of India was formed. The Constitution of the Home Science Association was framed by Miss Dorothy Pearson of Women's Christian College, Madras. Later the association became affiliated to the International Federation of Home Economics.

The main objective of the Association was to raise the standard of Home Science education in schools and colleges. Many branches of the Association were started in almost all states. The journal- *Indian Journal of Home Science* was first started in 1966.

### Let us do



*Collect more information regarding the status and history of Home Science in other developing and developed countries using internet facility.*

## 1.2 Meaning and Importance of Home Science Education

The study of Home Science helps each people lead a more satisfying personal, family and community life because of the knowledge, understanding, skills and appreciation of cultural and spiritual values a pupil acquire through Home Science education.

Unlike other subjects, Home Science is a practical science one applies in everyday life. As a practical subject it offers maximum opportunity to express one's ability to take up things and develop leadership qualities.

Home Science education develops qualities needed for responsible citizenship. Home Science Education helps pupil to recognise the importance of food in healthy living, teaches how to prepare food by retaining its nutrients and the importance of balanced diet. It also enables one to sort out family problems and find out solutions for them. Home Science education helps one to start self employment and become a wage earner at younger age. The curriculum empowers to take intelligent decisions concerning the use of materials and resources. The student becomes efficient to nurture and take care of the young, to foster their healthy growth and development. Moreover one gain technical knowledge and information from various branches of Home Science for both personal and professional use.

## 1.3 Major Areas in Home Science

There are five different areas of specialisation in Home Science. Each branch offers post graduate courses and facilities for research.

The five major areas in Home Science are

- Human Development
- Family and Community Resource Management
- Food and Nutrition
- Textile Science
- Extension Education

Observe and identify the areas in Home Science from the Figure 1.1.

Human development deals with the development of a child from conception to old age.



Fig. 1.1 Major Areas in Home Science

Physical, motor, emotional, language, cognitive and social developments of human beings are included in this. Behavioural problems of children, exceptional children, disorders, specific problems and issues that hinder the development of human beings are also dealt with. Geriatrics is also a part of the study since the life span of an individual is longer today.

Under Family and Community Resource Management, time, money, energy and space management are the main topics for study. A good time plan is essential for time management. For money management resources have to be utilised judiciously. A family budget fulfils this aim. Energy management is a difficult task as the activities in a person's life is different from another individual. Energy management study aims at reducing the amount of energy required for doing each work. A work simplification technique enables this process. Consumer education is also included under this subject. The consumer is provided with information regarding food safety, safety against adulteration, common adulterants, health hazards and Consumer Protection Act. Major principles and basics of design and arts are also detailed in this area.

In Food and Nutrition food science and nutrition are included. Chemistry of food, nutrient retention, sources of nutrients, nutritive value of food and judicial mixing of food are scientifically instructed in food science. Nutrition imparts the knowledge of various nutrients, their composition, functions, sources, requirements and deficiency status.

Textile Science includes all details about textile fibres and fabrics, fabric construction processes namely spinning, weaving, printing, dyeing etc. Basic principles of apparel designing and construction are also taught.

In Extension Education, basics of programme planning, preparation of audio visual aids, social work, applied nutrition; methods of communicating with the society etc. are included.

### **Check your progress**

1. List the major areas of Home Science.
2. State the importance of Home Science.

## **1.4 Scope of Home Science - Educational and Vocational**

Home Science teaching has sustained itself as a major employment sphere in research and in extension of social services. Nursery schools, family planning agencies, family counselling centres, pre-primary training centres, agricultural research centres, social

welfare departments, international agencies like United Nations International Children's Emergency Fund (UNICEF), Food and Agricultural Organisation (FAO), Cooperative For American Relief Everywhere (CARE) are some of the areas where Home Science graduates and post graduates can find suitable places. Nutritionist, Nutrition Consultants, Dieticians, Food Experts and Scientists in Central Food Technological Research Institute, National Institute of Nutrition are some of the other career opportunities.

Above all Home Science offers more scope for self employment opportunities compared to other subjects. Fashion designing, starting tailoring unit, catering units, nursery schools, family counselling centres, food processing centres and preservation units are some of the areas where a Home Science graduate can explore self employment.

Table 1.1 shows the educational and vocational scope of Home Science.

<b>Vocational area</b>	<b>Job opportunities after senior secondary</b>	<b>Opportunities of further education</b>	<b>Job opportunities after advanced course</b>
Food and Nutrition	Food laboratory aide, dietary aide, food product tester, kitchen food assembler, quality control technician, short order cook, baker helper, waiter/waitress, dining room attendant, cake decorator	Diploma in hotel management and catering, BSc Home Science, diploma from polytechnics/vocational institutions, diploma in related subjects through distance education	Food technician, dietary assistant, dietetic technician, food technologist, nutritionist, caterer, food service manager, specialty cook, chef
House Keeping	Guest service clerk, housekeeping maid, host/hostess, establishment guide, lodging facilities, attendant	Diploma in hotel management and catering, BSc Home Science, diploma from polytechnics/vocational institutions, diploma in related subjects through distance education	Guest house manager, housekeeping manager, hospitality supervisor, hotel/motel manager, convention coordinator

Vocational area	Job opportunities after senior secondary	Opportunities of further education	Job opportunities after advanced course
Interior Designing, Furnishing and Maintenance	Showroom Assistant, Interior Design Aide, Furnishings Sales Associate	Diploma in Hotel Management and Catering, BSc Home Science, Diploma from Polytechnics/ Vocational Institutions, Diploma in related subjects through Distance Education	Window Display Designer, Interior Design Assistant, Photo-stylist, Furnishings Buyer, Housekeeping Instructor
Consumer Services	Advisor Consumer rights, Product Demonstrator, Sales representative, Consumer Reporter, Personal Shopper, Staff of Consumer Forum	BA/BSc Home Science, Diploma in Communication and Journalism, Diploma in Public Relations, Diploma in consumer Protection Law	Food/Consumer Products Tester, Product Representative, Public Relations Representative Consumer News writer
Family and Human Services	Adult day care worker, residential care aide, elder care worker, family aide, personal home care aide, home maker's aide	BA/BSc Home science, diploma of Special Educators/ child development Counsellors	Social Service technician/Aide, Community Worker
Child Development and Education	Pre-school Aide, Family child care provider, recreation aide, teacher Aide	Diploma of Special Educators/Child Development Counsellors, Child guidance and counselling certificate course, BSc Elementary Education	Child Day care Supervisor, Pre-school teacher, Special Education Aide, After-school Programme Supervisor

Vocational area	Job opportunities after senior secondary	Opportunities of further education	Job opportunities after advanced course
Fashion Design, Manufacturing and Merchandising	Fashion Design Aide, Fabrics/Accessories Estimator, Sales Associate Costumer Assistant, Employee in a dry cleaning shop, Employee in a garment manufacturing firm, Employee in a textile industry, Employee in an Embroidery unit	BSc Home Science, Fashion Designing from Institution of Fashion Technology, Polytechnics/ Design Schools	Assistant Designer, Fashion Illustrator, Textile Technician, Computer Imaging Consultant, Merchandise Displayer, Fashion Buyer

Table 1.1 Educational and Vocational Scope of Home Science

Source: Module 1 National Open School

### Let us do



Conduct a class seminar on the topic “Employment opportunities in Home Science”. (Hints: Special care should be given to Self Employment).

### Let us sum up

Home Science is an art as well as a science. Though it is a recently developed branch of science it has achieved tremendous development through years. It helps everyone to lead a happy and satisfying personal and social life and also to develop qualities of good citizenship. There are five major areas in Home science with various educational and vocational prospects.

The five major areas in Home Science are human development, family and community resource management, food and nutrition, textile science and extension education. Human development deals with the development of a child from conception to old age. Family and community resource management gives an idea about managing various resources mainly time, money, energy and space properly. Consumer education, principles and basics of design are also included in this area. In Food and nutrition, basics of Chemistry of food, basics of meal planning, dietetic management during disease condition etc. are detailed. Textile science deals about the properties of various fibres, fabric construction methods and basic principles of apparel designing.

### Learning Outcomes

- ◆ Identifies the evolution, meaning, importance, major areas and scope of Home Science.

### Evaluation Questions

1. Home Science education develops qualities needed for responsible citizenship. Justify.
2. Imagine that you are a graduate in Home Science. If you want to choose a self-employment, identify the area and justify the reason for your selection.

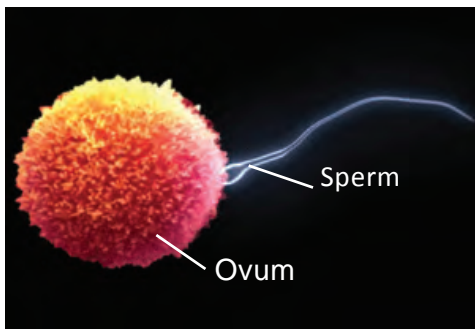
## INTRODUCTION TO HUMAN DEVELOPMENT

### KEY CONCEPTS

- 2.1 Stages of Development - Pre-natal and Post natal
- 2.2 Growth and Development
- 2.3 Areas of Development.
- 2.4 Factors Affecting Growth and Development

You know that life begins with the union of ovum and sperm. Observe Figure 2.1. What happens to the ovum and sperm after their union? The growth from a single microscopically small cell to a body about two hundred billion cells is phenomenal. This phase is known as the pre-natal stage. After birth till death all human beings pass through various phases known as post-natal life. The knowledge about pre-natal and post-natal

life helps you to understand yourself and to develop parental skills. Let us begin this chapter with the concept of pre-natal development.



*Fig. 2.1 Union of sperm and ovum*

### Do you know !

Size of ovum: one of the largest cells of the body-approximately 0.1 millimeter in diameter.

Size of sperm: one of the smallest cells of the body-approximately 0.05 millimeter in diameter.

## 2.1 Stages of Development Pre-natal and Post- natal

### A. Pre-natal Period

Observe the video presentation on the topic 'pre-natal period' and prepare a brief note on the changes that go on during the pre-natal period. The following indicators can be used.

- What are the characteristic features of the pre-natal period?
- What is the significance of lunar month with regard to pregnancy?

It is customary for layman to think of pregnancy in terms of nine calendar months. But scientists use, as their measuring rod, 'lunar months' of 28 days each. These coincide with the periods of the female menstrual cycle. The ten lunar months of the pre-natal period may be marked off into three subdivisions. They are the period of ovum, the period of embryo and the period of foetus. The highlights of each of these developmental periods are given below.

#### a **Period of ovum (conception to the end of the second week)**

- Practically unchanged in 'size' because of the lack of outside source of nourishment
- Rapid internal development
- Implantation in the uterine wall about 10 days after fertilization becoming a parasite.

#### b **Period of embryo (end of the second week to the end of the second lunar month)**

- All important external and internal features start to develop and function
- Sex organs develop well enough to distinguish the sex of the embryo
- By the end of the period, embryo measures 1 ½ to 2 inches in length and weighs about 28.350 gms
- Growth in the head region is proportionately much greater than the rest of the body
- Accessory apparatus-placenta, umbilical cord and amniotic sac-develops.

#### c **Period of foetus (end of the second lunar month to birth)**

- External and internal features continue growth and development
- Internal organs assume nearly adult positions by the fifth lunar month
- The nerve cells present since the third week, increase rapidly in number during the second, third and fourth months..
- Foetal activity begins in the second and third months.



#### **Do you know!**

The sex of the child is determined at the time of fertilization itself and nothing can change it.



Human growth processes pass through various stages. The stages in the pre-natal period are summarised in Table 2.1

Sl No.	Stages of life	Age Span
a.	Period of the ovum	Conception to the end of the second week
b.	Period of the embryo	End of the second week to end of the second lunar month
c.	Period of the foetus	End of the second lunar month to birth

**Table 2.1 Age Span for Human Developmental Stages-Prenatal Period**

Observe Table 2.2 and prepare a note on the growth of foetus during the pre - natal period

Period	Growth of Foetus	
1 month	Embryo consisting of two layers of cells	
2 months	Size of a kidney bean, constantly moving with distinct, slightly webbed fingers.	
3 months	3 inches long and weighs nearly 28.35gms with unique fingerprints, now in place.	

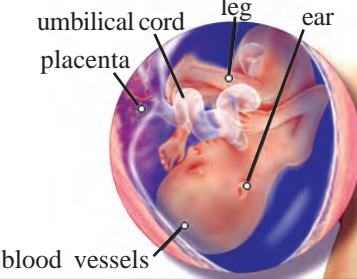
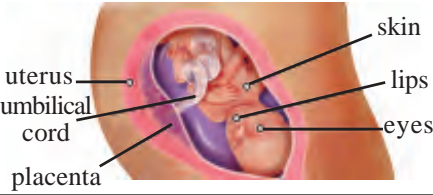

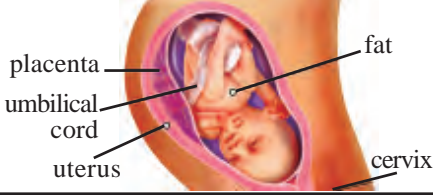
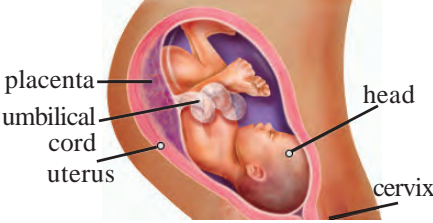
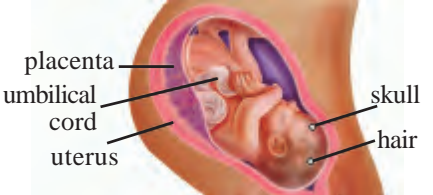
Period	Growth of Foetus	
4 months	5 inches long and weighs 141.75gms, skeleton starts hardening from cartilage to bone.	
5 months	More than 10 inches long, eyebrows and eyelids are now in place.	
6 months	Weighs 680gm and wrinkled skin starts to smooth out	
7 months	Weighs about 1.36 Kg and is more than 15 inches long, open and close eyes and follow light.	
8 months	Weighs about 2.15kg, lungs are well developed	
9 months	More than 19 inches long and weighs nearly 3kg now.	

Table 2.2 Stages of Pre-natal Development

## B. Post-natal Period

Can you name the stages you have passed through in your life?

- .....

Name the stages you have to face hereafter?

- .....

Let us discuss the different stages of human development, of the post-natal stages of life.

The Post-natal period is a period beginning immediately after the birth of a child. The Post-natal stage which serves as a framework to study the growing child is described by different psychologists in different ways. The different stages of post natal period are summarised as given in Table 2.3

SI No.	Stages	Age span
a.	Infancy	From birth to two years
b.	Childhood	From the 3 <sup>rd</sup> year to 12 years
(i)	Early childhood	From the 3 <sup>rd</sup> year to 6 years
(ii)	Late Childhood	From 7 <sup>th</sup> to 12 years or in strict sense upto the onset of puberty
c.	Adolescence	From the 13 <sup>th</sup> year to 19 years or in a strict sense from onset of puberty till the attainment of maturity
d.	Adulthood	From the 20 <sup>th</sup> year to 60 years or in strict sense from attaining maturity to the age one ceases to produce one's own kind
e.	Old age or ageing	From 61 years or in a strict sense from the end of the reproduction capability stage till death

*Table 2.3 Age Span for the Human developmental Stages-Post-natal Period*

**a. Infancy:** Infancy is a period from 0-2years. The child undergoes physical growth at a rapid rate, greater than he will never experience subsequently. It is interesting to know the changes that take place in the first two years. Children at this stage are very active learners. During this period the baby's physiological



processes become operative and fairly well adjusted.

**b. Childhood:** Childhood is a period from 3 years to 12 years.

**(i) Early childhood:** The early childhood years, 3-6 years of age represent a remarkable period of physical and psychological developments. It is a period when true personality begins but physical development proceeds at a slower rate. Here children become more self sufficient, acquire language, become a part of the group, become more co-ordinated and obtain a higher degree of self control.



**(ii) Late childhood:** The stage of late childhood starts from the 7<sup>th</sup> year and goes on till the 12<sup>th</sup> year. You have already gone through this period. Can you list some of the characteristics of this period?



- .....

During this period, physical growth continues at a lower rate but intellectual and emotional developments are rapid and very complex as he moves from home to the outside world. He begins to acquire basic skills of formal learning and develops certain social activities. End of late childhood is also referred to as pre-adolescence period.

During the greater part of late childhood, the child's physical growth continues, but at a still slower rate until it shows a sudden spurt as the child approaches adolescence. He is more attached to his peer groups and interested in social and group activities.

During this period school tasks contribute intellectual developments too.

**c. Adolescence:** You know some of the characteristic features of adolescent period since you belong to this period.

Adolescent period follows late childhood and extends from the age of thirteen to nineteen. Very often it is called the awkward age because of awkwardness, clumsiness and accompanying self consciousness which occurs frequently. During this time physical, mental, emotional and social developments are



complete. It is considered as the last step in the long period of development which begins at the time of conception. By the end of adolescence, the individual is considered legally and socially matured. He is capable of living an independent life free from supervision and guidance.

**d. Adulthood:** It is the longest period of the life span. An individual assumes adulthood at the age from 20-60 years. During this stage physical developments



are fairly complete. But psychological adjustments continue throughout the entire stage. Choosing a life partner, establishing a family, becoming a useful and productive member etc. are crucial during adulthood. His personality and achievements are determined by the kind of experiences he has had during his early years of life.

**e. Old Age:** Old age is considered as the final stage of the normal life span. During this period many physical, social, emotional and behavioural changes take place. Some men and women manifest signs which are associated with old age from their 60<sup>th</sup> age onwards. These

aging years demand a higher degree of emotional adjustments. There are certain problems of adjustments such as physical and economic dependency, establishing new contacts and interests and activities to occupy increased leisure time. Psychological hazards during this stage include feelings of inferiority and inadequacy resulting from physical changes in life patterns, feeling of guilt about sitting idle and reduced income that necessitates changes in living patterns. Financial worries and ill health are common among this group.



### Let us do



- Prepare an Album on the Life Span of Human Development.
- Based on Table 2.1 and 2.2 construct a complete table of prenatal and postnatal period.

**Check your progress**

1. Briefly write about adulthood.
2. Mention the general characteristic features of adolescence.
3. Specify the age at which physical developments are fairly complete.

**2.2 Growth and Development**

Is your height and weight at present and when you were in the 8<sup>th</sup> standard the same? Why?

- .....

Growth refers to quantitative increase in size and structure. Body and its part become larger, heavier and longer.

You know that an adult and a child behave in different manner in the same situation. Why such differences?

Development refers to qualitative and quantitative changes. Hurlock (2011) defines development as a progressive series of orderly, coherent changes. Progressive signifies that the changes are directional, that they lead forward rather than backward. Orderly and coherent suggest that there is a definite relationship between the changes taking place and those that preceded or will follow them. Even though the terms growth and development are used interchangeably, there are specific differences between them. We can sum up the differences between growth and development in the following table.

Growth	Development
Refers to increase in size, height, weight etc.	Refers to improvement in the functioning of the body process
Easily measured and observed	Cannot be measured easily
It is limited. Starts with birth to reach the maximum at maturity	A continuous unending process all through life.
Limited to specific areas	Concerned with various aspects and parts of body and behaviour as a whole
Quantitative change	Qualitative and Quantitative change

*Table 2.4 Difference between Growth and Development*

*Source: Premlatha Mullic 2001*

## Principles of Growth and Development

How can we assess the progress of growth and development of a child?

- .....  
Human development is governed by certain principles. Knowledge of the principles of growth and development helps us to understand children better. A person who knows these principles will be able to assess children's development objectively. It also helps us to prepare children ahead of time for the changes that are going to take place in their life. In other words proper child guidance is possible only with the knowledge of principles of growth and development. These principles are discussed below.

### **i. There are individual differences in development**

As each child has his own characteristic rate of development, we cannot expect the same behaviour from all children of the same age. eg. Some children may grow up to 6 feet tall, while others might stop at 5 feet or in between.

### **ii. Different areas develop at different rates**

As children grow each area of development proceeds at its own rate and reach maturity in its own time period. eg. the heart, liver and digestive organs grow slowly in childhood, but rapidly during the early years of adolescence.

### **iii. Development is continuous**

Development is a continuous process from the time of conception to death. It may slow down or speed up at certain times, but it never stops completely at any time. e.g. Physical development is rapid during infancy and adolescent period but slows down during childhood period.

### **iv. Development is sequential**

Development follows an orderly sequence, which in general is the same for most children. Each stage of development leads to the next. There are two basic sequences. First development proceeds from head to toe (Cephalo-caudal) e.g. a child first controls his head, then his trunk (turns) and later his legs (stands). This order of development never changes. Secondly, development proceeds from centre of the body towards outside (proximo-distal), eg. Child catches a ball first with both his arms, then with palms and later with his fingers.

### **v. Development proceeds from general to specific responses**

The early responses of the infant are very general in nature as age increases they become more specific. eg. In early stages of language development, the child uses the word 'toy' before he learns to call each toy by name.

**vi. Development is influenced by both heredity and environment**

Heredity plays an important part in a child's development. This is evident as many characteristics such as colour of eyes, facial features etc. are passed through the genes from the parent to their children.

Environmental factors such as nutrition, motivation, good role model etc. play an important role in the development of child. A child who is not given opportunities to interact with others, generally turns out to be shy and introvert.

**vii. Development is due to maturation**

No development can take place unless the child's body is strong and able to support the concerned muscles. eg. A child can hold his head only after neck muscles are strong enough to hold it.

**viii. Development is predictable**

Because the rate of development for each child is fairly constant, we can predict the rate of development to some extent. eg. Children of tall parents are generally tall.

**ix. Many forms of so-called 'problem behaviour' are normal behaviour of the age in which they occur.**

Each developmental age has certain undesirable forms of behaviour which are normally found at that age and are outgrown as the child passes on to the next stage of development. eg. Bed wetting during the first year of life is normal but it can become a problem behaviour during early childhood.

**x. Development involves changes**

Major changes include change in size, changes in proportion, disappearance of old features and acquisition of new features.

**Change in size:** Each year as child grows his/her height and weight changes.

**Change in proportion:** As the child grows in size changes in proportion also occur. For eg. at birth head occupies one fourth of the body length. This proportion changes and in adulthood the head occupies one eighth of the body length.

**Disappearance of old features:** Old features disappear or get modified as the child grows. Disappearance of baby hair and baby teeth are a few examples.

**Acquisition of new features:** Among the physical features getting permanent teeth, appearance of primary and secondary sex characteristics are all new features acquired in the process of growth.

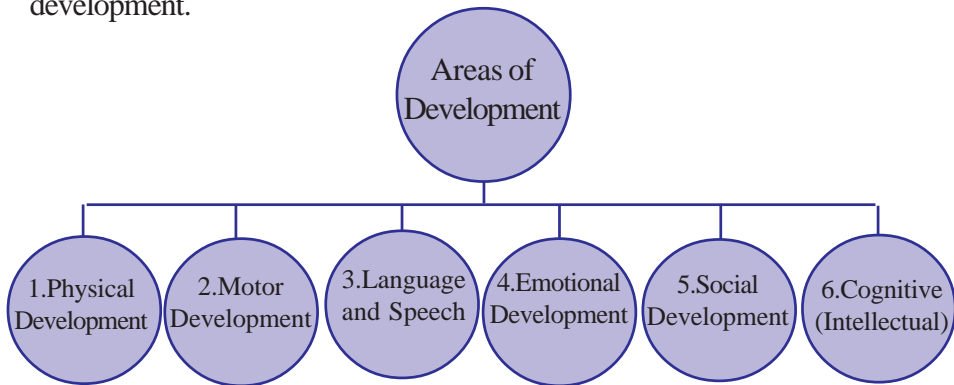


**Let us do**

Identify examples for each principle of growth and development and prepare a chart.

**2.3 Areas of Development**

Using the given illustration and description prepare a note on areas of human development.

*Illustration showing Areas of Development*

Now you are physically and emotionally independent. What were the factors that have contributed to achieve this status? List some of them.

- .....

Human development constitutes the development of different areas such as physical, motor, language and speech, emotional, social and cognitive developments. By the time the child reaches adulthood, the development of major areas will be completed.

**Physical development:** Physical development means changes in height and weight and associated changes in size and shape of the body. Physical development influences child's behaviour directly by determining what they can do and indirectly by influencing their attitudes towards self and others.

**Motor development:** Motor development means the development of control over bodily movements through the co-ordinated activity of the nerve centres, the nerves and the muscles. Motor development is partially responsible for overcoming the helplessness of newborn infants.

**Language and speech development:** The thoughts and feelings can be communicated in any form of language (gestures, emotional expressions, speech or written language) but it is most commonly and most effectively done by speech. Speech is a motor-mental skill. Speech development is the ability to use meaningful

words to others and to understand the meaning of words used by others.

**Emotional development:** Emotions are complex psychological and biological responses to internal and external stimuli. Emotional development can be defined as the ability to express, control, understand and accept one's emotions. All emotions play an important role in children's lives through the influence they have on children's personal and social adjustments.

**Social development:** Social development means the acquisition of the ability to behave in accordance with social expectations. The change of children into social, nonsocial or antisocial person depends mainly on learning, not on heredity.

**Cognitive or intellectual development:** Cognitive development is the sum total of sensation, perception and cognition. Sensation means sensing something through sense organs. Perception gives additional meaning to sensing. Cognition is the process of thinking and knowing. The intellectual or cognitive development helps a person to memorize, imagine, communicate, perceive and to solve problems.

### Check your progress

1. Define
  - (a) Growth and development
  - (b) Emotions
  - (c) Cognitive development
2. Mention any five principles of growth and development.

## 2.4 Factors Affecting Growth and Development

The factors which affect growth and development can broadly be divided into heredity and environment.

### Heredity and Environment

We know that we resemble our parents/grandparents in most of the features like colour of the skin, hair, shape of the nose, eyes etc. Can you identify the reason?

- .....

Heredity is a biological process through which the transmission of physical and social characteristics takes place from parents to offsprings. It greatly influences the different aspects of growth and development, ie. height, weight and structure of the body, colour of hair and eye, intelligence and aptitude. In short, it is the sum total of all the traits present in an individual at the time of birth. The genes in the chromosomes of the mature sperm cell and the mature ovum carries potential for physical and mental traits. The carrier of genetic determination is chromosome.

Your mother may advise you to have good friends. It is undoubtedly true that your friends have an influence on you in developing good/bad qualities. Can you list some other factors that have an influence on you.

- .....

Environment refers to all the factors except heredity, affecting an organism starting from the moment of conception. Individual's environment consists of the sum total of the stimulations (physical and psychological) which he receives from his conception onwards. The different types of environment are physical, social and psychological environment. Physical environment consists of all outer factors such as food, clothing, shelter, weather and climate. Social environment is constituted by the society-individuals and institutions, social laws, customs by which human behaviour is regulated. Psychological environment is rooted in the individual's reaction with an object. One's love, affection and fellow feeling attitude will strengthen human bonds.

### **Influence of Heredity and Environment on Human Development**

Every aspect of development is influenced by both heredity and environment. Environment affects a child's personality in many ways. A child absorbs a lot from his parents, home, surroundings, school, friends and the neighbourhood. Many traits which are important to personal adjustments may be changed by variations in environment. Heredity provides the raw materials from which a person is made. How he is moulded, and what he becomes depend chiefly on environment. Heredity and environment appear to be co-acting influence, both are essential for development. The colour of a child's hair and eyes, his physique and strength are inherited, but these are also influenced by climate, diet and disease. Every human being is born with certain muscular and skeletal structures- it is shaped and moulded by learning and experiences. Many activities, like writing, throwing a ball, spelling a word etc. are influenced by heredity and environment. Genetic factors have been found more important than environmental factors in determining the age at which first menstruation occurs.

Can you list some other examples to show the influence of both heredity and environment on your development?

- .....

Now you know that heredity and environment are the two broad factors affecting the growth and development of a child. Can you list some specific factors that help you grow and develop?

- .....

Observe the illustration and compare with your findings

**a. Sex:** Sex acts as an important factor of growth and development. There is difference in growth and development of boys and girls. Boys are generally taller and courageous than girls. Girls show rapid physical growth during adolescence

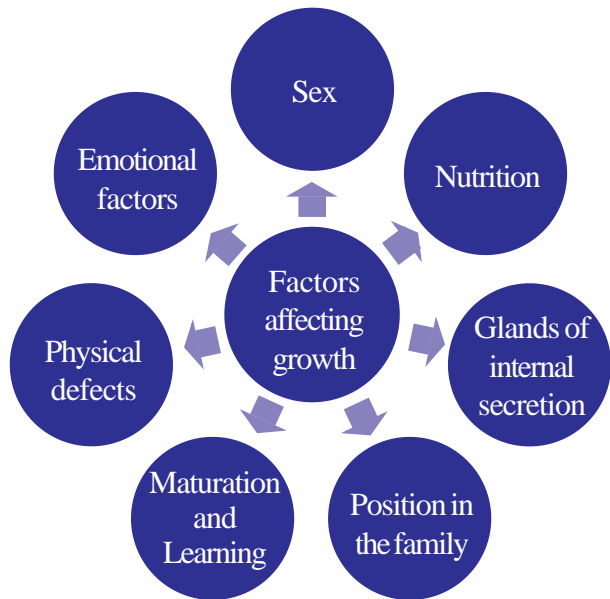
**b. Nutrition:** Nutrition plays an important role in

physical as well as mental development. Insufficient diet during the growing period causes the appearance of various deficiency diseases and growth retardation. This condition cannot be rectified with quality diet in later period of life. Thus growth and development of a child mainly depend on his food habit and nutrition.

**c. Glands of internal secretion:** You know that our body functions are regulated by the hormones secreted by various glands. Certain glands of internal secretion play an important role in the development of children. Thyroxin produced by the thyroid gland is essential for the physical and mental development. Deficiency during the growing years results in stunted growth (cretinism). A balance of male hormones control development of masculinity and that of female hormones control it toward femininity. At puberty, sex hormones promote the development of genital organs.

**d. Position in the family:** The position of the child within the family may influence his development more through environmental than through natural factors. The second, third or fourth child within a family generally develops more quickly than the first born, because of the fact that the younger children learn from imitating their elder brothers and sisters.

**e. Maturation and learning:** Development is a result of maturation and learning. Maturation is the natural unfolding of traits present at the time of birth. Learning comes from experiences. Learning helps the child in his physical, mental, emotional, intellectual, and language development. Knowledge and skills, habits, and attitudes of a person help to deal with people.



**f. Physical defects:** The achievements of physically defective persons are far below when compared to normal children. Why?

Physical defects like visual, auditory defects and orthopaedic disabilities affect the normal development of children. The developmental status of a child suffering from a physical defect is usually below that of the normal child. For eg. blind children are slower in walking, feeding or dressing themselves than children with normal vision.

**g. Emotional factors:** Children from broken homes and orphanages do not grow and develop to an optimum level. Emotional disturbances, insecurity, sibling rivalry, jealousy, loss of parents, inadequate schooling etc. have a negative effect on growth and development

Some of these factors coming under environmental factors are hereditary or with the nature of both hereditary and environmental. With respect to hereditary factors, the most crucial category which adversely affects growth and development is the hereditary disorders. Some of them are discussed below.

### Hereditary Disorders

Haven't you heard about the diseases or conditions that are passed on from parent to their children? Can you list some of them?

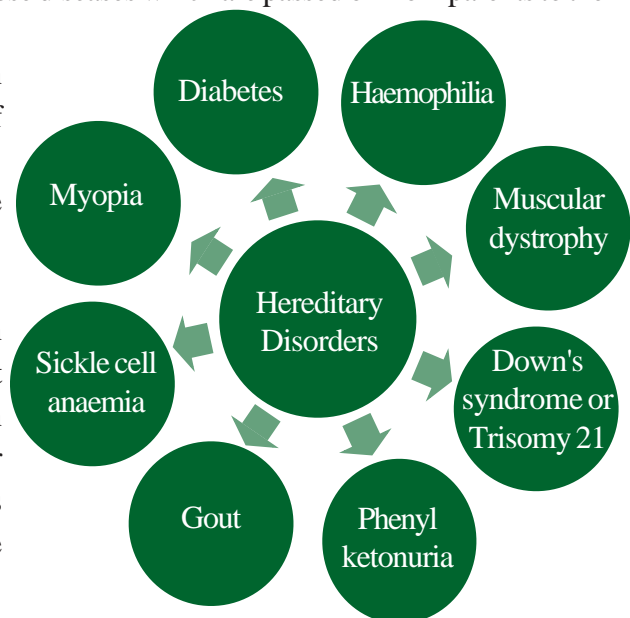
Hereditary disorders are those diseases which are passed on from parents to their offsprings through genes.

Observe the illustration showing different types of hereditary disorders.

Let us identify and know the features of such diseases.

#### a. Haemophilia

Haemophilia is a condition in which blood does not clot normally. This results in severe bleeding from minor wounds. It is always associated with a defective gene.



This disease only affects boys, rarely occurs in women but is transmitted to their sons. A female can be a carrier. Administration of clot inducing drugs and blood transfusion reduces hazards.

### b. Muscular Dystrophy

Muscular dystrophy (MD) is a group of more than 30 inherited diseases. They all cause muscle weakness and muscle loss. Some forms of muscular dystrophy appear in infancy or childhood. Others may not appear until middle age or later. The different types can vary in whom they affect, which muscles they affect, and what the symptoms are. All

forms of muscular dystrophy grow worse as the person's muscles get weaker. Most people with muscular dystrophy eventually lose the ability to walk.

### c. Down's Syndrome or Trisomy 21

An inherited disorder resulting from an extra chromosomal material on pair number twenty one, which causes mental retardation and distinct physical features. Physical features are almond shape of the eye, flattened facial features, poor muscle tone, broad hands, with unusual crease of the palm.

### Let us do



*Download picture of a child with Down's Syndrome and note down the characteristic features and prepare an electronic presentation*

### d. Phenyl-Ketonuria [PKU]

Phenyl-ke-tonuria is a metabolic disorder, in which phenylalanine an amino acid in milk and high protein foods such as meat cannot be metabolised normally by the liver. As a result, phenylalanine and other metabolic products accumulate in the blood, the nervous system becomes deprived of enough nutrients and severe mental retardation occurs.

### e. Gout

Gout is caused by a build-up of uric acid in the blood. Uric acid is a waste product that forms in the body every day and excreted mainly through kidneys. It forms when the body breaks down chemicals in the cells known as purines. If too much uric acid is produced or too little is excreted while urinating, the uric acid builds



### Do you know!

Haemophilia almost occurs in males since the gene can be passed from mother to son, as son lacks a second X chromosome to make up for the defective gene. Girls, on the other hand, are likely to be carriers of haemophilia but unlikely to actually have the disorder. In order to have haemophilia, girls must have the abnormal gene on both X chromosomes - a very rare occurrence.

up and may cause the formation of tiny crystals in and around joints. They accumulate in the joints or surrounding tissue and cause pain, inflammation and swelling.

Purines can be found naturally in your body, as well as in food, such as fish, caffeine, organ meats, beef, fried foods, soda, rich sauces, shell fish and fruit juice.

#### f. Sickle Cell Anaemia

Sickle Cell Anaemia is a genetically inherited disorder in which red blood cells become sickle shaped rather than dough nut shape. Sickle shaped cells cannot transport oxygen to various parts. They live only for a short duration than normal blood cells( RBC) more over bone marrow cannot replace them. When the sickle shaped cells block small blood vessels it leads to anaemia, jaundice, low resistance to infection and susceptibility to severe pain, and damage to various organs.



Fig. 2.2  
Sickle Cell

#### g. Diabetes

Diabetes is a metabolic disorder in which the person has high blood glucose (blood sugar) either because insulin production is inadequate or because the body's cells do not respond properly to insulin or both. The normal blood sugar level is 80-120 mg/dl.

#### h. Myopia or Short-Sightedness

Myopia is a very common eye condition that causes distant object appearing blurred, while close objects seen clearly. It is a refractive error of eye, a condition where the light that comes in does not directly focus on the retina but in front of it.

#### Let us do



*Conduct a project on hereditary disorders found in your locality and prepare report.*

#### Check your progress

1. List the factors affecting growth and development
2. Write a short note on  
Haemophilia, Sickle cell anaemia, Phenyl ketonuria and Muscular dystrophy
3. What do you mean by heredity and environment?

### Let us sum up

The pre-natal stage is the period from conception till birth. This period is divided into three sub- stages; they are the period of ovum, period of embryo and the period of foetus. The post natal life begins at birth and ends at death. The phases of post-natal period are infancy, early and late childhood, adolescence, adulthood and old age. Infancy is the period from 0-2 years. The early childhood period is between 3-6 years, which is a remarkable period of physical and psychological developments. The stage of late childhood starts from the 7th year and goes on till the 12th year. Adolescent period follows late childhood and extends from the age of thirteen to nineteen. Adulthood is the longest period of the life span ranging from 20-60 years. Old age is considered as the final stage of the normal life span usually begins at the age of sixty.

Growth refers to quantitative increase in size and structure of the body, whereas development refers to qualitative and quantitative changes. Human development is governed by certain principles. Knowledge of the principles of growth and development helps us to understand children better. Human development constitutes the development of different areas such as physical, motor, language and speech, emotional, social and cognitive developments.

Heredity is a biological process through which the transmission of physical and social characteristics takes place from parents to off springs. Environment refers to all the factors except heredity, affecting an organism starting from the moment of conception. Sex, nutrition, gland of internal secretion, position in the family, maturation and learning, physical defects and emotional factors are the specific factors affecting growth and development. Heredity disorders are those diseases which are passed on from parents to their off springs through genes. Some of the heredity disorders are Haemophilia, Muscular dystrophy, Down's syndrome, Phenyl-Ketonuria, Gout, Sickle Cell Anaemia, Diabetes and Myopia.

### Learning Outcomes

- ◆ Differentiates stages of development
- ◆ Differentiates growth and development and lists the different principles of growth and development by citing examples
- ◆ Discriminates the different areas of development
- ◆ Explains the different factors affecting growth and development and analysing different hereditary disorders



**Evaluation Questions**

1. Name the area of development in the following instances.  
 Increase in weight: .....  
 Ability to communicate:.....  
 Ability to express the emotion: .....  
 Ability to solve problems: .....
2. Differentiate growth and development
3. Pre-natal period of a baby consists of certain sub stages. Explain.
4. Complete the Table

Sl. No	Name of Hereditary disorder	Disease Condition
1	Haemophilia	
2		Cannot see distant objects clearly
3	Down's syndrome	
4		Blood cells become crescent shaped

5. 'Development involves changes.' Justify with examples.

## INFANCY AND EARLY CHILDHOOD

### KEY CONCEPTS

- 3.1 Development during Infancy and Early Childhood
- 3.2 Early Childhood Care and Education
- 3.3 Play

In the previous chapter, we have learnt the different stages of pre-natal and post-natal life of a human being and the importance of different areas of development.

Observe the picture and identify the stage to which the child belongs?

- .....

As you know, a child in the age group of 0-2 years is known as an infant and the age from 3 to 6 years is known as early childhood. The infancy period has a distinctive place in a man's life span

because it is critical, adventurous, dangerous and at the same time appealing. By the time the child reaches the age of two, the child is relatively independent of adult aid. Early childhood is the preschool age and also known as the 'pre-gang age' and the 'age of exploration'.



### 3.1 Development during Infancy and Early Childhood

The first 6 years of life are crucial not only for an individual's health and physical development, but also for cognitive, social, emotional, language and motor developments. The development in these areas depends solely upon the care, motivation and training the child receives from parents and care givers.

In the following sections we will try to explore the basic physical capacities as well as rapid and important changes taking place in different areas during the first six years. As an adolescent, you might be interested to know about the growth and developmental pattern during the early years of life.

#### A. Physical Development

Do you know why the height (length) and weight of a baby are measured at the time of birth?

- .....

Is the weight gain of a child uniform throughout infancy and early childhood? Why?

- .....

We know the definition of physical development

Physical development can be observed mainly in physical growth cycles, body size, body proportions, growth of bones, muscles and fat, teeth and development of the nervous system.

**a. Physical growth cycles:** The term 'cycles' implies that physical growth occurs sometimes rapidly and sometimes slowly. Growth cycles are physically as well as psychologically important because they affect a child's behaviour. Growth is at a rapid rate during the first 6 months of post-natal life. By the end of the first post-natal year, growth begins to slow down.

**b. Body size:** Body size is measured in terms of height (length) and weight. It is determined by both heredity and environment. The hereditary control comes from the growth hormone. Environmental control of body size comes from conditions in the pre-natal environment as well as conditions in the post-natal environment. Table 3.1 shows the reference height and weight of children in the age group of 0-6 years

Age (years)	Boys		Girls	
	Height (cm)	Weight (kg)	Height (cm)	Weight (kg)
0	50.5	3.3	49.9	3.2
¼ (3m)	61.1	6.0	60.2	5.4
½ (6m)	67.8	7.8	66.6	7.2
¾ (9m)	72.3	9.2	71.1	8.6
1.0	76.1	10.2	75.0	9.5
1.5	82.4	11.5	80.9	10.8
2.0	85.6	12.3	84.5	11.8
3.0	94.9	14.6	93.9	14.1
4.0	102.9	16.7	101.6	16.0
5.0	109.9	18.7	108.4	17.7
6.0	116.1	20.7	114.6	19.5

*Table 3.1 Reference body Height and Weight of Children according to National Centre for Health Statistics (NCHS)*

The average new born loses about 150-200 gm in just 3 to 4 days. After that the baby grows rapidly and doubles the weight by 4 months. The birth weight becomes 3 times by one year.

The length of the baby at birth is about 50cm and in one year it becomes 1½ times the length at birth. Thereafter it increases as shown in Table 3.1.

**Let us do**



*Analyse the table given above and try to find out the characteristics of growth during the period of 0-6 years and compare the differences.*

**c. Body proportions:** You know that the proportions of the child’s body are quite different from those of the adult’s body. The changes are relatively slight during the first 6 months after birth. From then until puberty, head growth is slow, limb growth is rapid and



**Fig. 3.1**  
*Body Proportions*

trunk growth is intermediate. The brain and facial features attain maturity.

**d. Bones:** Bone development consists of growth in bone size, change in the number of bones and change in its composition. Bone development is most rapid during the first year of life then relatively slow up to the time of puberty.

**e. Muscles and fat:** In the early years of childhood adipose tissue develops more rapidly than muscle. The first 2 to 3 years is one of the critical periods of fat cell development. At birth, muscle fibres are present, but undeveloped. After birth they change in size, shape and composition. Upto five years of age, the muscles grow in proportion to the increase in body weight. Then from 5 to 6 years, there is a rapid spurt in muscle growth, at that time the child's weight gain is approximately 75 % of muscle weight.

Can you identify the pattern of changes in teeth during this stage?

• .....

**f. Teeth:** Ordinarily the first temporary tooth cuts through the baby's gum between the sixth and eighth months, but the time of eruption depends upon health, heredity, nutrition before and after birth, race, sex and other factors. By 9 months, the average baby has three teeth. Between 2 and 2½ years of age most young children have all 20 of their baby teeth. On the average, a child at 6 years of age has 1 or 2 permanent teeth.

**g. Development of the nervous system:** During the pre-natal period, the number and size of nerve cells increase. During the first 3 to 4 years of post-natal life, immature cells present at birth develops. After the age of 3 or 4, growth of the nervous system proceeds at a relatively slow rate. The rate of gain in weight of both cerebrum and cerebellum is greatest during the first 2 years of life. The cerebellum triples its weight during the first year of post-natal life.

## B. Motor Development

How does a child learn to walk?

• .....

Can you list out similar skills in a baby?

• .....

Infancy and early childhood are often the ideal age for learning motor skills. In the early stages of learning motor skill, body movements are clumsy and

uncoordinated and many unnecessary movements are made. As a result of motor development, children acquire many motor skills. They are categorised as gross muscular skills and fine muscular skills.

Gross muscular skills are those which are performed using the large muscles of the body. eg. Running, jumping, ball throwing and catching, climbing etc.

Fine muscular skills are those which involve the use of small muscles of the body. eg. Buttoning shirts, drawing, stringing beads, writing, scribbling etc.





The movements of hands and legs include both gross and fine muscular skills.


**a. Hand skills:** The hand skills during infancy centre around independence in feeding, dressing and playing. By the end of the second year, the baby can use the spoon properly with only a moderate amount of spilling and can remove their dress. These skills are perfected in early childhood. By the time he reaches five years of age, he would be able to bathe, dress, tie his shoes and comb his hair without assistance. Between the ages of five and six years, most children become proficient in throwing and catching balls.








**b. Leg skills:** As the major part of infancy is spent in developing the ability to walk, leg skills are only in a rudimentary state of development by the end of the infancy period. At the age of three a child can ascend and descend stairs. Between the ages of three and four years he can learn tri-cycling. He learns to hop, skip, gallop and jump by the age of five to six years.

Observe Table 3.2 and understand the sequence of motor development that takes place during infancy.

Age	Sequence of Motor Development	
2 months	Holds head steadily when held upright Lifts head up	
3 months	Holds head steadily while being carried Rolls over Raises head and chest	
4 to 5 months	Grasps small objects	
6 months	Sits with support	

Age	Sequence of Motor Development	
7 months	Rolls from back to stomach Attempts to crawl and creep	
8 months	Achieves the sitting position without help Tries to stand	
9 months	Walks while holding furniture Bangs two objects held in hands	
10 months	Walks with help	
11 months	Stands alone Turns pages of book	



Age	Sequence of Motor Development	
12 months	Walks alone Drinks from cup	
14 months	Builds tower using two blocks, Scribbles	
15 months	Walks sideways and backward	
17 months	Walks up steps	
18 months	Begins to run	

*Table 3.2 Sequence of Motor Development During Infancy*

Children often show individual differences in the exact ages at which they display the various developmental achievements outlined here. However successful attainment of these motor skills is often used as an indicator of healthy development.

**Let us do**



*Based on the above table prepare a picture album showing sequence of motor development of infants*

**Check your progress**

1. List the motor skills of a child from two months to one year.
2. Compare the hand skills during infancy and early child hood.
3. Write the motor skills of a child for the months given below.  
7 months, 8 months, 11 months and 15 months.

**C Language Development**

During infancy how does the child communicate with mother and others?

- .....

The early years of life are critical for language development. Language is a form of communication such as writing, speaking, sign language, facial expression, gesture, mime etc. which helps a person to convey the needs, feelings, problems and thoughts to others. Speech consists of the ability to produce certain sounds that are recognisable as words and the ability to associate meanings with these words.

**Pre-speech Forms of Communication**

Learning to talk is a difficult task. Infants have an inborn desire to communicate with others. But the baby is not mature enough to speak during the first year of life. Until they can use words to communicate, babies use pre-speech forms of communication, namely crying, cooing and babbling, gestures and emotional expressions.

- a. Crying:** The baby expresses his needs only by crying during the first month. They cry to express hunger, pain, fatigue and other unpleasant bodily states and to satisfy their desire for attention.
- b. Cooing:** Explosive vowel like sounds made by the child earlier around three months is called cooing. These early cooing sounds develop into babbling and later into words.

- c. Babbling:** Babbling is the production of inarticulate, meaningless speech sounds consisting of two letter words (one consonant and one vowel). eg. Da-da, ma-ma. After that there is a rapid increase with a peak between the sixth and eighth months. These gradually develop into words.
- d. Gestures:** Gestures are movements of the limb or the body which help to substitute or supplement speech. As a substitute, gestures take the place of words and supplement gestures emphasise the meaning of spoken words.
- e. Emotional expressions:** You know how to express an emotion. In children emotion is expressed or communicated through facial and bodily changes. The pleasant emotions are accompanied by pleasant vocalisations in the form of cooing, chuckling sounds and laughs, while the unpleasant emotions are accompanied by whimpering and crying.
- After passing through these pre -speech forms of communication, a child begins to learn the major tasks in language development

### Major Tasks in Learning to Speak

Learning to speak involves three separate yet interrelated processes-learning to pronounce words, building a vocabulary and forming sentences. These processes are interrelated. Hence failure to master one of them will adversely affect the whole speech pattern. Children usually make rapid progress in these three tasks during early childhood if opportunities and guidance are provided. These three processes are explained below.

- a. Pronunciation:** Pronouncing words is the first task in learning to speak. Pronunciation is learned through imitation. Children literally 'pick up' the pronunciation of words from the people with whom they associate.
- b. Vocabulary building:** In vocabulary building, children learn to associate meanings with sounds. Since many words have more than one meaning and since some words that sound alike have different meanings, vocabulary building is far more difficult than pronunciation.
- c. Sentence formation:** To form a sentence we combine words into sentences that are grammatically correct and can be understood by others. At first, children use one-word sentences –a noun or verb which, when combined with a gesture expresses a complete thought. Children use single-word sentences from approximately 12 to 18 months of age. Two year old children combine words into

short incomplete sentences, nouns, verbs and occasionally an adjective or adverb. They simply omit prepositions, pronouns and conjunctions. At 3 years their sentences are nearly complete (3-4 words sentences). At 4 years they say complete sentences(6 -8 words). On the average, 3 to 4 year old children speak 15000 words.

**Let us do**



*Observe a 4 year old child for 1 hour and identify, list out the nouns used by the child.*

**D. Emotional Development**

How does a child react, when you give a small pinch to him or when he gets irritated?

- .....
- What are the other emotions expressed by a child? List all the emotions you noticed in children.
- .....

Emotions play an important role in everyone’s life. An emotion can be described as the stirred up state of the organism followed by physiological changes in the body. Emotions are simple reactions that suggest pleasure or displeasure.

The ability to respond emotionally is present even in the new born infant. At birth, the baby shows only general excitement. At three months, delight and distress is also expressed along with excitement. At six months, along with the above emotions they show fear and anger. At one year they also express elation and affection.

Do you know how small children expresses their emotions?

- .....

Emotions can be broadly classified into two types.

1. Positive – integrative emotions and.
2. Negative – disintegrative emotions

**1. Positive–Integrative Emotions**

Positive–integrative emotions are pleasant in nature, the person feels happy and its expression is liked and welcomed by others. eg. Joy, love, affection, curiosity and sympathy.



**Do you know!**

- Delight – Happiness
- Distress – Unhappiness
- Elation – Condition of being in high spirits

**a. Curiosity:** Children usually pose questions like ‘what is this?’ in their early stages. Curiosity is the interest in new, strange or mysterious elements in a person’s environment. It is the desire to know. The pre-school child is highly curious. The stimuli that give rise to curiosity in childhood are numerous. He is curious about his body, people and things. Mechanical devices, toys, novel situations, new way of dressing, changes in their body etc. also cause curiosity in them. A curious child reacts positively by moving towards them, exploring and manipulating them. When he can talk, he asks endless questions to satisfy his curiosity. The questioning age begins at the third year and reaches its peak around the sixth year.

**b. Joy, Pleasure and Delight:**

Which is the most beautiful expression in children?

- .....

Joy is a pleasant emotion. It is known as pleasure, delight or happiness. Among babies, the pleasant emotions of joy, happiness and delight are also associated with the baby’s activities such as cooing, babbling, creeping, standing up, walking and running. They express their joy through smiles and laughter. A surprise, contrast situation, play situation and achievement stimulate joy in pre-school children. They express their joy through smiling and laughing, by jumping up and down, rolling on the floor, clapping their hands and by hugging and kissing.

**c. Affection:**

Have you ever noticed a child expressing affection?

- .....

Affection is an emotional reaction directed towards a person, an animal or a thing. It indicates warm regard, friendliness, sympathy or helpfulness and it may take a physical or verbal form. Babies less than 5 months of age fix their gaze on a person’s face, kick, hold out and wave their arms, try to raise their bodies, smile and turn their trunks. By the sixth month, they respond by hugging and by reaching for the loved one’s face. After the first year, they tug, pat, stroke, and kiss the loved person or object.

**2. Negative – Disintegrative Emotions**

They give an unpleasant feeling to a person and are not welcomed by others. eg. anger, fear, jealousy etc. Observe Figure 3.2 showing different emotions.

**a. Fear:** What makes a child fearful? Fear is a natural response to danger. Usually, infants are afraid of loud noises, animals, darkrooms, high places, sudden displacement, being alone, pain and strange persons, places and objects. 2 to 6

years of age is the peak period for specific fears such as fear of thunder, lightning, dogs, spiders and noisy machines. For them, these fears are real since they are not old enough to understand dangers. An infant usually cries, turns or hides his face in fear. But the pre-school child hides behind a person / furniture, cries, screams to avoid fear evoking situations.



Fig 3.2  
Various Emotions

**b. Anger:**

How do children express anger ?

- .....

Anger is a more frequently expressed emotion in childhood than fear. This is because anger-provoking stimuli are more and children discover at an early age that anger is an effective way of getting attention or what they want. Minor physical discomforts and interference with physical activities arouse anger in infants. Whereas inability to carry out actions, denial of wishes and plans and taking away their possessions, interference in play, failure of toys etc. stimulate anger in pre-school children. In response they may resist, throw things, kick, scream, spit, bite, grind teeth and have angry outbursts.

**c. Grief:** Grief is an emotional distress resulting from the loss of something loved. In its milder form it is known as sorrow or sadness.

**d. Jealousy:** Jealousy is a normal response to actual, supposed or threatened loss of affection. It is an outgrowth of anger, giving rise to an attitude of resentment directed toward people. Often some fear is combined with anger in the jealousy pattern. Jealousy often begins between the ages of two and five years, with the birth of a younger sibling, when they see others having something which they like to possess and due to parental favouritism.

**Let us do**

*Based on the above information prepare a script containing all emotions and conduct a role play.*

**Check your progress**

1. Explain the pre-speech forms of communication.
2. List the common emotions of a child
3. How does a child express his curiosity and fear?

**E. Social Development**

Are all the students in your class very co-operative? Can all of them become leaders? Why does this difference occur?

• .....

Early social experiences play a dominant role in determining the child's attitudes towards social relationships and the pattern of behaviour in his relationships with others. Social or antisocial patterns of behaviour are established during the childhood. Early social experiences also determine the social behaviour of children when they become adults. Happy experiences encourage the child to become a social person and unhappy experiences encourage the child to become unsocial/antisocial.

**Socialisation:** Social development of a child takes place through socialisation. Socialisation is the process of learning the skills, attitudes and behaviours which enable individuals live easily with other members of the family and society. It involves learning good habits, morals, religious and cultural values, getting disciplined and acquiring a strong sense of right and wrong. The child also learns important social skills (both proactive & anti social) like co-operation, sympathy, sharing, friendliness, generosity, negativism, rivalry, quarrelling, teasing and bullying etc. The child learns all these by the interaction with parents, grandparents, siblings, relatives, neighbours, friends and teachers. They all serve as agents of socialisation. Child's personal factors (his own physical, mental and emotional development) and environmental factors (family, peer group, neighbourhood, community, religion and mass media) together influence a child's social development. Therefore all factors play a constructive role helping the child to develop positive self concepts, positive attitudes towards people and life.

**Pattern of Social Development**

New born babies are social beings right from the start. They have an inborn need for the company of other people. Soon after birth, children start recognising their parents and siblings and want to be with them. Later they enjoy the company of other children and adults. They also develop the ability to distinguish voices and behaviour of others. Social development takes place in the following pattern.

2 weeks	Baby begins to interact with others, watches the mother’s face as she feeds and talks to him. He soon recognises her.
4 -6 weeks	Baby begins to smile
3 months	When the adult speaks to the baby, he responds making noises
6 months	Baby begins to attract other’s attention
9 months	He distinguishes strangers from familiar people. Like to be a part of the family.
1 year	Learn to co-operate with family members. He understands and obeys simple commands, likes to play alone.
2 years	He likes to play near other children, but not with them, keeps his possessions, shows concern for others in distress.
3 years	He plays with other children and understands sharing and showing sympathy
4 years	He needs other children to play with but his behaviour is alternatively co-operative and aggressive.
5 years	He co-operates with his companions and understands the need for rules and fair play.

*Table 3.3 Pattern of Social Development during Infancy and Early Childhood*

**Let us do**



*Prepare a chart showing the social development of children with illustrations.*

**F. Cognitive Development**

Why do children perform differently in exams?

- .....



Intelligence is a mental operation which is developed out of one's mental and physical interaction with the environment. According to Piaget, children pass through a series of stages of thinking that are qualitatively different from each other.

Now we can analyse the nature and stages of cognitive development during infancy and early childhood years.

Piaget believed that cognitive growth proceeds continuously and advances in stages. According to him these stages of growth are divided into four stages of cognitive development.

- The sensory-motor stage - from birth to 2 years
- The pre-operational stage - 2 to 7 years
- The concrete operational stage - 7 to 11 years
- The formal operational stage - 12 year onwards

### **Sensory- Motor Stage**

This stage is from birth to two years. Piaget called the first stage of cognitive development the sensory-motor stage because it is characterised by the absence of language and it is limited to direct sensory and motor interactions with the environment. In this stage the child learns from the environment with the help of his senses and physical and motor interaction with learning material. He learns about an object by touching, tasting, grasping and holding that object. He engages in repetitive activity and acts intentionally to attain a goal. During this stage the child acquires the concept of object permanence. Object permanence means knowing that an object still exists, even if it is hidden. For example, if you place a toy under a blanket, the child who has achieved object permanence knows it is there and can actively look for it. Before this stage, the child behaves as if the toy had simply disappeared.

### **Pre-Operational Stage**

This stage covers the category of children between 2 to 7 years. Pre-operational means "before being logical." At the Pre-operational Stage, infants don't think



**Do you know!**



### **Jean Piaget**

Jean Piaget was a Swiss biologist, philosopher, and psychologist, best known for his work in the area of developmental psychology. Piaget identified the stages of cognitive growth and development. Piaget's particular focus was on the intellectual or cognitive development of children and the way in which their mind processes and progresses in knowledge.

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logically, and they learn language and symbolic thought. Their thinking has certain characteristics.

**Egocentrism:** the inability to take another person’s perspective or point of view. eg. The sun and the moon are following him

**Animism:** attributing life to inanimate objects.

eg. Why do stars twinkle? Because they’re happy.

**Irreversibility:** The inability to mentally reverse a sequence of events.

**Centration:** The tendency to focus or center on only one aspect of a situation and ignore other important aspects.

**Conservation:** Two equal physical quantities remain equal even if the appearance of one is changed, as long as nothing is added or subtracted. For eg. if a child is shown two identical containers filled with the same amount of juice, and the juice is poured into two different containers, the child will think that one holds more liquid, not understanding that the same amount of juice is held in each container (Fig. 3.3).



*Fig. 3.3 An example of Conservation of Volume*

The concrete operational and formal operational stages are applicable to children beyond early childhood.

**Check your progress**

1. Explain the factors affecting socialisation
2. Explain the characteristic features of cognitive development during infancy and early childhood.

**3.2 Early Childhood Care and Education (ECCE)**

Can you remember your nursery school days?

- .....

Early childhood years are critical in a child’s life. Now you know that the rate of development in all areas is more rapid during these years. Hence the child requires a stimulating environment to develop his potentials to the maximum. Play and self

expressional or manipulative activities form the best medium of learning. These are best provided through early childhood education. Moreover, census reports state that one out of every six infants born, dies before reaching five years of age due to improper child care, poor environmental condition and malnutrition. Therefore due importance should be given to the nutrition and care of children. Hence **early childhood care and education** can be viewed as an investment for the future, because children represent future wealth for the family, society and nation. This programme consists of activities and experiences for the total development of the child.

The health and nutritional services and the learning experiences provided to the children of early childhood years are collectively known as early childhood care and education.

### **Objectives of Early Childhood Care and Education**

The general objectives of ECCE can be described as follows.

- Laying the foundation for a healthy, productive and satisfying life in the future by enabling the child to develop his/her maximum potential
- Preparing the child for entry into and success in primary school and
- Providing support services to women and girls to enable them enter/continue with education, training and being part of the work force.

### **The Importance / Need of Early Childhood Care and Education**

Let us discuss the significance of early childhood care and education in the life of an individual.

The following points emphasise the need for early childhood care and education. The growth and development in all three major domains namely **physical** (physical growth, perceptual skills, motor skills), **cognitive** (language development and thinking and problem-solving skills) and **social-emotional domain** (children's self identity, interpersonal skills and their expression of feelings) is rapid in the childhood years. Home becomes inadequate to meet these growth needs. Therefore to ensure better foundation for an all-round development of children, an early intervention (environmental and educational) is significant.

An individual's habits, attitudes, trust in people etc. can be moulded through the rich and challenging early childhood experiences.

A child by nature is playful and children's play results in learning. Early childhood care and education not only provides the opportunity for playing with other children but also to develop social skills. The group experiences provided will help the child to be an effective member of his social group.

The wastage and stagnation at the primary level as well as children's poor performance can be checked and controlled considerably. It is also proved that children having attended early childhood education programmes do better and easily adjust in the primary level than those who directly come at the primary level. They are also ready with concepts necessary for formal learning.

It provides a suitable environment not only to children coming from small urban tenants and flats with little space to move but also to children from slum areas and poor families with unsatisfactory home environment.

The nutritional needs and the health care of children from poor economic conditions can be satisfied in this programme.

Working parents have an added advantage that they consider preschool as an institution where their children can be looked after.

It instils social equality by providing equal opportunities to socially backward as well as to socially disadvantaged children.

### Early Childhood Care and Education Facilities

List the names of schools that provide early childhood education in your locality.

- .....

There are many institutions which provide necessary services for children in early childhood years. Some provide only educational services, some others give care and some extend both. Parents prefer a programme that supports their values, beliefs and culture. The existing facilities for early childhood care and education are discussed here.

**a. Nursery schools:** Nursery school is meant for children between the ages of 2-6 years. The curriculum of nursery school includes various activities and the knowledge of 3 Rs (Reading, writing, arithmetic). Eating, sleeping, outdoor activities etc. are included as other aspects in the curriculum, followed by learning of self-caring skills. At the age of 5 years, children are provided with lessons in 3 Rs. Science will be taught through nature study. Environmental studies is the major activity of nature study.



#### Do you know!

The nursery school concept began in England through the efforts of two sisters-Rachel and Margaret McMillan in 1911. In fact both the sisters opened children's clinic in 1902 to provide physical care under healthy conditions. Their clinic later expanded to Nursery in 1911.

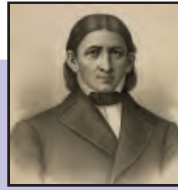
**b Kindergarten:** Friedreich Froebel (1782-1852) of Germany developed a system of education in 1837 known as 'Kindergarten' means 'Children's garden'. He conceived the school as a garden, the teacher as the gardener and students as tender plants. To him, kindergarten is a place where children may grow as naturally as plants under the guidance of a teacher.

Kindergarten is a place where children play and work with materials and other children. It is a child-centred rather than subject centred system. In this system, nearly half of the day is devoted to activities such as singing, listening to music, other rhythmic activities,

storytelling, story listening, reciting poems, and peer discussion etc. The remaining time is distributed for child care, free play and rest sessions. The teacher has to ensure participation of children in these activities.

**c. Montessori schools:** These are schools run on the philosophy of Maria Montessori of Italy. The most important goal of the Montessori education is to recognise the unique needs and capabilities of each individual child. The key concepts and special features of the Montessori approach are:

1. **Structured environment:** The school provides a set of special materials with which children can gain intellectual skills in systematically graded steps. The teacher selects and arranges these materials and demonstrates the procedures. The child has the freedom to choose and use the materials. This leads to self education.
2. **Individual activity:** Individual activity and 'learning by doing' are given more importance than group activity. Each child is expected to learn through individual activities. Each child has his own pace in learning. They are



### Do you know!

Friedrich Froebel invented the concept and the name Kindergarten. He was born in a village near Weimar in what is now central Germany in 1782, and grew up in the political and intellectual turbulence of the Napoleonic era. He read widely in contemporary philosophy and, much influenced by the Swiss educators Rousseau and Pestalozzi, came to believe in the importance of the pre-school period as laying the foundation for not only a sound education for the individual, but also for the health of a society at large.

expected to identify the errors and make corrections individually. Here learning is effected by doing.

3. **Sensory learning :** One of the special features of Montessori education is the involvement of all senses in learning. Experiences with colour, number, form and touch are provided to involve all senses.

A typical Montessori curriculum for children 3-6 years old includes language, mathematics, sensory-motor experiences, practical life experience, science, social studies, art and computer areas.

**d. Integrated Child**

**Development Services (ICDS):** Integrated Child development Services is a comprehensive and integrated programme which started in 1975 for the all-round development of a child. It provides a package of services namely, supplementary food, immunisation, health check up, referral services, non-formal preschool education and health and nutrition education for mothers. The nodal point for the delivery of ICDS package is an 'Anganwadi' which is to be run on a local basis. The preschool education is child-centred and based on play and recreational programmes.

- e. Foster child care:** This programme is for those children whose parents cannot or will not take care of their own children or those who have been abused or abandoned.



**Do you know!**



**Maria Montessori**

Maria Montessori was an Italian physician, educator, and innovator, acclaimed for her educational method that builds on the way children naturally learn.

She opened the first Montessori school-the Casa dei Bambini, or Children's House-in Rome on January 6, 1907. Subsequently, she travelled all over the world and wrote extensively about her approach to education, attracting many devotees.

Maria Montessori was born on August 31, 1870. She was well-schooled and an avid reader-unusual for Italian women of that time. The same thirst for knowledge took root in young Maria, and she immersed herself in many fields of study before creating the educational method that bears her name.

**f. Baby sitters:** A baby sitter looks after the child in the absence of parents. Baby sitters play a very definite role in moulding the behaviour of young children and facilitating their development. Hence a baby sitter should possess the required qualities to shoulder such a responsibility.

**g. Proprietary child care (creches):** These are run by corporations business people and individual proprietors to make profit. A crèche may be termed as a day nursery. The central purpose is to provide custodial services or to substitute maternal care during daytime. It mainly satisfies the needs of working mothers.

### Let us do



*Visit a preschool and prepare a report on activities conducted there and infrastructure facilities provided for the kids*

### Check your progress

1. What are the aims and objectives of ECCE?
2. Describe the existing facilities for early childhood care and education  
What is the most interesting activity of the child?

• .....

In the following section we shall discuss play in detail.

## 3.3 Play

Play is an activity carried out for the enjoyment it provides. It is one of the important means of socialisation for young children. Enjoyment of activity is the essential element of all play. Children play only as long as the activity amuses them. When they become bored, they drop what they are doing. They turn their attention to something else which they find more enjoyable. Play is also an essential part of their education because while they are playing they are learning. The play activities of children vary according to their developmental stage.

Play may be divided into two categories. Active play and Passive play or amusement.

### A. Active Play

In active play, children get satisfaction from what they do. In this the child does something. Exploratory play, physical play, creative play, imaginative play, manipulative play, social play and collecting are different forms of active play.

**a. Exploratory play :** This enables a child to explore things and the environment. In this, they try to find out what the things are like. eg. playing with a toy helps to discover



its size, shape, texture, colour, how they are made, what he/she can do with them etc.

**b. Physical play:** This is a play in which a child is actively moving around. eg. running, jumping, climbing, crawling, balancing, swinging, throwing a ball etc. This type of play encourages the development of gross motor skills.



**c. Creative play:** Creative play is one in

which the child makes something new by expressing his/her own ideas and feelings. Young children make many things with blocks, sand, mud, clay, beads, paints, paste and crayons.



**d. Imaginative play:** The child imagines

and acts as someone else or as an animal. It is also known as 'dramatic play' 'role play' or 'pretend play'. It helps them to understand how people behave and also the world around them. The child act out adult roles like doctor, teacher, nurse and so on. By expressing themselves in this way, the child progresses in his emotional development. Reading stories and listening to story tapes will develop the faculty of imagination.



**e. Manipulative play:** This play involves skillful use of the hand. During manipulative play, the hands, eyes and brain are being trained to coordinate, that is, to work smoothly together. Sewing cards, threading beads, dot-to-dot and drawing stimulate manipulative play.



**f. Social play:** In this play children play together. It teaches

them to cooperate, to share and to be honest. It also teaches them that antisocial behaviour like cheating leads to isolation and loss of friendship.





**g. Collecting:** Pebbles, beads, feathers, stamps and coins are some of the things collected by children. From 6 years to adolescence, collecting is a very important form of play.

## B. Passive Play



looking at comics, listening to music, watching television etc. are examples of passive play. Day dreaming, a form of mental play, is also a passive play. When the child enters school make-believe play loses its charm and dreaming takes its place.

### Let us do



*Observe a group of children playing together and try to categorise their play. Record your findings*

### Significance of Play

Now let us find out the importance of play in the life of young children.

Play enables children to explore themselves and the world. It allows them to discover, experiment, create, concentrate, express ideas, develop muscles, invent, learn new skills, co-operate with others, use the imagination, learn how other people behave, role play, develop speech, share possessions and to be considerate to others.

- i. Play leads to happiness:** A child who is absorbed in play is likely to be a happy child, as play produces the feeling of satisfaction and achievement.
- ii. Play helps to prevent boredom:** Preventing a child from being bored is very important, as boredom can quickly lead to bad temper, irritability and destructiveness.
- iii. Play helps to reduce stress:** The acting out of stressful situations can help them to prepare themselves and seem more familiar to face such situations and therefore less frightening.



### Observe

Figure. The child in the middle is simply watching the play. This is an example of passive play. Children play a passive role in amusements or passive play. The enjoyment comes from watching or listening to others. Watching others, looking at pictures, listening to stories,

**iv. Play helps to divert aggressive instincts:** Play helps to release aggressive and other negative emotions in a socially approved manner. eg. a child's anger towards a sibling can be expressed freely towards a doll. Thus the child is free.

### **Value of Play**

Do you know how play promotes the all-round development of young children? Play is very valuable in the life of young children. Play is essential to the development of a normal, well - adjusted personality. It gives the child a chance to develop physically, emotionally, mentally, socially and morally in a way that no other single activity can. The value of play to children is as follows:

**a. Physical value:** One of the basic values of play is that it helps the child in his physical development. It provides exercise to the child's body and to his muscles. It helps to develop motor coordination. The child spends a lot of energy in playing and play stimulates appetite. Play also stimulates good sleep in children.

**b. Social value:** Play is a socialising force in children. Children learn to give and take in the playground. The child's social contact widens through play. In the playground children learn how to play the game fairly, how to loose with grace, how to win without arrogance, how to take criticism, how to sacrifice personal wishes in the interest of others, how to be a part of a team and how to be loyal to one another etc.

**c. Educational value:** Play helps to improve intellectual skills. The child learns different concepts like shape, size, number and texture by handling different play objects. Exploring, collecting and other forms of play help in gathering information about his environment. When a boy plays with creative building materials, simultaneously he learns how to solve problems and thereby his mental skills are developed. His imagination, vocabulary and logical thinking are all improved by play activities. Play helps the child to know the difference between reality and fantasy. The child's motivation to learn is stimulated by such activities as reading and television viewing etc.

**d. Psychological value:** Play provides children with a certain kind of self fulfilment and self realisation which is not possibly achieved in any other way. They feel proud when they win in play activities. The child who lacks academic ability may find more readily accepted in a play situation.

**e. Therapeutic value:** Play has therapeutic value because of its cathartic nature. Catharsis means letting out pent-up emotions. They shout and laugh during

play activities and through these, less desirable emotions like jealousy, anger, fear etc. get released. Play therapy is used to care children having behaviour problems. Play also satisfies the child's psychological needs of leadership, approval and responsibility.



### Do you know?

#### Play therapy

A process of correcting behaviour problems in children by allowing them to engage in play.

### Selection of Toys

Do boys and girls prefer the same kind of toys? Why ?

• .....  
 Certain toys are preferred by boys and some by girls. eg. generally wheeled toys are preferred by boys and kitchen toys by girls. Gender influences the kind of play equipment they use and the way they play with that. The number of play equipment children have and the amount of space they have to play - both are influenced to a large extent by the socio economic status of the family and the pattern of their play. So much care is needed in selecting the toys for children.

While selecting toys for children, what are the points to be considered? Let us discuss this in detail.

Children can play with a variety of household objects and get pleasure and stimulation from them because they treat them as toys. If toys are to be successful one should bear in mind the following points.

- Should be suitable for the age, interest and developmental stage of the child
- Should be strong
- Should be made of safe materials
- Should help to develop new skills
- Should be durable
- Should be of low cost.
- That can be used for various types of play.
- Toys must be safe for the child to play, should not have sharp edges and loose parts, painted toys should be lead free and free from spikes and staples.

### Toys for Different Ages

You might have noticed that toys are available for different ages. Now let us identify the age appropriate toys for the children

Up to six months: rattles, soft toys, plastic keys, musical toys are suitable. This will help in developing sensory skills such as listening, grasping, reaching out, eye movements and exploring.

Six to twelve months: push and pull toys, building blocks, activity centres and stacking beakers are suitable to develop the manipulative skills, eye-hand coordination, sensory skills, sitting and crawling skills.

Twelve to eighteen months: toys such as shape sorters, picture books, sand and water and construction toys are ideal. It is the time to develop balance, walking skills and language skills.

Eighteen months to two years: large jig saws, balls, nursery rhyme and story books, toys with moving parts are ideal to improve the gross- muscular skill, his eye- hand coordination skills and learning skills.

Two to three years: suitable toys are picture books, pencils, paints, threading beads and a tricycle. This will improve their curiosity, fine and gross motor skills, and the child can recognise colour and size.

Four to six years: the children are interested in counting games, a clock, a pretend shop, alphabets games, weighing and measuring activities, objects useful for gardening etc since they have longer concentration span, precise eye-hand co-ordination and fine manipulative skills.

#### Let us do



*Based on the above description prepare a table (Hints : Types of toys and values)*

#### Let us sum up

The first six years of life are crucial not only for an individual's health and physical development but also for cognitive, social, emotional, language and motor developments. Physical development can be observed in physical growth cycles, body size, body proportions, growth of bones, muscles and fat, teeth and development of the nervous system. As a result of motor development, children acquire many motor skills, mainly gross muscular skills and fine muscular skills. Crying, cooing and babbling, gestures and emotional expressions are the pre-speech forms of communication used by babies.

Learning to speak involves three separate yet interrelated processes namely pronunciation, vocabulary building and sentence formation. Emotions expressed by a child can be broadly classified as positive-integrative emotions and negative-disintegrative emotions. Social development of a child takes place through socialization. According to Piaget, stages of cognitive growth can be divided into four stages. Of which, sensory-motor stage is from birth to two years and pre-operational stage covers the category of children between two to seven years.

The health and nutritional service and the learning experiences provided to the children of early childhood years are collectively known as Early Childhood Care and Education (ECCE). The existing facilities for early childhood care and education are Nursery schools, Kindergarten, Montessori schools, Integrated Child Development Services, Foster child care, Baby sitters and Proprietary child care.

Play is one of the important means of socialization for young children. Play can be divided into two categories: Active play and Passive play. In active play children get satisfaction from what they do. Children play a passive role in passive play. Play enables children to explore themselves and the world. Play gives the child a chance to develop physically, emotionally, mentally, socially and morally. The number of play equipment children have and the amount of space they have to play are influenced to a large extent by the socio economic status of the family and the pattern of their play.

### Learning Outcomes

- ◆ Differentiates physical development of boys and girls during infancy and early childhood and analyses physical, motor, language, emotional, social; and cognitive developments during infancy and early childhood
- ◆ Explains the objectives and importance of Early childhood care and education and evaluates the activities of a preschool
- ◆ Categorises and differentiates different types of play and recognises values of play

### Evaluation Questions

1. Body size and proportions change during infancy and early childhood. Justify
2. Match the following:

Sl No.	Age in months	Motor skills
1	2 months	Walks while holding furniture
2	6 months	Scribbles
3	9 months	Lifts head up
4	11 months	Walks alone
5	12 months	Begins to run
6	14 months	Sits without support
7	18 months	Stands alone

3. Compare the leg skills during infancy and early childhood.
4. Learning to speak involves three separate and interrelated processes. Explain.
5. Play is essential for the development of a normal, well - adjusted personality. Substantiate your answer with valid arguments.
6. What are the factors affecting social development of children below 6 years?
7. Explain the characteristic features of sensory-motor stage.
8. Anu is reluctant to send her child for preschool education. How will you convince her the importance of preschool education?
9. Prepare a short note on the facilities available for preschool education.

## CHAPTER

# 4

## LATE CHILDHOOD YEARS

### KEY CONCEPTS

- 4.1 Developments during late Childhood
- 4.2 Discipline and Guidance for Children
- 4.3 Behavioural Problems and Suggestive Measures

The period of late childhood is often referred as 'School Years'. It extends from the age of seven years to twelve years or in a strict sense upto the onset of puberty or sexual maturity. Although puberty starts at adolescence, for some children it may start early in late childhood.

During this stage the child normally engages in educational activities more than any other activity. It is also the time when certain essential skills are learned through the formal curriculum and the extra curricular activities in school. This period is also referred to as 'gang age' because the child is usually found in the group of selected peers, the gang and the major concern is acceptance by the peers and members in the gang.

### 4.1 Developments during Late Childhood

Have you noticed any physical changes when you were at the age of 12 years?

- .....

Let us discuss various developments that occur in the late childhood period.

## A. Physical Development

You know that physical development involves changes in height, weight and the body proportions of a child. Each child develops at his own pace. Sex differences in physical growth are more pronounced during late childhood years. Physical developments mostly include the development in height and weight.

**a. Height:** Childhood is a period of slow and relatively uniform growth. Increase in height is at the rate of five to six centimeters annually. An average girl of eleven years should have a height of 142 centimeters and the average boy of the same age have 140 centimeters.

**b. Weight:** Increase in weight is also slow and fairly uniform at this age. At the onset of puberty, the average girl of 11 years should weigh 33.7 kilograms and the average boy of the same age have 32.2 kilograms.

The height and weight of children from seven to eleven years is given in Table 4.1.

Age (years)	Boys		Girls	
	Height (cm)	Weight (kg)	Height (cm)	Weight (kg)
7.0	121.7	22.9	120.6	21.8
8.0	127.0	25.3	126.4	24.8
9.0	132.2	28.1	132.2	28.5
10.0	137.5	31.4	138.3	32.5
11+	140	32.2	142	33.7
12+	147	37.0	148	38.7

*Table 4.1. Reference Body Height and Weight of Children according to NCHS*

### Let us do



Analyse the table given above and prepare a bar diagram showing the growth of children. (weight and height can be given separately)

**c. Body proportions:** As the child grows, his trunk becomes slimmer; his chest broadens and his arms and legs become longer and thinner. The skeletal structure will be bigger and broader. The size of the head decreases and the lower part of the face increases in size, thus eliminating some of the facial disproportions of early childhood. The gradual eruption of permanent teeth changes shape of the mouth.



**d. Development of muscles:** The child's muscles grow in size and strength during this period. He usually has a high energy level and engages in a lot of physical activities.

**e. Bone development:** There are changes in the size and composition of bones during this period. The length and width of the bones increases. Continued deposition of minerals or ossification hardens bones which reach their mature shape.

**f. Development of teeth:** Do you remember the age at which your milk teeth first fell?

•.....

The child's primary teeth begin to fall from the age of six. It continues upto thirteen years. Twenty milk teeth are lost during school age. Girls are found to have permanent teeth earlier than boys.

**g. Brain development:** About 90 percent of the adult brain size is achieved by the age of six. During late childhood, brain development includes the organisation of brain functioning and myelination.



### Do you know?

Myelination is the deposition of fatty substances around nerves cells which helps in the conduction of electric impulses.

## B. Motor Development

You know that most of the motor skills initiate during early childhood period. By the time the child goes to school, most children are proficient in motor skills like jumping, skipping, hopping and climbing a little height with well coordinated arm and leg movements. They are more and more skillful in using a number of muscles simultaneously. They develop greater flexibility of various parts of the body like trunk, wrist, legs etc. Their speed of movement and the ability to balance increase considerably. The motor skills of late childhood can be divided into four categories namely self-help skills, social help skills, school skills and play skills.

**a. Self help skills:** Self help skills are skills needed to help himself or herself. It includes the ability to eat, dress, bath and groom



with speed.

**b. Social help skills:** Social help skills are skills which help the child to become sociable at home and school. At home they usually engage in activities like dusting, helping the mother in the kitchen, sweeping etc. At school, cleaning black board, emptying the waste paper basket etc.



**c. School skills:** School skills are skills needed to carry out his or her school activities. It includes writing, drawing, painting, clay modeling, dancing, singing etc.

**d. Play skills:** Play skills are skills needed to engage in play. eg. Throwing and catching balls, riding bicycles, skipping etc.



### C. Social Development

A number of changes in social development occur in the late childhood years. As his social contacts widen, he is expected to be a member of social groups. The significant characteristics of social development during late childhood are:

**a. Formation of childhood gangs:** A gang is a spontaneous local group of children. Children who have same interests come together and spend most of their time in the company of others in the gang. A child of school age has a strong desire to be an accepted member of the gang. He likes to imitate his gang mates in dress, behaviour and opinion. Through gang experiences he learns appropriate social attitudes.

- b. Over sensitivity:** Children have the tendency to get easily hurt when scolded or threatened.
- c. Suggestibility:** They are easily influenced by the suggestion of others, especially peers.
- d. Competition:** Competition takes the form of rivalry among group members.
- e. Responsibility:** Children tend to have a greater sense of responsibility and the willingness to share the load than during early childhood years.
- f. Social insight:** This is the ability to perceive and understand the meaning of social situations. As they grow, children tend to develop more social insight.
- g. Sex antagonism:** Children choose friends of their own sex and show hostility towards members of the opposite sex.

#### D. Emotional Development

During this period, situations arousing emotions and the manner in which they are expressed are different from that of early childhood years. The child during this stage learns that expressions of negative emotions are socially unacceptable. Boys express anger and curiosity more overtly than girls while girls are likely to experience more fears, worries and feelings of affection.

The common emotional expressions of late childhood years are:

- a. Fear:** Children's fear during this stage is mainly imaginary and fanciful. They are afraid of supernatural elements and remote dangers. They fear death, thunder, lightning and storm. Their ability to remember the past makes them fearful of frightening characteristics in movies, comics, television etc.
- b. Worry:** It is an imaginary form of fear. Their worries are the result of imagined situations, which could arise in future and be dangerous. Their worries include those regarding school, about school work, failing in test, being scolded, being punished etc.
- c. Anxiety:** Anxiety is an uneasy state of the mind. When a child worries often he may develop anxiety. Anxiety increases as he grows. Anxiety is expressed in the form of depression, irritability, restless sleep and extraordinary sensitivity.
- d. Anger:** Anger is aroused by teasing, constant fault finding or making unfavourable comparisons with other children. Many other stimuli like being cheated, bullied, scolded etc. will lead to anger in children.

**e. Jealousy:** Jealousy may result from the worry of losing affection of a beloved person or may be the result of envy. The child also feels jealous of others who possess things which he does not possess. The common response to jealousy takes the form of hitting, kicking, general naughtiness, calling nick names etc.

**f. Joy and happiness:** There are individual differences in the expression of joy, stimuli evoking joy and amount of happiness a child enjoys. The usual joy responses include smiling, laughing, jumping up and down, clapping hands, hugging etc.

**g. Affection:** As the child grows, his social contacts widen and if these contacts are pleasurable, he tends to develop affection towards all who treat him as an important individual. Children as they grow, want to show affection in appropriate manner.

## E. Cognitive Development

In the previous chapter you learned the features of cognitive development in the early childhood. Let us discuss the cognitive development of late childhood years. During the late childhood years the child's perceptual powers increase in keenness and accuracy. He has long memory and is able to recall from the long past.

According to Piaget, during this stage the child enters the period of concrete operations in thinking. This stage is characterised by the cognitive skills of decentration, reversibility and conservation.

**a. Decentration:** The ability to shift attention from one aspect to another is called decentration. Decentering involves the ability to show a flexible approach to problem solving. eg. the school age children understand that cows can be grouped as animals, but also as animals which give milk.

**b. Reversibility:** Reversibility allows the child to understand that a process can go in both ways. eg. The child is able to understand that subtraction is the reverse of addition. More important is that reversibility implies a series of cause effect relationships. A child is now able to look forward to the consequences of what he or she is doing.

**c. Conservation:** It is the understanding that something has not changed in its essential properties even though its shape, arrangement or physical appearance have altered. The child first masters the conservation of numbers. Conservation of weight is the realisation that weights remain equal, despite change in appearance in shape and size of the container. The school aged child also can have an overall mental picture of a sequence of events.

**Let us do**

Prepare a questionnaire related to cognitive development during late childhood years for parents of 5 children. Collect and record the data in your Home Science diary.

**F. Language Development**

The children in late childhood discover that speech is an important tool for gaining acceptance into a group and this gives them a strong incentive to learn to speak. Improvement is observed in three areas namely vocabulary, pronunciation and sentence construction.

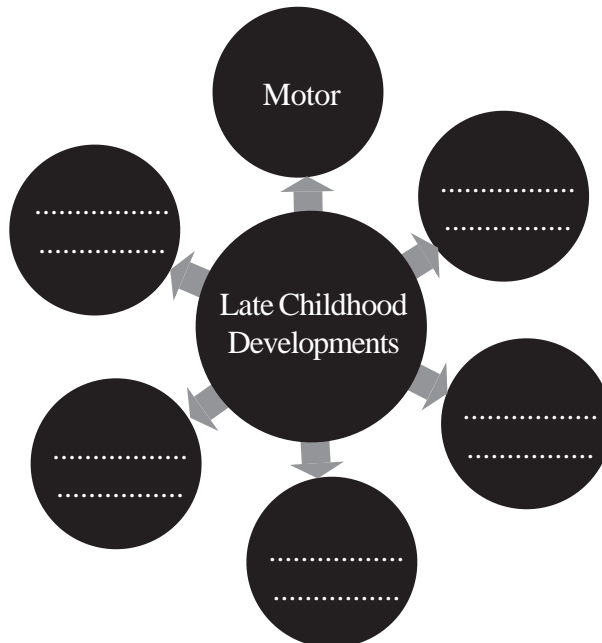
**a. Vocabulary:** The child of this age not only learns many new words, but also finds new meanings for old words. Girls on the whole, build more vocabulary than boys.

**b. Pronunciation:** Errors in pronunciation are less common. However variation in pronunciation can be observed depending upon the locality and family background of the children.

**c. Sentence construction:** The six year old child can command nearly every kind of sentence structure. The length of the sentence increases until he is nine or ten years old.

**Let us do**

Using the descriptions given above try to complete the illustration given below. Compare it with that of infancy and early childhood.



## 4.2 Discipline and Guidance for Children

What will happen if you reach your classroom after morning bell? Why?

- .....

Discipline is the training in self-control. It moulds, strengthens or perfects our behaviour. The main purpose of discipline is to train children follow the rules laid down by people in authority. Discipline will affect the way in which the children behave and their social and emotional development. It helps to direct the child's energies into useful and socially acceptable channels.

Good discipline makes the children feel secure, help them to behave in a way acceptable to others. It teaches them what is safe and unsafe and helps them to develop self-control. Lack of discipline results in a child who is likely to be insecure, greedy, disobedient, non-cooperative, rude and selfish. Too much discipline causes the child to be miserable and putting too many expectations on the child can harm the relationship between the child and the parent.

Discipline can begin when a child can understand what is expected of him or her. By the age of one year, a child will understand the word 'no' and will begin to be aware of what he or she can or cannot do. After this age with greater understanding the child gradually becomes aware of what is expected of him.

Suppose your younger brother disturbs you while you are studying. When you complain to your mother she says that he is in early childhood and need not be disciplined at present. What is your opinion about this issue?

- .....

### Let us do



*Conduct a debate in the class on the topic "Necessity of discipline in the period of late childhood".*

### Techniques of Discipline

Each parent has different ways to bring up children. The techniques which are used commonly to inculcate discipline are:

- i. Authoritarian disciplinary techniques
- ii. Permissive disciplinary techniques
- iii. Democratic disciplinary techniques

**i. Authoritarian disciplinary technique:** The authoritarian disciplinary technique is one with strict rules and regulations, no freedom of action, thought and movements and too much emphasis on perfection. There is constant criticism of

the wrong doings, no respect for individual rights, control through external force in the form of punishment, not involving children in decision making or other activities, little or no recognition or approval when the child meets the expected standards.

Children who are subjected to authoritarian discipline are likely to be rebellious and revolting, feel diffident that might lead to the feeling of guilt, become shy, secretive, dishonest to avoid punishment, suspicious and introverted.

**ii. Permissive disciplinary technique:** Permissive disciplinary technique employs little or no discipline. It does not guide the child into socially approved patterns of behaviour and does not employ punishment. Limits or boundaries are not set for the child on what he may do or may not. The child can make his own decisions and act in any way he pleases and there is too much leniency. In permissive disciplinary techniques, children might get confused and become insecure, develop excessive aggressiveness, turn unmanageable in the school or neighbourhood, become fearful and anxious and develop illusions concerning their own rights.

**iii. Democratic disciplinary technique:** Democratic disciplinary methods employ explanations, discussion and reasoning to help children understand why they are expected to behave in a certain way. They emphasise growth, self-discipline and self-control. There is no harsh punishment at any time. Punishment is given only at appropriate times when the child refuses to do what is expected. Reward with praise is given when the child comes up to expected standards. Children brought up in a democratic way develop independence in thinking, achieve healthy, positive, confident self-concept, cooperate with people with friendliness approach and achieve greater creativity.

### Let us do



*Analyze the above description “techniques of discipline” and point out which type of discipline you like? Make a note on three different types of discipline and their effects in your Home Science Diary.*

### Essentials in Discipline

In the previous section you have learned about different techniques of discipline. Discipline has four essential elements. They are:

- a. Rules
- b. Consistency
- c. Punishment
- d. Rewards

Omission of any of these essentials will result in unfavourable attitudes on child and in their behaviour, which will not conform to social standards and expectations.

**a. Rules:** The first essential in discipline is rules. Rules tell what to do and what not to do. These rules may be set by parents, teachers or playmates. The rules provide children with guidelines for approved behaviour in a particular situation. Rules serve an important function in orienting children to imbibe moral values. If one goes against rules he or she will be punished.

**b. Consistency:** There must be consistency in the rules used. When the rules are consistent, it speeds up the learning process.

**c. Punishment:** Punishment must be developmentally appropriate, administered fairly and should motivate the child to conform to the social expectations. Punishment blocks the willful breaking of rules. Punishment teaches the relative wrongness of different wrong acts. The seriousness of the wrong act is learned by the severity of the punishment the child receives for it.

**d. Rewards:** Rewards mean any form of appreciation for an attainment. It can be a word of approval, a smile or a pat on the back. Whatever be the reward used, it must be developmentally appropriate for children. The most effective reward is social recognition. Special treatment is useful for older children. Gifts are sometimes given for good behaviour. It is a token of affection or represents a respect for the child's abilities and achievements or a form of encouragement or a token of confidence.

### Let us do



*Compare the disciplinary methods followed in your home and your friend's home. Evaluate it and prepare a report*

### Habit Formation

What do you mean by a habit?

- .....

Name a habit you possess?

- .....

Habit is an action that becomes automatic with repetition. Once formed, a habit is very difficult to break. During the life time of an individual, he develops a number of habits like cleanliness, orderliness, punctuality, dressing, eating, speaking etc.



## Principles of Habit Formation

There are certain principles governing habit formation. They are:

- a. Principle of repetition:** Before an action becomes a habit, it has to be repeated many times.
- b. Principle of effect:** The effect that an action produces on the child during initial activity will determine whether the child will repeat the action or not.
- c. Principle of learning and unlearning:** Since most of the habits are learned they can also be unlearned. When an action is not repeated it is likely to disappear.
- d. Principle of continuity and consistency:** Unless the child or the parents are serious and firm in repeating an action it can never become a habit. As the child grows up, explanation of the advantages of good habits and the disadvantages of bad habits will help in developing a habit. When a child is too young to understand these, the parents should be firm about the child's habits.

## Habits in Children

We know that habits are learned. Is there any age to learn habits?

The baby is born without habits. All the habits are learned in the life time. Some of the habits which are developed in the children are:

- a. Eating habits:** By one year, the child is taught to eat with his right hand without spilling food. He is expected to drink from a cup. Talking while eating, making munching sounds, drinking water during eating etc. are discouraged.
- b. Sleep habit:** The child is expected to develop proper sleep habits. In the early days night feeding should be discouraged so that the child develops the habit of unbroken sleep at night.
- c. Habit of using the toilet:** This is a very important habit to be developed in the children. Improper bowel movement results if a child does not develop the habit of emptying his bowel in the morning. This leads to a number of health problems. Using the toilet for defecation is to be encouraged among children.
- d. Good manners:** Good manners are very essential for group living. Children should be encouraged to use words like 'thank you', 'good morning', 'good night' etc. Children should know that adults and elders must be respected in proper manners.
- e. Good thinking habits:** Children must be encouraged to develop a positive attitude towards oneself and others. They should be taught to avoid violence. Teaching of moral values will go a long way in developing good thoughts in children.

**Check your progress**

1. Why do children need discipline?
2. In your opinion which is the most appropriate disciplinary technique? Why?
3. What are the elements of disciplinary techniques?
4. List the principles of habit formation.
5. What are the habits to be inculcated in children?

**4.3 Behaviour Problems and Suggestive Measures**

What is the boy in the picture doing? Do you know why he is doing such an activity?

• .....

A behaviour problem is the child's way of gaining satisfaction or of avoiding annoyance. Hence he considers it as logical, rational and even necessary. He uses it to satisfy his desires.

The parents, teachers and other adults consider some behaviours of the children as problem behaviour because they do not conform to adult standards. This may develop an unfavourable attitude towards elders and towards the situation. The child gradually develops a distinctive personality and demands independence which he may not be capable of handling successfully.

The term 'behaviour problem' is used to designate a deviation in behaviour from the one expected or approved by the group.

**Causes of Behaviour Problems**

There can be many reasons why children develop these behaviour problems. Some are listed below

- When children live in an environment which forbids self expression.
- When parents and teachers expect too much from children and they are not able to keep up to the expectations.
- Children learn unacceptable behaviours as tools to get what they want.
- When family environment is disturbed.
- When there is a crisis in the child's life. On birth of another sibling, the death of a beloved member of the family etc.
- Long physical illness or when they fall sick too frequently.

The behaviour problems commonly encountered in children and its possible meaning are listed in Table 4.2.

Sl. No	Behaviour problem	Possible meaning
1	Hurts other children	Troubled feelings, anger
2	Destroys things	Feelings of helplessness, jealousy, boredom, wanting attention, excitement, exuberance, curiosity
3	Uses bad language	Trying something new, a joke, imitation getting attention, letting off bad temper
4	Does not share	Too young or too little, need for experience in owning and sharing
5	Sucks his thumb (or fingers)	Need for sucking, need for loving, cuddling, assurance and comforting, fatigue, hunger, dissatisfaction, boredom
6	Wets	He is not ready for training yet. Resistance or rebellious, insecurity, fear
7	Demands attention	Feels let out, insecure, unloved, boredom, interest in you
8	Has fears	Previous painful experiences, strangeness. Needs his parents close by, feeling unloved or guilty feelings.
9	Steals	Ignorance of property rights. Unsatisfied needs and hunger. Rebellious, hostile feelings, imitation
10	Tells lies	Fear of punishment, exaggeration, imagination, imitation, attention seeking

*Table 4.2 Behaviour Problems Commonly Encountered In Children and Its Possible Meaning*

The measures to overcome behaviour problems among children are:

- a. Love the child so that he may grow with trust in himself and in others
- b. Recognise his worth as a person
- c. Respect his rights and help him to understand and respect the rights of others
- d. Help him to develop initiative, imagination and creativity
- e. Encourage his curiosity and his pride in workmanship
- f. Provide conditions for wholesome play
- g. Illustrate the value of integrity and the importance of moral values and courage

- h. Encourage him always to speak the truth
- i. Provide opportunities to develop faith in God
- j. Provide him with rewarding educational opportunities
- k. Protect him against exploitation and undue hazards and help him to grow in health and strength
- l. Intensify his search for new knowledge to develop his potentialities.

### Let us do



*Observe 5-6 school going children in your locality and identify behaviour problems. Suggest certain remedial measures.*

### Let us sum up

Physical development during late childhood involves changes in height, weight and the body proportions. Most children in late childhood years are proficient in most of the motor skills and have a well coordinated arm and leg movements. The significant characteristics of social development during this period are formations of childhood gangs, over sensitivity, suggestibility, competition, responsibility, social insight and sex antagonism. During this period, situations arousing emotions and the manner in which they are expressed are different from that of early childhood years. According to Piaget, the child enters the period of concrete operations in thinking. This stage is characterised by the cognitive skills of decentration, reversibility and conservation. With regard to language development, improvement is observed in three main areas namely vocabulary, pronunciation and sentence construction.

Discipline is the training in self control. The techniques which are used commonly to inculcate discipline are authoritarian disciplinary techniques, permissive disciplinary techniques and democratic disciplinary techniques. Rules, consistency, punishment and rewards are the four essentials elements of discipline.

Habit is an action that becomes automatic with repetition. Principle of repetition, principle of effect, principle of learning and unlearning and principle of continuity and consistency are the principles governing habit formation. Eating habits, sleep habit, habit of using toilet, good manners and good thinking habits are the habits developed in children.

A behavior problem is the child's way of gaining satisfaction or of avoiding annoyance. The behavior problems commonly encountered in children are hurting other children, using bad language, stealing, telling lies, demanding attention etc.

### Learning Outcomes

- ◆ Interprets and analyses the various developments during childhood
- ◆ Identifies and recognises the techniques of discipline and habit formation and arguing on the necessity of disciplining during childhood.
- ◆ Evaluates behavioural problems and listing suggestive measures.

### Evaluation Questions

1. Some parents consider discipline as harmful because it limits a child's freedom to develop in his or her own way. Do you agree with this statement? Give reason.
2. Give examples of occasions when the child needs discipline. Suggest suitable disciplinary techniques with justification.
3. Late childhood is a period of learning motor skills. Evaluate.
4. Examine the characteristic features of social development in late childhood .
5. Complete the following.

Disciplinary Technique	Features
-----	strict rules and regulations
Permissive	-----
-----	Self-discipline and self-control.

6. Match the following

A	B
Hurts other children	Trying something new, a joke, imitation, getting attention, letting off bad temper
Destroys things	Need for sucking, need for loving, cuddling, assurance and comforting, fatigue, hunger, dissatisfaction, boredom
Uses bad language	Too young or too little, need for experience in owning and sharing
Does not share	Troubled feelings, anger
Sucks his thumb (or fingers)	Feelings of helplessness, jealousy, boredom, wanting attention, excitement, exuberance, curiosity

# ADOLESCENCE - CHARMS AND CHALLENGES

## KEY CONCEPTS

- 5.1 Adolescence
- 5.2 Developments during Adolescence
- 5.3 Identity Formation and Identity Crisis
- 5.4 Specific Issues and Concerns during Adolescence



A



B

Observe the above pictures. Can you identify the stages in these pictures?

A .....

B .....

Mention the stage to which you belong?

- .....

Now you belong to the adolescent stage and before that you passed through another stage. Which was that?

- .....

At the end of childhood, a sub-stage can be noticed in everyone's life, which is called pre-adolescence.

Pre-adolescence is a stage of human development prior to adolescence. It generally starts from the end of childhood and ends with the beginning of puberty.

## 5.1 Adolescence

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to the age of maturity or adulthood. Puberty is a unique and distinctive period which is characterised by certain developmental changes that lead to sexual maturity. Generally we can say that an individual from 13 to 19 years of age comes under adolescence. This age is also called 'teenage'. These individuals are called adolescents or teenagers.



### Do you know!

The word adolescence originates from the Latin word *adolescere* which means "to grow up"

### Characteristics of Adolescence

We have already mentioned that you are in a stage of adolescence. Can you list the characteristics of adolescents by observing your own self?

- .....

Adolescence has certain characteristics that distinguish it from other periods. They are:

- a. **Significant period:** During this period an individual begins to think about himself seriously. It is an important period with physical, biological and psychological effects with the formation of new attitudes, values and interests.
- b. **Transitional phase from childhood to adulthood:** An adolescent is neither considered a child nor an adult. The individual has passed childhood and the childhood features have disappeared. But they have not achieved adult maturity. It is a period where rapid physical, biological, emotional, and social changes take place.
- c. **Problem age:** Adolescent is facing/having too much tensions, worries and anxieties due to the frequent clashes with parents, increased peer interactions, heightened emotionality and hormonal changes.
- d. **Time of identity formation:** In adolescence, the individual develops a distinct personality. He arrives at the roles and values that determine his identity. He has to make crucial choices.

- e. **Unrealistic aspirations:** Adolescents have unrealistic aspirations not only for themselves but also for their families and friends. The society imposes many expectations on them and may face disappointment in trying to fulfil them.
- f. **Threshold of adulthood:** It is a period in which the adolescents try out socially unacceptable adult behaviours like smoking, drinking etc. to create the impression that they are like adults.
- g. **Time of experimentation, idealism, conflict and uncertainty:** In this period they try out new things, stand for an ideal, have many conflicts. They are in a confused state and they often do not know what they do.

**Check your progress**

1. List the characteristics of adolescence.
2. Differentiate between pre-adolescence and adolescence

**5.2 Developments during Adolescence**

The transition from childhood to adolescence involves a number of biological, cognitive and socio-emotional changes. Let us discuss the changes that take place in this particular period.

The important changes during this period are:

- A. Biological and physical development
- B. Cognitive development
- C. Social development
- D. Emotional development.

**A. Biological and Physical Development**

What changes do you observe in your body when you transit from childhood to adolescence?

- .....

Adolescence is characterised by many biological and physical changes. The main changes that take place during this period are growth spurt, changes in body proportion, primary sex characteristics and secondary sex characteristics.

**a. Growth Spurt**

Growth spurt signifies the sudden increase in height and weight of an individual that turns children into adolescents. When compared with girls the growth spurt in



boys starts two years later. And in some cases this may occur early or late too.

- i. **Increase in height:** Have you observed any change in your height than when you were in the childhood period?

During this period height increment occurs at nearly double the rate in childhood.

- ii. **Increase in weight:** The adolescents also experience a significant increase in weight. The weight gained during adolescence constitutes nearly half of one's adult body weight. Teenage and early adult males may continue to gain natural muscle growth even after puberty.

The height and weight of adolescent boys and girls according to NCHS are given in Table 5.1.

Age in Years	Boys		Girls	
	Height in cms	Weight in Kg	Height in cms	Weight in Kg
13+	153	40.9	155	44.0
14+	160	47.0	159	48.0
15+	166	52.6	161	51.4
16+	171	58.0	162	53.0
17+	175	62.7	163	54.0
18+	177	65.0	164	54.4

*Table 5.1 Height and weight of Adolescents according to NCHS*

### Let us do



*Assess the height and weight of students in your class compare it with the standard height and weight by NCHS and prepare a note on it.*

### b. Changes in Body Proportions

The body proportions of adolescents change apparently. The trunk and limbs grow much faster than other parts of the body. This results in a disproportionate size causing awkwardness in adolescents. This awkwardness disappears when full growth is attained. The head and brain do not show relatively much increase in size. An adolescent's heart and lungs increase both in size and capacity. Bones also become harder and more brittle.

**c. Primary Sex Characteristics**

Primary sex characteristics mean the maturation of sex organs. It is directly related to reproduction. Primary sex characteristics occur due to the gonad stimulating hormone called gonadotrophin. The primary sex characteristics seen in boys and girls are:

Boys

- The testis and scrotum grow followed by growth of the penis
- The seminal vesicles, the prostate and the bulbourethral gland enlarge and develop
- First ejaculation of seminal fluid occurs.

Girls

- Growth of the uterus, fallopian tube and vagina
- Ovaries produce ova and secrete hormones needed for pregnancy
- Menarche –beginning of menstruation.

**d. Secondary Sex Characteristics**

Secondary sex characteristics are the external changes that make them attractive to the opposite sex members. It is indirectly related to reproduction and they result from the action of growth hormone.

By observing your self list out some secondary sex characteristics that are seen in your body

- .....

Some of the secondary sex characteristics in boys and girls are given in Table 5.2. Read it and compare the differences.

Boys	Girls
Growth of hair on face, arms, legs and shoulders and later on chest. Formation of pubic hair	Enlargement of breast
The skin becomes coarser and thicker and pores enlarge	Growth of body hair in the under arm and pubic region
The word Adolescence originate from Latin word Adolesce which means “to grow up	Widening of hips
The fatty glands in the skin become active and produce an oily secretion	Skin becomes smooth and fine and produce an oily secretion
The voice becomes deeper	Changed distribution in weight and fat
Adams apple enlarges	More subcutaneous fat and fat deposits, mainly around the buttocks, thighs and hips

*Table 5.2 Secondary Sex Characteristics in Boys and Girls.*

## Early and Late Maturation

You must have noticed in your own class that some students look taller, heavier and mature than others, Why is this difference?

- .....  
Some adolescents grow earlier than others. Those who grow early are called early matures. The ones who grow towards the end of adolescent years are called late matures. The timing of puberty can have important psychological and social consequences.

### Early and Late Maturation in Boys

Early maturing boys are usually taller and stronger than their peers. They have the advantage of capturing the attention of their peers and they are more popular and are often selected for sports and other activities. They often tend to have a good body image, are more confident, secure and more independent. However early puberty is not always positive for boys. It can be accompanied by increased aggressiveness. As they appear older than their peers, such boys may face increased social pressure and society may view them as more emotionally advanced. But their cognitive and social development may lag behind their physical development. Studies have shown that early maturing boys are more likely to participate in risky behaviours. They also tend to loose interest in studies.

Late maturing boys can be less confident because of the poor body image when compared to their developed friends and peers. Late maturing boys, when they reach adulthood, tend to have greater intellectual curiosity, social initiative and creative solutions to the problems.

### Early and Late Maturation in Girls

Early maturing girls have to cope with the developmental stress early, they seem to have better problem solving and coping skills than late matures. Early maturation in girls can sometimes lead to increased self-consciousness. Since their body is developing in advance, such girls can become more insecure. Their height, appearance etc. can be a source of embarrassment for classmates. Consequently girls who attain early sexual maturation are more likely to develop eating disorder than their peers.

Late maturing girls do not look mature like their age mates but childish. They may sometimes worry about their appearance. But in some cases, late maturing girls are found to be outgoing and confident in their social interactions.

**B. Cognitive Development**

You know that now you can perform tasks which need higher intellectual skills when compared to your childhood years, don't you? Why is this possible?

- .....  
This is because there is a marked improvement in learning, knowledge and mental development.

You may recall the cognitive development of Piaget during the childhood years. According to *Piaget*, adolescence is the period of formal operations of cognitive development. This stage starts from 12 years onwards and extends upto late adolescence. All higher mental processes are found in this stage. The major characteristics of adolescent cognitive development are: a. Hypothetic – deductive reasoning, b. Propositional thinking, c. Systematic thinking d. Reasoning out imaginary situations.

**a. Hypothetic – deductive reasoning:** The adolescent is capable of imagining all the alternatives for solving a given problem. There is a shift of emphasis in thoughts from real to possible. They consider the entire abstract hypothesis before coming to a conclusion.

eg. If you were asked “A woman was found dead in her house. A heated iron was found near her. What may be the cause of her death?”

The younger children will conclude that the woman must have died of an electric shock. The adolescent can think of all possible reasons like she could have got a heart attack, someone could have murdered her or that she could have had an electric shock etc. Hence we can say that a formal operational child will explore all possibilities before coming to a conclusion.

**b. Propositional thinking:** Another feature of cognitive development during adolescence is the ability of propositional thinking. The adolescent can reason out verbal propositions. This is called propositional thinking.

eg. The concrete operational child will be able to bring out the differences in the height of a set of three dolls only when the dolls are present in front of him/her. On the other hand the adolescent will be able to deal with the problem even when asked verbally. He/she does not need to see the set of dolls to compare the height. He/she can imagine the objects based on verbal statements.

**c. Systematic thinking:** Adolescents acquire the ability to think systematically for solving a problem. eg. If you are asked to form all the possible words from the

letters A, T, E and M. You will do this exercise systematically – you will first think of words using two letters, then three letters and finally four letters. But the younger child without systematic planning will get only a few words.

**d. Reasoning out Imaginary Situations:** The adolescent will reason about imaginary situations. He/she can solve unreal problems too.

eg. “Birds have wings and if I also have wings, will I become a bird?” An adolescent will examine the situation logically and the answer is negative. After having gone through concrete operational stages, the adolescent is able to perform operations involving decentration, reversibility and conservation.

Apart from these changes adolescents develop many cognitive abilities like improved creativity, unique language development, establishing long term values of self reliance, competence and independence etc.

### Check your progress

1. List the primary and secondary sex characteristics in boys and girls.
2. What do you mean by early and late maturation?
3. Explain the major characteristics of adolescent’s cognitive development.

## C. Social Development

You might have noticed that you have become more sociable and your participation in social groups and other activities have increased, haven't you? Adolescence is a vital period in social development. Adolescents can be easily influenced by people with whom they develop close relationships. In this stage you can make your own decisions. Relationship has the largest effect over the social development of an adolescent. They show significant changes in their relationship with parents, peers and teachers.

### a. Relationship with Parents

Read the news given. Haven't you noticed such news in the media?

#### BOY LEFT HOME AFTER QUARRELLING WITH PARENTS

Idukki: A boy aged 15 years left home and boarded a train after quarrelling with his parents. His father questioned him for talking long hours on the phone and taking it away. They do not like parental control and resists

parental interference in their behaviour and values. This leads to parent-child conflict. There occurs

What may be the reason behind the situation?

- .....

When the adolescent goes through puberty there is often a significant increase in his/her conflicts with parents. Arguments often occur due to the minor issues of control such as acceptable clothing and the right to privacy etc. Their disagreement with parents increases when their friends start influencing them. The adolescent may start criticising and questioning the authority. Adolescents do not like parental control and resist parental interference in their behaviour and values. This leads to parent-child conflict. There occurs a gap between adults and the adolescents. Indian parents do not tolerate the criticism by growing adolescents and this leads to friction in their relationship. They rebel against authority. Social Media has also played a dominant role in adolescent-parent disagreements. Although conflicts increase during adolescence, adolescents still share some important life issues with parents. The home environment and parents remain to be important for the behaviour and choices of adolescents. Adolescents who have a good relationship with their parents are less likely to engage in various risk behaviours such as smoking, drinking, fighting and unprotected sexual intercourse.

**Let us do**



*Make a script and role play a situation in which parent- adolescent issues are focussed and discuss the ways to reduce the conflict.*

**b. Relationship with Peers**

You may know that your friends very much influenced you for developing social characteristics. Peer group is a group of individuals of the same age, social status, ability, who are considered to share similar values and interests. The behaviour and attitude of adolescents are very much influenced and affected by the peer group. It helps in developing a variety of physical and social skills and social roles.

Can you list some positive elements that your friends have influenced in your character?

- .....

Peer group offers the opportunity to develop social skills such as empathy, sharing and leadership. Peer groups can have positive influences on an individual such as academic motivation and performance, the style of clothing, language, vocabulary etc. It provides a sense of security and moral backing. Adolescents can also have negative influences like encouraging experimentation with drugs, drinking and stealing through peer pressure. In early adolescence, cliques are common. Cliques are small groups that are

composed of less than nine boys or girls. The clique provides a setting for intimate personal relationships. Acceptance in cliques is based on achievements, recognition and demonstration of conformity to rules of conduct. As adolescence progresses, the clique enlarges into a crowd. Crowd is a bigger group than a clique. An adolescent can be a member of a clique and a crowd at the same time. In addition they also have one or two close friends.

In early adolescence, one's physical capabilities decide the place of an individual in the peer group. But as he grows, intelligence, creativity and popularity determine his place.

Peer group plays a very important role in the psycho-social development of adolescents namely identity formation. The adolescent compares oneself with peers and he tries out different social roles. When the adolescent is not able to form an identity, confusion results. Heterosexual interests emerge more strongly during adolescence.

### c. Relationship with Teachers

What is the nature of your relationship with your class teacher? Is it good or bad? School is a major institution, other than the family, which is responsible for inculcating a number of social as well as academic skills to the adolescent. The school environment and teachers influence the personality of adolescents. The teacher at school plays a vital role in the life of a student. The teacher should be an excellent role model and a friend. Properly trained teachers can recognise the hidden talents of students.

Poorly trained, incompetent teachers can have a negative impact on students.

The over expectations of teachers, their constant pressure and demand to get more marks is quite irritating to them. This results in rebellious behaviour.

### Let us do



*From your school experience discuss how teachers and other school elements modified your behaviour and make a note on it.*

### D. Emotional Development

Sit calm and lonely in your room. Analyse the emotions you experienced on that day. You may realize that most of the emotions expressed by you were at peak level itself. Adolescence is said to be a period of heightened emotionality. Heightened emotionality is a state of more than normal emotional experience. Adolescence is considered as a period of 'Storm and Stress'. The words storm and stress suggest anger and turmoil.

The emotional fluctuations of adolescence may be related to variability in the hormone levels during this period. Environmental experiences may also contribute to the emotions of adolescents.

### Emotions During Adolescence

What all emotions are expressed and experienced by you when you reach adolescence?

Think whether your emotions are expressed normally or over expressed? What may be the reason for this?

- .....

Adolescents express their emotions in different ways. The common emotions in adolescence are

**a. Happiness and joy:** Adolescents feel happy about many things like beauty of nature, warmth and satisfaction from friendship and love.

**b. Love:** Love has a very special significance for an adolescent. They have different kinds of love for family, friends and mankind in general. Love may be active- promoting the welfare of others or it may be passive- simply accepting loving behaviour or it may be mutual- with each of the two persons engaged in promoting the happiness and growth of the other.

**c. Anger:** List one or two situations that make you angry?

- .....

Anger occurs as a result of frustration. School and home environment which stimulate frustration can produce anger in adolescents. Favouritism, criticism, self disappointment etc. can also result in anger. As adolescents mature, they express their anger more verbally and resort less to physical abuse in keeping with societal expectations.

**d. Fear, worry and anxiety:** Fear, worry and anxiety are feelings which arrive as a result of one's relation to other people or to actual or imagined happenings in one's environment.

Fear is the action to escape from an immediately threatening situation. It often causes people to avoid the fear of an object or situation.

Worry involves repeated mental rehearsal of the fear producing situation.

Anxiety is a blend of many emotions like fear, worry etc.

**e. Jealousy:** Jealousy is a special form of emotion. It arises in an adolescent when he is threatened by actual or supposed loss of affection or prestige by a rival. Jealousy is made up of varying combinations of threatened love, fear, anger, hate, anguish, failure, rejection and shame. The jealousy is always social in origin. Adolescents tend to feel jealous with respect to their achievements in various areas – school, athletics, sex and in peer relations.



- f. Grief:** Events like death of a parent, grandparent, friend, or family pet can cause grief to adolescents. Parent's divorce, moving away from a friend etc. also can cause a feeling of loss and grief.
- g. Guilt:** Guilt arises when individuals feel, think, or do things they consider to be wrong. Parental attitude and religious beliefs affect this feeling.
- h. Curiosity:** Adolescents are curious about many things around them. It may lead to risk taking behaviour and experimenting.

### Methods of Solving Emotional Problems

What will you do when you feel extreme anger?

- .....

There are many ways by which an adolescent can adjust to oneself as well as to others.

- i. Develop a positive self esteem and self confidence
- ii. Avoid comparison with others
- iii. Talk openly to parents or friends to solve emotional problems
- iv. Avoid situations which arouse emotional outburst
- v. Participation in social, cultural, and other activities that can foster self confidence and maintain emotional balance
- vi. Engaging in relaxing techniques like yoga and meditation to relieve emotional stress
- vii. Guidance and counselling can help in coping with maladjustments

### Check your progress

1. What are the influences of parents, peers and teachers in the social development of an adolescent?
2. List the common emotions expressed by an adolescent.

## 5.3 Identity Formation and Identity Crisis

Examine the news. Haven't you noticed such type of news?

### TEEN-AGE BOY SERIOUSLY INJURED AFTER IMITATING ACTOR

TVM: A Hastings boy is recovering from third-degree burns on 65 percent of his body after setting himself on fire to imitate stunts from

"Jackass: The Movie." "He is going to live," his mother told the St. Paul Pioneer Press. "He was on life support for about six days. He will be in the

hospital a minimum of two months. He has already had three major surgeries, and I don't know how many more he'll have." The newspaper

Why does the boy try to imitate the actor?

How do actors influence the personality of adolescents? Discuss.

- .....  
Children identify themselves with the behaviour and ways of their parents. But when they reach adolescence they start to form a new identity which may reflect their interests, values and choices. Identity is a ‘sense of self’ or ‘sense of who we are’.

### A. Identity Formation

Identity is the sense of self that we achieve through examining and committing to the roles in society.

The process of forming identity is called identity formation. This involves individualisation. It is the development of the distinct personality of an individual.

The three general aspects for Identity formation are

- Self – concept:** One’s self-concept is an individual’s perception of one’s own qualities, competencies etc.
- Sense of identity:** Sense of identity gives you a sense of who you are as a person. It will continue throughout the entire life. Environment plays a major role in identity development. The formation of identity is crucial in life.
- Self esteem:** Self esteem is one’s thoughts and feelings about oneself or it is your opinion of yourself. It is crucial in forming a positive attitude towards living. High self esteem leads to achievements whereas low self esteem leads to identity crisis.

### B. Identity Crisis

During adolescence, many accept changes and identify a goal or a plan for the next stage of their life. For some, this stage becomes a struggle as they have difficulty in understanding the changes their bodies are going through or have not achieved the sense of self identity they need to move forward. This is known as an identity crisis.

Identity crisis is a state or period of psychological distress occurring in adolescence when a person seeks a clear sense of self and an acceptable role in society.

In order to resolve identity crisis and to have a strong sense of oneself it is necessary to maintain a positive self-esteem, to be self-assured, have intimate relationships and be open to new ideas while maintaining ones standards.

### Check your progress

1. Explain the general aspects of identity formation.
2. Define identity crisis.

## 5.4 Specific Issues and Concerns during Adolescence

*Renjith a sixteen year plus one student was caught by his teachers for using drugs. He was taken to a counsellor. She found that he was involved in other offences like stealing money from home and friends, consuming alcohol, and smoking. He was under the influence of his friends who had led him to such a condition.*

Do you think the activity of Renjith is a normal behaviour? This behaviour is not normal. This is a disorder.

### Adolescent Disorders

Adolescence is a significant period of physical changes and adapting to new social roles. This period is often a period of 'storm and stress'. This, if left without expert attention, can lead to disorders. Observe the following illustration and find out the major adolescent disorders.



#### A Anorexia Nervosa

Anorexia Nervosa is a complex eating disorder characterised by self starvation and



#### Do you know!

Anorexia Nervosa literally means nervous loss of appetite

severe loss of weight which can lead to death. This begins usually in adolescence. Because of the fear of becoming fat they skip meals. It is interesting to note that they deny that they have a

problem. This disorder has three key features.

- Refusal to maintain healthy body weight
- Intense fear of gaining weight
- A distorted body image

### Causes of Anorexia Nervosa

Anorexia nervosa is a complex condition arising from a combination of psychological, social and biological factors.

**a. Psychological factors:** People with anorexia are often perfectionists and over achievers. Even though they appear to be perfect, they feel helpless, inadequate and worthless. They may have low self esteem and may face emotional disturbances and might have traumatic experiences in the past.

**b. Social and family factors:** In many cultures, it is considered fashionable to have a slim figure. With peer pressure and the influence of media, this can lead to excessive dieting and later anorexia. Participation in activities that demand slenderness like dance, modelling etc. can aggravate this. Anorexics are seen to come from unstable families and where parents are controlling and dominating. Stressful life events such as onset of puberty, a family break-up, bullying, physical and sexual abuse can also result in anorexia nervosa.

**c. Biological factors:** Researches show that there may be a genetic pre disposition to anorexia. Brain chemistry also plays a significant role. People with Anorexia tend to have high levels of cortisol-the brain hormone related to stress and decreased level of serotonin associated with the feeling of well being.

### Consequences of Anorexia Nervosa

Anorexia can lead to the following complications.

- i. Change in heartbeat
- ii. Dehydration, kidney problems
- iii. Liver damage
- iv. Amenorrhea- menstruation stops
- v. Wastage of muscles resulting in weakness and loss of function
- vi. Slowed digestion, constipation and abdominal pain
- vii. Permanent loss of bone calcium leading to osteoporosis
- viii. Anaemia and malnutrition
- ix. Dry and blotchy skin

- x. Delay in cognitive and mental abilities, mental slow down, depression, insomnia.

### Management of Anorexia Nervosa

The treatment of Anorexia has three steps.

- a. **Medical treatment:** The first priority is to stabilise serious health issues. The patient may be hospitalised until a healthy weight is achieved.
- b. **Nutritional treatment:** The second step in the treatment is nutritional counselling. A nutritionist can help to develop and follow meal plans that include enough calories and protein to maintain normal body weight.
- c. **Counselling therapy:** The goal of this treatment is to identify the negative thoughts and feelings that have led to this disorder and replace them with healthier thoughts. It also aims at helping to deal with difficult emotions, relationship problems and stress in an effective way. Family therapy can also be effective in treating adolescent girls with anorexia.

### B. Bulimia Nervosa

Bulimia nervosa is an eating disorder characterized by “Binge-Purge eating pattern”. The person with bulimia eats large amounts of high calorie foods shortly followed by purging with self induced vomiting or by using laxatives. The bulimic person has a normal body weight and begins at late adolescence.



#### Do you know!

‘Binge’ means to eat in an uncontrolled way. ‘Purge’ means to get rid of something

### Causes of Bulimia Nervosa

Just like anorexia nervosa, bulimia is a complex condition resulting from many factors. The main causes are

- a. **Body image obsession:** Many adolescents begin a bulimic lifestyle as a means to reduce body weight and become slim. They may be subjected to social and peer pressure.



- b. Low self esteem:** Bulimic people have a low opinion of themselves and they see losing weight as a way of gaining self worth.
- c. Depression:** People with bulimia are depressed and they overeat and try to get rid of it.
- d. Stress:** Bulimia can sometimes occur following stressful situations in life like death or breaking from family.
- e. Mental health problems:** Bulimia is seen to be common among people with anxiety disorders, post traumatic stress disorder and personality disorder.
- f. Puberty:** Many young people become bulimic around the time of puberty due to hormonal changes.
- g. Genetics:** There are genetic factors related to the development of bulimia. Researches show that people who have close relatives who are bulimic are more likely to develop this.

**Consequences of Bulimia Nervosa**

- i. Loss of muscles or body weight
- ii. Vomiting and excess use of laxatives can result in loss of sodium and potassium causing electrolyte imbalance
- iii. Stomach acids during vomiting can damage teeth enamel and cause cavities and discoloration of teeth. It can also cause swollen salivary glands
- iv. Self induced vomiting can lead to irritations and bleeding in the lining of throat, oesophagus and stomach
- v. Abuse of medication can result in toxicity

**Management of Bulimia Nervosa**

The bulimic can benefit from counselling therapy. They should be made aware that they have a problem. Drugs help to break the addictive patterns. Anti depressants can also be administered.

**Let us do**



*Conduct a survey among your peer groups to find out any eating disorders seen among them and identify the reason behind it. Give suggestive measures too.*

**C. Adolescent Obesity**

What do you mean by obesity?

- .....
- Obesity is also an eating disorder. Obesity means weighing more than thirty percent

above one's ideal body weight and it reflects excessive weight for one's height. The categorisation of overweight or obesity is done based on the Body Mass Index (BMI). BMI can be calculated by weight in kilogram divided by the square of height in meters.

### Calculate your BMI

Your weight in kilogram divided by the square of your height in meters is your BMI. eg. If a person weighs 62 Kg and the height is 1.58 meters.

His BMI is  $62 / 1.58 \times 1.58 = 24.89$

It is interesting to note that the number of obese adolescents has increased significantly over the past years. Table 5.3 provides the BMI of different categories. Using Table 5.3 find out your BMI and identify to which category you belong.

Category of weight	BMI
Under weight	Below 19
Normal Weight	19-24.9
Over weight	25-29.9
Obese	30 and above

*Table 5.3 BMI of Different Categories*

My BMI is .....

### Let us do



*Conduct a project in your school to find out the BMI of any twenty five students and its relation with meal pattern and life style and categorise the students to normal, under weight, overweight and obese. Give some remedial measures*

### Causes of Adolescent Obesity

There are many factors which contribute to adolescent obesity. Both heredity and environmental factors are involved in obesity.

#### I. Hereditary Factors

Some adolescents inherit the tendency to be overweight. Fourty percent of children who become obese have one obese parent and seventy percent of children have both parents obese.

#### II. Environmental Factors

The environmental causes of obesity are more predominant with changing lifestyle and food habits. They are:

**a. Dietary patterns:** The eating habits of adolescents contribute largely to obesity. Use of fast foods, soft drinks, salty tit bits, non vegetarian foods high in calorie and fats and low in dietary fibre and a tendency to snack throughout the day can increase the average daily energy intake.

**b. Decrease in physical activity:** Obese adolescents are considerably less active than their peers of average weight. Studies show that adolescents who participate in teen sports and exercise programmes were less likely to be overweight than those who participated in these activities.

Watching television for two or more hours a day was linked to obesity in both adolescent boys and girls. Many like to munch on snacks while watching TV which increases their calorie intake.

**c. Childhood obesity:** Being overweight as a child is a strong predictor for being an overweight adolescent. Researches show that eighty percent of children who were overweight at 3 years of age were also overweight at 12 years.

**d. Family environment:** Parent's higher educational level, stronger feeling that parents care about them and higher self esteem reduce the chances for adolescent obesity. In boys the feeling that parents were trying to control their diet was linked with obesity.

### Consequences of Adolescent Obesity

Obesity has negative effects on the biological development and socio emotional development of adolescents.

**a. Effect on the biological development:** Obesity in adolescents can lead to high blood pressure, hip problems, pulmonary problems, heart diseases and diabetes mellitus.

**b. Effect on socio emotional development:** Adolescence is a period when physical appearance is of utmost importance. Obese adolescents are found to have lower self esteem, less positive self image, prone to depression and have more problems in relationship with peers.

### Management of Adolescent Obesity

**a. Restriction in calorie intake:** Reduction in the consumption of unhealthy foods and soft drinks can be effective. Schools can implement obesity reduction programmes by motivating adolescents to have healthier eating habits, discourage the use of unhealthy fast foods and awareness can be given on the importance of following a balanced diet.

**b. Regular exercising:** Schools can also play a major role by implementing



programmes that increase the amount of time children exercise. The adolescents and parents should be made aware of the importance of exercises like walking, cycling to school, swimming and other sports activities.

**c. Reduction in sedentary activity:** Adolescents should reduce the time spent on watching TV, playing video games etc. which demand less energy expenditure.

**d. Behavioural therapy:** A change in behaviour can be brought about by keeping a weight loss diary and giving rewards when they achieve the goal of losing weight.

All the above mentioned strategies can be adopted for the management of adolescent obesity.

### Let us do



*Make a leaflet to be distributed among students on determining their BMI and ways to manage obesity.*

### Check your progress

1. Explain the causes of following disorders.
  - (a) Anorexia nervosa
  - (b) Bulimia nervosa
  - (c) Adolescent obesity
2. What are the consequences of adolescent obesity?

### D. Depression

What do you mean by depression? Have you felt depressed in your life?

- .....

Cite one situation when you experienced depression

- .....

Sometimes an adolescent may say “I am sad” or “I am so down” This may be a mood which can last only for few hours. In depression an individual experience lethargy and hopelessness for at least two weeks or longer. According to the Diagnostic and Statistical Manual of Mental Disorders you may be depressed if you have five of these characteristics for two weeks period.



**Check it yourself.**

- 1 Depressed mood most of the day
- 2 Reduced interest or pleasure in all or most activities
- 3 Significant weight loss or gain or significant increase or decrease in appetite
- 4 Trouble sleeping or sleeping too much
- 5 Psychomotor agitation or retardation
- 6 Fatigue or loss of energy
- 7 Feeling worthlessness or guilty in an excessive or inappropriate manner
- 8 Problems of thinking, concentrating and making decisions
- 9 Recurrent thoughts of death and suicide.



**Do you know!**

Female adolescents are more likely to develop depression than male adolescent

**Causes of Depression**

Can you list some reasons for depression?

- .....

A combination of genetic, biological, family, social and environmental factors can cause depression among adolescents.

**a. Genetic factors:** Depression often has a genetic cause. Studies have found that relatives of patients with depression are likely to develop it more than individuals without a family history.

**b. Biological factors:** Depression may be caused due to the abnormalities in the release of neuro transmitters like serotonin. In some females hypo or hyper secretions of reproductive hormones like estrogen and progesterone can cause depression.

**c. Family and social factors:** Family factors involved in adolescent depression are parent-adolescent conflict, low parental support, emotionally unavailable parents, parents marital conflict and economic problems etc. Not having a best friend, having less contact with friends, peer rejection and problems in romantic relationship can also cause depression.

**d. Environmental factors:** Some medicines and drugs used for acne, high blood pressure, inflammation, gastro-intestinal relief etc. can result in depression.

**Consequences of Depression**

Adolescents who are depressed have an increased risk of problems like

- Poor concentration, difficulty with school works and relationship with parents and peers
- Decreased involvement in daily activities and responsibilities
- Health complaints such as abdominal pain, fatigue and headache
- Engaging in high risk behaviour such as having sex, smoking, substance abuse, violence, suicidal attempt etc.

### Management of Depression

Depression can be treated with drug therapy and counselling therapy techniques. Anti depressant drugs reduce the symptoms of depression. Counselling from an expert professional is needed. The problem should be analysed and concrete measures should be adopted to correct it.

### E. Suicidal Behaviour

After the declaration of public exam results comes of such news are common. Why?

- .....
- .....

Suicidal behaviour among adolescents is closely associated with depression. Females are more likely to attempt suicide than males but males, are more likely to succeed in committing suicide. Males use more lethal means like weapons whereas females take poison or overdose of sleeping pills or cut the wrist.

### Causes of Suicidal Behaviour

Causes of suicidal behaviour are:

**a. Depression:** This is the most frequently cited factor in adolescent suicide.

Low self esteem, overly self critical, sense of hopelessness etc can cause depression. Substance abuse can also cause suicidal thoughts among adolescents.

**b. Family and social problems:** Adolescents with unstable family, lack of affection and emotional support, high control and pressure for achievement, high

### STUDENT COMMITS SUICIDE AFTER EXAM RESULT

TVM: A 15-year-old boy committed suicide on Thursday by jumping into the Neyyar dam apparently for failing in his ninth class examination, Trivandrum police said. Rescue officials said the child, a resident of kaliyakkavila, was last seen by some of his friends who said he looked depressed. They said he had told them that he was going to the canal. The family said he had left home in the morning to find his result. A few hours later, they said, they were informed that he had jumped into the canal. The body was recovered a few hours later and handed over to the family after they refused a post-mortem examination.

expectations from parents can lead to suicide. Physical or sexual abuse, poor grades in schools, academic pressure and breakup of romantic relationships can also trigger suicidal attempt.

**c. Genetic factors:** The closer a person's genetic relationship with someone who has committed suicide, the more likely the person will commit suicide.

Try to add some points in the following box to make your schoolmates aware of suicidal tendencies.

Impact of suicide in family and society.

• .....

**Let us do**



*Prepare a poster and exhibit it in the wall magazine to make your friends and public aware on the ill effects of committing suicide.*

**Management of Suicidal Behaviour**

Counsellors in schools or counselling centres can ensure that a depressed/ distressed adolescent receives the needed assistance. Recognition and evaluation of clinical depression is essential. Psychological counselling and medical treatment can help in treating depression.

Apart from professional treatment, the adolescent should be given a chance to open up and talk about his feelings and intense emotions and to reduce his loneliness.

A family member, a religious leader, a school counsellor or a trusted doctor can help to attain a positive attitude.

It is necessary that suicidal behaviour or warning signs like change in behaviour, changes in patterns of eating or sleeping, loss of interest in usual behaviour, withdrawal from others, talking of suicide, giving away valuable possessions or previous attempts be taken seriously and quick assistance may be given. Emergency assistance can be received from telephone help lines where immediate support is given.

**Let us do**



*Collect any five incidents of adolescent suicide from newspaper or magazine and analyse the possible causes of it.*



**Do you know!**

Suicide is the second leading cause of death following motor vehicle accidents among teenagers. How to reduce this?

## F. Substance Abuse

What do you mean by substance abuse?

Do you have any personal experience with any person who had an experience of any kind of substance abuse?

The most commonly used substances of abuse are listed below.

- Alcohol
- Tobacco
- Drugs
- Anabolic Steroids
- Inhalants



### Let us do



*Make a leaflet on the ill effects of substance abuse from internet and distribute among your friends.*

### Causes of Substance Abuse

The reasons for substance abuse among adolescents are:

- a. Curiosity:** Most of the adolescents first use drugs and alcohol out of curiosity. But these experimentations can lead to chronic use and abuse.
- b. Parental modelling and peer pressure:** Substance abuse is most likely to occur among adolescents whose parents and peers use drugs. Those who feel socially insecure are likely to use them to gain peer approval and feel relaxed with friends.
- c. Rebellion against parental and societal norms:** Substance abuse during adolescence may be a form of defiance against parents and teachers or against social norms or laws.
- d. Escape from problems:** Some indulge in abuse to escape from tension, frustration and fear arising due to personal, family and social problems.
- e. Heightened sensations and kicks:** For some, substance abuse is a means of having exciting sensations and experiences.
- f. Harsh parenting:** Harsh parenting and low parental monitoring can cause children to turn to substance abuse.

### Consequences of Substance Abuse

Adolescents who continuously abuse substances can experience a number of problems including

- a. Academics:** Low grades, being absent from school and other activities and school dropouts are associated with substance abuse. The cognitive and behavioural problems can reflect in their academic performance.
- b. Physical health:** Cardio vascular diseases, stroke, cancer, HIV / AIDS, Hepatitis and lung diseases can occur in substance abuse. A large number of adolescents using alcohol and drugs face increased risk of death through suicide, homicide, accidents and illness.
- c. Mental health:** Mental health problems like depression, apathy, withdrawal, psycho social dysfunction, personality disorders, conduct problems, suicidal thoughts and suicidal attempts are more among adolescents who abuse drugs.
- d. Peers:** The adolescents who abuse substance are looked down upon by peers as they do not get involved in school and community activities.
- e. Family:** The abuse of substances may result in family crisis and family dysfunction. The parents and siblings are affected by the substance abuse by the adolescent and it may drain the family resources.
- f. Social and economic consequences:** Financial loss and distress are experienced in their families.

There is a strong link between substance abuse and delinquency. It is also associated with violent criminal behaviour.

### Management of Substance Abuse

Drug rehabilitation is a medical and psycho therapeutic treatment used to enable a person to stop substance abuse and become normal productive member of society.

The physical dependence on substances can be managed by medicines which block the action of addictive substances.

The psychological dependency on substances can be treated by having an addiction free environment with the help of an expert/clinical psychologist and parental awareness.

Social adjustment is made by involvement in social activities.

### Check your progress

1. How can you manage the following adolescent disorders?  
(a) Depression. (b) Suicidal behaviour (c) Substance abuse.
2. Explain the causes of depression.
3. What are the consequences of substance abuse?

### G. Adolescent Stress

Note down a stressful situation you have experienced recently?

- .....

Some of us feel anxious and uneasy in certain situations like the exam period, when the exam results are announced or when we face a new problem. This situation is called stress.



Stress is the response of individuals to circumstances and events that threaten them. An adolescent faces a number of problems, challenges and situations that can cause stress. Some level of stress can help to feel the person motivated but high or poorly managed stress is a serious problem.

#### Causes of Adolescent Stress

- Physical factors:** Adolescents experience many physical changes. The hormonal changes can lead to mood fluctuations, low self esteem, anxiety and depression. Dealing with mood swings and body changes can cause stress.
- Social factors:** Another common cause of stress is social pressure. Adolescents feel stress or when they try hard to win the approval of their friends. They may also feel stressed due to the peer pressure to experiment with smoking, drugs and alcohol and engage in early sexual behaviour.
- Academic factors:** For adolescents, academic pressure is a major cause of stress. Attaining good grades, completing homework and assignments, preparing for examination etc. can cause stress. High expectation from parents and teachers can also result in stress.
- Family:** Family problems such as separated or divorced parents, death or illness in the family, quarrelling parents, emotional, physical and sexual abuse, fight with siblings and alcoholism in the family can cause stress among adolescents. Change of schools and parents' job transfer can also cause stress.

#### Consequences of Adolescent Stress

- Academic effect:** Adolescents who had stress had adjustment problems in school and it affect their academic performance.
- Physical effect:** Long term exposure to stress can lead to health problems like high blood pressure, heart diseases, digestive problems, obesity and it speed

up aging process.

**c. Psychological effect:** Stress can lead to depression, sleep problems, irritability etc.

### Management of Adolescent Stress

Some effective strategies for dealing with stress are:

**a. Think positively and optimistically:** A positive mood improves self esteem and an optimistic attitude improves self efficiency and increases self control. Adolescents may have stress due to immediate gratification like smoking, drinking, going for movies instead of studying etc. With better self control such stressful situations can be avoided.

**b. Seek social support:** Support from family members, friends, teachers etc. can help to reduce stress. If the adolescent finds it difficult to cope up with stress situation, he can seek professional help from counsellors or therapists.

**c. Use multiple coping strategies:** Adolescents facing stress can choose more than one strategy because a single strategy may not be effective.

**d. Using relaxation techniques :** practicing yoga, meditation, listening to music and engaging in hobbies will help to reduce the stress.

#### Let us do



*Discuss with two or three of your friends and list the major stress situation they faced recently. Point out the strategies they used to overcome the situation.*

### H. Peer Pressure

Almost all adolescents like to be in the company of friends. It is during this period peers have the strongest influence on you. Peer pressure is choosing to do something under the influence of peers, which you otherwise wouldn't do.

Peer pressure can be positive if it motivates to do new activities and improves the performance. It becomes negative when the adolescent try things they normally are not interested in like smoking, taking part in anti social behaviour etc.

#### Let us do



*Conduct a survey to elicit information from a group of adolescents on the peer pressure they face. Analyse the situation and provide some remedial measures.*

### Causes of Peer Pressure

Children with poor self esteem and those who feel that they have few friends and those with special needs are more likely to fall into peer pressure.



## Consequences of Peer Pressure

Peer pressure may lead to:

- i. Choosing same clothes, hair style, and jewellery as their friends without considering parental financial status
- ii. Listening to same music or watching same TV show
- iii. Changing the way they talk to unacceptable language
- iv. Taking risk or breaking rules leading to criminal behaviour
- v. Not working hard at school affecting academic performance
- vi. Engaging in sexual activity
- vii. Smoking or drinking alcohol
- viii. Tendency for truancy.

## Management of Peer Pressure

The strategies in the management of peer pressure are:

- i. Developing a strong sense of oneself
- ii. Open communication with parents, teachers etc.
- iii. Suggest ways to say 'no'
- iv. Widen social contacts and engaging in extracurricular activities
- v. Build-up the self esteem of adolescents.

### Let us do



*Conduct a debate on the positive and negative impacts of peer pressure among adolescents.*

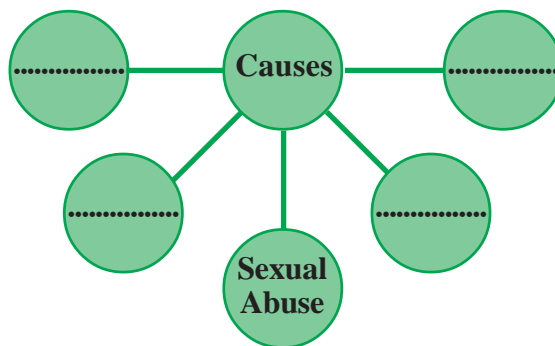
### I. Adolescent Pregnancy

Adolescent pregnancy refers to pregnancy that occurs in young girls from 13 to 17 years. According to World Health Organisation (WHO), about sixteen million girls aged 15 to 19 years and two million girls under the age of fifteen give birth every year. Worldwide one in five girls give birth by the age of eighteen.

### Causes of Adolescent Pregnancy

- a. **Early marriage:** In many societies girls are under pressure of early marriage and to bear children.
- b. **Lack of education:** Education is a major protective factor for early pregnancy. Birth rates among women with low education are higher than those with tertiary education. Lack of sex education can also be a contributing factor.
- c. **Sexual abuse:** Sexual abuse of adolescent girls is a cause of adolescent pregnancies. They fall into traps or are abused by people inside and outside the family.

**d. Lack of discipline and control:** Adolescent age is a period of onset of sexual maturity. It is the time they show interest in the opposite sex. Unrestricted interactions with opposite sex members can lead to problems like sexual activity and teenage pregnancies.



**e. Socio economic factors:** High rate of adolescent pregnancy is associated with income levels and unfavourable childhood environment. After going through the above note on the causes, try to complete the illustration given.

### Consequences of Adolescent Pregnancy

Adolescent pregnancies create health risk for both baby and the mother.

**a. Effect on the child:** Infants born to adolescent mothers are more likely to have low birth weight, neurological problems and childhood illnesses. This can lead to infant mortality. Still births and new born deaths are 50% higher among infants born to adolescent mothers.

**b. Effect on mother:** Pregnant adolescents are more likely to have unsafe abortion than adults. They are prone to complications like anaemia and prolonged labour. This can contribute to lasting health problems and maternal deaths. Adolescent mothers are drop outs from the schools. This can result in poverty and underachievement.

### Managing Adolescent Pregnancy

Adolescent mothers need extensive help to enhance educational and occupational opportunities. They should be given assistance in achieving competent child care and to plan their future.

An effort should be made to reduce the rate of adolescent pregnancy. Giving age appropriate family life education and motivating adolescents to reduce adolescent pregnancies can considerably reduce the rate of adolescent pregnancy. Community involvement and support is needed to implement these initiatives.

### J. Personal Problems

A personal problem is a problem which affects only a particular individual, eg. sickness, bullying etc. Personal problems can be physical as well as psychological.

**a. Physical problems:** Adolescents are very much concerned about their appearance. They feel unhappy if their body is not developed according to their desire. They look in the mirror and compare the nose, eyes, teeth, lips and figure with the prevailing beauty standards. They may feel anxious that their eyes are too small, lips are too big and so on. In our society the colour of the skin is a factor which determines one's beauty. Dark complexioned girls or even fair complexioned ones wish to be fairer. This is a cause of concern for them. Boys are happy when they have moustache but girls feel exceedingly worried about the hair on face and legs.

**b. Psychological problems:** Lack of self esteem, fear, anxiety, inferiority complexes, bullying at school are the psychological problems of adolescents. Some may have strong and very frequent emotional outburst which becomes a problem.

### **Consequences of Personal Problems**

The personal problems of adolescents, if not rectified in time, can lead to serious problems like substance abuse, depression and suicide.

### **Management of Personal Problems**

Many adolescents need expert guidance and support in handling personal problems. An adolescent can talk about their personal problems to supporting and understanding parents or a friend. The case in which such a support is not available, need the help of a professional counsellor to bring them back to their normal state.

### **Check your progress**

1. List some personal problems faced by adolescents.
2. Explain the effects of adolescent pregnancy on the mother and the child.
3. What are the consequences of peer pressure?
4. Suggest suitable strategies to manage adolescent stress.

### **Let us sum up**

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to the age of maturity or adulthood. Adolescence has certain characteristics that distinguish it from other periods. The transition from childhood to adolescence involves a number of biological, cognitive and socio-emotional changes. The main biological and physical developments that take place during this period are growth spurt, changes in body proportion and primary and secondary sex characteristics. According to Piaget adolescence is the period of formal operations of

cognitive development. This stage starts from 12 years onwards and extends upto late adolescence. The major characteristics of adolescent cognitive development are hypothetic-deductive reasoning, propositional thinking, systematic thinking and reasoning out imaginary situations. Adolescence is a vital period in social development. Adolescent can be easily influenced by people with whom they develop close relationships. Adolescence is said to be a period of heightened emotionality. It is considered as a period of 'Storm and Stress'.

During this period, adolescence starts to form a new identity which may reflect their interests, values and choices. The process of forming identity is called identity formation. Identity crisis is a state or period of psychological distress occurring in adolescence when a person seeks a clear sense of self and an acceptable role in society.

Specific issues and concerns during adolescent period are anorexia nervosa, bulimia nervosa, obesity, depression, suicidal behavior, substance abuse, stress, peer pressure, adolescent pregnancy and certain personal problems.

**Learning Outcomes**

- Identifies and explains the characteristics of adolescence.
- Appraises, evaluates and compares the height and weight of adolescents, recognizing cognitive changes and emotional changes and dramatises the social development during adolescence
- Appraises identity crisis and identity formation
- Identifies and evaluates the disorders among adolescents

**Evaluation Questions**

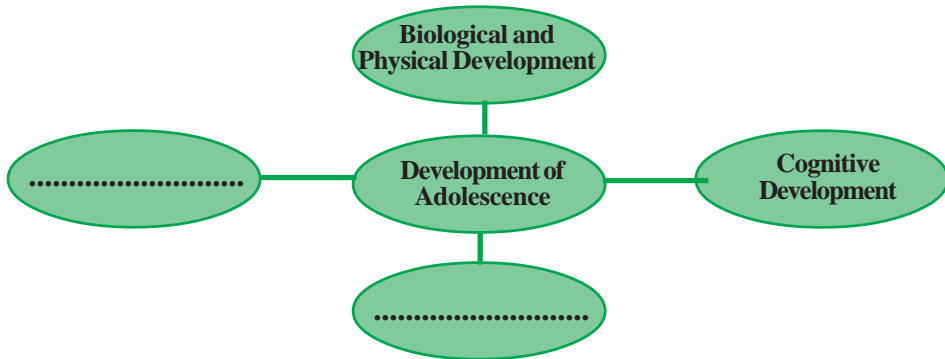
1. List out the personal problems you ever faced? Categorize them into psychological and physical problems.

Psychological problems	Physical problems
• .....	• .....
• .....	• .....

2. Note down your opinion about adolescent pregnancy and list out the effect of adolescent pregnancy on

Child	Mother
• .....	• .....
• .....	• .....

3. Complete the illustration and write a short note on any two developments during adolescent period



4. Anorexia and Bulimia are referred as complex disorders. Why?
5. Enumerate the treatment strategies for Anorexia nervosa.
6. Anorexia nervosa and Bulimia nervosa are eating disorders, but they are different. Explain.
7. Adolescent pregnancy is a the result of a number of complex problems. Explain.
8. How do you identify an adolescent under depression?
9. Discuss the role of family and society in causing depression among adolescents?

## CHAPTER

# 6

## ADULTHOOD AND OLD AGE

### KEY CONCEPTS

- 6.1 Adulthood
- 6.2 Old age

We have discussed the development of adolescents in the previous chapter. Now you are in the stage of adolescence. What will happen to you when time passes? You will reach another stage which is referred as adulthood.

### 6.1 Adulthood

What are the peculiarities of adults?

- .....

Adults are individuals who have completed growth and are ready to assume their status in society along with other adults.

According to Mangal (1998), adulthood extends to a period of 20-60 years. During this period the individual chooses a career, a life partner, establishes his family and becomes a productive and useful member of his family and society. His personality and achievements are determined to a considerable extent by the kind of experiences he has had during his early formative years.

#### Responsibilities of Adulthood

Your parents have many responsibilities over you and to your family. Try to list out some of them.

- .....

Adulthood is a period with expectations and new responsibilities. Adults are expected to have some major transitions such as from studies to the work force, from living in their parent's home to living in a household of their own, from financial dependence to financial independence etc.

Do you think the emotions and psychological characteristics of your parents are same as that of yours? Individuals have established their identity and are independent, responsible, self-disciplined and purposeful in adulthood. It is a stage of psychological development involving growth, learning and consolidation of the self.

Can you list out and classify the responsibilities of the adults?

• .....

Adults have responsibilities in three main areas

- A. Choosing a career
- B. Choosing a life partner
- C. Maintaining family.

## A. Choosing a Career

What do you mean by a career? Try to list out some of them.

• .....

In order to make future responsibilities fruitful an adult needs a good career. Career is a job which helps one to earn for his/her living.

A career selected, leads to new responsibilities which include responsibilities towards

- a. Authorities
- b. Co-workers, subordinates and work place
- c. Specific work.

**a. Responsibility towards authority:** Career-oriented workers should be ready to work up to their capacities, to try improving their skills and to make personal sacrifices in terms of time and effort for their wellbeing and also for the well being of the institution. The person can become successful in his career through punctuality, sincerity, belongingness, resourcefulness etc.

**b. Towards co-workers, subordinates and workplace:** The degree of success achieved in the job depends on individual's vocational adjustment. A feasible condition of workplace and co-workers is essential to attain good results in any job. Cooperation with co-workers makes the job more effective. It also

creates job satisfaction. Professional jealousy and rivalry to co-workers should be avoided. Authorities should keep a friendly atmosphere to their subordinates and try to make them feel comfortable. This helps to gain maximum output.

**c. Towards specific work:** Every job is specific in its way and demands special talents and skills to perform it effectively. For a specific job to be effective, the person should be aware of the skills needed for that job. eg. A teacher should be responsible, sincere, dedicated to his/her profession and excellent in teaching skills.

### Let us do



*Consider your school as a workplace, observe the responsibilities of your class teacher and prepare a note on her responsibilities towards authorities, fellow- teachers and students*

### B. Choosing a Life Partner

Have you ever noticed the responsibilities of newly married couples?

- .....

The responsibilities included in marriage are responsibility towards the mate and responsibility towards in-laws.

**a. Towards the mate:** Responsibility to the mate means reorganising the pattern of living, revamping friendship and social activities and changing occupational requirement. Both husband and wife have to give up and sacrifice some of their interests for the sake of accommodating each other. They have to look after each other and give mutual care, share, love and concern.

**b. Towards in- laws:** Young married adults tend to resent advice and guidance and financial aid from their in- laws. Young couples should respect, care, love and accept advice from their in laws and other family members. The young generation should provide financial support to their elderly parents and in- laws.

### C. Maintaining a Family

Didn't you notice the responsibilities of young couples increasing when they become parents?

The pattern of family life undergoes marked changes during the period of middle age. For the smooth running of the family all the members should take up certain responsibilities.

Can you list out some responsibilities of adults as family members?

- .....



- a. Responsibility as a good parent:** Both husband and wife must bring out adjustments in the pattern of their lives when they become parents. In the family, parents should give care and show concern to children. Children need good education, good value system, good physique etc. Parents are responsible to satisfy such needs.
- b. Responsibility towards other family members:** Adults have to provide care, respect and protection to aged parents and in-laws. Grandparents should be allowed to take up some responsibilities in bringing up children. The other responsibilities include looking out for others' feelings, obligation etc. and accountability to others, respect and recognition for other family members.
- c. Responsibility towards the living society:** Good family relationships reflect successful social life and they can contribute many good things to the society. Responsibility towards neighbourhood, towards the relatives and society should never be neglected by an adult person. One should be productive and responsible to society.

### Let us do



*Observe the responsibilities of your father and mother and prepare a chart.*

### Check your progress

1. List the characteristics of adulthood
2. Explain the main responsibilities of adulthood.

## 6.2 Old Age

Examine the paper cutting given below.

### 95-YEAR-OLD WOMAN ABANDONED BY SON

Sarvepalli: It was an ordeal for a 95-year-old woman who was driven out of the house by her son and left in the open four days ago. Kanduru Ramalakshamma had been lying on the bare floor outside her son's house on the Sarvepalli canal bund here in the scorching heat. When the neighbours questioned her son, who is a lab technician at B.V. Nagar here, why he was torturing his mother, he warned them against any interference. On

receiving information, the Balajinagar police reached the spot and arranged a cot and a fan for the old woman. When questioned, the family members tried to give explanation, but the police warned them against ill treating her or else a case would be lodged against them. After her husband's death, Ms. Ramalakshamma had been staying with her three sons in turns, each keeping her for three months. She went to her third son's house only ten days ago

- What is the reason for this situation?
- Are aged people unwanted in our family?
- What is your opinion?
- Write down your perspective on this matter.

Ageing is a natural process or phenomena. It is part and parcel of the life of every human being. The age of 60 and after, is considered as old age when people are either retired or near to retirement or relieved from jobs.

Due to better living conditions and medical facilities, life span has increased and ageing does not start till the mid sixties or early seventies.



### Characteristics of Old Age

List out some of the characteristics of your grandparents

- .....

The characteristics of old age are:

- Loss of general attractiveness and status loss of productivity
- Financial worries and feelings of ill health
- Decline in mental functioning which leads to think and learn slowly, to forget quickly, to be confused, to have repetitive speech and get fatigued quickly
- Decline in companionship, withdrawal from social contacts and loss of interest in personal life and family responsibility
- The feeling that one is 'useless', feelings of insecurity, loneliness, selfishness, attention demanding, inadequacy, rejection, self-pity, apathy, negatives, rigidity and regressive tendencies and unwillingness to do his share of work
- Wrinkles and liver spots on the skin due to loss of subcutaneous fat, change of hair colour to gray or white
- Deterioration of sense organs, reduced function of the immune system and circulatory system, reduced blood flow and lung capacity
- Changes in the vocal cord that produce the typical 'old person's voice'
- Diminished eye sight, difficulty to read in dim light and smaller prints.

- x. Memory loss, difficulty in understanding and taking more time to learn new information.

### Needs of Old Age

In this situation the elders need more care than us. Can you imagine the needs of old people? Make a note on them.

• .....

Growing old is not easy. Advancement in age demands multiple adjustments and needs. Their needs are classified as follows.

**a. Physical need:** It is observed that in the modern way of life the old people are deserted in a room with a little food etc. This should be avoided making them active and dynamic members of the society, to enact their roles effectively. They need physical help in the following matters:

- i. They need constant physical support, due to the decline in sensory abilities, physical energy, digestive and regulatory functions
- ii. Ageing demands many physical rearrangements, feasible indoor and outdoor facilities, bright light and life supporting devices (labour saving devices, walking sticks, wheel chairs, etc.)
- iii. Chronic illnesses and diseases, one after the other, necessitates frequent checkups and medication. Periodic medical check up by a visiting doctor and services of mobile clinics will be of great help to them
- iv. They need nutritious, healthy and digestible food to cope with the gradual weakness and digestibility problems of old age
- v. They are in constant need of a companion while travelling for assistance.

**b. Social needs:** Aged people need to associate with others. Their feeling of insecurity manifolds as the life span runs to the end. So the aged possess an intense need for social support and recognition and the sense of belongingness.

So the aged need:

- To relate with family members, spouse, children, grandchildren, and neighbours to keep them healthy and happy
- To meet their friends and take walks outside
- A neat and clean atmosphere
- Care, attention and love from family members and a feeling of security, self-respect and position in society
- Gratitude for the benefits they provide to younger ones
- Somebody to listen and spend some time with them
- To communicate with others and participate in family events and festivals

**c. Emotional needs:** The aged people face a number of difficulties which create emotional and psychological stress leading to an intense feeling of loneliness. They feel satisfied when they enjoy the love, companionship and achievement of spouse, children and grand children. They need:

- i. The presence of others and their emotional support
- ii. Love and affection from near and dear ones
- iii. A constant companion who looks after them every time
- iv. A sense of belongingness
- v. To be a productive member of the family
- vi. To be with family members and neighbours and talk with them
- vii. Physical and psychological support from family and society.

**d. Vocational and financial need:** One's work gives social position and influence. It is a source of social contact and provides a feeling of satisfaction from productivity. After retirement their income reduces as they are forced to stop working even when they want to work. So they wish to have:

- i. A money source
- ii. Job alternatives
- iii. Financial independence
- iv. To keep some money with them
- v. To use the money beyond the control of their children.

**e. Recreational need:** The number and variety of activities they engage in decline with age, even though an interest in them may persist. Common recreational activities of old people include reading, listening to the radio, watching TV, visiting friends and relatives etc.

### Let us do

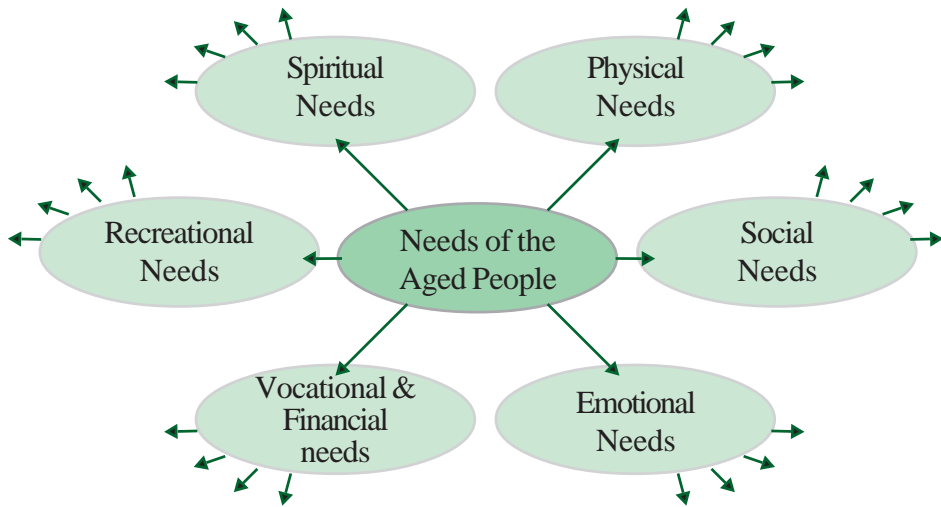


*Conduct an interview with aged people in your family and neighbourhood and list the recreational activities in which they usually engage. Suggest some measures to make them productive.*

**f. Spiritual need:** Most of the elderly give utmost preference for spiritual activities and religious practices. They become living models before their children and grandchildren. Most of them like:

- To spend their time for spiritual upbringing and prayer
- To have morning and evening prayers
- To watch and listen to spiritual talks and devotional songs on TV and radio.

After reading the above note, try to fill up the following illustration and make a brief note on the needs of aged people.



Now, we have a clear idea about the needs of the elderly. But many of these needs are not fully satisfied. When their needs are neglected, they feel rejected, insecure, useless, unwanted and seem highly depressed in life. Moreover old age is a period of physical and social losses-loss of children, spouse, friends, job, property and physical appearance. Hence they find it very difficult to keep themselves active and constructive and to be engaged in for personal and social good.

### Let us do



*List the problems of aged persons in your family or neighbourhood and suggest certain remedial measures to solve it.*

It is our duty to minimize the problems they face and create a pleasing and welcoming environment in the family to provide them a feeling of self actualisation. When their needs are not met, problems may arise. Therefore caring their needs is our duty.

### Care for the Elderly

Didn't you notice the paper cutting. Is it a good practice?

How can we care our grandma and grandpa? List out some measures to care grandparents in your family?

- .....

### AGED LADY LEFT AT GURUVAYUR TEMPLE

Guruvayur: An aged lady named Kalyani (76) was left by her grandson at Guruvayur Temple.

Care can be given to the aged at home or outside by catering to their needs and by instilling in them a feeling of belongingness and worthiness.

### Care at Home

On the basis of India's cultural view of care for the elderly, parents are particularly taken care of by

their children in old age, most commonly by their sons. Most of the aged prefer to live with their children during the last phase of life when they need their warm affection and close association.

Youngsters should give them a feeling of security, self respect and a position in the family. Good medication and nutritious food also should be provided. The older generation should be treated with love, affection and respect by the younger generation. The presence of elders in the home channelises many blessings for the wellbeing of the family. Elders act as mediators for the intergenerational conflicts in the family and as advisors to children. The tradition and culture of the family and society is transferred to the younger generations through the elderly. They also act as the agents of socialisation of children. Children get awareness about social and moral codes from elders. Tactful interactions of the elderly with children make the children active, sociable and acceptable in the family and society. Conflicts may arise due to differences in attitudes, tastes, food habits, recreational activities and religious outlook. But the wisdom and experience of the old is to be appreciated by the younger generation. It is rightly said that **Old is Gold**.

### Care Outside the Home

Read the news given below. Is such a trend good for Kerala? What is your opinion?

• .....

#### MINISTER INAUGURATED THE 25TH OLD AGE HOME IN CITY

THIRUVANANTHAPURAM  
APRIL 12. Karunyam, home  
for the aged managed by the  
Sri Aurobindo Foundation,

will be inaugurated by the  
Health Minister, at Pullurithi,  
near here, on April 14. The  
Chairman of the foundation,

K. Sreedharan, said that the  
noted businessman and  
philanthropist,



aged. A rising trend is being noticed among the urban elderly also, who move out of their homes into habitats catering to their needs, in order to spend their later years in comfort.

Today the traditional joint family system has given the way to the modern nuclear family system where the aged find little place. They are increasingly isolated and left out. They are unable to cope up with the speed of the modern world. Young men are increasingly hesitant to take up the burden of their parents. The following are some reason for choosing a home outside.

### Reasons for Choosing a Home Outside

- Maladjustments and conflicts with other family members
- Loneliness and dejection irrespective of education, income or family relationships
- Having lost touch with their families, either because of their children's marriage, or due to job demands
- Lack of family or friends
- The death of the life partner and the misery of being 'lost'
- Maladjustments with the environmental changes
- Ill-health and the inability to care properly for oneself
- Non – availability of somebody to give care and support.

Let us analyse the merits and demerits of living in an institution by going through Table 6.1

Merits	Demerits
<ul style="list-style-type: none"> <li>• Maintenance and repair are provided by the institution.</li> <li>• All meals are available at reasonable costs.</li> <li>• Provision of suitable recreations and amusements.</li> <li>• Opportunities are available for contacts with contemporaries with similar interests and abilities.</li> <li>• Greater chance for acceptance by contemporaries than when with younger people.</li> </ul>	<ul style="list-style-type: none"> <li>• It is more expensive than living in one's own home.</li> <li>• Institutional food is usually less appealing than home made food.</li> <li>• Choice of food is limited and lack of varieties.</li> <li>• Close and constant contact with some people who may be uncongenial.</li> <li>• The location is away from shops, amusements and community organisations.</li> </ul>

Merits	Demerits
<ul style="list-style-type: none"> <li>• Eliminates loneliness because people are always available for companionship.</li> <li>• Holiday celebration for those who have no family</li> <li>• Opportunity for prestige, based on past accomplishments that would not occur in groups of younger people.</li> </ul>	<ul style="list-style-type: none"> <li>• Location is usually away from family and friends.</li> <li>• Living quarters tend to be considerably smaller than their homes.</li> </ul>

*Table 6.1 The Merits and Demerits of Institutional Living.*

### Let us do



*Conduct a debate on the merits and demerits of living in old age homes and prepare a report on it.*

For many older people who are not taken care of in their own homes, old age homes and day-care centres (Pakalveedu) are safe havens where they can live with dignity and interact with their peers.

**a. Old age homes:** An old age home is a multi-residence housing facility intended for senior citizens. Typically each person or couple in the home has an apartment-style room or suite rooms. Additional facilities are provided within the building.



This can include facilities for meals, gatherings, recreation activities and some form of health or rest home care. A place in a retirement home can be paid for on a rental basis like an apartment or can be bought in perpetuity.

**b. Day care centre:** The old people who stay with their children and grandchildren have to find alternatives for old age homes since they are alone in the home during the day time. They need day time engagements outside home. Can you suggest such a facility for elderly people?

- .....





In Day Care Centre, the elderly spend their time constructively avoiding conflicts in the family. These centres provide useful services to make their day time happier and engaging. Once, twice or thrice in a week they come there and spend their day time in mutual sharing of their interests, desires and family news, in newspaper reading, in dining and praying and in recreational activities. In the evening they will be back at their homes. They have counselling, celebrations and get together on special occasions and can serve society in their own way (by engaging in crafts and hobbies).

The Day Care Centre is a small building in the community with sufficient space for afternoon rest, library, reading room, crafts and hobbies, indoor games and open space for outdoor games and meetings situated in healthy and open surroundings and easily approachable by its members. Equipment and materials for the above activities will be provided. A person with warm understanding and leadership abilities, along with group of volunteers interested in serving old people, will be in charge of them. They help the aged in all their activities.

The Day Care Centre helps older people to meet people and make new friends, to overcome loneliness, to keep themselves physically and mentally active, to be independent, useful and self-sufficient, to accept responsibility, get a feeling of belonging and being wanted.

### Let us do



*Make a visit to a nearby old age home and find out the different reasons of why they are kept there and prepare a note on it.*

### Check your progress

1. Write the characteristics of the elderly.
2. Briefly explain the needs of the elderly.

### Let us sum up

Adults are individuals who have completed growth and are ready to assume their status in society along with other adults. Adulthood is a period with expectations and new responsibilities. Adults have responsibilities in three main areas. They are choosing a career, choosing a life partner and managing family. In order to make future responsibilities fruitful an adult needs a good career. The responsibilities included in marriage are responsibility towards the mate and responsibility towards in-laws. The pattern of family life undergoes marked changes during the period of middle age.

The age of 60 and after, is considered as old age when people are either retired or near to retirement or relieved from jobs. Some of the characteristics of old age are loss of general attractiveness, loss of productivity, financial worries and feelings of ill health, deterioration of sense organs, reduced function of the immune system etc. Advancement in age demands multiple adjustments and needs. The needs of old age are physical need, social need, emotional need, vocational and financial need, recreational need and spiritual need.

Care can be given to the aged at home or outside by catering to their needs and by instilling in them a feeling of belongingness and worthiness. For many older people who are not taken care of in their own homes, old age homes and day-care centres are safe havens where they can live with dignity and interact with peers.

### Learning Outcomes

- Identifies the responsibilities of adulthood
- Evaluates the needs and care of elderly people, and argues on the merits and demerits of old age homes
- Develops a positive attitude to the importance and care of aged people

### Evaluation Questions

1. Explain the main responsibilities of adults.
2. List out any six characteristics of elderly people observed by you in your grandparents.
3. Write four points each as 'for' and 'against' for a debate conducted in your class on the topic 'Merits and demerits of old age homes'
4. What are the facilities you found in a Day care centre during your visit?

## CHILDHOOD DISEASES AND PREVENTION

### KEY CONCEPTS

- 7.1 Immunity-Concept and Types
- 7.2 Protection from 'Vaccine-Preventable' Childhood Diseases

Children are more susceptible to diseases for a number of reasons. The major reason is that they have a limited exposure to diseases and therefore haven't yet built the immunologic defenses required to fight certain diseases. Environment plays an important role as well. Further children also do not always practice good hygiene and that makes them both

susceptible to as well as good transmitters of diseases. Many such diseases are most infectious before the appearance of any symptoms of the disease, making transmission even more likely. But most of these diseases can be prevented by immunisation. The following section deals with how the immune system is built up in our body, types of immunity and a basic understanding about vaccine preventable diseases.

### 7.1 Immunity-Concept and Types

*Anu and Arathy were playing in the rain. The very next day Anu caught cold and a sore throat while Arathy did not. Can you explain the reason for this?*

- .....

The environment surrounding us is crowded with harmful organisms. All of them are not visible. These disease causing foreign substances are called pathogens. Some enter

our body and cause infection and diseases. But sometimes we do not get the disease even when we are exposed to specific pathogens. Why?

- .....  
This is due to the immunity of our body.  
What do you mean by immunity?

- .....  
Before studying immunity let us learn terms such as antigen, antibody etc. Antigen is a substance when introduced into the body stimulates the production of an antibody. Antigens include toxins, bacteria, foreign blood cells and the cells of transplanted organs. Antibodies are large Y-shaped proteins and are recruited by the immune system to identify and neutralise foreign objects like bacteria and viruses (antigen).

Immunity is the specific resistance to a disease and involves the production of an antibody against a specific antigen.

### **How does the Immune System Work?**

Name one or two organisms that cause diseases to us?

- .....

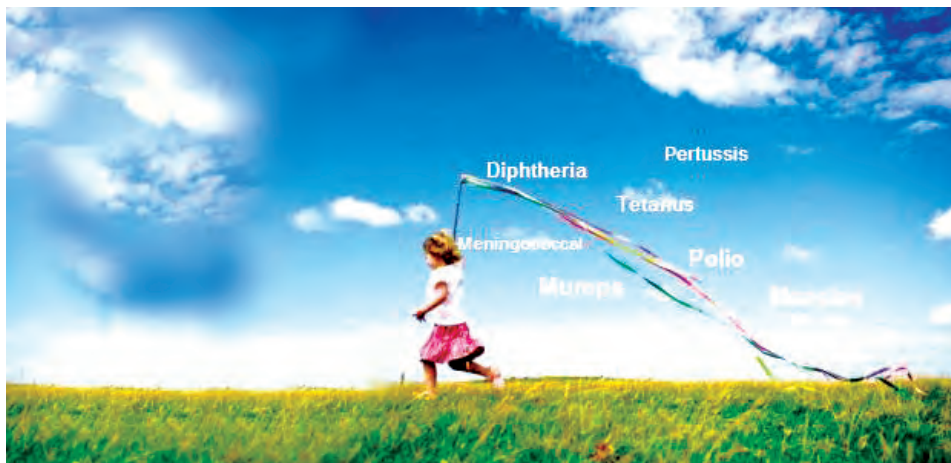
Microorganisms that cause diseases are mostly bacteria and viruses.

Immune system is a complex system in the body responsible for fighting disease. Its primary function is to identify foreign substances like bacteria, viruses, fungi, parasites etc. in the body and develop a defence against them. This defence is known as immune response.

The immune system responds to bacteria and virus in a very complex way. It recognises unique molecules from bacteria and viruses and produces antibodies and special white blood cells called lymphocytes, which destroy the antigen.

During the first encounter with a specific pathogen, some lymphocytes called memory cells form, with the ability to confer long lasting immunity to that pathogen, often for life. During the second exposure, these memory cells recognise antigens on the pathogen they encountered before, triggering the immune system to respond faster and more effectively than on the first exposure producing more antibodies.

The production of more antibodies gives protection to the body against that disease.



### Types of Immunity (Defence Mechanisms)

You might have heard that once we contract a viral disease like chickenpox, we will not get the disease again even if we are exposed to the germs causing the same disease. Why is it so?

- .....

This is due to the immunity we have acquired.

The body possesses several defence systems to fight against pathogens. Let us understand the different types of immunity that help us to protect from various diseases.

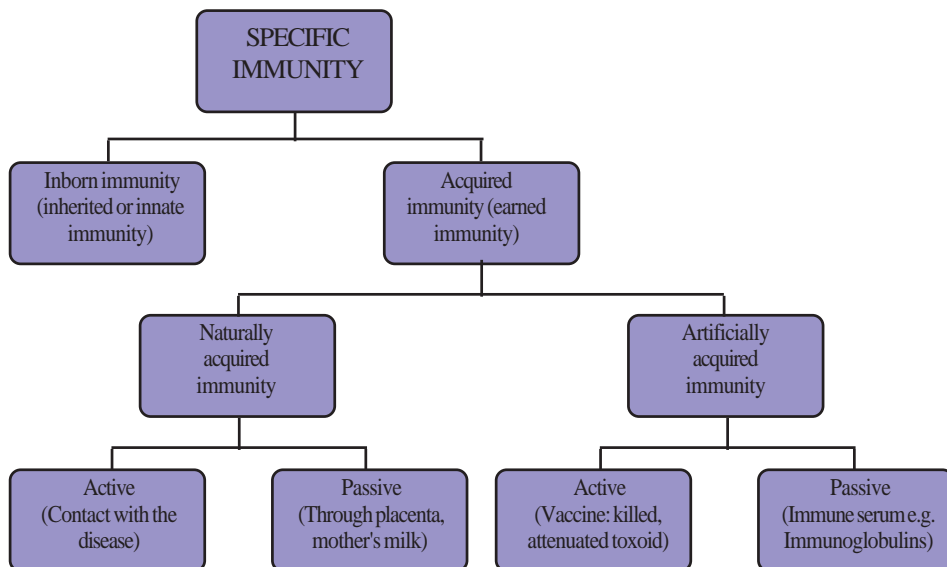
#### A. Non-Specific Immunity (Non-Specific Defence Mechanisms)

This type of immunity fights against a variety of foreign invaders. Some of the non specific defence mechanisms are skin, tears, neutrophils and monocytes, hydrochloric acid of the stomach, vomiting, defecation and urination etc.

#### B. Specific Immunity (Specific Defence Mechanisms)

These are considered as the final line of defence against disease. Specific mechanisms are able to recognise and respond to specific substances. Specific immunity can also be classified into two main categories: inborn and acquired as shown in the illustration given.





**a. Inborn immunity (inherited or innate immunity):** Inborn immunity refers to the immunity that is inherited or genetic. This inherited or innate immunity may be common to all members of the species. eg. Humans have specific immunity to many diseases of animals. Inborn immunity may also be common to a specific population, sex, and race or to an individual person.

**b. Acquired immunity:** Acquired immunity is attained through natural or artificial means. Both naturally and artificially acquired immunity can be attained actively or passively.

**1. Naturally acquired immunity:** Naturally acquired immunity occurs when a person is exposed to a causative agent. This immunity can occur both actively and passively.

**i. Naturally acquired active immunity:** Naturally acquired active immunity results when a child is exposed to and develops a disease. eg. Measles or chickenpox subsequently builds up antibodies (immunity) to infections that are caused by the same organism. Individuals can also develop acquired immunity during their lives as a result of their exposure to disease-causing organisms. They do not necessarily have to fall ill with the disease. But with sub clinical infection they just build up immunity slowly. In other words acquired immunity is built on lifetime exposures.

**ii. Naturally acquired passive immunity:** Naturally acquired passive immunity occurs between mothers and their infants. Immunity is transferred

from mother to foetus during pregnancy through the placental circulation exchange. If the baby is breast-fed, the baby also receives protection after birth through the mother's breast milk. Naturally acquired passive immunity can last only upto six months of age, when the infants own immune system begins to take over.

2. **Artificially acquired immunity:** Artificially acquired immunity occurs when a person is exposed to a causative agent. Artificially acquired immunity can also be acquired through active or passive means.
  - i. **Artificially acquired active immunity:** Artificially acquired active immunity occurs through an injection of the causative agent (antigen) into the person's system. This is called vaccination, inoculation or immunisation; the substance injected is called a vaccine. The causative agent is diluted to reduce its virulence (strength) so that the recipient will form antibodies without falling ill. The presence of antigen causes antibody formation in the person's body. Examples of vaccines are those for pertussis, measles, german measles etc. Tetanus is an example of an immunisation that can be either active or passive. The active form is given as a vaccine-tetanus booster and causes the person to form his or her own antibodies against tetanus.
  - ii. **Artificially acquired passive immunity:** Artificially acquired passive immunity occurs with the injection of readymade antibodies into a person's system. These antibodies were produced by another individual's immune system eg. Immunisation for rabies. This immunisation contains ready-made anti-rabies antibodies and is given in the event of a bite by a rabid animal. Tetanus globulin can be given in the passive form if a person falls ill with the disease of the tetanus.

### Importance of Breast Feeding

In the above section you recognized that breast milk provides naturally acquired passive immunity to the child. How does the child acquire this immunity?

During the first two or three days of lactation, the breast secretes colostrum, a pre-milk substance containing antibodies and white cells from the mother's blood. Because it contains immunity factors, 'colostrum' helps to protect the new born infant from those infections against which the mother has developed immunity. Maternal antibodies from colostrum inactivate harmful bacteria within the infant's digestive tract. Later breast milk also delivers antibodies but not as much as colostrum.

Breast milk offers an infant unsurpassed protection against infection by providing anti-viral agents, antibacterial agents and infection inhibitors. Breast fed babies are less prone to develop stomach and intestinal disorders during the first few months of life and so experience less vomiting and diarrhoea than formula fed babies. Breast milk contains antibodies and other factors against the most common causes of diarrhoea (rotavirus) in infants and young children. Breast feeding reduces the severity and duration of symptoms associated with this infection.

Do you know why it is said that breast milk is most important for babies?

- .....
- Breast milk is the ideal food for infants because it provides the needed nutrients in the right proportions and also protects against other common illnesses of infancy like middle ear infection and respiratory illness. Breast milk also offers protection against the development of the cardiovascular disease. Compared with formula fed infants, breast fed infants have lower blood cholesterol when they become adults. Breast milk provides the hormones that promote physical development. Breast milk improves the cognitive development and protects against food allergies, chronic diseases such as diabetes type I, hypertension etc. later in life.

### Check your progress

1. Define immunity.
2. How does the immune system work?
3. What are the different types of immunity?

## 7.2 Protection from 'Vaccine-Preventable' Childhood Diseases

What do you mean by a communicable disease? Can you list some of the communicable diseases?

- .....
- The most common diseases in children are communicable (transmitted from one person to another). A communicable disease, in addition to causing illness to the person himself, can spread to others by various means directly or indirectly- air, food and water, animals and insects. Preventing exposure to contagious diseases is difficult. Because these conditions are most often infectious before symptoms appear. The period between exposure and the development of the symptoms is the incubation period. With the advent of immunisation many children now go through life without experiencing many of the destructive communicable diseases.



The goal of communicable disease management is prevention, which usually occurs through immunisation. The ultimate purpose of immunisation is to eradicate the disease.

Immunisation is a process by which a person becomes protected against a disease through an enhancement of their immune response by administering vaccines. A vaccine is a biological preparation that improves immunity to a particular disease. A vaccine typically contains an agent that resembles a disease-causing micro-organism and is often made from attenuated or killed forms of the microbe, its toxins or one of its surface proteins. The agent stimulates the body's immune system to recognise the agent as a foreign substance, destroy it and 'remember' it, so that the immune system can more easily recognise and destroy any of these micro-organisms that it later encounters. 'Vaccine-preventable' diseases are those diseases for which vaccines that can confer partial or complete protection exist.

By priming the immune system through vaccination, when the vaccinated individual is later exposed to the live pathogens in the environment, the immune system can destroy them before they can cause the disease.



### Do you know!

Priming is the process of artificial introduction of immunity in order to protect against infectious disease. Priming the immune system involves sensitising or stimulating an immune response with an antigen that can produce immunity against a disease causing organism or toxin.

### Importance of Immunisation

1. Vaccines promote health. They help healthy people stay healthy, removing a major obstacle to human development
2. Immunisations have an extensive reach. They protect individuals and communities
3. Immunisations have rapid impact
4. Vaccines save lives and costs

Let us discuss the causative organism, modes of spread, signs and symptoms, treatment and prevention of some common childhood diseases. These diseases can be prevented by immunisation.

#### 1. Diphtheria

Diphtheria is caused by the bacterium *Corynebacterium diphtheriae*. This germ produces a toxin that can harm or destroy tissues and organs. One type of diphtheria affects the throat and sometimes the tonsils. Another type, more common in tropics, causes ulcers on the skin.

**Modes of spread:** Diphtheria is transmitted from one person to another through close physical and respiratory contact as droplets and rarely through pre existing wounds.

**Signs and symptoms:** The incubation period is 2-5 days. When the diphtheria affects the throat and the tonsils, the early symptoms are sore throat, loss of appetite and slight fever. Within two to three days a bluish white or grey membrane forms in the throat and the tonsils. This membrane sticks to the soft palate of the throat and may bleed. Patients with severe diphtheria do not develop a high fever but may develop a swollen neck and obstructed airway.

**Complications:** The most severe complications of diphtheria are respiratory obstruction followed by death.

**Treatment:** Children who develop diphtheria should be given diphtheria antitoxin and antibiotics. They should be isolated to avoid exposing others to the disease. About two days after starting the antibiotic treatment the patient is no longer infectious.

**Prevention:** The most effective way of preventing diphtheria is to maintain a high level of immunisation in the community. Earlier, diphtheria toxoid vaccine was given in combination with tetanus toxoid and pertussis vaccine (DPT vaccine). Now a combination of vaccines (Pentavalent) for diphtheria, tetanus, pertussis, hepatitis B (hep B), Haemophilus influenzae type b (Hib) is given. Approximately every ten years, booster doses of the adult form of the vaccines tetanus-diphtheria toxoids vaccine may be needed to maintain immunity.

## 2. Pertussis

Pertussis or whooping cough is a disease of the respiratory tract caused by the bacteria named *Bordetella pertussis* that live in the mouth, nose and the throat. Many children who suffer from pertussis have coughing spells that last four to eight weeks.

**Modes of spread:** Pertussis spread very easily from child to child in droplets produced by coughing or sneezing. Children exposed to the germs become infected.

**Signs and symptoms:** The incubation period is five to ten days. At first, the infected child appears to have a common cold with running nose, watery eyes, fever, sneezing and mild cough. The cough gradually worsens and involves many bursts of rapid coughing. At the end of these bursts, the child takes in air with a

high pitched whoop. The child may turn blue because he or she does not get enough oxygen during a long burst of coughing. Vomiting and exhaustion often follow the coughing attacks, which are particularly frequent at night.

**Complications:** Complications are most likely in infants. The most common and deadly complication is bacterial pneumonia.

**Treatment:** Treatment with an antibiotic, usually erythromycin, may make the illness less severe, because the medication kills the bacteria in the nose and the throat. The use of antibiotics also reduces the ability of infected people to spread pertussis to others. Children infected with pertussis should be given plenty of fluids to prevent dehydration.

**Prevention:** Pertussis can be prevented with the vaccine which is given as pentavalent vaccine and DPT.

### 3. Tetanus

Tetanus is acquired through exposure to the spores of the bacterium *Clostridium tetani* which are universally present in the soil. The disease is caused by the action of a potent neutron toxin produced during the growth of the bacteria in dead tissues eg. In dirty wounds or umbilicus following non-sterile delivery.

**Modes of spread:** Tetanus is not transmitted from person to person. A person usually becomes infected when he gets in contact with contaminated objects through wounds. Tetanus germs are likely to grow in deep puncture wounds caused by dirt nails, knives, tools, wood splinters and animal bites. Women face an additional risk of infection if a contaminated tool is used during child birth or during an abortion.

A new born baby may become infected if the knife, razor or instrument used to cut its umbilical cord is insterile or if the hands of the person delivering the baby are not clean.

**Signs and symptoms:** The incubation period is 3-10 days but it may be as long as three weeks; the shorter the incubation period higher the risk of death.

The symptoms are muscular stiffness in the jaw followed by stiffness in the neck, difficulty in swallowing, stiffness in the stomach muscles, muscle spasm, sweating and fever. Newborn babies with tetanus are normal at birth but stop sucking between three and 28 days after birth. They stop feeding and their bodies become stiff while severe muscle contractions and spasms occur. Death follows in most cases.

**Complications:** Fractures of the spine or other bones may occur as a result of muscle spasms and convulsions. Death is particularly likely in the very young and old people.

**Treatment:** Tetanus at any age is a medical emergency best managed in a referral hospital.

**Prevention:** Earlier infants and children were immunised with DPT vaccine or DT. Now, as mentioned earlier, Pentavalent is given.

Neonatal tetanus can be prevented by immunising women during pregnancy with tetanus toxoid. This protects the mother and enables tetanus antibodies to be transferred to her baby. Clean delivery practices have to be ensured.

#### 4. Measles

Measles is a highly infectious disease caused by a virus. Because the disease is so infectious, it may cause many deaths especially among malnourished children.

**Modes of spread:** Measles is spread through contact with nose and throat secretions of infected people and in airborne droplets released when an infected person sneezes or coughs. A person with measles can infect others for several days before and after he or she develops symptoms.

**Signs and symptoms:** The incubation period is 14 days with a range of 7- 18 days. The first symptom is fever. During this period the patient may develop running nose, red and watery eyes, small white spots inside the cheeks. After a few days a slightly raised rash develops usually on the face and the upper neck. Over a period of about three days the rash spreads to the body and then to the hands and the feet. It lasts for about 5-6 days and then fades.

**Complications:** Infected infants may suffer from severe diarrhoea, inflammation of the middle ear and severe respiratory tract infections. Pneumonia is the most common cause of death associated with measles.

**Treatment:** General nutritional support and treatment of dehydration with oral rehydration solution are necessary. Children should be encouraged to eat and drink. Children should be given vitamin A supplementation to prevent eye damage and blindness. Two doses of vitamin A is to be given 24 hours apart.

**Prevention:** Measles can be prevented by immunisation with measles vaccine.

#### 5. Rubella and Congenial Rubella Syndrome

Rubella is a disease caused by a virus. Congenial Rubella Syndrome (CRS) is an important cause of severe birth defects. When a woman is infected with rubella virus

early in pregnancy, she has a 90% chance of passing the virus to her foetus. This can cause the death of the foetus or it may cause CRS. Even though it is a mild childhood disease CRS cause many birth defects. Deafness is the most common but CRS can also cause defects in the eyes, heart and brain.

**Modes of spread:** Rubella is spread through air when infected people sneeze or cough. Once a person is infected, the virus spreads throughout the body in about five to seven days. During this time, the pregnant woman may pass the virus to the foetus. Infected people are most likely to pass on the virus when the rash develops. But the virus may be spread from seven days before to about seven days after the rash appears. Infants with CRS can transmit the virus for a year or more.

**Signs and symptoms:** The incubation period is about 14 days. The symptoms are often mild and 20-50% of infected people have no symptoms at all.

In children a rash is usually the first sign. Other signs include low fever and swollen lymph nodes in the neck. The rash most often begins on the face and spreads from head to foot. It usually last for about three days. The rash is pink and fainter than measles.

Infants who are born with CRS usually show symptoms such as cataract, loss of hearing in infancy and congenital heart disease but they may not show symptoms for 2-4 years.

**Complications:** Complications tend to occur more often in adults than in children. About 70% of adult women who are infected may develop pain in their joints or arthritis especially in the fingers, wrists and knees.

If Rubella infection occurs in pregnant women

- (i) in the first three months of pregnancy the child will have congenital abnormalities almost 100%
- (ii) Between three months the abnormality may be 50%
- (iii) If infection occurs after nine month the chance is 25%.

Complications from CRS include deafness, cataracts, heart defects and mental retardation.

**Treatment:** There is no specific treatment for rubella or CRS. Patients with rubella should drink plenty of fluids and may take medication to reduce mild fever. Infants with CRS are treated for their specific problems.

**Prevention :** Rubella vaccines are safe and effective for infants and it is given along with measles and mumps vaccine MMR. To prevent CRS, women in the child bearing age should be immunised (between the age of 15 and 40)

## 6. Mumps

Mumps is an infection caused by a virus. It is sometimes called infectious parotitis and primarily affects the salivary glands. Mumps is mostly a mild childhood disease. It mostly affects children between five and nine years old. But mumps virus can cause serious complications in adults.

**Modes of spread:** It is spread by air borne droplets released when an infected person sneezes or coughs and by direct contact with an infected person.

**Signs and symptoms:** The incubation period is 4-21 days. Swelling in parotid glands just below and in front of the ears is the most important symptom. The swelling may occur on one or both sides of the neck. Other symptoms include pain when chewing or swallowing, fever, weakness and tenderness and swelling in the testicles.

**Complications:** Complications from mumps are rare, but they can be serious. In men and teenage boys, an inflammatory condition called orchitis may cause swelling in one or both testicles. Orchitis is sometimes painful and can cause sterility. Encephalitis, meningitis and hearing loss are other rare complications.

**Treatment:** There is no specific treatment for mumps.

**Prevention:** Mumps vaccine should be given in combinations with measles and rubella vaccines (MMR vaccine).

## 7. Poliomyelitis (Polio)

Have you heard about the pulse polio immunisation programme? Read the news given below and write down the importance of the programme?

- .....

### POLIO IMMUNISATION PROGRAMME ON SUNDAY

The Health Department has made elaborate arrangements for the Pulse Polio Immunisation Programme to be held in the district on Sunday. Addressing a press conference here on Thursday, District Collector V.N. Jithendran

and District Medical Officer L. Anithakumari said that the programme was aimed at polio eradication by administering vaccine to all children below the age of five years on the same day. Mr. Jithendran said as many

as 80,181 children up to the age of five years, including new born babies, in the district would be administered with polio vaccine on the day. He said a total of 1,036 pulse polio booths would be set up in different parts of the

Poliomyelitis (polio) is a crippling disease caused by a virus.

**Modes of spread:** The incubation period is 6-20 days. The only way to spread poliovirus is through the faecal/oral route. The virus enters the body through the

mouth when people eat or drink water that is contaminated with faeces. The virus then multiplies in the intestine, enters the blood stream and invades certain type of nerve cells, which it can damage or destroy.

Nearly all children living in the households where someone is infected become infected themselves. It is important to know that the great majority of people who are infected do not have symptoms, but can still spread the disease.

**Signs and symptoms:** Most children infected by poliovirus never feel ill. Less than 5% of those infected may have general flu-like symptoms such as fever, loose stools, sore throat, upset stomach and head ache or stomach ache.

Most children who have a polio virus infection without symptom develop immunity and have life long protection against paralytic polio.

Paralytic polio begins with mild symptoms and fever. These symptoms are followed by severe muscle pain and paralysis, which usually develops during the first week of illness. Patients may lose the use of one or both the arms or legs. Some patients may not be able to breathe because respiratory muscles are paralysed.

**Complications:** Death may occur if the respiratory muscles of the chest are affected and no respirator is available to support breathing. Without adequate physiotherapy the paralysed limb will not regain full function, often leaving a child seriously crippled.

**Treatment:** While the initial symptoms-muscle pain and fever –can be relieved, no treatment exists to cure paralysis from polio. A respirator can help patients who have the difficulty in breathing. Regular physical therapy as well as orthopaedic treatment and operations and use of braces can help reduce the long term crippling effects of polio.

**Prevention:** Polio can be prevented by immunisation with Oral Polio Vaccine (OPV)

## 8. Tuberculosis (TB)

You might have noticed a mark on your left hand just below the shoulder. What is that?

- .....  
Tuberculosis is caused by the bacterium *Mycobacterium tuberculosis*, which usually attacks the lungs, but can also affect other parts of the body, including the bones, joints and the brain.

Not everyone who is infected with tuberculosis develops the disease. People who are infected may not feel ill and may have no symptoms. The infection can last for a life time, but the infected person may never develop the disease itself. People who are infected but who do not develop the disease do not spread the infection to others.

**Modes of spread:** TB is spread from one person to another through air often when the person with the disease coughs or sneezes. TB spreads rapidly especially in areas where people live in crowded conditions, have poor access to health care and are malnourished. A variety of TB called bovine tuberculosis is transmitted by consuming raw milk from infected cattle.

People of all ages can contract tuberculosis. But the risk of developing TB is highest in children younger than three years old and in older people. People with TB infection who have weak immune systems are more likely to develop the disease.

**Signs and symptoms:** The incubation period is usually 4 - 12 weeks, but the infection may persist for months or even years before the disease develops. A person with disease can infect others for several weeks after he or she begins treatment.

The symptoms of TB include general weakness, weight loss, fever and night sweats. In TB of the lungs, called pulmonary tuberculosis, the symptoms include persistent cough, coughing of blood and chest pain. In young children however the only sign of pulmonary TB may be stunted growth or failure to thrive. Other signs and symptoms depend on the part of the body that is affected. eg. In tuberculosis of the bones and joints, there may be swelling, pain and crippling effects of the hips, knee or spine.

**Complications:** TB can persist in many ways and may be very difficult to diagnose. Untreated pulmonary TB results in debility and death. This may be more rapid in persons infected with HIV/AIDS.

**Treatment:** People with TB must complete a course of therapy, which usually includes taking two or more anti-tuberculosis drugs for at least six months. This is often called DOTS, or Directly Observed Treatment Schedule. If proper treatment is not taken it can lead to multidrug-resistant TB, it can be extremely dangerous if it spreads to other people.



**Prevention:** Immunization of infants with Bacillus Calmette Guerin vaccine (BCG) can protect against TB meningitis and other severe forms of TB in children less than five years old. BCG vaccine is not recommended after 12 months of age because the protection provided is variable and less certain.

## 9. Hepatitis B

Hepatitis B is caused by a virus that affects the liver. Adults who get hepatitis B usually recover. However most infants infected at birth become chronic carriers.

**Modes of spread:** The hepatitis B virus is carried in the blood and other body fluids. It is usually spread by contact with blood in the following ways.

- Through an unsafe injections or needle sticks. Unsterilised needles or syringes can contain hepatitis B virus from an infected person
- Transmission of the virus by mothers to their babies during the birth process
- Transmission between children during social contacts, through cuts, scrapes, bites and scratches
- Transmission during sexual intercourse through contact with blood or other body fluids
- Also through blood transfusion

**Signs and symptoms:** The incubation period is between 6 weeks to 6 months. Infection in children is asymptomatic. However a large proportion of children may become chronic carriers compared to adults.

People with the symptom may feel weak and may experience stomach upsets and flu-like symptoms. They may also have very dark urine or very pale stools. Jaundice (yellow skin or yellow colour in the white of eyes) is common. The symptoms may last several weeks or months. A laboratory test is required for confirmation.

Most acute infections in adults are followed by complete recovery. However many children become chronic carriers. People who recover from acute hepatitis B are protected from becoming infected again throughout their lives.

**Complications:** The most serious complications include chronic hepatitis, cirrhosis, liver failure and liver cancer occurs in people with chronic infection.

**Treatment:** There is no treatment for acute condition. Supportive treatment is indicated. In chronic infection the disease can sometimes be stopped with medications.

**Prevention:** It is recommended that all infants receive three doses of hepatitis B vaccine during the first year of life. Now a combination of vaccines (Pentavalent) for diphtheria, tetanus, pertussis, hepatitis B (hep B), Haemophilus influenzae type b (Hib) is given.

### 10. Haemophilus Influenzae Type b (Hib)

Haemophilus influenzae type b is one of six related types of bacterium.

**Modes of spread:** The Hib bacterium is commonly present in the nose and throat. Bacteria are transmitted from person to person in droplets through sneezing and coughing. Infected children may carry Hib bacteria without showing any signs or symptoms of the illness but they can still infect others. The risk of disease is the highest among children between six months to two years of age.

**Signs and symptoms:** Pneumonia and meningitis are the most important diseases caused by Hib bacteria. In developing countries, pneumonia is more common than meningitis in children with Hib disease.

**Complications:** Children who survive Hib meningitis may develop permanent neurological disability, including brain damage, hearing loss and mental retardation. 15 to 30% of children who survive Hib disease are at risk of this disabilities. 5 to 10% cases of Hib meningitis are at risk of dying.

**Treatment:** Hib disease can be treated with specific antibiotics.

**Prevention:** Several Hib conjugate vaccines are available. All are effective when given in early infancy. To reduce the number of injections Hib vaccine is now given along with DTP-Hep B+ Hib.

#### Let us do



*Prepare a table showing the modes of spread, signs and symptoms, complications, treatment and prevention of all the 10 diseases discussed above.*

We have already understood that the ten diseases discussed above can be prevented by vaccines. The time of administration of vaccines recommended by World Health Organization is given in Table 7.1. The main purpose of the schedule is to ensure that children receive vaccines at the right time to protect them from infectious diseases.

Age	Scheduled vaccines	Disease protected against
At birth	<ul style="list-style-type: none"> <li>• BCG,</li> <li>• OPV-0,</li> <li>• Hep B - birth dose</li> </ul>	<ul style="list-style-type: none"> <li>• Tuberculosis</li> <li>• Poliomyelitis</li> <li>• Hepatitis B</li> </ul>
6 weeks	<ul style="list-style-type: none"> <li>• OPV-1,</li> <li>• Pentavalent-1</li> </ul>	<ul style="list-style-type: none"> <li>• Poliomyelitis</li> <li>• Diphtheria, Tetanus, Pertussis, Hepatitis B, Haemophilus Influenzae b</li> </ul>
10 weeks	<ul style="list-style-type: none"> <li>• OPV-2,</li> <li>• Pentavalent-2</li> </ul>	<ul style="list-style-type: none"> <li>• Poliomyelitis</li> <li>• Diphtheria, Tetanus, Pertussis, Hepatitis B, Haemophilus Influenzae b</li> </ul>
14 weeks	<ul style="list-style-type: none"> <li>• OPV-3,</li> <li>• Pentavalent-3</li> </ul>	<ul style="list-style-type: none"> <li>• Poliomyelitis</li> <li>• Diphtheria, Tetanus, Pertussis, Hepatitis B, Haemophilus Influenzae type b</li> </ul>
9-11 months	<ul style="list-style-type: none"> <li>• Measles vaccine</li> </ul>	<ul style="list-style-type: none"> <li>• Measles</li> </ul>
12-15 months	<ul style="list-style-type: none"> <li>• MMR vaccine</li> </ul>	<ul style="list-style-type: none"> <li>• Measles, Mumps, Rubella</li> </ul>
16-24 months	<ul style="list-style-type: none"> <li>• DTP-Booster-1,</li> <li>• OPV-Booster</li> </ul>	<ul style="list-style-type: none"> <li>• Diphtheria, Tetanus, Pertussis,</li> <li>• Poliomyelitis</li> </ul>
5 year	<ul style="list-style-type: none"> <li>• DPT-Booster-2</li> </ul>	<ul style="list-style-type: none"> <li>• Diphtheria, Tetanus, Pertussis,</li> </ul>
Vitamin A	9,18,24,30,36 months	

**Table 7.1 Immunisation Schedule for Children below 6 years**

*(Dose of vitamin A-9 months - one lakh IU*

*Children 12 months and older - two lakh IU)*

### Let us do



Visit a nearby PHC/Hospital and collect pamphlets related to various communicable diseases. Conduct a class seminar based on this using a projector.

### Check your progress

1. Define immunisation
2. Explain the signs and symptoms of the following diseases.
  - (i) Pertussis
  - (ii) Mumps
  - (iii) Tuberculosis
  - (iv) Polio
  - (v) Hepatitis-B

### Let us sum up

Most of the children are more susceptible to diseases for a number of reasons. The major reason is the lack of immunity mainly among pre-school children. Immunity is the specific resistance to a disease that involves the production of an antibody against a specific antigen. Immune system produces antibodies to fight against the germs and it responds to micro organisms in a very complex way.

The body possesses two types of defense systems to fight against pathogens- non specific and specific immunity. Skin, tears, neutrophils and monocytes etc. constitute non specific defense mechanisms. Specific immunity can be inborn and acquired. Breast feeding is very important because it provides naturally acquired active immunity to the child. With the advent of immunisation many children now go through life without experiencing many of the destructive diseases.

Immunisation is a process by which a person becomes protected against a disease through an enhancement of their immune response by administering vaccines. A vaccine contains an agent that resembles a disease causing micro organism and is often made from attenuated or killed forms of the microbe, its toxins or one of its surface proteins. Vaccines help to promote health and removing a major obstacle to human development. So all children below six years should be vaccinated against diseases namely diphtheria, pertussis, tetanus, measles, mumps, rubella, tuberculosis, hepatitis-B and haemophilus influenza type b.

### Learning Outcomes

- Explains different types of immunity and recognises the importance of breast feeding
- Describes and differentiates different communicable diseases.

### Evaluation Questions

- Breast feeding provides \_\_\_\_\_immunity
- Ram suffered from pertussis and he will not get the disease again.
  - What type of immunity has he acquired?
  - Name the other method of obtaining immunity against the same disease.
- Differentiate naturally acquired active immunity and naturally acquired passive immunity with examples.
- 'Breast milk offers an infant unsurpassed protection against infection'. Substantiate the statement.
- How will you convince a group of mothers of children below the age of five years on the importance of immunisation?
- Complete the table:

Sl. No.	Name of disease	Causative organism
1.	Diphtheria	.....
2.	.....	Clostridium tetani
3.	Polio	.....
4.	Tuberculosis	.....

- Anu brought his child to the doctor with the following symptoms.  
Low fever and swollen lymph nodes
  - identify the disease
  - causative organism
  - treatment
- Prepare a chart on 'immunisation schedule for children below 6 years'.
- Expand the terms.
 

(a) DTP	(b) OPV
(c) CRS	(d) BCG
(d) DOTS	

## CHAPTER

# 8

## CONCERN AND ISSUES IN HUMAN DEVELOPMENT

### KEY CONCEPTS

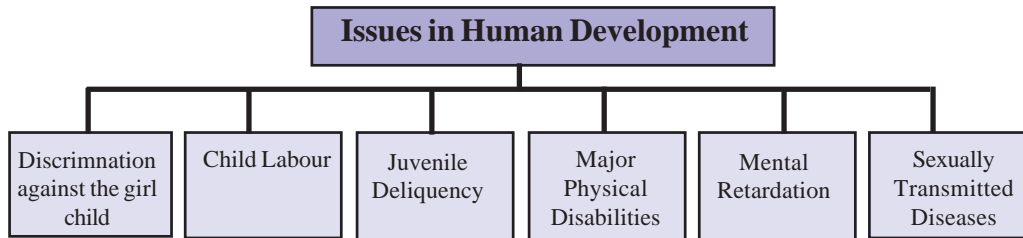
- 8.1 Discrimination against the Girl Child
- 8.2 Child Labour
- 8.3 Juvenile Delinquency
- 8.4 Major Physical Disabilities
- 8.5 Mental Retardation
- 8.6 Sexually Transmitted Diseases

In the previous chapters you have learned about the development of children through various stages and factors affecting their development. But there are some children who do not get enough opportunities for development either due to unfavourable circumstances or various disabilities. This is a matter of grave concern. These children need special attention and care to be brought to the forefront of society.

Can you mention few issues which hinder the development of children?

- .....

In our society issues such as child labour, female infanticide, sex discrimination, sexual abuse, juvenile delinquency, personal and social problems due to disabilities and sexually transmitted diseases, sexual harassment, bogus marriages, child marriage etc. are to be urgently addressed. Many measures are taken to deal with these problems. Let us discuss some of the issues prevalent in our society. Observe Illustration 8.1 and identify the major issues in human development.



*Illustration 8.1*  
*Issues in Human Development*

### 8.1 Discrimination Against the Girl Child

Have you ever experienced such painful situations in your life? What do you feel about the life of the girl in the given picture?

• .....

In our society a woman's worth and status is considered to be lower than a man due to various discriminatory practices. Preference for sons prevails at all levels of the society, rich or poor, urban or rural. Discriminatory practices include female



infanticide, female foeticide, early marriage and dowry system. It is believed that every year 12 million girls are born in our country but unfortunately only 1/3 of those survive. Some are killed in the womb, some at the time of birth, some die due to ill health and some due to poor nutritional status. Female foeticide and female infanticide has led to a deviation in the male-female sex ratio. In India the sex ratio has dropped from 972 females to 1000 males in 1901 to 940 in 2011 census..

Can you find out the sex ratio of Kerala?

• .....



#### Do you know!

Female sex ratio as per census 2011

India : 940

Kerala : 1084

What is your opinion about the status of girl child in our state?

- .....

Let us discuss the status of the girl child in different areas.

**a. Nutrition and Health Care**

In many places mothers tend to feed their sons first. Girl babies are breast fed less frequently and for a shorter period than boy babies. Poverty, gender discrimination and son preference have also influenced the nutritional status of a girl child. Boys get a major share of food than do girls. Even in well-off families boys get the best in terms of food, clothing, educational materials and other goods. Girls get less access to medical attention, health care facilities and routine immunisation. Sick girl is often ignored and only given medical treatment when her condition is serious. But in the case of a boy child, parents seek medical attention more promptly.

**b. Education**

In the case of education too, the girl child gets a lesser chance. Investment in the education of girls is not considered to yield adequate returns. She may be enrolled in the school but when her work is needed at home- to help in house hold work, to mind younger siblings or to fetch and carry fuel, fodder, water or food for the men working in the field- she is compelled to drop her studies. But the education of a boy child is taken more seriously. Higher education is often denied to girls not always because of lack of resources but considering that it may make her independent and unsuitable for marriage. It is also said that higher education is not required for a girl to carry out house hold work or for her roles as wife and mother. Do you think the situation is different in Kerala? Think about the educational opportunity now given by parents to boys and girls in our state.

**Let us do**



*Conduct a survey in your locality and analyse the educational opportunities given to boys and girls.*

**c. Marriage and Family Life**

The status of women in society is closely linked to their age at marriage. The age at which a woman marries has clear implications for her health, her personal development, her access to education and training and the number of children she would have.

What is your opinion about the appropriate age for marriage of a girl?

- .....



Teenage marriage is more common in developing countries in general and in rural areas in particular, reflecting strong adherence to traditional values, lack of educational facilities and employment opportunities for girls.

#### d. Cultural Practices

In many societies, sons carry on the lineage and the family name; perform funeral or burial rites of parents and religious rituals for ancestors. Daughters are viewed as transient, to be given away in marriage. Her productivity and fertility would then benefit her husband and his family.

#### e. Sexual Exploitation

Every day we happen to watch the news relating to sexual exploitation of a girl child or woman.

Why do such incidents happen in our society?

- .....

Girl children are vulnerable to sexual exploitation within and outside the family. The fundamental reason for sexual exploitation of girls is the low status accorded to women by society. Increasing urbanisation and loss of extended family support has

### SEXUAL EXPLOITATION OF MINOR GIRL: ONE HELD

SPECIAL  
CORRESPONDENT  
CALCUTTA :Police on  
Friday arrested a 30-year-  
old man on the charge of

sexually exploiting a  
minor girl after enticing  
her with the prospect of  
marriage. Circle Inspector,  
Gupta , identified the

accused as Binu, a  
resident of Iravipuram  
colony in Kollam. The  
police said the man had  
met the victim at a

contributed to wide spread trafficking in children and child prostitution. Poverty and indebtedness among the rural poor is the most obvious cause of child prostitution. Sometimes girls are tricked into prostitution under false pretexts. Children also undergo prostitution through bogus marriage, domestic labour, false adoption, and immigration. Children are forced to work for long hours with poor wages and unhygienic surroundings. They may often become victims of sexual physical and psychological abuse.

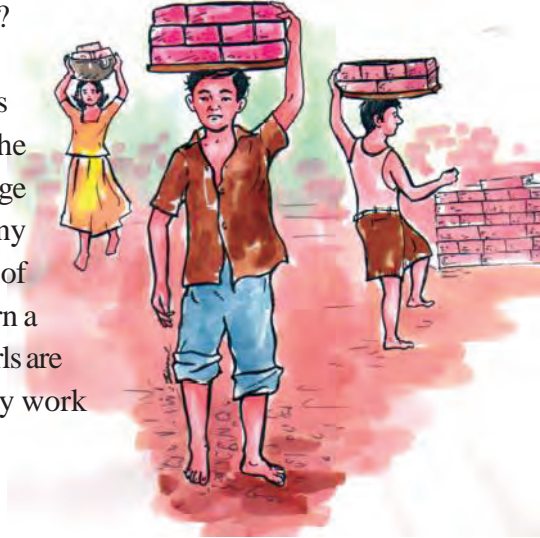
It is the girl child who is the future mother. If she is not provided with adequate food and health facilities then her health will suffer. This in turn will affect the health of her future children. If she is denied the opportunity to attend school she will remain intellectually under developed. A little amount of care, a handful of warmth and a heart full of love for a girl child can make a big difference.

**8.2 Child Labour**

What do you notice in the picture?

- .....

Child labour is common in today's world. Child labour is the employment of children under the age of 14 years. A child labourer is any child who is below fourteen years of age and is engaged in work to earn a living. Small children especially girls are exploited in such activities. They work from dawn till late night.



**Causes of Child Labour**

Can you list some of the reasons for child labour?

- .....

The main causes of child labour are:

- a. **Poverty:** Majority of child labourers come from poor families. Because of poverty, children are forced to work for long hours for very low wages and sometimes without wages just for food and shelter. In India many children work as bonded labourers, in order to pay off their parents' debts.
- b. **Relatively large family size:** A large family with limited income cannot give education, recreation and other facilities to children, hence the children are compelled to work to meet the demands of the family. Increasing inflation and the resulting poverty force children to adopt any kind of unskilled labour.
- c. **Illiteracy and ignorance of parents:** Ignorant and illiterate people believe that children are a means to earn. So they send their children to work. In families, children are a source of additional labour power for low income.

**d. Orphaned, abandoned and rejected children:** These are children who have no parents or neglected by parents due to many reasons. For a better living they are forced to earn.

**e. Failure to enforce existing laws:** We have many laws which prevent child labour. But the lack of proper law enforcement has resulted in wide spread child labour.

### Consequences of Child Labour

What will be the consequences if children are made to work for long hours?

- .....

Children who work for long hours in uncomfortable body positions may result in permanent disability. The work in unhygienic conditions may lead to infectious diseases. Absence in schooling will increase the number of illiterates in the country.

### Prevention of Child Labour

Child Labour can be prevented by adopting legislative measures and educational measures.

**a. Legislative measures:** We can prevent child labour by having strong legislative measures and effective enforcement of law. Legislation in India seeks to address main concerns like:

1. Prescription of minimum age limit for employment and regulation of working hours for children
2. Ensuring compulsory minimum education
3. Ensuring health and safety of child labourers by prohibiting employment of children in hazardous work.

Following are some of the Acts for the protection of the child:

- Factories Act, 1948
- Mines Act, 1952
- Minimum Wages Act, 1954
- Child Labour (Prohibition and Regulation) Act 1986
- Juvenile Justice (Care and Protection) of Children Act, 2000
- Right of Children to Free and Compulsory Education Act, 2009



#### Do you know!

World Day against Child labour is observed on June 12th every year

In addition to the above acts, a National Policy on Child Labour was formulated in 1987 to focus on rehabilitating children working in hazardous occupations.

**b. Educational measures:** In order to eradicate this evil from our country we have to create awareness among parents so that they realize the negative consequences of child labour and the importance of educating children. Effort should be made to improve quality, relevance and access to education. Programmes like ‘School Work Initiative’ can help working children. Non formal education, out of school, can be given. Free and Compulsory Education should be given to all children.

**Let us do**



*Collect news on child labour from newspapers/magazines and analyse the possible causes of child labour. Suggest some measures to overcome them.*

**Check your progress**

1. Child labour means forcing a child to work before  
(a) 15 years            (b) 14 years            (c) 18 years
2. What are the causes of child labour?
3. List the various Acts to prevent child labour.
4. Explain areas in which girl children face discrimination.

**8.3 Juvenile Delinquency**

*Manu, a seventeen year old boy, is studying in 9<sup>th</sup> standard. He is irresponsible in duties and studies. Some of his classmates say that he has enough friends outside school. He always indulges in the mischievous activities in the classroom and school, such as teasing peers, stealing money, quarrelling with peers etc. There is also a rumour that he keeps a syringe in his bag. One day he tried to kill his friend by wounding with a sharp knife. The headmaster presented the matter to the PTA President and the PTA members decided to hand him over to the police.*

Suppose Manu is in your school. What would be your attitude towards him? He is only 17years old. What action should the PTA committee and police take? Can they consider him as an adult criminal? Share your views.

- .....

Manu is a juvenile having delinquent behaviour. No police or criminal court can deal with him! Let us discuss the same.

The incidence of criminal behaviour is common among adults. But when a crime is done by a child we call him/her a Juvenile Delinquent.

Delinquency is a kind of abnormality. When an individual deviates from the course of normal social life, his behaviour is called “delinquent”. According to Friedlander “delinquency is a juvenile misconduct that might be dealt with under the law”. In simple words it can be said that juvenile delinquency is a type of abnormal or anti-social behaviour by a juvenile who is below the age specified by the statute. It varies from country to country but commonly is the age between 7 to 16 or 18.

Can you recollect any such incident of child delinquency that you have seen in films or any documentary?

- .....

Crime is defined legally as a violation of law. Children in conflict with law are boys and girls below eighteen years of age, alleged to have committed offences and have been taken into custody by the police under the purview of the Juvenile Justice System. Such children are termed as ‘Juvenile Delinquent’. Children are vulnerable to abusive negative circumstances and are influenced by adults to engage in crime often. They too need sensitive and protective measures for suitable rehabilitation.

Here we have seen the case of Manu. He always engages in mischievous activities in and outside school. Like this, some other crimes also prevail in our society? Can you list out some of them?

- .....

Some of the offences could be:

- Burglary, stealing and petty thefts
- Murder
- Rape/molestation and sexual abuse
- Causing grievous hurt or injury to another
- Other minor offences

### Causes of Juvenile Delinquency

Delinquency among young people can be caused by many reasons. Can you list the situations that provoke them to do these crimes?

- .....

The main causes for delinquency are:

- a. Poverty:** Poverty deprives children of socio-cultural and economic opportunities for growth and development. Poverty related circumstances like severe hunger, illness, addictions, parental neglect etc. aggravate the situation. Such children are at greater risk than others of being inducted into crime.
- b. Family:** Criminal acts of family members influence children and sometimes they themselves induct children into offences.
- c. Lack of appropriate guidance and discipline :** Inconsistent discipline, parental indifference and abusive parenting can lead to a poor self-image and personality problems, making children vulnerable to negative influences outside the home.
- d. The home situation:** Disintegration of “families at risk”, severe family crisis, system, migration, and urbanisation has all weakened the positive and nurturing influence of family on the child. Tension and emotional disturbances and abuse at home may drive the child away from home and become vulnerable to criminal activities.
- e. Victims of abuse:** Research indicates a correlation between child abuse and subsequent delinquency.
- f. School dropouts:** Not attending school regularly results in truancy, indulging in unhealthy leisure activities and committing petty crimes to earn a living.
- g. Exposure to media:** Exposure to media violence not only increases physical aggressiveness in children but also makes them accepting violence more.
- h. Peer influence:** In adolescence, experimenting with drugs, gambling, drinking, inappropriate sexual behaviour, desire for quick money, getting involved in youth gangs often lead to violence and crime.
- i. Lack of age appropriate sex education:** This often leads to sexual abuse and molestation and even rape by young children.
- j. Gang culture:** Observed especially among street children where the street gang is the substitute family and the child gets bullied into the anti-social activities of the gang in return for survival, protection or favour

### Characteristic of Juvenile Delinquents

Do you think that children who commit delinquency have any special characteristics? Now we will discuss the characteristics of juvenile delinquents.

- i. Poor academic performance and language learning
- ii. High dropout rates from school
- iii. Irresponsive and show emotional disturbance
- iv. Lack of self-control
- v. Indulge in anti- social activities like stealing, robbery, rape, aggravated assaults, homicide, running away from home
- vi. Wandering about railroads, streets etc.
- vii. Progressive decline in intellectual functioning
- viii. Hyper active.

### Rehabilitation

How can we protect such children?

- .....

Any juvenile in conflict with law is prosecuted according to the provisions of **The Juvenile Justice (Care and Protection of Children) Act 2000**. This Act has been further amended in the year 2006 and 2010. The objective of this legislation is to ensure the care, protection and development needs of the children who are either neglected or have come into conflict with law constituting delinquency. As per the Act the State Government is empowered to constitute one or more Juvenile Justice Boards for every district to deal with children in conflict with law. The Board has the exclusive power to deal with all matters under the act pertaining to the juvenile in conflict with the law.

**Rehabilitation of juveniles:** The very nature of the Act is curative not punitive. Delinquent juvenile, due to their immature understanding or unfavourable environment commit offence, but have a long way to go. Hence it is a moral duty on the part of the court and society to provide them with chances to live healthy and to bring them in the main stream of development. There are very efficient and effective measures of rehabilitation for juvenile delinquent.

**Observation and Special homes:** Observation and special homes are established for children in conflict with law by the State Government itself or under an agreement with voluntary organisations in every district or group of districts.

Observation homes are established for the temporary reception of any child in conflict with law pending any inquiry regarding them under the Act.

Special homes are meant for the reception and rehabilitation of juvenile in conflict with law.

### Rehabilitation of Juvenile after being Released or Acquitted

When any child in conflict with law is released or acquitted, in the opinion of Child Welfare Committee, he is in need of rehabilitation and social integration to fall in the main stream of society as an alternative by:

- a. **Adoption:** Orphaned, abandoned, neglected or abused children have to be adopted by means of institutional or non-institutional methods. Children's institutions and state government owned institutions shall be recognised as adoption agencies.
- b. **Foster Care:** Foster care is the term used for a system in which a minor is placed in private homes of a state certified caregiver. Foster care is intended to be a short term situation until permanent placement can be made.
- c. **Setting up after care organisation:** The state government is under statutory obligation to lay down the scheme and guidelines for setting up care organisation, when the juvenile leaves special homes. The provision is incorporated by the legislature with a view of enabling the juveniles to lead an honest, industrious and useful life.

#### Let us do



*Collect news from newspapers relating to juvenile delinquency, analyse it and prepare a note on the reasons behind each activity.*

#### Check your progress

1. Define juvenile delinquency.
2. List out the causes responsible for juvenile delinquency.
3. What are the characteristics of a juvenile delinquent?

So far we have discussed some of the social issues which affect human development. Now we shall examine the issues related to physical disability.

## 8.4 Major Physical Disabilities

Have you seen people with disabilities? What are their problems? Those who have impairments in their limbs, nerves, muscles or bones are grouped under physically handicapped. Those with disability in eyes and ears also come under this category. Their



normal physical movements and activities are affected by such impairments and hence they are called physically handicapped.

Can you imagine and list out the problems of such persons?

- .....

### A. Impairment in Limb/Missing Limb

According to Cruickshank, a child with impairment in limbs or missing or crippled is defined as “one who has a defect which causes a deformity or an interference with the normal functioning of bone, muscle or joint”. Such orthopaedic condition may be of different types. They are:

- a. **Congenital deformity:** Congenital deformities can occur due to genetic problems. If a child has congenital deformities, he has impairment by birth itself.
- b. **Acquired orthopaedic defects:** Acquired orthopaedic defects can occur at any stage in life. Polio and bone tuberculosis among small children have long lasting crippling effect on them.

### Causes of Impairment

Some causes for the impairment are:

- a. Improper foetal formation of bones, limbs and other important body parts.
- b. Abnormal intrauterine position of the foetus or prolonged labour
- c. Abnormalities in the neuromuscular unit
- d. Hormonal factors may cause deformities
- e. High level of maternal oestrogen and progesterone, and diseases like measles, mumps, jaundice of mother during pregnancy
- f. Muscular damage and spinal injuries due to accidents
- g. Accidents involving limb amputation result in bone deformities
- h. Brain damage, brain fever and brain anoxia, polio and bone tuberculosis.

### Characteristics of a child with affected or missing limb

Physical defects lead to inferiority complex among young children

- These children isolate themselves from those around them. Loneliness reflects in awkward social behaviour
- A little older child often goes through psychological trauma because of the discrepancy between his/her aspirations and the ability to perform

- Anxiety, extreme depression, escapism and over aggression are seen among children with affected and missing limb
- They have shorter attention span, engage themselves in less exploration and display less motivation
- More dependent on adults and interact less with peers
- Poor social contact
- Intelligence of the orthopedically handicapped is similar to that of the normal, they are less creative.

### **Special Needs of Children with Affected/Missing Limb**

These children have special physical, social, emotional and educational needs. They should be helped to cope up with their daily routine.

#### **a. Physical Needs**

- i. Science and technological advancement has led to the discovery of artificial limbs. These help one to overcome physical defects
- ii. Physiotherapy is a paramedical science that helps the handicapped child to exploit his physical potentials to the maximum.

#### **b. Social and Emotional Needs**

- i. Playing is an important socialising tool. Children with affected limbs are very often left out of such group activities. This discrimination adversely affects on-going socialising processes. The child may feel frustrated, dejected and neglected
- ii. The social stigma attached to the handicap interferes with the normal peer group relationship
- iii. Pity shown by parents and friends lowers the child's self-esteem. Social attitudes like the belief that a "crippled body has a crippled mind" gives rise to a wrong self-image
- iv. Extreme aggression and temper tantrums are quite common among such children. Loving care and proper training to be independent and self-reliant are the basic needs of all such children
- v. The parents, attitude should be to help the child give his/her best rather than "do things for them". Parents often hold themselves responsible for their child's handicap and become over indulgent. As time passes the child starts demanding and accepting help and stops making efforts to be independent and self-reliant.

### c. Educational Needs

Facilities should be provided for intellectual development, academic ability and facilitating the child's total adjustment to limitations

- i. These children should be taught to be self-reliant, initiative-oriented and able to make choices
- ii. They should be taught how to use the different parts of the body
- iii. Teachers ought to see that they develop a workable self-concept
- iv. The school must develop creativity in the children with reference to art, rhythm, music, drama, social experience etc. and the opportunity for personal development must be provided.

The following physical facilities may be provided in schools:

- i. A short ramp on step to enable children with wheel chairs or crutches enter the building
- ii. Addition of a hand bar by the side of the water tap, in a toilet or near a section of the blackboard, if the school has this
- iii. Special classrooms are located in the ground floor normally for those with orthopaedic disabilities where special equipments are provided. eg. standing tables, parallel bar, relaxation chairs etc.
- iv. Arrangement of desks so as to make room for the wheel chair to move
- v. Modification of furniture to provide for the comfort of the child with braces.
- vi. Rubber mat over slippery sections of the floor within the classroom. Problem of children having poor hand coordination can be solved by taping paper to the desk
- vii. Providing holders for books
- viii. Adjusting seats so as to turn to the sides so that the child with braces can sit more easily
- ix. Providing foot rests.

### Let us do



*Make a visit to the institution for orthopedically handicapped and list out the facilities provided for them.*

### Check your progress

1. What are the different types of impairments in limbs?
2. List out the characteristics of children with missing limb.
3. Explain the special needs of children with affected/missing limb.

**B. Visually Impaired**

Have you noticed persons who are blind? How are they different from others?

- .....

Is there any provision in the Indian currency which helps a visually handicapped identify the denomination?

- .....

Let us discuss this in detail.

Visual handicap is defined in terms of visual acuity, visual field and visual efficiency.

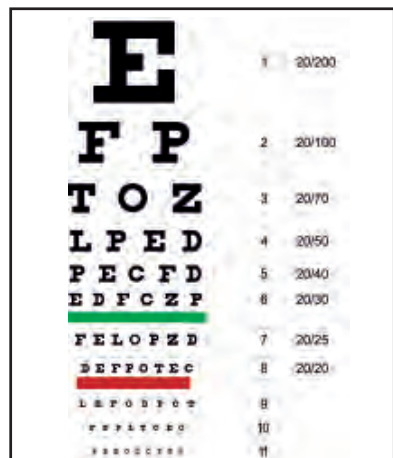
Visual acuity is the ability of the eye to see distant objects clearly. The visual field is the amount of side to side vision. Visual efficiency means how well one can use one’s visions. This means how visual information is processed, analysed and interpreted in the brain.

Visual impairment is assessed using Snellen chart, developed by Hermann Snellen. The Snellen chart is a measuring device used to determine an individual’s visual acuity. The chart contains eight rows of letters of the alphabet in graded sizes. The chart is constructed so that a person reading the figure on the chart at a distance of 20 feet corresponds to what a normal eye sees at 20 feet who is said to have 20’/20’ vision.



**Do you know!**

**Hermann Snellen** was a Dutch ophthalmologist who introduced the Snellen chart to study visual acuity (1862). He did research on astigmatism, glaucoma and other eye diseases, as well as research on correction of visual acuity using eyeglasses and ophthalmological surgery.



A person with 20'/20' vision and both eyes working in a coordinated fashion is considered to be normally sighted. Children whose visual acuity is between 20/200 and 20/70 in the better eye with the best corrective means are considered as partially blind. Individual who have low visual acuity are or who are visually limited may be legally blind that is visual acuity 20/200 or less.

### Characteristics of Visual Impairment

The general characteristics of blind or partially blind people are:

- a. The eyes may be red, watery, sensitive to light, blinks more frequently
- b. They complain about headache
- c. They place head close to reading materials
- d. They move head forward and backward while looking at distant objects
- e. They face problems of social and personal adjustment because of their inferiority feeling
- f. They have restricted mobility
- g. Problems in understanding abstract concepts
- h. They have poor eye – hand coordination.

### Causes of Visual Impairment

Visual impairment may be caused due to congenital and developmental disorders, general diseases, deficiencies and injuries, accidents and chemicals.

#### i. Congenital and Developmental Disorders

Congenital and developmental disorders are the major causes of visual impairment. Their eyes do not develop at all, eye balls abnormally small, congenital cataract due to rubella infection etc. Sometimes there is a fibrous mesh behind the lens, it is caused due to exclusive use of oxygen on premature babies while in incubators.

#### ii. General Diseases and Deficiencies

Malnutrition is the cause of visual impairment especially deficiency of vitamin A, vitamin B1, B2, C and D. Infections of the mother such as German measles, syphilis, gonorrhoea etc. leads to blindness of the child. Chronic diarrhoea is a cause of blindness in rural India. Hypertension, diabetes and kidney disease cause visual impairments.

#### iii. Injuries, Accidents and Chemicals

Injuries, motor accidents, blow to the head, burns, fire crackers, explosives, industrial hazards etc cause blindness. Chemical disturbance on ingestion of poisonous substances, methyl alcohol, dye and chemicals lead to visual problems

### Educational Needs

Visually handicapped children can be educated in the regular class. The curriculum should be the same. The visually impaired child receives the information predominantly from touching and hearing. Skill development facilitates better learning. The education includes:

- a. Training to do their daily routine jobs like washing, toileting, cleaning, clothing, eating etc.
- b. Special curriculum which includes plus curriculum. This gives some training in mastering basic academic skills. Areas of plus curriculum include the



**Do you know!**



#### Louis Braille

Louis Braille was the inventor of the Braille system. He became blind at the age of three in an accident. He developed a mastery over that blindness .



teaching of Braille, use of equipments like raised numeral watches, calculators, low vision aids magnifiers, electronic magnifiers which run on the printed page and the image is enlarged and projected on to a monitor in a small video camera, audio – recorded materials, sonic glasses, micro computer and computer Braille transmitter, optacon, kurzweil reading machine etc.

- c. The visually impaired have to develop orientation and mobility skills. This should be based on the sense of hearing, touch, smell, taste to be developed by using different techniques such as guide dog, Hoover cane, ultrasonic echolocation devices, safety techniques etc.



**Do you know!**

Hoover cane is a foldable white stick with red band that helps the blind to move around freely.

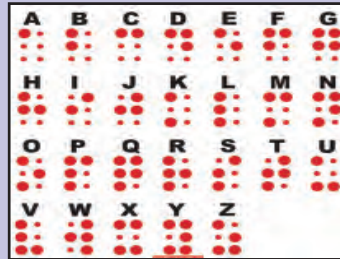
Ultra sonic Echolocation Device is an electronic device which guides the blind to locate things with sounds.



### Do you know !

**Braille System:** Braille is the written language for blinds. This consists of a perceptual unit containing raised dots that symbolize alphabets. These Braille characters are embossed in lines on paper and read by passing the fingers lightly over the manuscript.

**Sonic glasses:** These glasses send out ultra-sonic sound waves. These sound waves hit objects; they are changed into sounds they can be heard by the blind individual as echoes. The individual is trained to hear echoes to determine how far or near the objects is.



**Optacon:** It is a small machine held in the hand which translates letter by letter images from the scanner into tactile stimulus.

**Kurzweil:** It is a reading machine which translates printed text material into aural English. It is able to deliver the speech message at the normal human speech rate.

The special provisions provided to children in schools may include:

- Pupils with partial visual impairments should be asked to sit close to the black board
- Up to two point, the larger the print, the better it is for pupils to see
- Blue and white stencils, multi coloured chalks and grey pencils are difficult to see
- A normal classmate can help a visually impaired child and assist him in drills, taking notes, tutoring him, creating awareness of what is happening
- The teacher should express acceptance, praise and encouragement, whenever these children accomplish something.

### Check your progress

1. Write short notes on;
  - (a) Visual acuity
  - (b) Visual field
  - (c) Visual efficiency
  - (d) Snellen's chart

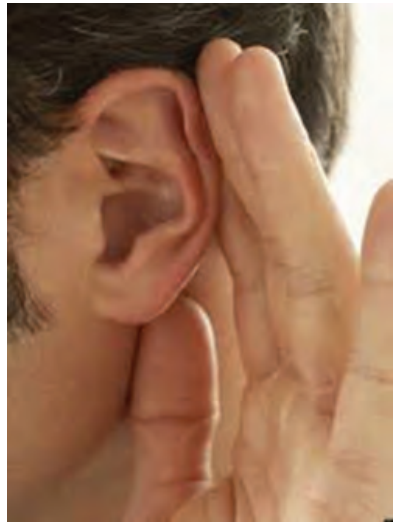
2. List the characteristics of blind people?
3. How visual impairment can be classified?
4. Visual impairment is assessed using .....

**C. Hearing Impaired**

Deafness, hearing impairment, or hearing loss is a partial or total inability to hear. The degree of hearing loss is indicated in decibels (dB), which is a measure of loudness.

Hearing loss may be mild, moderate, severe or profound as shown below. It can affect one ear or both ears and leads to difficulty in hearing, conversational speech or loud sounds.

- Mild hearing loss (26-45dB)
- Moderate hearing loss (46-65dB)
- Severe hearing loss (66-90dB)
- Profound hearing loss (greater than 90 dB)



‘Hard of hearing’ refers to people with hearing loss ranging from mild to severe. They usually

communicate through spoken language and can benefit from hearing aids, captioning and assistive listening devices. People with more significant hearing losses may benefit from cochlear implants.

‘Deaf’ people mostly have profound hearing loss, which implies very little or no hearing. They often use sign language for communication.

**Types of Hearing Loss**

The three primary types of hearing loss are

- a. **Conductive hearing loss:** A hearing loss is considered conductive when there is an obstruction to the conduction of sound through the outer or middle ear, either the sound is blocked or the structures of the ear fail to convey the noise.
- b. **Sensory neural hearing loss:** This loss exists when there is damage to the hair cells within the cochlea, they no longer sense the fluid movements within the inner ear and thus no signal is sent to the brain.
- c. **Mixed hearing loss:** When there is a both conductive and sensory-neural hearing loss in the same ear it is classified as mixed hearing loss.



## Causes of Hearing Loss and Deafness

The causes of hearing loss and deafness can be divided into two viz. congenital causes and acquired causes.

- a. **Congenital causes:** Congenital causes lead to hearing loss being present at or acquired soon after birth. Hearing loss can be caused by hereditary and non-hereditary genetic factors or by certain complications during pregnancy and childbirth, maternal rubella, syphilis or certain other infections during pregnancy, low birth weight, birth asphyxia (a lack of oxygen at the time of birth), inappropriate use of drugs during pregnancy, and severe jaundice in the neonatal period.
- b. **Acquired causes:** Acquired causes lead to hearing loss at any age. Infectious diseases such as meningitis, measles and mumps, chronic ear infection, collection of fluid in the ear, head injury or injury to the ear, excessive noise, age-related hearing loss, wax or foreign bodies blocking the ear canal can cause hearing loss at any age.

## Educational Approaches for Hearing Impaired

The educational approach should be selected according to the severity of hearing loss. There are three primary communication methods used in the education of the deaf children:

1. **Oral/aural:** An approach to deaf education that emphasizes auditory training, articulation ability and lip reading.
2. **Total communication:** A method of interaction with individuals with language impairments using a combination of spoken language and signs which includes sign language, voice, finger spelling, lip reading, amplification, writing, gesture and visual imagery.
3. **Bilingual/bicultural (bi-bi):** This is a philosophy of teaching that recognizes the authenticity and importance of both hearing and deaf cultures and that incorporates the elements of both in the class room.

In these methods there may be techniques that are used to aid the child with a particular method such as:

- i. **American Sign Language:** This is the manual language used by the deaf community
- ii. **Cued speech:** A manual used by some deaf children and their teachers/parents, which uses hand shapes near the mouth to help make lip reading easier.

- iii. **Lip reading (speech reading):** Decoding the language of a speaker by paying close attention to the face and mouth without being able to hear the speaker's voice.

Apart from these different methods and techniques, there are different places and settings that the deaf or a child with hearing impairment can learn such as:

1. **Main streaming:** The practice of incorporating children with disabilities into the regular class room instead of keeping them apart in special classes.
2. **Residential schools:** These are schools designed for deaf individuals to live and learn in a school where deaf people and deaf culture assemble everyday.

**Check your progress**

1. How do you differentiate 'deaf' and 'hard of hearing'?
2. What are the causes of hearing loss?
3. List the educational needs of the hearing impaired.

**Let us do**



*Make a visit to a school for the deaf and understand the educational facilities available for such children and prepare a report.*

So far we discussed the issues related to some of the social problems and physical disabilities. Those intellectual deviance also face problems, of which the mentally retarded suffer the most.

**8.5 Mental Retardation**

In this section we are going to learn about children whose intelligence is below the normal intelligent quotient (IQ).

Can you state the normal IQ of an individual?

- .....

According to the American Association on Mental Retardation (AAMR), Mental Retardation is the “sub-average general intellectual functioning, resulting in or associated with concurrent impairments in adaptive behaviour and manifested during the developmental period”.

The intelligence possessed by a normal individual is said to be between 90 and 110 IQ. Some children possess an intelligence less than average intelligence and they are said to be mentally retarded or mentally handicapped. The abbreviation IQ stands for

intelligence quotient. It is a measure of intelligence. The formula used to calculate the IQ is  $\frac{MA}{CA} \times 100$ . MA stands for mental age and CA for chronological age. Mentally retarded children have lower mental age than their chronological age.

World Health Organisation (WHO) gave the following classification of mental retardation.

- |    |                             |      |          |
|----|-----------------------------|------|----------|
| a. | Mild mental retardation     | I. Q | 50 – 70  |
| b. | Moderate mental retardation | I. Q | 35 – 49  |
| c. | Severe mental retardation   | I. Q | 20 – 34  |
| d. | Profound mental retardation | I. Q | Under 20 |

**a. Mild mental retardation:** Mild mental retardation is roughly equivalent to what used to be referred as the education category of “educable”. As a group, people with this level of mental retardation typically develop social and communication skills during preschool years (ages 0-5 years) have minimal impairment in sensory motor areas. By their late teens, they can acquire academic skills up to approximately the sixth-grade level. During their adult years, they usually achieve social and vocational skills adequate for minimum self-support, but may need supervision, guidance and assistance, especially when under unusual social or economic stress. With appropriate support, individuals with mild mental retardation can usually live successfully in the community, either independently or in supervised settings.

**b. Moderate mental retardation:** Moderate mental retardation is roughly equivalent to what used to be referred as the educational category of “trainable”. Most of the individuals with this level of mental retardation acquire communication skills during early childhood years. They profit from vocational training and with moderate supervision can attend to their personal care. They can also benefit from training in social and occupational skills but are unlikely to progress beyond the second grade level in academic subjects. They may learn to travel independently in familiar places. They adapt well in the community usually in supervised settings.

**c. Severe mental retardation:** The group with severe mental retardation constitutes 3% - 4% of individuals with Mental Retardation. During the early childhood years, they acquire little or no communicative speech. During the school-age period, they may learn to talk and can be trained in elementary self-care skills. They profit to only a limited extent from instruction in pre-academic subjects, such

as familiarity with the alphabet and simple counting but can master skills such as learning sight reading of some “survival” words. In their adult years, they may be able to perform simple tasks in closely supervised set.

**d. Profound mental retardation:** The group with profound mental retardation constitutes approximately 1% - 2% of people with mental retardation. Most individuals with this diagnosis have an identified neurological condition that accounts for their mental retardation. During the early childhood years they display considerable impairments in sensory motor functioning. Optimal development may occur in a highly structured environment with constant aid and supervision and an individualised relationship with a caregiver.

### Characteristics of Mental Retardation

The general characteristics of mentally retarded children are:

- a. **Slow reaction :** They respond slowly to what others say, to what happens in their surroundings. Sometimes they do not respond at all.
- b. **Absence of clarity:** They cannot express clearly their thoughts, needs and feelings.
- c. **Inability to learn fast:** They cannot learn anything new and as different as easily as others.
- d. **Inability to understand quickly:** They cannot understand easily what they see, hear, touch, smell or taste.
- e. **Inability to decide:** They cannot take even small decisions.
- f. **Lack of concentration:** Some mentally retarded children cannot give continuous attention to one person or one activity.
- g. **Short temper:** Some find it difficult to control their feelings.
- h. **Inability to remember:** Some can remember only for a short time of what they are told.
- i. **Lack of coordination:** They have difficulty in sucking, chewing or eating, use of hands or moving from place to place.
- k. **Distinguishable physical appearance:** Severely retarded and profoundly retarded children may have distinguishable physical appearance.

### Let us do



*Discuss with your classmates and prepare a table on the characteristics seen in mentally retarded children.*

## Causes of Mental Retardation

- a. **Chromosomal and genetic disorders:** One of the most visible conditions associated with mental retardation is chromosomal and genetic disorders. Down's syndrome is the best known of the chromosomal disorders producing mental retardation.
- b. **Maternal infection:** Mothers who contract rubella or German measles during the first three months of pregnancy may produce children who show symptoms of disorders and retardation.
- c. **Maternal age:** Evidences indicate that older mothers have an increased risk of producing mentally disabled children.
- d. **Maternal nutrition:** Malnutrition of the mother during pregnancy leads to different mental as well as physical defects in the child.
- e. **Radiation:** The effects of radiation during pregnancy have been found to cause damage to the foetus. The child exhibits one or more abnormalities such as growth retardation, mental retardation etc.
- f. **Birth complications:** Birth complications such as premature and post mature delivery, prenatal anoxia, forceps delivery etc may cause brain damage of the child and thereby mental retardation.
- g. **Brain injury and brain diseases:** Head injury during pre-natal and post-natal life or diseases of the brain leads to brain damage and thereby mental retardation.
- h. **Lead poisoning:** Lead poisoning is permanently and progressively toxic to central nervous system.

## Prevention and Care of Mental Retardation

### Preventive Measures

- a. Avoid marriage between men and women who have close blood relationships
- b. Proper pre-natal care including immunisation, good diet and medical checkup should be provided
- c. Delivery attended by a trained person, preferably hospital delivery
- d. Proper weaning food for the baby will reduce the incidence of mental retardation to a considerable extent
- e. Genetic counselling and voluntary birth control – there are tests to identify parents who have chromosomal anomalies such parents may be counselled about the risk

- f. Proper care of the mother and child
- g. Provision of public education eg. Information about correlation of mother's age and mongolism, avoiding children after forty.

### **Educational Provision**

- a. There should be proper grouping and classification of mentally retarded children on the basis of the degree of the severity of their retardation
- b. The 'educable' should be educated and the 'trainable' should be trained. Those who are neither easily educable or trainable should be cared for and efforts should be made to train them for managing their essential day-to-day affairs
- c. Schools should provide the essential environment for maximum development of the abilities and capacities of all mentally retarded. Curriculum, methods of teaching and tools for evaluation should be adjusted according to the individual's needs
- d. There should be provision for specially trained teachers, able to utilize new materials and techniques for their education or training. They should be able to deal with the special problems of these children, understand them sympathetically and help them to grow with their difficulties
- e. In these schools greater emphasis should be placed on co-curricular experiences and the children should be provided opportunities for learning the ways of their emotional and social adjustment, imbibing moral virtues and desirable personal habits
- f. These institutions should have the provision for vocational education and training. The mentally retarded should be trained for manual work, crafts and specialised vocations according to their abilities.

### **Let us do**



*Conduct a visit to such a nearby institution and identify the different types of retardation. Prepare a note on the educational facilities given to them.*

### **Check your progress**

1. Write down the classification of the mentally retarded.
2. List out the causes of mental retardation.
3. How is IQ calculated?

In addition to the above mentioned issues few diseases can also create hindrance in human development. Among them sexually transmitted diseases need special attention.

## 8.6 Sexually Transmitted Diseases (STD)

What do you understand from the given news?

- .....

### STD SPREAD IN CERTAIN AREAS OF THE CITY.

Mumbai	Sexually	bacterial, viral, yeast and	some are also transmitted by
Transmitted diseases are also	called venereal diseases which	are mainly transmitted	non sexual ways like blood
are caused by a variety of		through sexual content. But	transfusion, from mother to
			child etc.

Sexually Transmitted diseases, also called venereal diseases, are caused by a variety of bacterial, viral, yeast and protozoan infections. They are mainly transmitted through sexual contact. But some are also transmitted by non-sexual ways like blood transfusion, from mother to child etc.

Different types of STD's have different symptoms and treatment. The commonly seen sexually transmitted diseases are AIDS, Syphilis, Gonorrhoea etc.

### A. AIDS

Everyone is familiar with the word AIDS. What is AIDS? What is the expansion for it?

- .....

AIDS or Acquired Immunity Deficiency Syndrome is considered as the deadly epidemic of modern times. It is a viral syndrome, which destroys the body's immune system. The patient may be susceptible to all kinds of infections and diseases.

#### Causative Organism

Can you recollect the name of virus which causes AIDS?

- .....

Human Immunodeficiency Virus or HIV is the organism which causes AIDS.

Observe the Figure 8.1



#### Do you know!

According to National AIDS Control Organisation (NACO) there are more than 2 million people living with AIDS in India.

**Incubation period:** The incubation period for the disease is very long. The person with HIV does not get AIDS immediately. They may develop AIDS within about 10 years.

**Mode of spread:** The person who has HIV is capable of transmitting the virus to others. HIV is present in blood and body fluids like saliva, semen, vaginal and cervical secretions, urine, tears, breast milk etc. But it is transmitted from one person to another only through:

- a. Unsafe sexual contact
- b. Receiving of blood or blood products from infected persons.
- c. Use of non-sterile needles
- d. Sharing of needles among drug users.
- e. From mother to child during birth or through breast feeding

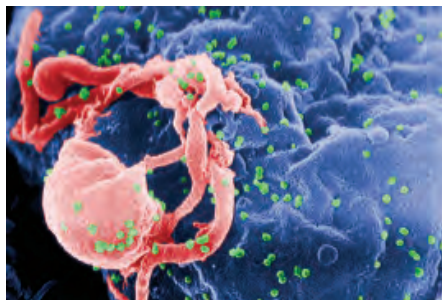
**Symptoms:** Majority of people who are infected with HIV are unaware that they are infected since the symptoms appear very late. The symptoms of AIDS are:

- a. Frequent fever and cough
- b. Nausea and vomiting
- c. Rapid weight loss and excessive sweating
- d. Breathing difficulties and unexplained fatigue
- e. Diarrhoea
- f. Memory loss
- g. Vision problems
- h. White spots or sore in the mouth

The body is unable to fight all the infections and diseases and this leads to the death of the person.

### **Diagnosis of AIDS**

Laboratory tests are generally performed for the diagnosis of AIDS. The widely used diagnostic test for HIV is Enzyme Linked Immuno Sorbent Assay (ELISA). HIV positive means that the person has the risk factor for reaching the condition of AIDS. Medical experts suggest that only 10 percent to 30 percent of people who possess HIV actually develop AIDS.



*Figure 8.1*



### Treatment of AIDS

Treatment of AIDS, with anti-retroviral drugs is only partially effective. This can only prolong the life of the patient.

### Prevention of AIDS

Although there is no cure for AIDS, there are many strategies adopted worldwide for the prevention of this disease. Various programs are organised by various agencies to fight the spread of HIV.

In India, the National AIDS Control Organisation (NACO) and other Non-Governmental Organisations (NGO's) are

involved in making people aware of this deadly disease. World Health Organisation (WHO) has many programmes worldwide which help to prevent AIDS. The world AIDS Day is observed on 1<sup>st</sup> December every year.

Some of the measures that can be adopted for preventing AIDS are:

- Testing blood for HIV before blood transfusion
- Ensuring the use of disposable needles
- Sterile instrument in hospitals, laboratories, clinics etc
- Control of drug abuse and sharing of needles
- Advocating safe sex and use of condoms etc.
- Awareness programmes to change the attitude and behaviour of the people through mass media, theatre, street play etc.
- Community based intervention among risky population.

Apart from the initiatives for prevention of AIDS, the victims should be given opportunity to lead a normal life. In order to rehabilitate AIDS victims we need to provide them with jobs and status in the community. Occupational therapy can help them re-engage in life, particularly through vocational rehabilitation



#### Do you know!

The red ribbon is a symbol of solidarity with HIV positive people and those living with AIDS



### Let us do



*Observe the illustration given below and write a note on the ways through which the virus enter into our body. Prepare a table on the ways of transmission and non transmission of the virus too.*



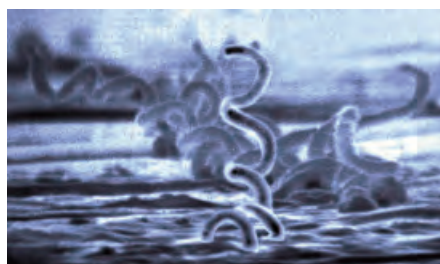
*"Prevent AIDS": Pprepare a script for a role play on this motto and conduct it in your school.*

### B. Syphilis

Syphilis is a chronic infectious sexually transmitted disease.

#### **Causative Organism:**

Syphilis is caused by a type of bacteria known as spirochete. The bacteria usually die within few seconds outside the human body. Observe Figure 8.2



*Fig. 8.2 Spirochete*

#### **Incubation Period:**

The incubation period is from 10-90 days.

#### **Mode of Spread:**

It is mainly spread through:

- a. Sexual Contact
- b. Blood Transfusion
- c. Mother to Foetus

Syphilis usually progresses through 3 stages of increasing severity, if left untreated

**a. Primary stage:** Dull red spots appear on the vaginal wall, cervix, penis, scrotum, anus, tongue, lips or throat which may develop into a hard crusty painless sore called chancre. This may disappear but the disease progresses to the next stage if not treated.

**b. Secondary stage:** After a period of 1 week to 6 months reddish patches appear in the mouth and around genitals. Other symptoms include non-itching rash, sore throat, fever, headache and weight and hair loss. This is the most infectious stage. If untreated this leads to the next stage.

**c. Tertiary stage:** The patient develops ulcers in the eyes, liver, lungs or digestive tract. Paralysis, dementia or fatal heart damage can also result. A child born to a mother having syphilis may be born blind, deaf or deformed or may die soon after birth.

### Treatment of Syphilis

Penicillin is the best treatment for syphilis. Though existing damages cannot be reversed, it can prevent further damage.

## C. Gonorrhoea

Gonorrhoea is a highly infectious disease that can affect the genitourinary tract, genitals, fallopian tubes, rectum and cervix. It may also affect the mouth, throat and eyes.

**Causative organism:** Gonorrhoea is caused by the bacteria *Neisseria gonorrhoea*. (figure 8.3)

**Mode of spread:** Gonorrhoea is mainly spread through sexual contact.

**Incubation period:** The incubation period is from 2-7 days.

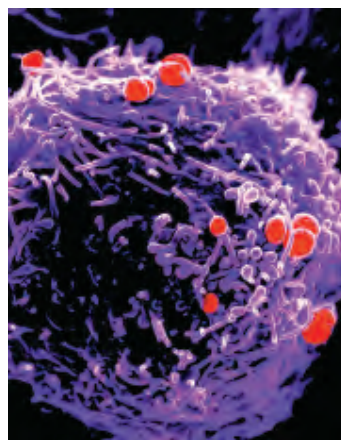
**Symptoms:** The symptoms in men and women may vary.

### *In Men:*

- Thick yellowish green discharge from penis
- Inflammation of the tip of the penis
- Burning sensation during urination
- Appearance of pus or blood in the urine.

### *In Women:*

- Yellowish green discharge from vagina
- Pain in the abdominal area
- Burning sensation during urination



*Figure 8.3*  
*Neisseria gonorrhoea*

- Fever
- Abnormal menstrual bleeding.

If gonorrhoea is left untreated, it will result in sterility, heart disease and arthritis.

**Treatment:** Gonorrhoea can be cured by antibiotics, the most effective of which is Penicillin G.

### Prevention of Syphilis and Gonorrhoea

The prevention strategy for syphilis and gonorrhoea should include awareness programmes regarding their transmission. Attitudinal change and behavioural modification can reduce incidence. Proper clinical diagnosis and treatment are necessary.

### Let us do



*Conduct an interview with a medical practitioner regarding the prevention of STD's and prepare a report*

### Check your progress

1. Expand
  - (a) AIDS
  - (b) STD
2. Causative organism of
  - (a) AIDS
  - (b) Gonorrhoea
  - (c) Syphilis
3. List out the symptoms of
  - (a) AIDS
  - (b) Syphilis
  - (c) Gonorrhoea

### Let us sum up

Our society faces many problems, among which some of them have an adverse effect on human development. In most cases children are the victims. This can be due to lack of enough opportunities for their development. In our society discrimination against the girl child like female infanticide, female foeticide, early marriage and dowry system is very common. Child labour is another issue which needs special attention. This may be due to poverty, large family size, illiteracy, ignorance of parents etc. We can adopt certain legislative and educational measures to prevent child labour. Juvenile delinquency is the problem mainly associated with the adolescents. The Juvenile Justice Act 2000 ensures the care, protection and development needs of the children who are either neglected or have come into conflict with law constituting delinquency.

In India, a lot of people are suffering from major physical disabilities. Such disabilities include impairments in limb/missing limb, visually impaired, hearing impaired and mentally retarded. Proper care and education should be provided to such categories to overcome their difficulties. Sexually transmitted diseases are another important obstacle in the path of human development. AIDS, syphilis and gonorrhoea are the common among them. Creating awareness among the people is the most effective strategy to reduce the gravity of the situation.

### Learning Outcomes

- Appraises the status of a girl child by citing examples
- Examines the causes and consequences of child labour and suggest preventive measures to prevent child labour.
- Recognises the offences, causes, characteristics and rehabilitation of a juvenile delinquent
- Differentiates types of disabilities and identifies the causes, characteristics and needs of the disabled persons by citing examples
- Classifies different types of retardation, recognises the characteristics, causes, prevention and care and needs of mentally retarded
- Evaluates the educational needs of mentally retarded
- Identifies different types of sexually transmitted diseases, symptoms and treatment.

### Evaluation Questions

1. Critically analyse the status of the girl child in our society?
2. Suppose you see a child below 14 yrs working in a hotel. How can you protect him from such a situation?
3. Explain the different needs of children with missing limb?
4. Ramu is a blind child in your class. How can you help him in his education?
5. Complete the table

A	B
(a) Mild mental retardation	.....
(b) .....	IQ 35-49
(c) Severe mental retardation	.....
(d) .....	IQ under 20

6. How do you identify mentally retarded children?
7. Prepare a table on STD  
Hint: (a) Causative organism  
(b) Incubation period  
(c) Mode of spread  
(d) Symptoms
8. Differentiate between conductive and sensory neural hearing loss
9. Rana was caught by a policeman for stealing. Write possible causes that might have led him to do such a crime.

## CHAPTER

# 9

## RESOURCE MANAGEMENT

### KEY CONCEPTS

- 9.1 Resources
- 9.2 Management Process
- 9.3 Decision Making

We all prefer to lead a peaceful, satisfying and independent life. Necessarily, we have to meet our needs and goals to achieve this status. Some of them are our primary needs and others are secondary. Besides, the needs and goals vary from family to family and from person to person. The means of achieving the

same also varies. Even the standards of living of families differ. Why are these such disparities? This is due to the difference in the possession of resources. Let us find out what makes this difference. We shall also examine the ways of proper management of resources.

### 9.1 Resources

What do you need to buy a new dress?

- .....

Similarly we need several abilities and money to pursue higher studies and other resources like knowledge, material things, skills etc. to perform all our activities. Thus, we learn that a lot of things are required to do our day-to-day chores. These are called our resources. Therefore, it can be said that the means used to meet our needs are called resources.

Resources can be defined as anything useful that helps us in meeting our needs. Resources are what we must possess to get what we want.

## Types of Resources

Can you list some of the resources to meet our needs and perform our day to day activities?

- .....

Compare your list with the following list.

- Money, salary, rent, interests from savings, bank account etc.
- Your house, for living and working
- Time
- Energy to do work
- Knowledge, skills and abilities for doing our work, like studying, playing games etc.
- Material goods like land, car, television etc.
- Community facilities like park, hospitals, transportation facilities, communication facilities etc.

When you look at this list carefully, you will realise that there is a difference between resources like money, house, equipments etc. and resources like knowledge, time, skills and abilities. A television will have a fixed cost for everyone i.e. anyone can buy these things at the same price. However, your knowledge or skill can be very valuable for you and your family while it may not be of the same value to others. Your energy is a resource for you and can be used to do any work that you want to. But your energy cannot be used by others to perform what they want to do. Similarly, if your father has the skill of being a good lawyer, it is something which belongs to him and only he can use it. Thus, some resources become a part of an individual and can be used only by that person. The resources possessed and utilised by individuals are called human resources.

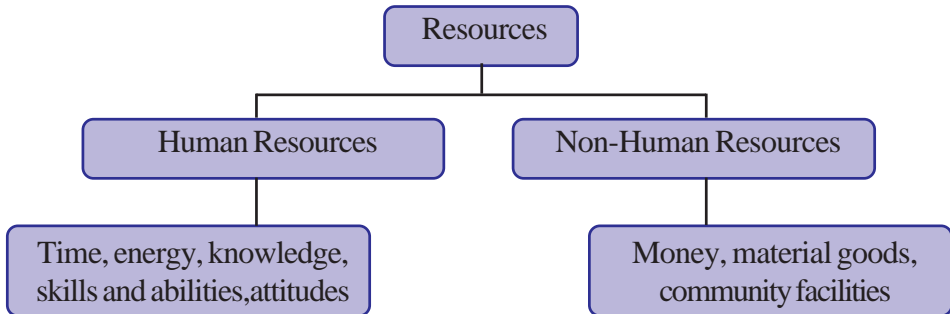
Can you list some examples of human resources?

- .....

Examples of human resources are time, energy, knowledge, skills and abilities. The amount of human resources available will vary from one person to another. Therefore, they can be acquired and cultivated.

At the same time, there are some other resources which are available to everyone. They are more easily recognised than human resources. Some of these resources are community facilities like park, hospitals etc. which are available to all of us. However, it is for us to make use of them properly and take advantage of their uses.

Such resources are known as ‘non-human resources’. Some examples of non-human resources are money, house, land, material goods and community facilities. Non-human resources are external to individuals, but they can be possessed and utilised by them. Observe the illustration given below.



**A. Human Resources**

**a. Time:** Time is a resource which is unique in that it is equally available to all. It is important to remember that the amount of time available to anyone is fixed -24 hours a day. A sense of time is a natural gift but it can be acquired by many through determination and practice. Time has the greatest importance in one’s life as it cannot be extended. It cannot be bought by money. Everyone seems to be pressed for time. Time is the most talked resource in our daily life. Time should be properly distributed between work, sleep, rest and other activities.

**b. Energy:** It is the power of an individual to carry out both physical and mental work. Lack of energy makes one unfit for both mental and physical activity. One should learn to use energy resources wisely, conserving energy wherever and whenever possible. The amount of energy possessed by various people is not the same due to many factors. No two persons can be exactly alike with regard to the energy they possess.

**c. Knowledge:** It is a resource which can constantly be built up. It is essential for all individuals. A student planning to write the exam makes use of his knowledge. Equipped with this knowledge, he is able to perform well in the exam.

**d. Skills and abilities:** These include both inherent and acquired skills. These may range from manual skills such as good handwriting to social skills such as the ability to communicate effectively. It is possible to develop skills through systematic learning and practice.

**e. Attitudes:** These are opinions and feelings which can stimulate or retard an action. These are the least tangible resources possessed by individuals. A



positive attitude helps one to reach success whereas a negative attitude prevents from reaching the goal.

## B. Non-Human Resources

**a. Money:** Money is a valuable resource. It can be exchanged for goods or services, which in turn make life easier and more comfortable. It is not, however, equally available to all and hence its careful management is the major concern of almost every one. Other goods and services required by the family or an individual can be obtained using money.

**b. Material goods:** Material goods are items that may be durable and long lasting like houses and other buildings, vehicles and house hold equipments etc. or they may be consumable items like food, clothing, cosmetics and toiletries. The quality of these resources are limited by the the availability of money.

**c. Community facilities:** Community facilities such as parks, markets, co-operative stores, libraries and hospitals are resources commonly available to be shared by many people. Utilisation of these resources often helps to provide a family with services and goods at a reasonable cost.

### Let us do



*Based on the illustration and description given above prepare a note on human and non-human resources.*

### Characteristics of Resources

Both human and non-human resources have some common characteristics. They are listed below:

- i. Resources are useful:** Resources can be used to fulfill our needs and wants, which is why they are called resources.  
eg. A school provides education, a telephone helps to communicate with other people.
- ii. Resources are limited in supply:** Every resource is limited in supply. We have only 24 hours in a day. Similarly, the salary obtained in cash is also fixed. You have only limited supply of energy. In the same manner, resources like water, electricity, fuel, etc. are all limited in supply. To get maximum benefit, we must lay efforts to conserve them and manage them effectively.
- iii. Resources are inter-related:** When we work, we need resources like time, energy, skill, equipments etc. Without adequate supply of time and skill, we will not be able to use our energy to work properly. Thus it is realised

that all these resources are used at the same time; hence they are inter-related.

- iv. **Resources have alternate uses:** Most resources have alternate uses. eg. We can use our family savings for the purchase of a house, equipment or for higher studies. Thus resources have alternate uses.
- v. **Resources can be substituted:** To achieve the same goal, we can use one resource or another. To reach school or office, we may use our energy and time resources for walking or use money resource for travelling in a bus. Other examples are the use of ready-made or convenience food instead of cooking them at home. Therefore, one resource can be substituted by the use of another resource.

Thus we can see that all resources have similar characteristics. Therefore we should:

- Create and cultivate them to enhance their availability
- Conserve them as they are limited in supply.

### Ways of Maximizing Satisfaction by the Use of Resources

Resources should be utilized so as to get maximum benefit from their use, thereby to get maximum satisfaction. The different ways of maximising satisfaction from the use of resources are listed below:

- i. Identify all available resources
- ii. Make use of only the right amount of resources
- iii. Substitute the more expensive resources by the less expensive ones
- iv. Develop habits that can enhance the use of resources
- v. Cultivate practices to increase the availability of resources
- vi. Learn to share resources
- vii. Preserve/conserves resources: Adopt the 3-R's - Reduce, Re-use, and Recycle resources to maximize satisfaction from their use

### Let us do



*Identify any three human and non human resources available to your family and compare this list with that of your friend's list. Suggest at least two ways by which you can enhance or maximise their utility*

### Check your progress

1. Define resources.
2. What are the characteristics of resources?

## 9.2 Management Process

Examine the following example:

If you want to appear for a competitive exam at a place far away from your present stay, what are the arrangements you have to take?

In this context, you need to do the following:

- enquire details regarding the venue
- plan the mode of journey
- list the things to be done to reach there
- buy the ticket for the date as planned earlier
- collect all things for making the trip comfortable
- check whether you have everything with you, like sufficient money, hall ticket, pen, pencil, calculator etc.
- board the train and reach the exam venue in time.

Can you say how you have planned this trip successfully and how you have collected all the things you wanted for a comfortable journey and reach the exam venue in time? The processes you have used in this case is called management and the things you have used are your resources. You have managed a number of things to ensure that you are able to appear for the exam.

Therefore, we can say that management is a process of using what you have to achieve what you want.

### Significance of Management

Let us now imagine what would have happened if you had not managed as listed earlier? Surely you could have faced a lot of problems. Let us see what are they.

- i. You might have reached the railway station late
- ii. Without reserving a ticket, you may not be able to reach the venue in time
- iii. You could have forgotten to take the hall ticket, money etc.
- iv. You may not be able to write the exam.

Don't you now agree that management is an important tool, even to make a simple task like making your trip a success? Similarly, many other situations in our life also need management. We can therefore say that management plays a significant role in our day-to-day life.

Management helps us to:

- i. Achieve goals
- ii. Utilise our resources properly
- iii. Make our life more systematic

- iv. Avoid wastage of resources
- v. Increase efficiency in work situations
- vi. Achieve a better standard of life.

### Steps in the Management Process

You have now learnt that management is an important aspect of our lives. We have to achieve a large number of goals and satisfy our wants. Whether our goal is more important or less important, we need resources to achieve it. We are also aware that resources are limited. To achieve our goals with limited resources, we have to follow a systematic method. Management involves the following steps:

- |                |               |                 |
|----------------|---------------|-----------------|
| A. Planning    | B. Organising | C. Implementing |
| D. Controlling | E. Evaluating |                 |

#### A. Planning

The first step in management consists of thinking in advance of what needs to be done, that is planning. A simple way to plan is to make a list of all the things that need to be done. Since certain things have to be done first and others later, arrange them in a proper order or in a sequence.

According to Koontz and O'Donnel "planning is an intellectual process, the conscious determination of the course of action, the basis of decision on purpose, facts and considered estimates." Planning is always based on facts and information and not on wishes or feelings. One formulates the ways and means of using information to utilise the resources effectively. A plan should be simple, action oriented, motivating and flexible.

If you take the example of your journey to write the exam at a different place, you have planned all the things that were needed to be done. After that, you collected the things required to write the exam. eg. You first took money from the bank and then went to the station to buy tickets for the journey. Then you packed your suit case containing all the items required, like hall ticket, pen, dress etc. While doing this you had arranged each activity in sequence in which it has to be done.

Besides following a sequence, you also need to make the plan flexible so that you can make changes at the last minute, if needed. eg. Suppose you find that tickets are not available for the train journey, it can be performed in a bus.

Thus, planning involves

- Listing activities
- Sequencing activities, and

- Providing flexibility for any adjustment.

From the above illustration can you say why planning is so important?

- .....
- It is important because main aspects will not be left out while carrying out a task.

Based on planning, organising can be done easily.

In short, during planning think about the following:

- What is to be done?
- Who will do the work?
- How will it be done?
- When will it be done?
- What resources will be used?

## B. Organising

Organising is one of the most crucial steps in management. The success or failure of a plan largely depends on how sound the organisation structure is. Organising is a technique of arranging things in an orderly manner. Organising means assigning duties to individuals. It also involves channeling authority and responsibility. Good relationship between members leads to proper co-ordination of activities, so that all efforts are directed towards the fulfillment of goals. A sound and effective organisation is the answer to most problems and there can be no substitute for a good organisation.

Let us now examine the example given earlier. When you were planning for your journey, you decided to go to the station to purchase tickets, that is, you fixed the responsibility on yourself. eg. When you decided to buy the ticket for your trip, it can be done by yourself or you may seek the help of your brother or your mother for it, that is assigning the task to other people.

While assigning tasks to other people, make sure that they have the time and ability to do that work and are willing to do the same to make the plan successful.

Can you now speak of the importance of organising?

- .....

Organising ensures that:

- all the planned work is done
- there is proper distribution of work
- work gets finished in time
- time, energy, and other important resources are saved and
- your planning is successful.

This implies that since the work gets distributed among two or more persons, it saves time and energy. Since more than one person does the work, all the work gets done and no one is overburdened, that is, there is a fair distribution of work. By doing so, there is no wastage of resources and are also conserved.

### **C. Implementing**

Implementing means putting the plan into action. It is the 'doing process' under management. When a plan has been finalised and resources are assembled and organised, it is ready to be put into action. It is the planner's responsibility to see that conditions are suitable to achieve the goals and directions are properly given to ensure successful performance. This calls for careful observation, guidance and supervision.

In the given example, the implementation part involves the actual performance of the journey and reaching the exam venue to write the exam.

### **D. Controlling**

One of the most challenging tasks during the implementation of a plan is controlling its operation. In the absence of proper control, all efforts may prove to be a failure. Controlling is the art of measurement and application of correction of any activity. If any thing goes wrong with the prior action plan that is planning, organising or implementing, it can be set right during the control process. In order to conform to the plan, knowledge regarding the various activities involved, effective understanding, motivation, leadership qualities, skilfull directions are essential. Implementing the plan requires both individual and group efforts.

Can you look at the earlier example? After writing the exam and preparing for the return journey, you see that the train you have booked has been cancelled. What will you do? Now you have to either perform the journey by bus or postpone the journey to the next day. This arrangement can be termed as controlling.

### **E. Evaluating**

Evaluation is a very essential tool of management. It helps in assessing progress at every stage of the management process and the final results achieved. Evaluation provides checks and tests to know that the plan is turning out as originally planned or whether it needs any modification. Evaluation has to be done from time to time. It helps in judging the strength and over coming weakness of the entire process, so that it is checked and will not be repeated in future. This is also called looking back or "feedback".

In the given example, evaluation is done at the end of the journey to assess whether the plan turned out as originally planned or needed any change while performing journey the next time.

Though you may find that evaluation is listed as the last step, it is done at each stage of management that is planning, implementing, organising, and controlling. You have to evaluate at every stage, so that you need not regret in the end. Since you are constantly evaluating your work, you come to know the defects of your planning, implementing, organising and controlling. Sometimes, you are in a position to bring a change in your planning, implementing, organising and controlling. If you can, you tend to improve end results and complete the process smoothly and successfully. If not, you learn to do a better job in future.

### Let us do



*Explain the management steps you have to follow while conducting a school science exhibition and prepare a report.*

### Motivating Factors in Management

There are three motivating factors in management. These are:

1. Values
2. Standards
3. Goals

#### 1. Values

A value is a moral principle or belief that a person holds about some aspect of life. Can you list some of the values you like to achieve?

- .....

Honesty, punctuality, kindness, sincerity, health, good habits, happiness, etc. are some of the values we try to acquire. It motivates us to behave in a particular way. eg. You value good health that is why you tend to eat nutritious food and also do regular exercise. You value time that is why you try to be punctual for your appointments.

Different people may give importance to different values. No two people may have the same values. Values may remain the same or change in life. eg. Some people value honesty and hence do not tell a lie ever. But they may fall in bad company and then start telling lies. Their value for honesty thus disappears.

New values may be acquired from time to time eg. Some people may start valuing time and do things in time. Others may start valuing independence and therefore get encouraged to do things themselves. This may help them to become independent and also in developing their skills and raising their self esteem.

Can you list some more values and related actions?

- .....

## 2. Standards

Standard is an accepted level of quality. Hence it is a measure of values that compel individuals to perform actions that will give the desired satisfaction. Whenever we do any work, we measure our performance against a standard.

eg. When you draw a diagram, it needs to be drawn neatly and to be properly labelled. It is compared with the one given in the text book.

Some standards are self dictated, while others are demanded or dictated to us by our family and community. Therefore, some standards are flexible and some are rigid. You may have also observed that for the same task, you have a particular standard at a given point of time under certain conditions and another standard at a different time under different conditions.

Let us take an example. You may prefer to select a dress by yourself. If your mother selects for you, you have to be prepared to accept the selection. The selection may not be as per your standard of colour or fashion, but still you have to be prepared to accept them. The standards one holds are a reflection of the values one has and the aim one has for the future.

Some standards affect you alone, others may affect your family and your community. Hence we should be very careful in selecting our standards. eg. When we hold “cleanliness” as our standard, we should not only keep our house clean, but also the places around our house. We should apply the same standard of cleanliness for our house as well as for our community. Throwing garbage from the house on to the street is not a standard of cleanliness.

## 3. Goals

A goal is your aim or objective in life. You have joined this course because your aim is to get a class XII certificate, isn't it? You achieve them within the limits set by your values, standards, and the resources available. To define the term goals we can state that:



Goals are the aims or objectives that we want to achieve and work for. Thus goals grow out of our values, needs and desires. We expect that by accomplishing these goals, we get a sense of achievement, happiness and satisfaction. Just as our values and standards change with time, our goals also keep changing.

Some goals are achieved sooner than the others. Some goals are achieved more easily than the others. Some goals are reached within a span of a few minutes, few hours or few years. Sometimes, certain goals are dropped because they have already been achieved. eg. If you have finished your schooling your goal of schooling is dropped, instead a new goal of joining a college for a degree course is added to take its place.

Can you list some goals of this type?

- .....

### 9.3 Decision Making

If we use the process of management as a tool to lead a harmonious, successful and satisfying life, we have to take correct decisions about the goals we wish to achieve, the standards we want to maintain and the lifestyle we desire. While making decisions, we have to make a choice among many alternatives.

Considering different alternatives is important because then we are sure that we are following the right course of action and have not left out an option which could save our money, time, energy, or social/emotional problems. Hence it is vital to learn how to make correct decisions while solving a problem or reaching a target or tackling a situation. What is the meaning of decision making?

A decision is the selection of a course of action among alternative choices.

eg. If you have missed your school bus, what are your options? You can consider three options.

1. You can wait for public transportation facility
2. Hire an auto rickshaw
3. Return home and ask your father to drop you in his scooter.

You have to select any one of the options to reach the school in time.

Decision making influences the whole management process - planning, organising, implementing, controlling and evaluating. At each step there are problems and situations that call for decision to be taken. In carrying out a plan, a decision for each action of step goes hand in hand, with the review of progress towards result. Decision making directs the way in which things must happen, instead of just letting them happen.

## Steps in Decision Making

Making a decision involves a number of steps. These are:

- a. Identifying the problem
- b. Obtaining information and formulating a possible courses of action
- c. Evaluating the consequences of each alternative
- d. Selecting the best possible course of action.

Let us understand how to apply these steps of decision making by taking an example.

### a. Identifying the Problem

Recognising the problem is the first step in decision making. Indications of the problem may first be noticed as symptoms. These symptoms should be analysed to understand the depth of the problem. Proper assessment of the problem in all respects is needed.

Let us examine the story of Ramu.

*Ramu is studying in the 11<sup>th</sup> standard. Ramu's father is working in a government office. In the middle of the academic year, his father got promotion and is transferred to another district. The family wishes to shift to the new place. But Ramu wishes to continue in the same school. But his father decides to shift Ramu's education to the new place where he got the transfer to. The underlying problem is the shifting of Ramu's education to the new place and selecting a new school. While identifying the problem, it is important to be clear and unemotional. Ramu's family should not overlook the benefits of the present school. The teaching faculty of the present school is excellent. In the light of the above situation, keeping in mind the needs, desires and values of Ramu's family, we should now help them move to the next step of decision-making.*

### b. Obtaining Information and Formulating a Possible Course of Action

After identifying the problem or situation, the second step is to formulate a possible course of action. This should be based on all available knowledge and information. No decision should be made until all aspects of information have been gathered and analysed. Imagination, reference etc. will help to obtain information about problems.

*Ramu's family should try and find out everything about the schools available in the new place. To get all the information, the family can seek the assistance of the employees of the office where Ramu's father got transferred to or use some other method. Ideally, Ramu's family should explore all possible alternatives among the resources. This will also help them set certain limits regarding which alternatives can be thought of.*

### **c. Evaluating the Consequences of Each Alternative**

The decision maker having examined all the information related to the problem must then look into the future to choose one alternative over the other. To make it easy, one has to consider two to three alternatives at a time and as one is rejected a new one should be added for consideration and evaluation. Each alternative should be clearly analysed for its consequences. The desirable and undesirable consequences of each alternative should be considered to select the best choice. *Ramu's family should consider all possible consequences if he is admitted to one of the schools they have listed in relation to his present school. All desirable and undesirable consequences like the quality of education, the effect of change of school on his studies etc. should be considered in each case.*

### **d. Selecting the Best Course of Action**

After examining all the alternatives based on the knowledge and information available, the decision maker must choose one alternative. Select the most appropriate and promising alternative from among all other, namely the one that will give the best result, in terms of cost, energy, time, money etc. It is a difficult task. It requires proper assessment of the values of each alternative. This involves imagining in detail what the result of an alternative could be. This imaginative process leads to deliberation on the weighing of values to discover and choose the best course under the circumstances.

*In the above example, in the end, Ramu's family decided to drop the shifting of Ramu's education, because they could not find a school which satisfies the educational needs of Ramu. Hence Ramu's family decided to continue his education in the present school and find out a suitable hostel for his accomodation.*

### Check your progress

1. Explain the steps in the management process.
2. List the motivating factors in management.

### Let us sum up

Resources can be defined as anything useful that helps us in meeting our needs. Every resource is limited in supply. For leading a peaceful, satisfying and independent life these have to be managed successfully. Resources can be of two types-human and non human. Time, money, abilities and skills, knowledge and attitude are human resources. Money material goods and community facilities constitute non human resource. To get maximum benefit, we must lay efforts to conserve them and manage them successfully. Management involves five steps - planning, organising, implementing, controlling and evaluating. Values, standards and goals are the three motivating factors in management. Making a decision involves a number of steps. They are identifying the problem, obtaining information and formulating possible course of action, evaluating the consequences of each alternative and selecting the best possible course of action.

### Learning Outcomes

- Discriminates the types and characteristics of different resources.
- Illustrates steps involved in management process by citing examples
- Illustrates steps in decision making by citing examples.

### Evaluation Questions

1. Classify the following into groups and name the group.  
Time, money, energy, skills and abilities, material goods, knowledge and community facilities.
2. Critically analyse the role of controlling and evaluation in the process of management.
3. Resources have certain characteristics. Justify.
4. Explain the steps in decision making with examples from your life.
5. Evaluate the significance of values, standards and goals in management.
6. What are the ways of maximizing satisfaction by the use of resources?
7. Explain the steps in decision-making with an example.

## MANAGEMENT OF TIME, ENERGY, MONEY AND SPACE

### KEY CONCEPTS

- 10.1 Management of Time
- 10.2 Management of Energy
- 10.3 Management of Money
- 10.4 Management of Space

In today's world, the management of human and non-human resources has rapidly become a matter of great concern. Therefore everyone needs to remain alert to new and better ways of managing these limited resources. The wise use of such resources helps in the smooth execution of our day-to-day activities. Let us discuss

how we can manage time, energy, money and space effectively.

### 10.1 Management of Time

Sometimes your teacher may ask you 'Why didn't you complete your project?' Your usual answer may be as follows. 'I didn't get enough time teacher'. Why don't we get enough time for completing our day to day activities?



#### Do you know!

Time is unique among all resources.



As you studied in the previous section, time is a human resource. We all know that, a day has twenty four hours. Within this limited period we have to perform a lot of activities like studying, completing projects, assignments, seminar reports etc. The fact is that everyone has the same amount of time at their disposal. Time is a limited resource and it is not possible to regain lost time.



Is it possible to make the best use of time spent on each work? Let us discuss.

By proper planning and organisation of work and ensuring the quality of work, we can make the best use of time. We may distribute time equally into eight hours of work, eight hours of personal living and eight hours of rest and sleep.

The time spent on various activities by each family varies. Two individuals or families are never identical in using time. Factors of this difference may be the socio-economic status of the family, age and sex of family members, social environment, whether it is a rural or urban family etc. So we should make the best possible use of this limited resource to complete all the work and achieve our goals in a given period of time.

*Suppose your sister is getting married on September 13<sup>th</sup> and your exams begin on 14<sup>th</sup> September, how will you manage your time for performing well in your exams? Record your time management in the diary.*

Managing time entails both making plans and their implementation. Efficient management of time permits a person to enjoy life, remain relaxed and productive whereas inefficient management of time leaves one tense and worried. Such people are likely to be less productive and are always in a hurry to catch up with their jobs. Thus a time plan helps you finish your work on time.

A time plan can be defined as an advance plan of activities to be performed in a given period of time. eg. Suppose you have to submit your seminar report in the class tomorrow, but when you reached home you find that your mother is not well and you have to give her medicine at alternate hours, help your younger brother in his studies apart from your work. How will you manage this situation with the limited available time?

- .....  
Examine the following options given below.

Option 1. *Give medicines to mother, help your younger brother in his studies and the next day request your teacher to give you one more day to submit the seminar report.*

Option 2. *You list the tasks you have to perform and prioritize them. Give medicine to your mother, do your assignment and along with that help your brother in his studies and complete the seminar report.*

Analyse the above two options and find out which one is more preferable, why?

- .....

In the first option you did not list all the activities and prioritise them. So you could not perform it successfully.

In the second option you made a time plan in your mind; so you could perform your work successfully.

The successful functioning of a time plan lies in its practicability. So it may be concluded that a time plan helps one to complete all assignments on time and also helps to find time for rest and relaxation. In order to make a practical time plan one should observe the following steps.

- a. List all those activities to be performed during a given span of time:** The activities can be of different types.
  - i. Daily activities include studying, eating, bathing, exercising, playing etc.
  - ii. There can be weekly activities like visiting friends and relatives, going to the library, going for a movie etc.
  - iii. Seasonal activities like shopping, attending religious festivals etc.
 (So it is essential to practise to make a list of items you want to purchase or the activities you want to perform. This will ensure that you do not miss out anything.)  
 In order to synchronise all the activities make a list and prioritise them.
- b. List all those activities which have to be done at a specific time:** There are some activities which have fixed time. eg. School and office timings. Particular time must be allocated for such activities and other activities can be adjusted accordingly.
- c. Estimate the time required for each activity and prepare a tentative plan:** It is of great importance to keep enough time for performing activities. If the time for doing an activity is more than what you have estimated then it will result in an impractical plan. Reasonable estimates of time required for completing a task need to be given to the time plan. There will be no purpose served if adequate time is not allowed for each activity.

- d. **Adjust other weekly and seasonal activities in to the above time plan:** Mark your fixed time activities on the time plan:
- e. **All other activities can be adjusted in the time provided in the plan:** It is always advisable to group together related activities. This will help in accomplishing number of tasks in a given time.

Can you list out the activities you can do at a time simultaneously?

- .....

- f. **Check the time plan:** Time plan must ensure accommodation of all the required activities. In case some difficulty arises due to shortage of time, then one can either delete some activity or dovetail a couple of activities to catch up with the lost time.
- g. **Controlling the time plan:** It aids in the smooth execution of the plan. It is essential to check ongoing activities. Whether the time plan drawn up is a mental one or is written down, it must be workable. Otherwise it is of no use. Emergencies, illness, sudden visit of relatives, etc. will test one's ability to adapt the plan as required. One may be able to omit one or more tasks, might perform others a little faster or find alternatives.
- h. **Evaluation of the time plan:** After completing planned tasks within the allotted time, evaluation is very important. Evaluation helps to check whether the plan works well or not. Proper evaluation helps in finding answers to the following questions:
  - Is the plan feasible?
  - Does it satisfy all requirements? Does it improve upon the smooth running of the task?
  - If not, how can it be bettered?
  - Did you allow enough time for going through each group of activities?
  - Were they too rushed? Could anything more have been done in the time?
  - Was there adequate rest?
  - Did one feel exhausted by the end of each day?

**Let us do**



*Prepare a time plan for yourself on a holiday that you have practised earlier and prepare another one after studying the time management. Construct pie-diagrams of both and prepare an evaluation report too.*

**Factors to be Considered While Making a Time Plan**

- a. Making a time plan is dependent on the help available, eg. If you have to attend tuition for a difficult subject you have to adjust your activities



accordingly, so that your time table will also have some provision for rest and leisure time activities.

- b. An important factor to be kept in mind is the sequence of the work. Tasks which are accomplished systematically and logically take less time than the work that is done in a disorganised way.
- c. Much of the time and energy can be saved by dovetailing.
- d. There are certain spells of time in the plan, when most of the activities are carried out in that short span of time. This period is called the peak load period. For example, in the morning a student has to perform a lot of activities like, studying, personal routine, arranging books, getting ready for school, having breakfast etc. One may consider the morning period as a peak load period. Usually, one has more than one peak load period in a day. One must keep in mind the adequate spacing of peak load periods in a time plan.
- e. It is clear that no one can work continuously for 24 hours. For carrying out tasks effectively, it is necessary to provide periods of rest and relaxation. Provision of leisure time activities must also be kept in mind while making a time plan. During leisure time one can relax and take rest.

Can you list some of the leisure time activities you engage in usually?

- .....

- f. Finally the time plan must be flexible. Besides estimating correctly the time required to do an activity, it is a must to have some free time period to cater to the emergencies.

### Let us do



*After completing this session revisit your time plan at the time of your sister's marriage and make necessary alterations.*

### Check your progress

1. Define time plan. What are the steps to be taken while planning time?
2. What do you mean by dovetailing? Explain with an example.
3. What are the factors to be considered while chalking out a time plan?

## 10.2 Management of Energy

Energy management is more complicated and difficult than management of time because in the case of time, one clearly knows that a person has 24 hours a day. The



**Do you know!**

Energy is the capacity to do work.

amount of energy possessed by various persons is not the same due to many factors. No two persons can be exactly alike in the amount of energy they possess. Also, it is not possible to measure the exact amount of energy required for doing a job. The main objective of energy management is to enable one do one's work by

using minimum amount of energy so that one will not feel tired. On the basis of energy cost required for various activities, they can be classified into three types namely-light work, moderate work and heavy work. Table 10.1 shows three categories of work.



**Do you know!**

Energy cost of a work=energy required to perform the work-energy required by the body while resting

Light work	Moderate work	Heavy work
Reading, writing, eating, watching TV, sewing, typing, office work etc.	Mopping, sweeping, walking moderately fast, washing clothes, gardening, etc.	Swimming, playing tennis, dancing, skipping, heavy labour.

*Table 10.1 Categories of Work*

**Let us do**



*Compare the activities in the above Table 10.1 and classify your daily activities into light, moderate and heavy.*

With an understanding of different types of work, you can plan your work more effectively by alternating different activities. This reduces the feeling of tiredness. What do you feel when you work continuously for a long period? What may be the reason?

- .....

**Fatigue**

As already mentioned energy management aims at reducing the amount of energy required for doing each work. After doing some work, one feels tired or fatigued. Fatigue can be defined as a feeling of extreme physical or mental tiredness. This happens with prolonged indulgence in heavy work and the resultant reduction in the capacity to do work. If a person likes a job and enjoys doing it, she finds it far less fatiguing than another which she dislikes.

Fatigue has been found to be of two kinds namely physiological fatigue and psychological fatigue.

### a. Physiological Fatigue

What do you mean by physiological fatigue?

- .....

When you run for a long time or climb a hill you may experience excessive tiredness. This condition may be termed physiological fatigue.

Energy is stored in the form of glycogen in the body. During muscular activity, the oxygen you breathe combines with glycogen to give energy. Muscular activities also give rise to waste products like lactic acid and carbon dioxide. The presence of these waste materials in the blood gives rise to fatigue. This type of fatigue is called Physiological fatigue. During rest or deep breathing oxygen replaces these waste materials and the individual feels refreshed.

Physiological fatigue may result from other factors such as inadequate rest, improper diet, work and home stressors or poor physical conditioning or symptoms of any disease.

### b. Psychological Fatigue

What do you feel if you do an uninteresting and monotonous work for a long time?

- .....

One may feel exhausted even though the capacity to do the work is unaltered. This type of fatigue often results because of boredom or frustration, a sense of resentment and isolation, a feeling of being pressurised to do things and a sense of uselessness. Individuals feel bored because of uninteresting, monotonous and undesirable work and working conditions. This type of feeling is called psychological fatigue. Frustration results when there is no job satisfaction and this leads to one's failure to achieve desired goals. Inexperience, mental worries and lack of motivation and appreciation often lead to disappointments and frustrations.

### Ways to Reduce Fatigue

For accomplishing a task efficiently, one must try to eliminate or reduce fatigue.

Can you suggest certain measures to reduce physiological as well as psychological fatigue?

- Ways to reduce physiological fatigue .....
- Ways to reduce psychological fatigue .....

Some possible ways of reducing fatigue are listed below:

1. **Physiological fatigue:** This can be reduced by having short periods of rest in between heavy activities. Resting restores the capacity to work and one feels refreshed for working more.
2. **Psychological fatigue:** This can be reduced by keeping the following points in mind.
  - Making the work interesting
  - Keeping time management
  - Having proper and well planned place of work
  - Having efficient work equipments that should be in proper working condition
  - Motivating workers to develop skill at work
  - Making the work environment more pleasant and enjoyable
  - Setting a number of small goals. Achieving one goal 'after the other is like moving up a ladder to success
  - Allowing free time in daily work schedule
  - Appreciating workers
  - Making the work familiar
  - Changing routine
  - Providing periods of rest and relaxation.

### Let us do



Analyse the following activities, identify the category of fatigue and suggest suitable measures to overcome them.

- (a) Doing practical work in an uninteresting subject
- (b) Practising Dance
- (c) Exercising
- (d) Watering plants

### Work Simplification

Management of energy involves reducing the expenditure of energy used for a specific activity. To make work easier we have to simplify our work by adopting work simplifying techniques. Work simplification means reducing the amount of time and energy spent on a particular job and thus ensuring effective energy management. As time and energy are closely related, the saving of energy invariably leads to saving of time. So everyone should be aware of the need to conserve both their time and energy. The idea of work simplification can help one achieve this. Work can be simplified in the following ways:

- A. Changes in hand and body motions
- B. Changes in work, storage space and equipments used
- C. Changes in end product

### **A. Changes in Hand and Body Motions**

#### **a. Eliminating all Extra Movements**

Many tasks can be done with less effort by eliminating or combining certain movements. For example, bring all the necessary materials and equipments needed for performing a job before starting a task, instead of carrying each item individually. This way you can save both time and energy.

#### **b. Improving the Sequence of Work**

Better sequencing and dovetailing of activities reduces the expenditure of time and energy in a particular job. Sequencing makes the work more convenient.

#### **c. Developing Skill at Work**

Skill is defined as 'familiar knowledge' which is combined in practical application to work performance. We all know that 'Practice makes a man perfect' which helps in developing skill at work. This will also minimise the number of time and energy consuming motions. When the movements for any job fall in to a smooth rhythm, the efficiency improves. eg. When you paint a fabric for the first time, you tend to spent more time and energy than when you become skilled in the art of fabric painting.

#### **d. Using Correct Body Posture**

Correct body posture is very important in doing activities. It ensures less expenditure of energy where as poor posture may result in lower efficiency, increased fatigue and problems like backache. A good body posture when standing, sitting or bending may need to be consciously practiced before it becomes natural action. Standing and sitting alternately is better than doing either for a long period.

### **Let us do**



*Observe poor postures involved during daily activities of your family members such as working in kitchen, in front of a computer, lifting an object etc. Provide suggestive measures to correct them.*

**B. Changes in Work, Storage Space and Equipment**

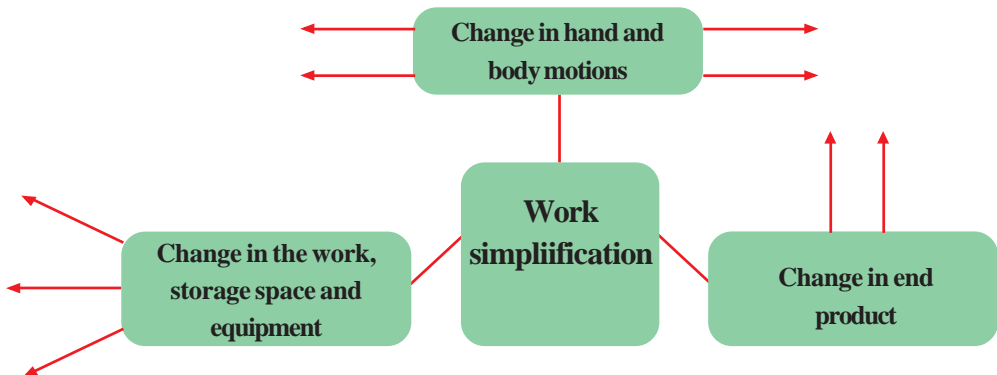
This emphasises re-arranging equipments, adequate organisation of the work place, storage space, ensuring that the height and width of work spaces is suitable to the user, adding new modern and improved equipments and tools in the work place. For organising place for work, care must be taken to ensure that equipments are placed within the reach of the worker. The equipment should be easy to grasp, handle and see. Only then it can be used regularly and comfortably. The height of the work place should be fixed by keeping in mind the height of the worker. The worker must be able to store and take out things without unnecessary stretching and bending. Use of labour saving devices also helps in reducing the expenditure of time and energy of the worker.

**C. Changes in End Product**

The worker might have to change some standards or expectations about how the finished product should be in appearance, shape, size etc Every person maintains certain standards according to his/her norms and traditions. Habits are deeply ingrained and sometimes difficult to change. But one must be aware that change is an inevitable fact of life. One must take initiative to accept new ideas if they involve saving of time and energy. Careful thinking and persuasion to accept new ideas is necessary to bring about change. eg. Instead of carrying too many books for various subjects, a modern device can be adopted.

Careful and imaginative thinking, willingness to modify one’s habits and ability to get the support of the family will go a long way towards making one’s tasks easier, quicker and more satisfying.

Using the above description on ‘work simplification techniques’ complete the following word web.



**Let us do**

*Observe and list the daily activities of your mother and help her to perform her activities well by giving certain suggestive measures in time management, energy management and work simplification. Exhibit your suggestions in the wall magazine.*

**Check your progress**

1. Explain the methods of work simplification.
2. Define fatigue? How can we reduce the two types of fatigue?
3. List some light activities.

**10.3. Management of Money**

We have already learned that among the various resources, money is the main material resource. Using it other goods and services required for the family or an individual can be obtained.

We all know that the availability of income varies from family to family. Our needs and desires are unlimited, but income is limited.

How can we balance between our needs and income?

Here comes the importance of money management. As money is a limited resource its management is very essential to satisfy our needs. Every family has different needs, hence their patterns of income and expenditures also differ.

‘Money management means balancing the income and expenditure to meet maximum requirements and achieve goals of the family’. To understand money management, it is essential to know the meaning of income first.

Income means whatever is ‘coming in’. Income is the inflow of money, goods and services. Now let us learn about income in detail.

**Family Income**

‘Family income is the stream of resources available to a family such as money, goods and services and the satisfaction the family derives from using these resources over a period of time’

Family income can be classified as:

- A. Money income
- B. Real income
- C. Psychic income

## A Money Income

Money constitutes a very important human resource. It is the cash available to a family from any source over a period of time. The period can be hourly, daily, weekly, monthly or yearly. It is obtained in the form of currency. Money income is tangible and is used for purchasing goods and services for the family. It is utilised to satisfy the needs of the family members at any given span of time.

### Sources of Money Income

What is the source of money income in your family?

- .....

The sources of money income for a family are salary, bonus, wages, rent, profits, cash gifts, dividends from shares, pension, lotteries, interest from banks, investments etc.

## B. Real Income

‘Real income is the stream of goods and services available to a family over a given period of time’. Real income is derived from properties and possessions owned by a family, skills, efforts, and abilities of the family members and also from community facilities.

These goods and services may be available to a family either (a) directly through the direct contribution of family members or by community facilities and (b) indirectly when some medium of exchange, usually money is involved. That is real income may be direct or indirect.

### a. Direct Real Income (Non-Money Income)

Direct real income consists of those goods and services availed by a family, directly through the efforts of family members or those of community without the use of money. In this, the money is used to purchase other goods and services which helps to increase the total money available to the family.

Sources of direct real income are i. judicious use of family assets ii. skills of family members and iii. use of community facilities.

#### i. Judicious Use of Family Assets

Using properties and possessions owned by them, such as house, land etc., a family can increase its real income and save money. eg. They live in their house and thus save on rent, grow vegetables in their own farm and save money.



## ii. Skills of Family Members

A family can save money by repairing their own gadgets, cleaning their house themselves and also by stitching their own clothes, thus saving expenses on an electrician, house maid and a tailor. Skills of bargaining and ability to use money effectively are also important sources of real income. Therefore, it is for the family to realise and manage their real income.

Can you identify certain examples to increase direct real income by using skills of your family members?

- .....

## iii. Use of Community Facilities

Use of library, parks, community centre, etc helps the family to save money income and increase its real income. eg. An individual, instead of buying books, can borrow these from a library. Similarly, a family can save on hotel expenses and organise family functions at a community centre instead.

## b. Indirect Real Income

Indirect real income consists of those goods and services availed by a family indirectly when some medium of exchange, usually money is involved. Services of servants availed by paying them money is an example of indirect real income.

Sources of indirect real income are

- i. Goods and services provided by using money
- ii. Fringe benefits and
- iii. Barter system.

### i. Goods and Services Provided by Using Money

Goods such as washing machine, mixer grinder etc may be bought and used. Similarly, services of electricity, internet, telephone etc. may be availed by a family after paying for these.

### ii. Fringe Benefits

Most employers give perks in addition to salary to their employees. Such benefits are called fringe benefits. eg. Reimbursement of electricity, medical and entertainment bills, free accommodation, conveyance, uniform, subsidised meals, allowance for education etc. these may vary from one institution to another.

### iii. Barter System

What do you mean by exchange of goods?

- .....

Occasionally a commodity or a service may be exchanged or bartered for another. eg. If a home maker prepares jam and the other make a squash and

they then exchange the two products between them, they both get to use these goods.

List some of the real income obtained by your family both directly and indirectly.

**C. Psychic Income**

Mention certain examples which give satisfaction to your family while using money?

- .....

Psychic income is flow of satisfaction that arises out of everyday experiences, derived largely from use of money and real income. It is intangible, subjective and most important income in terms of quality of living. The levels of achievement of psychic income by each individual vary. Psychic income depends on the skill of family members in utilising their money and commodities judiciously.

**Let us do**



*Prepare a flow chart of family income and exhibit in the class bulletin board*

**Importance and Need for Supplementing Family Income**

Some of you may be doing part time jobs. Why do you do this?

- .....

For a variety of reasons the family may need to seek ways and means of obtaining additional income in order to make both ends meet. This need arises if the expenditure exceeds the total of the assured and probable income. With rising costs the need to increase income is essential. Adding to the income means supplementing family income. Supplementation of income helps in the following ways.

**a. Achievement of Family Goals**

Every family sets goals in mind considering the available income resources. Very often it becomes difficult to fulfil all goals of the family with the available income. Hence it becomes important to supplement income. Increase in money income helps in achieving all family goals.

**b. Inflation**

Population is increasing day by day in our country. Thus the gap between demand and supply of all resources is getting widened. This results in the ever rising cost of commodities referred to as inflation. The increase in the availability of income does not keep pace with the increase in prices. So the need for supplementation of family income is greatly felt.

**c. Secure Future**

Everyone likes to secure their future for the family. Education, unexpected situations, marriage etc account for large expenditure. With the supplementation of family income one feels better equipped to look forward to a secure future.

**d. Catering to Large Families**

In order to satisfy the needs of families having more members, it becomes all the more necessary to supplement family income so that all basic requirements are met.

**Ways to Supplement Family Income**

Is your regular income enough for meeting all expenses?

To increase total family income, it is possible for every family to supplement their income. This can be done in the following ways:

**a. Adopting Income Generating Activities**

Are you or any one of your family member engaged in activities such as taking tuitions, stitching, painting etc.?

The family members can effectively utilise their talents in supplementing their family income. Income generating activities like stitching, artificial flower making, kitchen garden etc. can be adopted.

**b. Part-time Job**

Are you interested in teaching? Does any one of you take tuition? Teaching others will help you improve your academic standards. This in turn will improve your standard of living and economic status. Each family member must strive to develop skills and abilities in order to become economically more productive. Many students take up summer jobs during the long vacations to add to family income.

**c. Increase in Real Income**

We have already learned real income. The coordinated participation of family members in doing household work can bring about significant increase in family's real income. eg. Home repairs, maintaining kitchen garden, stitching clothes, using home prepared products etc. can reduce the expenditure of the family. This ultimately results in increasing the family's real income.

**d. Judicious Investment**

Every householder must save money each month to build up some reserve for a secure future. This money can be invested in totally safe plans that ensure a good rate of interest. Judicious investment of one's own savings is a good method of supplementing family income.

**e. Judicious Use of Material Resources**

List some of the material resources

- .....  
If the family possesses more material resources than they need, they can use it in supplementing family’s income. Can you suggest some ways in which a house could be used to supplement family income?
- .....  
Running a crèche or a day care centre at home, renting a part of the house etc. can be adopted for judicious use of material resources. This helps to increase our social as well as economic status.

**Savings**

You are familiar with the word ‘Savings’. Why should we save money?

- .....  
Usually we save a portion of our money income to meet incidental requirements of our future.

The portion of money income which is kept apart for future contingencies is known as savings. The difference between income and expenditure is saving. It can be expressed as:

$$\text{Saving} = \text{Income} - \text{Expenditure}$$



**Importance of Savings**

What will happen if there are no proper savings?

- .....  
Savings are important for a family due to the following reasons.

1. **Economic security:** The main aim of savings is to provide economic security to the whole family. It is required due to the following reasons.
  - a. Future is uncertain. Nobody knows what will happen tomorrow. Untimely death of an earning member of the family may lead to economic crisis in the family
  - b. On retirement, a person finds it difficult to make both ends meet with the limited income
  - c. In the case of loss of job or loss in business, there is sudden drop in income. To meet such crisis, only savings come to one’s rescue

- c. Another aim of savings is to provide economic security in case of physical disabilities. Such physical disability can be caused due to accidents, chronic diseases or old age. At such times only the investment in savings helps in meeting the requirements of the family.
2. **Increase in income:** Savings increases the family income. If savings are properly invested, additional money is earned in the form of dividends or interests. The principal amount remains safe and interest amount goes on multiplying. It also helps in increasing national capital.
  3. **Restriction on unnecessary expenses:** For savings, one has to spend strictly according to the budget. By budgeting, money is spent on necessities and expenditure on comforts and luxuries is restricted.
  4. **Habit of meagre spending:** Savings help in inculcating the habit of meagre spending in the members of the family. In its absence, the person always spends more than his income.
  5. **Minimising disparity in income and expenditure:** Savings help family members in minimising the disparities between the income and the expenditure. The aim of savings is to make provision for future needs which may not be met with the income. Such savings are especially beneficial for persons with irregular income.
  6. **For fulfilling future needs:** Savings are essential for meeting the demands of different stages of life. In the initial stages, when the children are small and their demands are few we require less amount of money. But in later years, one has to spend more on higher education, marriages of the children etc. For achieving long term goals like building a house, buying a car or owning some material goods, savings are essential.
  7. **Helping in implementation of national goals:** Savings of an individual are invested in the developmental plans of the nation. Savings are used for national defence and development.

### Family Budget

How can you bring about a balance between income and expenditure?

Does your family maintain a record of the expenses?

- .....

A family budget is a carefully thought out spending plan of money for the entire family. It is a tentative estimate of a family's income and expenditure over a period of time

The main objective of a family budget is to decide how a family income is to be spent how it is to be used and divided among different kinds of goods, services and savings. According to Bigelow ‘It is a tool whose value lies chiefly in the process of thinking through goals, estimating costs and making choices among alternative uses of money’.

### Importance of Budgeting

1. It serves as a financial guide for the family
2. It helps the family in spending money carefully so that the expenditure does not exceed the income
3. It helps in distribution and proper allocation of income for expenditure on different items, according to their requirement
4. Since all the members in a family work together for the planning of a budget, it includes a sense of cooperation among them
5. The budget helps in saving money for unforeseen emergencies
6. In the case of a deficit budget, it makes one aware of the items demanding unnecessary expenditure. Thus by giving least consideration to such items, it further helps in maintaining the balance in budget
7. It serves as a time record for meeting future needs
8. It helps in making the family happy by enabling it to live within its own means.

### Steps In the Preparation of a Family Budget

How will you maintain a record of expenses?

- .....

There are certain steps to be followed while making a budget. They are:

1. **List all commodities and services needed and wanted by family members throughout the proposed budget period:** It is customary to classify these under variety of headings, putting the related items together. The usual headings are food, clothing, housing, education, transport, personal expenses, housing expenses, savings and miscellaneous. These may vary from one family to another and extra groups may become necessary in case there are special needs. Within each group, it is necessary to specify the requirements in terms of specific goods or services. This will help one in making an accurate total of the money likely to be spent on each item.

2. **Estimate the cost of the desired items, totalling each classification and the budget as a whole:** It is necessary to estimate the cost of the items as accurately as possible. To make the budget accurate and successful it is better to check out the relative prices of goods in different shops and rise in prices. The work may be carried out by sharing the job between different members of the family.
3. **Estimate and total the expected income:** One must be realistic about the income available for spending within the budget period. The income may be listed under two headings, assured income and possible (probable) income. If these two are totalled separately, then the family can arrange its budget so that essential needs are looked after by the assured income. People with irregular income need to be extra careful in drawing up their spending plans.
4. **Bring expected income and expenditures into balance:** Balancing the budget is a crucial step, without which no budget can be complete. The total of the estimated expenses has to be compared with the total estimates of assured and possible incomes. Bringing the two in line can be done by increasing the income available and cutting down the expenditure.
5. **Check plans to see that they have a reasonable chance of success:** Budget must be checked to see:
  - If the needs of the family members have been met
  - If there is an allowance for emergencies, fluctuation in prices
  - If all bills and debts can be paid as they fall due. This is particularly important in the case of annual or seasonal payments
  - If the budget is practical and it can actually be carried out
 It takes much time and effort to make an effective and workable family budget. For those who have failed in making both ends meet or in saving for future, budgeting is likely to be of great help.

### Let us do



*Prepare a monthly budget plan of your family for the coming month and compare it with the previous one. Slots for a small savings should also be included. Exhibit it in your mother's kitchen calendar.*

### Check your progress

1. Compare family income and family budget.
2. Classify family income.

3. List the steps in making a family budget.
4. State the importance of budgeting.

### 10.4 Management of Space

You know that organising work space is one of the ways to simplify work. What do you mean by space?

- .....

Space is the area provided for a particular purpose. It may have two dimensions (length and breadth) such as a floor or it may have three dimensions (length, width and height) like a room.

Space management becomes important when space is limited. To save time and energy, space should be effectively utilised. Home is the place where individuals feel comfortable and safe. Definitely a clean and organised house relieves stress. Organised house means one where its space is effectively managed. eg. Living room can be used for sleeping at night. For this purpose some specific arrangements need to be made to perform these additional activities effectively.

The efficiency, convenience, comfort, neatness and the charm of a house depend largely upon the way in which various rooms are designed and space is managed. Great skill is needed in the case of small houses and flats so as to utilise all available space to the best possible advantage.

Space organisation means assigning space to an activity and systematically arranging all the materials required for it.

Thus the important aspects of space management are:

- Allotting space for the activity
- Making available on the spot all that is required for the activity
- Arranging systematically all the materials and equipment required for the activity.

It is desirable that all the materials required for performing a specific task are stored nearby so that time and energy can be saved. Such an arrangement for storage is termed as functional storage. Also if two or more activities need to be performed nearby then the working areas can be organised in such a way that they can be performed simultaneously.

For gracious living the essential purposes for which allocation of space is necessary are studying, storage, dining, sleeping, reception of guests, recreation, cooking, etc. Most of the above activities can be broken down into sub activities.

The sub-activities and provisions for recreation are given in Table 10.2



Activities	Provisions for recreation
<ul style="list-style-type: none"> <li>• Watching TV</li> <li>• Listening to music</li> <li>• Reading</li> <li>• Playing games</li> <li>• Family gathering</li> <li>• Using computer</li> </ul>	<ul style="list-style-type: none"> <li>• Television and its' accessories</li> <li>• Music system</li> <li>• Periodicals, magazines, and a rack</li> <li>• Play equipment</li> <li>• Seating arrangement</li> <li>• Computer and table</li> </ul>

*Table 10.2 Sub-activities and provisions for recreation*

From the above table you have understood the fact that each activity has specific requirements and it is best performed if it has a working area specified for it. The area specified for an activity is known as the work area or work centre. This does not mean that each activity needs a separate room. With the space constraints in most modern houses, it is not possible to have many rooms, so it is desirable to link two or more similar activities which can be performed in a particular room. All that is needed is to allocate space for each of the activities in that room.

### Let us do



Analyse the above table 10.2 and list out sub activities and provisions for 'Studying'.

### Guidelines for Making Work Centres More Effective

- Arrange work centres in a sequential order to assist in smooth flow of work
- Have transparent storage containers to keep them properly labelled
- Make all work centres easy to clean and maintain
- As far as possible prefer built-in-storage cabinets and cupboards that occupy floor space
- Create additional storage space under the staircase, below the window slabs and as lofts.



*Space organisation under the staircase*  
Source: [www.mosslounge.com](http://www.mosslounge.com)

### Space Management for Family Activities

How can we manage the space if it is limited?

• .....  
 Let us understand the specific requirements of some of these work centres for various household activities:

**Entertainment and recreation area:** Entertainment area is where all members of the family get together, chat, watch TV or do any similar work. This can be in the drawing room or there can be a separate living room or living cum bedroom.

Formal entertainment should be in the drawing room. If this room is large enough, it can be divided into two parts-one for sitting purpose where sofa sets, chairs, tables etc can be arranged and other for dining. The divider between the two areas can have shelves which can be used for displaying or storing various things.



*Sofa cum bed*

*Source: www.buy.vivastreet.co.in*

If the divider has the arrangement of a folding dining table in it, then the space of the room can be used as living room or children’s play room.

The living room can also be converted into a guest room at night where folding beds can be spread out as per requirement. Further, the furniture can be so provided that the living room can be used for sleeping at night. A sofa-cum-bed can be used as a sofa during the day and converted into a bed at night.



**Study area:** The study table should be placed where there is provision for good natural and artificial lighting with least disturbance. It can be in the bed room or it can be clubbed with the dining room using the dining table for writing. It can be in the form of a proper study table or a folding table which can be opened when required. The study table can also be like the dining table fixed in the wall. Here the wall space can be

used for storing books and other stationery items, a bookshelf or a cabinet can be accommodated or along the wall to keep books and stationery.

**Sleeping area:** Sleeping area is usually allocated in the bed room. The bedroom is meant for resting, sleeping and dressing. In addition it can also be used for study purposes.



*Double-Decker beds*

*Source: www. mountaintophotel. com*

ordinary charpoy can be used which can be moved out when it is not required.

If the bedroom is small, then the beds can be so made that the children's beds can be under the big bed and pulled out when ever required. Also folding beds can be used. Or an ordinary charpoy can be used which can be moved out when it is not required.

In the bedroom, beds can have boxes or drawers which can be used for storage in place of cupboards or shelves. For easier cleaning under such beds, these can be provided with wheels. Enough space on both sides of the bed should be left in



*Folding bedsspace*

*Source: www. sellex. ExFolding bed*

order to facilitate the making of the beds.

The side tables can be used on either side of the bed for keeping small items required regularly. Instead of a dressing table, a mirror can be fixed on the wall to save space. The almirah or wardrobe can be built in the wall and up to the ceiling level. It will cover less floor space and provide the needed storage space.

If the sleeping area is to be provided in the living room itself, as in the case of one room apartments then a divan and folding beds can be provided for sleeping.



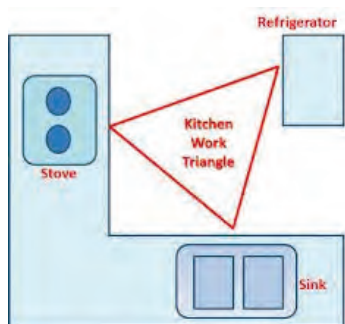
*Beds with storage facility*  
*Source: www. ana-white. Com*

**Cooking area:** The cooking area usually called a kitchen is a place where all cooking related activities are performed. In the kitchen it is necessary to store equipment and things which are required daily and those which are required frequently. But there is the need to store everything in the kitchen. Therefore it is necessary to store things at different heights depending on the need. The things that are required most often should be stored at a height most conveniently accessible so that unnecessary bend to reach the things can be avoided. The heavier and frequently used things are to be stored at floor level to avoid lifting these containers from a



*Folding table*

*Source: www.pickedvintage. Com*



height. Things used occasionally may be stored at a height above normal reach. This is called dead storage.

The concept of **work triangle** is important to reduce the time and energy spent in doing work in a kitchen. Indirectly it ensures effective space management.

Basically work triangles are measured from the centre points of the kitchen's major three appliances, from the sink to the range to the refrigerator. For comfort and efficiency the sum of the three sides of the ideal triangle should not exceed 22 feet. If it exceeds 22 ft it will be too tiring and if it is less than 12 feet it will be too cramped.

After cooking, food is served. The food can either be served in the kitchen if there is enough space or there can be separate dining area outside the kitchen. If there is not enough space in the kitchen to keep the dining table a folding dining table fixed in the wall can be used.

Whenever required the table can be opened and used. Further the place in the wall behind the table can be used for storing crockery, cutlery etc.

Depending on the space availability, provisions for storage should be given. There are various lay outs for kitchens in which these arrangements can be made. In these lay outs the work centres are arranged in the following ways.



*One-wall kitchen*

*Source: www.houseplansandmore.com*

**Two-walled kitchen:** Here two walls facing each other are used for kitchen arrangements.



*Two-walled kitchen:*

*Source: www.homesgallery.org.*

**L-shaped kitchen:** Here two adjacent walls are used for kitchen arrangements.



*L-shaped kitchen:*

*Source: www.housetohome.co.uk*

**U-shaped kitchen:** Here three adjoining walls are used for kitchen arrangements.



*U-shaped kitchen:*

*Source: www.housetohome.co.uk*



*Storage facility in a bathroom*

*Source: www.discountbathroomvanities.com*

**Bathing area:** Washing of clothes and bathing are usually done in the bathroom. Therefore a bathroom needs closed storage space for keeping soaps, washing powders, other toiletries and bath linen. The size should be such as to facilitate all the above said functions.

If a washing machine is used for washing clothes then there should be provision for keeping it in the bathroom or in an area specially assigned for washing clothes. Adequate arrangement must be made there to store soiled clothes. The area for drying the clothes should be near the washing area so that unnecessary movement between washing and drying area can be avoided.

**How to Make the Best Use of a One-Room Apartment?**

An ideal home should have excellent facilities for cooking, dining, sleeping, entertainment, study, bathing etc. In these days of economic stress, not all can afford a house with all these amenities. Most people live in one room apartments. They have to make the best use of their single room. This demands careful planning of



*Space arrangement in a one room apartment*  
 Source: [www.dreamdesignlive.com](http://www.dreamdesignlive.com)

the space and all the work centres have to be adjusted in that room. Activities should be located efficiently and those that do not conflict should be clubbed together. Light furniture which can be folded easily when necessary should be provided to enable easy transition from one activity to another. Versatile built-ins help to save space.

**Let us do**



*Make a sketch to show the possible arrangements of various work centres for a one room house*

**Expansion of Space with Proper Use of Arrangement of Furniture, Mirror and Colour**

How can we create illusion of space?

- .....

**Expanding Space by Furniture Arrangement**

- Two small sofas look better than four chairs
- Two small seating units placed together occupy less space

- Big pieces of furniture should be against the wall
- Folding and light furniture should be used whenever possible
- In one room apartment, two beds may look bulky. Instead a sleek double bed with cushions will look better
- Try to achieve balance in the room. No one side should look heavier or lighter than the other
- Low lying furniture when arranged in a room gives the feeling of spaciousness.
- Follow the wall space and avoid arranging furniture away from the walls if possible.

### Expanding Space with Mirrors

Strategically spaced mirrors can ‘double’ narrow spaces adding depth, light, and overall visual spaciousness and glamour. Mirror always gives added length and width to room. It is an expensive way of expanding space. In small rooms the effective use of mirrors on opposite walls creates an illusion of space, as a result the room looks larger than its actual size.



Source: <http://www.aesthetedesigns.com/5-tricks-small-spaces-feel-large/>



Source: <http://artcocktail.mallforarts.com/2013/01/interior-design-of-the-apartment-with-emphasis-on-art/>

### Expanding Space with Colour

Use accent colours at focal points of a room rather than scattered about indiscriminately. Also use some matching accents in adjacent areas. This careful ‘colour rhythm’ can lead the eyes to space beyond the room, thus helping to extend its visual boundaries. Light colours give a feeling of space. A well lit room seems spacious than a poorly lit room. Light and mirrors together work wonders in creating an illusion of spaciousness, accentuate the ceiling height and add to the feeling of space.

**Let us do**

*Prepare a plan and a sketch to make school staff room/ office room / Principal's room more spacious or library more usable*

**Check your progress**

1. What do you mean by space organisation?
2. Define work centre
3. How can we expand the space in a bedroom by the use of mirrors and colour?

**Let us sum up**

As time, energy, money and space are limited resources, everyone should be alert to new and better ways of managing them. Time is unique among all the resources, its management is very important. Efficient management of time permits a person to enjoy life, remain relaxed and productive whereas inefficient management leaves one tense and worried. For achieving this, a time plan is essential. It is an advance plan of activities to be performed in a given period of time. Certain steps to be followed while making an efficient time plan. Energy management is more complicated and difficult than management of time because no two persons can have the same amount of energy to perform activities. Adopting work simplification techniques enable one to use their energy effectively. Money management means balancing the income and expenditure to meet requirements and achieve goals of the family. Family income is the stream of resources available to a family over a period of time. It can be of money income, real income and psychic income. Supplementation of income helps to fulfill our goals. There are certain ways to supplement family income such as adopting income generating activities, part-time job, judicious investment etc. Savings help in many ways such as achievement of goals, raising the standard of living, providing security, meeting unforeseen expenses etc. Space management is necessary to save time and energy. In order to improve the efficiency of a house, it is necessary to manage space in different rooms.

**Learning Outcomes**

- Compares and evaluates management of time.
- Differentiates types of work and fatigue and illustrates work simplification techniques.



- Classifies types of family income importance and need for supplementing family income and savings and develops family budget.
- Lists, explains and illustrates ways of managing space.

### Evaluation Questions

1. 'Time is a unique human resource'. Justify.
2. Differentiate money income and real income.
3. Give two reasons for supplementing your family income and suggest four ways of doing so?
4. Anu needs to earn a living. Suggest four different ways by which she can use her knowledge of child development to earn more money.
5. Arrange the following into suitable categories.
  - (a) Fringe benefits
  - (b) Satisfaction obtained
  - (c) Pensions and lotteries
  - (d) Judicious use of material resources
6. Prepare a monthly budget for a family of four members having an income of Rs.15,000/.  
(Hints: Father, Mother and two children aged 10(girl) and 17(boy) years)
7. List six ways of expanding space in a room by the use and arrangement of furniture.
8. Space management is necessary to save time and energy. Substantiate the statement with valid arguments.

## CHAPTER

# 11

## DESIGN

### KEY CONCEPTS

- 11.1 Types of Design.
- 11.2 Elements of Design
- 11.3 Principles of Design
- 11.4 Colour

Many of us may have artistic talents. It may be in the field of painting, garment making, garment designing, embroidery, flower arrangement, interior and exterior designing of house, clay modelling, gardening, landscaping etc. Whatever it may be, the development of artistic talents depends on the opportunities, motivation and training one receives. To perfect a creative work,

to enjoy the beauty of an art work or to judge its quality a scientific understanding of the basic facts is very beneficial. This chapter provides basic knowledge concerning design- its elements, principles, characteristics and the use of colour in detail.

### 11.1 Types of Design

Suppose you are asked to prepare a design for a ‘pookkalam’. What aspects will you consider?

- .....

What is your concept about a good design?

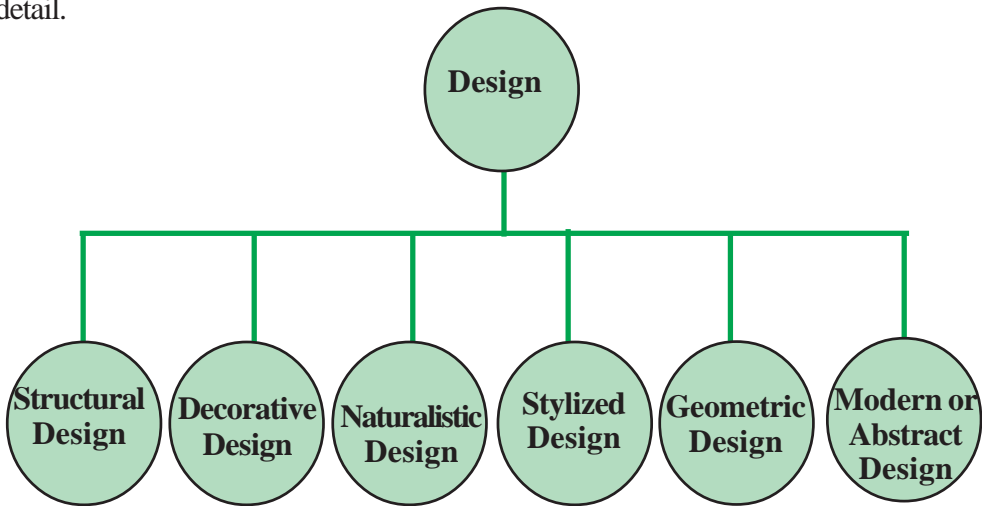
- .....

Many people think of design as a kind of effort in beautifying the external appearance of things. Certainly mere beautification is one aspect of design but design is much more than this. Design is a process of purposeful visual creation.

A good design is the best possible visual expression of the essence of ‘something’.

Design is defined as any arrangement of line, form, colour, space, value and texture. A good design shows an orderly arrangement of the material used and in addition enhances the beauty and charm of the finished product. The three essential aims of good design are order, beauty and utility.

Design can be of different types. Observe the illustration 11.1 given below. From the illustration we can understand that there are six types of designs. Let us study each in detail.



*Illustration 11.1*  
*Different types of design*

### A. Structural Design

Structural design denotes the structure and construction of an object. All objects have a structural design, which is a combination of size, shape, form, colour and texture. For an object to be truly beautiful and still useful a good structural design is essential which requires the following:

- It must suit its purpose or be functional
- It must have good proportion
- It must be suited to the material from which it is made
- It must be simple in outline

Analyse Figure 11.1 using the requirements of the structural design.



*Fig. 11.1*

## B. Decorative Design

Decorative design is the surface enrichment of the structural design. It enhances the beauty of an object. Any line, colour or material that is applied on a structural design for the purpose of enrichment constitutes a decorative design. The following criteria are to be fulfilled for a good decorative design.

- The decoration should be used in moderation
- It should be placed in structural points to strengthen the shape of the object
- There should be enough background space to give simplicity
- The decoration should be suitable for the material used
- The background should suit the pattern.



*Fig. 11.2*

Analyse Figure 11.2 and evaluate whether it is a good decorative design.

## C. Naturalistic Design

A naturalistic design is a design which is based on environmental patterns found in nature. eg. Designs and patterns of ecosystems, animal and plant communities, patterns of sand, soil, rocks, mountains, clouds, sky, water etc. This type of design is not a photographic image, but close to nature or clearly based on nature in appearance. Flowers, animals, people, or other objects are clearly recognisable. Light and shading are often accurately indicated. A house of this characteristic may



*Fig. 11.3*

express the theme of simplicity, handmade quality, sincerity and playfulness. Among the factors that contribute to the attainment of the natural effect is the use of natural material.

Do you notice any naturalistic pattern in Figure 11.3?

#### D. Stylised Design

A stylised design conforms to a particular style, as of representation or treatment in art. These designs do not look like pictures of natural objects. Usually the lines are simplified, while sometimes they are distracted. Stylised alone does not ensure high quality in design. However stylised designs are likely to be superior to the naturalistic patterns and sometimes may be of a combination of a stylised and geometric designs. Figure 11.4 is an example of a stylised form of a chair.



Fig. 11.4



Fig. 11.5

#### E. Geometric Design

Geometric designs are based on pure forms of circles, triangles, rectangles etc. although endless variations or combinations of them are used; they include stripes, dots and checks. These designs do not originate in nature. They are made up of shapes such as circles or other geometric forms and include stripes, plaids, chevron (V-shaped) patterns, and zigzags. How many different geometrical shapes are there in Figure 11.5?

#### F. Modern or Abstract Design

Abstract art uses a visual language of form, colour and line to create a composition which may exist with a degree of independence from visual references in the world. This type of design departs from nature. The elements (motifs), which may or may not be recognisable, are transformed into non-representational design. Modern designs make good application of the advancing and recessive qualities of colour. Figure 11.6 is an example of modern or abstract design of a chair.

Sketch another abstract or modern design for a chair



Fig. 11.6

**Let us do**

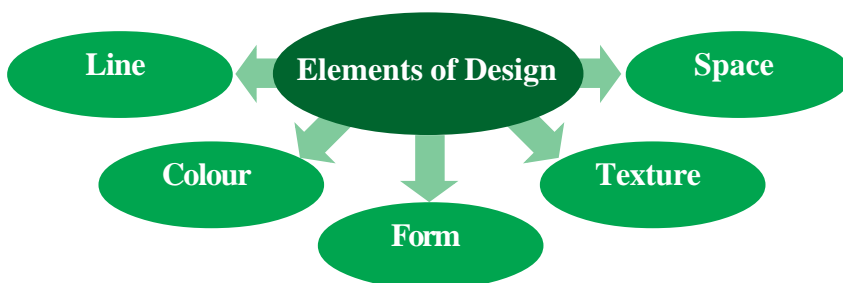
Based on the above illustration, pictures and descriptions make a note on different types of design in your Home science diary.

## 11.2 Elements of Design

Every design is created keeping in mind certain basic elements and principles of design. The elements and principles of design function together, to create a unified, unique and comprehensible design. A design may not have a function but may simply appeal to the senses. Even for such purposes it is essential to use the principles of design in it.

The ability of an individual to organise various elements in a design could be developed by applying the principles of design. Thus the principles of design can be thought of as ‘yardsticks’ to judge a design whether it is good or bad. It also acts as a flexible guideline for working with the elements of design. When the elements of design are applied using the principles of design, we can achieve the goals of design.

The basic elements of art or design include a. line b. shape and form c. texture d. colour and e. space. Observe Illustration 11.2.



*Illustration 11.2 Elements of Design*

**a. Line:** Lines are the basic element of design and contribute greatly towards the overall mood created in any design. Lines have three dimensions: i. the length, with many directions, ii. the width and iii. thickness which can vary. All lines can move in vertical, horizontal and diagonal direction or a combination of any of these. All lines fall into the category of straight, curved, or combinations of these two, such as zigzag line, a wavy line, scalloped line etc. Lines may be thick, thin, long or short, fuzzy or smooth. The emotional effect created by lines is as follows.

1. **Vertical lines:** Vertical lines suggest life, activity and dignity. They may be severe, strong, and direct and disciplined in the effect they may produce. They create a feeling of height. The doorways and draperies in a room give it strength and height.

2. **Horizontal lines:** Horizontal lines suggest repose, steadiness, tranquillity and solid stability. They are found in tables, low-backed chairs and book shelves and balance the severity of vertical lines.
3. **Diagonal lines:** Diagonal lines suggest movement and force. They disturb the discipline of vertical lines and the solidity of horizontal lines. In the home they are often found in staircases and in some fabrics.
4. **Curved lines:** Curved lines indicate gracefulness and transition. They add grace, femininity and flexibility to a scheme. They achieve a joyful, subtle and rich effect to any arrangements.
5. **Zigzag lines:** Zigzag lines create excitement.

Analyse Figure 11.7 and identify the effects of different types of lines in the room.

Lines are used in art and design to

- Enclose shape
- Define form
- Suggest movement
- Create depth
- Create mood, express feelings and ideas.

Observe Figure 11.8 and try to find out various types of lines.



Fig. 11.7



Fig. 11.8

**b. Shape and Form:** The term shape refers to the general outline of something. Shape is an enclosed line. Shape is two dimensional. It can be categorised into geometric and natural. Geometric shapes include squares, rectangle, circle and triangle whereas natural or organic shapes are found in nature such as rocks, clouds, trees etc. Geometric shapes are also found in nature.

Form is the three dimensional equivalent of shape. The cube, pyramid and sphere are the three dimensional equivalents of the geometric square, triangle and circle.

Uses of shapes in art and design are:

- To represent objects in two dimensions
- To create illusion of space and volume
- To suggest movement
- To express ideas, imaginations and feelings

### Let us do



Try to find out the shapes for the three forms given in figure 11.9

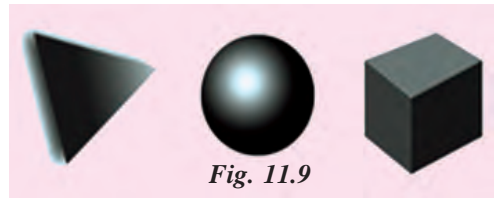


Fig. 11.9

**c. Texture:** Texture is the

tactile surface quality of material which may be felt when we touch the material or object or may be identified through visual examination. The texture in which the surface quality can be felt by touch are the actual texture of the material. eg. Rough texture of a coarse fabric or smooth texture of a polished surface. Any material which reveals a textural pattern when observed without touching is called visual texture of the object eg. polished stone, coir or jute mats.

Texture is important because it affects us physically. eg. A rough shawl will irritate us when draped around us. Textures affect reflection of light around us. eg. A polished metal or table surface will reflect light brilliantly and may also cause glare, whereas rough textured brick may absorb light and make the interior darker.

Uses of texture in art and design are:

- Form can be highlighted by the use of texture
- Make surface of form lively and interesting to look at
- Used to create visual harmony in forms shapes and spaces

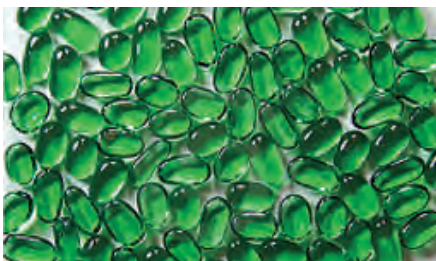


Fig. 11.10

Can you differentiate the visual texture of the two types of images given in Figure 11.10?

**d. Colour:** Colour is an element of art and design that is perceived only by the sense of sight. The sense of sight enables us to perceive colour because of light.



Because of its natural beauty, colour is a very important element in art and design. Colour is used mainly to:

- Describe form and shapes
  - Model form and create illusion of depth and space
  - Suggest movement in a composition
  - Express ideas and feelings
  - Create mood
  - Arouse emotions.
- e. **Space:** Space is generally considered to be the area seen between the shapes. In art there are two types of space: actual space and pictorial space. Actual space is either two dimensional as floor, flat surfaces, etc. or three dimensional as in sculpture, architecture models or actual objects. Pictorial space is the flat surface of the paper, canvas or other material and is also known as picture plane.

### Let us do



*Using the Illustration 11.2 and description make a note on the 'Elements of Design.'*

### Check your progress

1. Define design?
2. Differentiate structural and decorative designs with examples.
3. What are the various elements of design?

## 11.3. Principles of Design

The following are the principles of design or art.

- a. Scale and Proportion
  - b. Balance
  - c. Emphasis
  - d. Rhythm
  - e. Harmony
- a. **Scale and Proportion:** 'Scale' refers to the relative size of an object in relation to other objects, whereas proportion is the relationship of parts of the same object or the relationship between different objects in the same group. Proportion can also be described as the ratio of one part to another part or one part to the whole. Therefore proportion is sometimes called the law of relationship.

Proportion is the principle of design which is achieved when the different sizes are successfully grouped in any arrangement, so that they are “in scale”-that is the elements making up the structure have a pleasing relationship to the whole and to one another.

Analyze the scale and proportion applied in Figure.11.11



*Fig. 11.11*

**b. Balance:** Balance implies equilibrium among parts of a design. It implies rest or repose. When there is balance there is sense of equal weight on both side of the central point. This restful effect is obtained by grouping shapes and colours around a centre in such a way that there is equal attraction on each side of the centre.

Balance is of two types: formal (symmetrical) and informal (asymmetrical) balance.

In formal balance identical objects are arranged on both sides of a centre point. Formal balance is easy to achieve and also makes people feel comfortable because of its orderliness.

Figure 11.12 is an example of formal balance applied in a dress.



*Formal balance  
Fig. 11.12*



*Informal balance  
Fig. 11.13*

applied in furniture.

Informal balance can be achieved in various ways. In order to balance a heavy object and a light object, the heavier object is placed closer to the centre line than the light object. Several smaller objects can balance a single larger one. Informal balance gives the impression of spontaneity, freedom of movement and casualness.

**c. Emphasis:** -Emphasis is the art principle by which the eye is carried first to the most important thing in any arrangement and from that point to every other detail in the order of importance. Emphasis should be laid on few things, non-essentials should be eliminated. Certain areas or objects can be emphasized by

- Grouping objects
- Using contrasts of colour or values
- Using decorations
- Providing sufficient plain background space around objects
- Using unusual lines, shapes or sizes.

Figure 11.14 is an example in which the principle of emphasis is applied. Analyse Figure 11.14 and make a note in your Home science diary.



*Fig. 11.14*

**d. Rhythm:** Rhythm means an easy connected path along which the eye may travel in any arrangement of line, form or colour. Rhythm relates to movement. Rhythm can be achieved through repetition, gradation, radiation, opposition and transition.

Repetition is one of the easiest ways to achieve rhythm, which can be created when an element of design—such as colour, line, form or texture—is repeated.

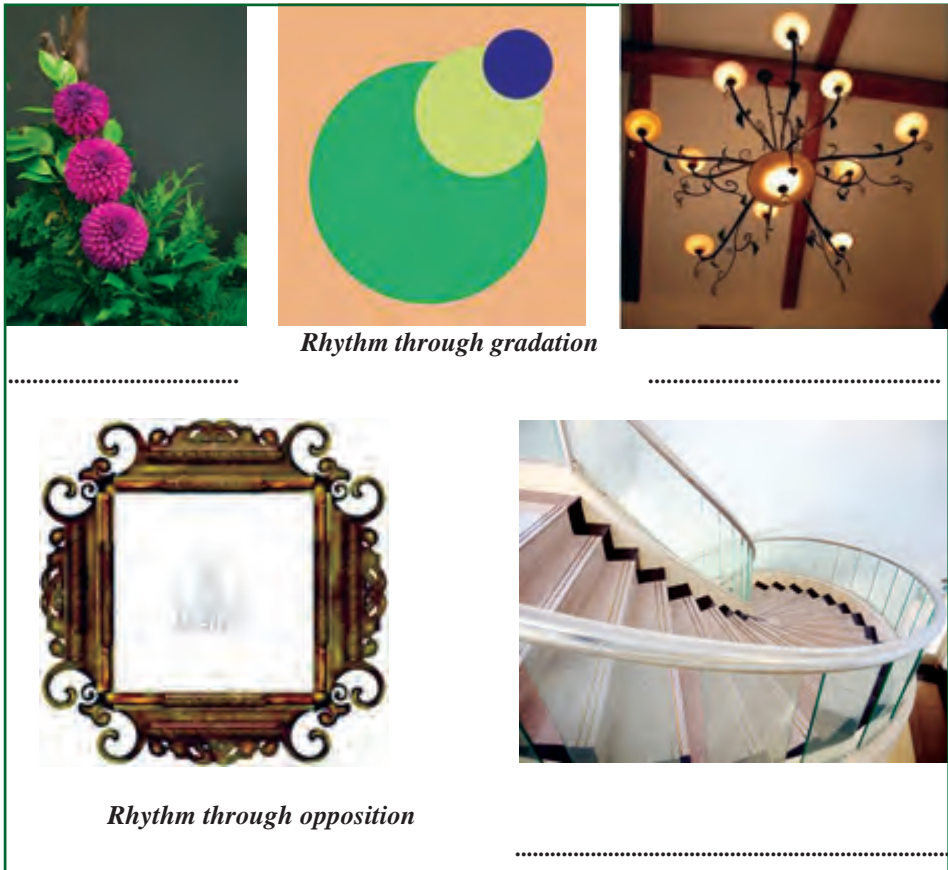
Rhythm by gradation can be created by a gradual increase or decrease of similar elements of design. The eyes travel through the levels of progression.

In rhythm, by radiation, lines flow outward from a central point.

In rhythm, by opposition, lines meet to form right angles.

In rhythm transition is created when curved lines carry the eyes from one part of an object to another part.

Analyse Figure 11.15 given below and complete the table



*Fig. 11.15*

e. **Harmony:** Harmony is the fundamental requirement in any piece of design. Harmony means unity or single idea or impression. It produces an impression of unity through the selection and arrangement of consistent objects and ideas. There are six aspects of harmony. They are harmony of line, shape, size, texture, colour and idea.

Figure 11.16 demonstrates how various aspects of harmony can be applied in an arrangement. Analyse it and make a note in your Home Science diary.



Figure 11.16

### Let us do



Prepare a slide presentation for the principle of design applied in interior of a home

### Check your progress

1. What are the principles of design?
2. What is the difference between formal and informal balance?
3. What are the ways of emphasising a design?

## 11.4. Colour

Imagine our world without colour. How would it be? As we all know that colours are an important part of our life and of nature. We like colourful things around us. It increases the beauty of the objects. Colour can attract our attention or change our mood. Hence it would be interesting to know the qualities of colour, the classification of colour and to know the suitability of different colours for various purposes.

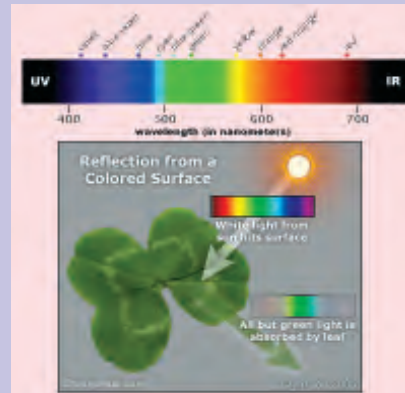
## Dimensions of Colour

Just as every object has three dimensions, length, breadth and height, colour also has three dimensions or properties. They are described using the terms hue, value and intensity. All these properties make a composition more attractive.

- a. **Hue:** Hue is the name of colour such as red, green etc.
- b. **Value:** Value refers to the lightness or darkness of a hue. The lightness or darkness depends on the amount of white or black added to the hue. To make a hue lighter, white is added. To make a hue darker, black is added. Adding black or white to a hue does not change the hue to a different hue, this only lightens or darkens it. Figure 11.17 is the value scale of blue

## What is Colour?

Colour is simply light of different wavelengths and frequencies and light is just one form of energy that we can see. We are all surrounded by electromagnetic waves of energy of which colour is just a small part. The perception of colour is a sensory experience. The colour of an object is seen by the eye when white light is shone upon the object's surface. The surface reflects some colours and absorbs others. It is the reflected light (or wavelength) that is picked up by the eye.



[www.uwgb.edu/heuerc/2d/coloursystem.html](http://www.uwgb.edu/heuerc/2d/coloursystem.html)



Figure 11.17 Value scale of Red

**c. Intensity or Chroma:** Intensity or Chroma refers to the colour strength or saturation of a hue. A pure colour as it appears on the colour wheel is the strongest or most intense. The intensity of a colour can be lessened by the addition of grey to the colour, which dulls the colour. A second way to lessen the intensity of a colour is to add the hue/colour that appears directly opposite on the colour wheel. This opposite colour is referred to as its complement.

### Let us do



*Prepare a value scale for a primary colour in your home science diary*

### Prang Colour Wheel and Classification of Colours

Our understanding of the organization and structure of colour is referred to as a colour theory or colour system. There are many different theories or systems, all of which are conventions for communicating colour information and perception rather than a factual basis for understanding colour scientifically. The most common and simplest colour wheel is based on the theories advanced by Louis Prang in 1876 and is commonly known as the Artist's or Prang colour wheel. It is the representation of



#### Do You Know!

#### Louis Prang

Louis Prang (1824-1909) was a lithographer and publisher known for the creation of the chromolithographic colour printing process. Because his company was first to make commercially printed holiday greeting cards available to the public, Prang is often referred to as the "Father of the American Christmas Card."

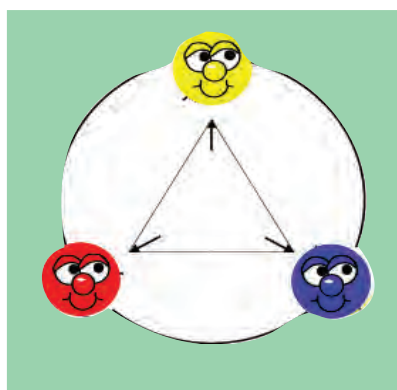


Figure 11.18

colour relationships.

According to Prang, all colours may be obtained from the three primary or basic or fundamental colours yellow, blue and red (Figure 11.18). These three colours cannot be obtained by mixing other hues (theoretically at least).

When two primary colours are mixed in equal proportions, a binary or secondary colour results. Observe the colour mixing (Figure 11.19) and their effects.

When a primary and a neighbouring binary colour are mixed, the following six intermediate hues are obtained. Examine the following combinations.

Yellow+ green	=	yellow green
Blue+ green	=	blue green
Blue+ violet	=	blue violet
Red+ violet	=	red violet
Red+ orange	=	red orange
Yellow+ orange	=	yellow orange

In the Prang colour chart, the colours are arranged in a circle with yellow at the top centre. Violet falls directly opposite on the same vertical line. Blue lies on the right side and red on the left side of the vertical line. The colours in the outer circle of the colour chart are of high intensity and they are striking and brilliant.

The circular arrangement of a

colour wheel suggests that the progression of colours is circular, that the arrangement of colours turns back on itself the way a circle does. Only full hues

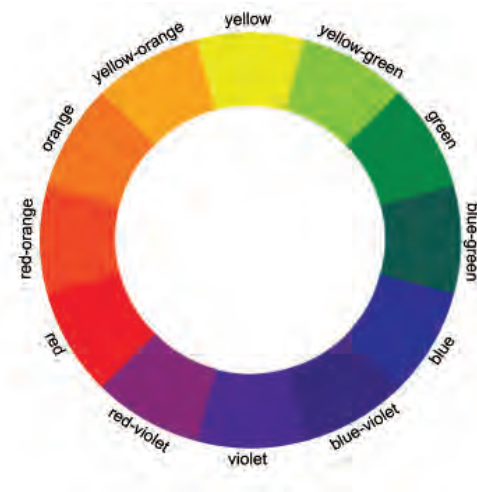


Figure 11.20

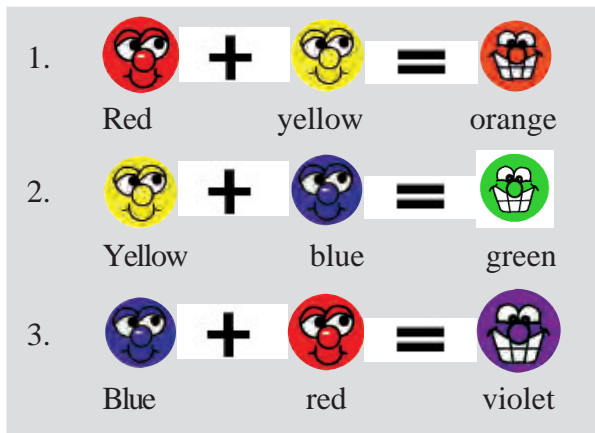


Figure 11.19

as they appear in the spectrum are usually shown in a colour wheel. The three primary hues, the three secondary hues and the six intermediate hues constitute the outer circle in the Prang colour chart. Black, white and grey are neutral colours

Figure 11.20 shows how the colours are arranged in a Prang colour wheel.



**Let us do**

Prepare a Prang colour wheel in your Home Science diary using primary colours

**Colour combinations or harmony:** No colour stands alone. In fact the effect of a colour is determined by many factors, the light reflected from it, the colours that surround it or the perspective of the person looking at the colour.

Harmony means the pleasing, effective, congruent and balanced combination of two or more colours or shades. It does not imply a random mixing of colours but a purposeful selection of a number of colours to get the desired effect. Colour harmonies are recipes for combination. The standard colour harmonies are given in Illustration 11.3.

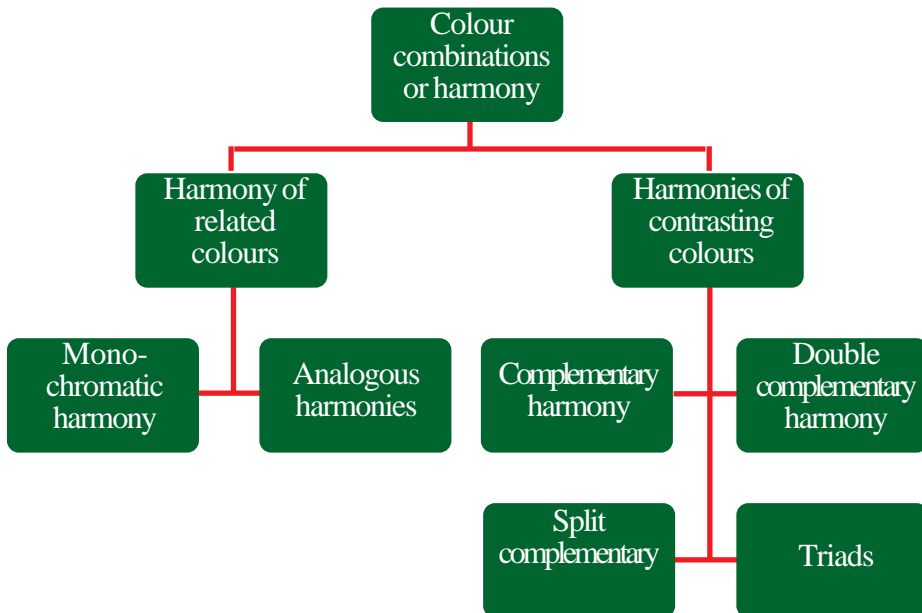


Illustration 11.3 Colour Combination

- A. Harmony of related colours:** Related colour harmonies are obtained by using colours which are similar. There are two ways of obtaining the same.

**a. Monochromatic harmony:** This is also known as one hue or one mode harmony. In this



Fig. 11.21

only one colour is used and their values and intensities can be changed. The neutrals black, white and grey may be used in any harmony. Figure 11.21 is a design in which monochromatic colour harmony is applied.



Fig. 11.22

**b. Analogous harmony:** It is also called adjacent colour schemes. It uses adjacent or neighbouring three colours on a colour wheel. Analogous harmonies are quiet and useful. The colours used should be of different intensities and values, such as an analogous harmony of yellow, yellow-orange and orange (Figure 11.22)

**B. Harmonies of contrasting colours:** There are four ways of obtaining contrasting harmonies. They are:

**a. Complementary harmony:** When colours which are directly opposite to each other in the Prang colour chart are used, they produce complementary harmony. They are excellent for room and window displays. eg. Yellow and violet, blue and orange, red and green. (Figure 11.23)

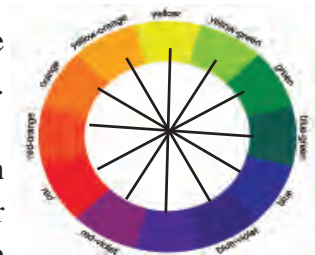


Fig. 11.23

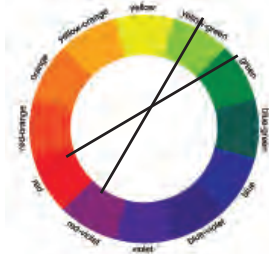


Fig. 11.24

orange (Figure 11.24).

**c. Split complementary harmony:** When a primary or an intermediate colour is used with the colours on either side of its complement, the combination produces split complementary harmony. eg. Yellow when used with red-violet and blue-violet will form split complementary harmony (Figure 11.25)

**b. Double complementary harmony:** When two adjacent colours and their complements are used together, they form double complementary harmony. One hue should be outstanding and it should be used in a large amount. eg. Blue, orange, blue-violet and yellow

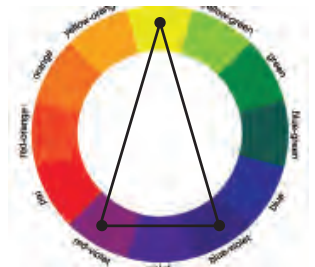


Fig. 11.25

**d. Triads:** Four equilateral triangles can be formed within the Prang colour chart. The colours forming the points of the equilateral triangle constitute the triads, thus the four triads formed are:

The primary triad created by the three primary colours, yellow, blue and red. The secondary triad formed by the secondary colours, green, violet and orange (Figure 11.26). The two intermediate triads consisting of the intermediate colours, yellow-green, red-orange and blue-violet and red-violet, blue-green and yellow-orange.

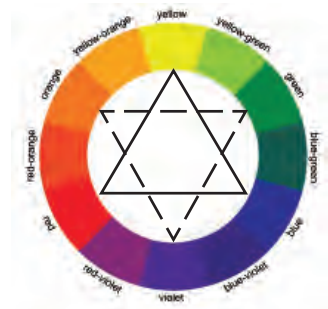


Fig. 11.26

### Let us do



*Draw a design using colour harmonies*

### Warm and Cool Colours

The colours on the left side of the circle are the warm hues. These are red, orange, yellow etc. these colours have the element of fire or sun within them. They project a feeling of warmth. They create a visual impact of reduced size and length. These are encouraging colours that produce a feeling of excitement and happiness.

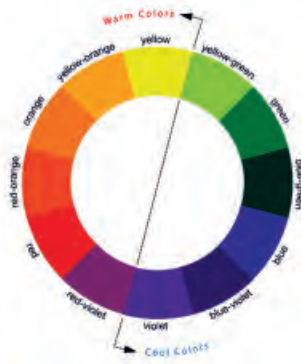


Fig. 11.27

The colours at the right side of the circle are the cool hues (Figure 11.27). These are blue, green, purple etc. They have the element of vegetation or water in them. They project a cool feeling. These are peaceful colours that give a feeling of rest and repose. They also create a visual impact of enhanced size and length. They also provide a balance to vibrant warm colours. Warm and cool colours are complementary

to each other and always create very interesting effects.

### Psychological Properties, Effects and Significance of Colour in Daily Life

A magical effect can be produced by colours since they can transform darkness into light, dullness into brightness, gloominess into cheerfulness and drabness into

beauty. Colour plays a vital psychological role in human life. It is of primary importance in the emotional life of the occupants. Moreover, the selection and use of different colours expresses the character and individuality of the people. Each colour has its own beauty and individuality.

- Red-out of fire-means heat to us,
- Green-out of freshly sprouted plants-means freshness and
- Gold-out of sunlight-means gaiety.

Colours have different meanings in different part of the world. No colour is seen in the same way by any two people. Colour is personal and universal sending a message full of vibrations. Observe the Table 11.1 and identify the characteristics, positive and negative effects of various colours so that we can use these colours effectively.

Name of colour	Characteristics & positive effects of colour	Negative effect of colour
Red	Red is the colour that stirs our senses. It is associated with power, vitality, energy and excitement of life. It Stimulate strength, joy, happiness and love	Too much can bring out fear, uncontrolled passion, lust and excessive anger
Orange	Orange stimulates creativity and ambition along with energetic activity. It can also generate pride and sense of preservation of self and others	Excessive exposure to orange can produce nervousness and restless behaviour
Yellow	Yellow is primarily a joyous colour. But it also brings out wisdom, understanding and highest of intuitional insight. It is the colour of sunshine, youth, gladness and merriment.	When too bright or used too often is over stimulating to the psyche and nerves and can cause mental irritation.

Name of colour	Characteristics & positive effects of colour	Negative effect of colour
Green	Green is nature's colour, healing soothing, peaceful and cool	Green represents selfishness, jealousy and laziness
Blue	Blue is the colour of heavenly consciousness, truth, harmony, calmness and hope	Too much blue can be depressing, bringing a feeling of the blues in otherwise healthy people.
Indigo	Indigo in the spectrum is lodged between blue and violet. It combines reason with intuition and discipline with creativity	Indigo stands for stagnation, mental fatigue and starving without success.
Violet	Violet in its highest vibration represents good motives elevates spiritual aspirations. Violet is associated with prosperity, wealth and increased productivity	Violet is the fastest vibration among the rainbow colours fading quicker than any other colour.
White	White is the vibration of purity and cosmic plane of perfection. It represents harmony.	The power of white light is intolerable to people who cultivate such base characteristics as malice, jealousy, envy and violence.
Black	Black the opposite of white is the colour of funeral drape and represents the loss and absence of life. Being around black too much can drain a person's health, because black absorbs energy and vitality.	Black is said to encourage the worst in people with criminal tendencies.

Name of colour	Characteristics & positive effects of colour	Negative effect of colour
Brown	Brown colour in its most positive aspect represents fertility, Mother Earth and the strength of seasoned wood. The highest quality of brown colour is that it represents the plane from which beauty comes forth.	Brown repulses the opposite sex, diminishes personal vitality, negates the life force and implies the decay and dying of nature

*Table 11.1. Effects of colours*

### Let us do



Prepare a seminar on the topic 'colour and colour harmonies' and present it in the class PTA with the help of projector.

### Know your progress

1. What are the dimensions of colour?
2. ...., ..... and ..... are the primary colours.
3. Name the standard colour harmonies.
4. What are the positive effects of primary colours?

### Let us sum up

Design is defined as any arrangement of line, form, colour, space, value and texture. Structural, decorative, naturalistic, stylized, geometric and modern or abstract are the different types of design. The elements and principles of design functions together to create a unified, unique and comprehensible design. The basic elements of design include line, form, texture, colour and space. Scale and proportion, balance, emphasis, rhythm and harmony are the principles of design.

Colour has three dimensions-hue, value and intensity. Hue indicates the name of a colour, value indicates the lightness or darkness of a colour and intensity refers to the brightness or dullness of a colour. All these make a composition more attractive. Of all the color theories, Prang colour is the simplest color wheel and it represents the relationship of colors. According to Prang, all colours may be obtained from the three primary colours like yellow, blue and red. When two primary colours are mixed in equal

proportions, a secondary colour can be obtained. The three primary hues, the three secondary hues and the six intermediate hues constitute the outer circle in the Prang colour wheel. The standard colour harmonies include harmony of related colours and harmony of contrasting colours. Triad is the richest of all the harmonies. Colour plays an important psychological role in human life. The selection and use of different colours expresses the character and individuality of the people.

### Learning Outcomes

- Classifies types of designs by citing examples.
- Differentiates and illustrates elements of design by citing examples.
- Illustrates principles of design.
- Illustrates and demonstrates value scale, Prang colour wheel and colour harmonies and differentiates colour harmonies.

### Evaluation Questions

1. Line can create certain emotional effects. Enumerate.
2. The elements of design have certain uses in a design. Prove the statement.
3. Illustrate the various types of design.
4. Match the following:

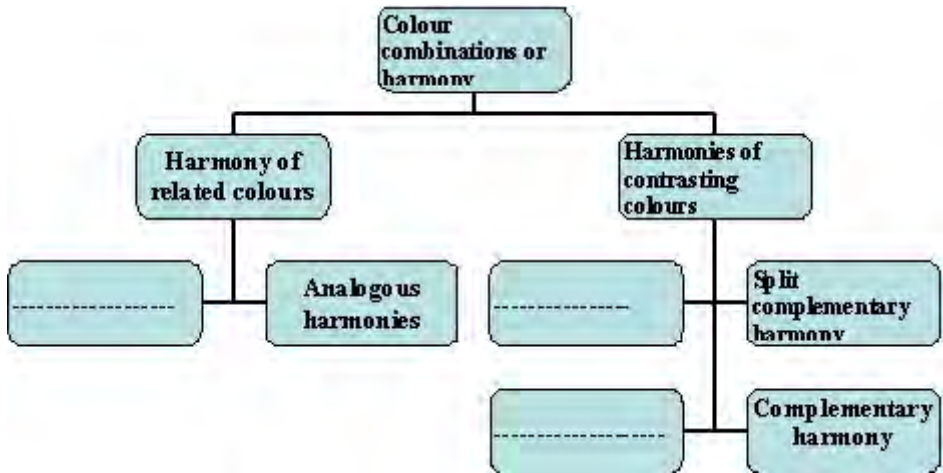
Sl No.	A	B
1	Proportion	Unity
2	Emphasis	Equilibrium
3	Harmony	Relationship
4	Balance	Movement
5	Rhythm	Importance

5. One of the ways to achieve rhythm in a design is through 'repetition'. What are the other means to achieve the rhythm?
6. Lightness or darkness of a hue is .....
7. Differentiate warm and cool colours..
8. What are the characteristics and effects of secondary colours in our life?
9. Anu comments that 'green is the colour of heavenliness and calmness'. What is

10. Complete the table:

orange		Jealousy and laziness
	Stimulates creativity	
violet	Peaceful and cool	Restless behavior

11. Complete the chart given below:



12. Identify the balance in the picture given below. What are the two types of balance? Comment on it.





## CHAPTER

# 12

## CONSUMER EDUCATION

### KEY CONCEPTS

- 12.1 Problems faced by Consumers
- 12.2 Food Adulteration
- 12.3 Consumer Aids
- 12.4 Consumer Protection (Amendment) Act-2011

We use a variety of goods/services /materials in everyday life. Where do we get these goods/ services/materials from? At home! No, a few of these can be made available at home but for most others, we have to go to the market, offices etc. What is your experience while shopping? Are you satisfied with the products available in the market? Do advertisements and sales persons always give you correct and complete information about the products you are purchasing?

You know when you buy goods and avail of services for satisfying wants, you become a consumer. What do you mean by a consumer?

- .....  
A consumer is an individual who purchases/uses/consumes services/items/products to satisfy wants. Each and every person is a consumer in one way or the other. Suppose you are a student, you enjoy the services of a school teacher and the school bus. In this way, you are a consumer there .

India is a vast country where a lot of people are ignorant and not informed clearly of many matters. An ignorant consumer gets cheated and exploited by sellers and manufacturers. Therefore correct information and guidance should be given to consumers, manufacturers and shopkeepers. Consumer education is the right way to attain this.

Consumer education aims at to educating consumers as to what, where, when, how and how much to buy and how to use what they have bought. Consumer education can be defined as ‘acquiring all necessary knowledge that will promote the standard of living, besides providing a better degree of satisfaction’.

**Importance of Consumer Education**

- Helps to develop the ability to decide and choose things intelligently
- Helps to be alert, well informed and vigilant against corrupt practices in the market
- Helps to take suitable action when faced with a problem
- Helps to demand safe, reliable and good quality products at a reasonable rate
- Helps in optimum utilisation of money and all other resources

Suppose you need an umbrella? Where do you get it from?

- .....

One can purchase products from different places like an ordinary shop, super bazaar, the foot path seller, wholesale dealer, retail shop, shopping mall, internet online shopping etc. Normally a consumer does not have proper information about these markets. He does not know how many new products are available in the market and from where he can get cheap and good quality products. Usually the shopkeeper takes advantage of this ignorance of the consumer by not giving quality products or by adding adulterants etc. In this manner the shopkeeper earns more profit and the consumer does not get maximum satisfaction. Thus the consumer faces many problems while shopping. Let us discuss the common problems faced by Indian consumers.

**12.1 Problems Faced by Consumers**

While buying products from the market, did you have bitter experiences? Record your experiences when you bought one or two kg of fruits from the market.

- .....

Let us discuss some of the problems or malpractices faced by consumers.

**A. Variation in Prices**

Prices of goods are less in wholesale markets compared to retail shops.

Did you observe that the prices of commodities are higher at certain shops? Why is it so? Does prices vary? Let us understand the reasons for price differences in the market

- a. Shopkeepers charge more than the highest MRP (Maximum Retail Price) to make greater profit

- b. They sell loose items without labels or packages and charge any price
- c. Poor quality goods are sold at the price of good quality popular brands
- d. Prices in two shops also vary. The costs of decorations, extra lights, air conditioners, computer billing and other overhead costs, all contribute to the increase in costs
- e. Prices are not fixed
- f. Certain shops spend heavily on advertisements  
The 'free home delivery' costs are also met by the consumer having to pay more for his/her purchase



### Do you know!

Prices of goods are less in wholesale markets compared to retail shops.

## B. Defective Weights and Measures

Have you ever checked the weights and measures used by the shopkeeper? Are you aware of different malpractices followed by these shopkeepers?

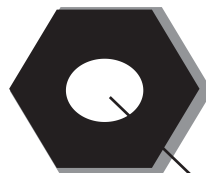
### a. Use Hollow Bottom Iron Weights Which Weigh Less than the Genuine one.

Observe the following diagrams A and B and compare B is different from A and make a note.

A. Correct



B. Incorrect



No Stamp markings

DL 1/5 - Code of Inspector

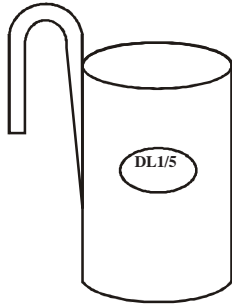
B - Quarter cone year divided into 4 quarters A, B, C, D

06 - year 2006

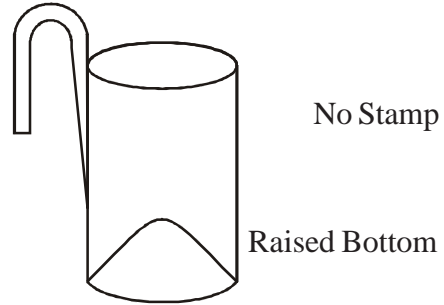
### b. Use of False Bottom Measuring jars

Compare the bottom portions of the measuring jars given below. Measures with a false bottom or dents are used to measure liquids like milk, oil, etc. Standard liquid measuring cups/jars bear the stamp from the Department of weights and measures.

**A. Correct**



**B. Incorrect**

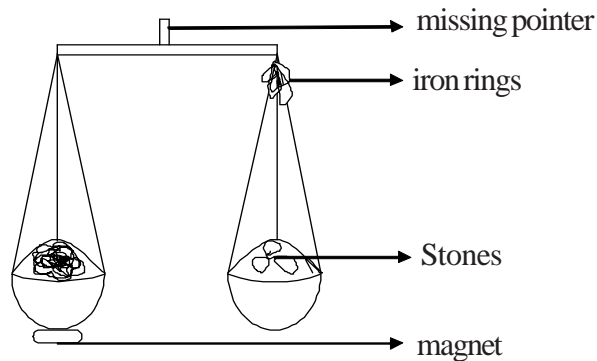


**c. Use Improper Weights Instead of Standard Weights**

Have you ever seen the fruit or vegetable vendor using stones in place of standard weights? Observe the pictures given below.

What are other ways he may cheat us?

- .....



- i. Use irregular weights like bricks and stones instead of standard weights
- ii. Use weighing balance with wooden beam that does not remain horizontal when the pans are empty
- iii. Pointers of weighing scale do not rest at zero, when empty
- iv. Pointers are missing in the balance
- v. Magnet is put under the pan of the scales
- vi. Iron rings hung on one side of the balance.

In addition to the above said malpractices the following things are also used for cheating the consumer:

- i. Narrow bottles with thick glass are used which do not accommodate the specified amount.

- ii. Not measuring liquid upto the brim or measuring milk along with froth
- iii. Not emptying the entire contents while measuring liquids such as oil, petrol milk etc
- iv. Use short or dented measuring rod for fabric or use table as a substitute at the textile shops.

From your experience find more examples of cheating of consumers

- .....

### C. Hoarding of Commodities

When we need more vegetables on occasions like Onam there may be a shortage and a hike in the price of vegetables in the market. You may notice a hike in the price of onion in Kerala.

Haven't you noticed that the demand for clothes is high during festival seasons? Why? List some occasions when the demand for commodities is high.

- .....

Hoarding is an act to keep hidden or private stock of goods in order to create artificial scarcity of the goods, to raise the price. Hoarding is a common practice during periods of high inflation, during wartime and during periods of economic or political instability.

## CRACKDOWN IN CUTTACK ON VEGETABLE HOARDERS

August 17, 2013 | BinitaJaiswal, TNN

<p>CUTTACK: To arrest the rise in the prices of onion and to check hoarding of essential commodities like edible oil and pulses, the Cuttack district administration cracked</p>	<p>down on traders on Friday.</p> <p>The special enforcement squad under the supervision of the food and civil supplies officers raided wholesale</p>	<p>traders in Malgoda and other parts of the city. "The raids were conducted on onion wholesalers but till now we have not found a single case of illegal hoarding."</p>
--	---	--

### Let us do



Analyse the article and above description and draw your conclusion on 'Hoarding'

**Following are some situations where hoarding is takes place in the market:**

- a. Due to strike of unions, truck drivers etc, the consumer might not get certain products in the market. In such situations shopkeepers create artificial shortage in the market by hoarding commodities and demand higher price from the consumers. As a result consumers have no option except to buy these products at a higher price or to do without them.
- b. During a pre-budget session many shopkeepers start hoarding commodities that are liable to cost more lately. This leads to black market that causes undue pressure on families living within limited incomes.
- c. During festival seasons purchase of sweets, clothes etc is high. As the demand is high, shopkeepers hoard these products to make more profit.

**D. Substandard Quality**

Haven't you noticed the advertisement in textile shops "buy one and get one free?". How can they sell two items at single price? Why should they give such an offer?

• .....  
 Among them one product may be of less quality. Which they want to sell out in a minimum period. Seeing the advertisement, consumers run to the shop and buy these things. The shop keeper can thus sell them easily and make higher profits. Let us see how substandard items are easily sold.

- a. Substandard products are freely sold in the market. This can affect the safety of consumers. Moreover good quality products are not available even if the consumer is ready to pay the extra price.
- b. A standard mark on products may not ensure quality and safety. Fake or duplicate products are sold bearing replica of standard marks. They misrepresent or misuse the standard marks.
- c. Very often shop keepers and manufactures sell substandard products by giving them attractive packaging. The average consumer gets so impressed with the packaging that he/she overlooks the quality. Hence the consumer is deprived of his/her money's worth.

**E. Inadequate / Misleading Labelling**

How will you get information about a new product in the market?

• .....  
 Do you read all the information given on the packet of a product?

If you are allergic to some soaps, you need high Total Fat Matter (TFM) soaps that contain some salicylic acid and coal tar. In order to find such a soap you have to read the label of the soap.

What all necessary data is missing in the label?



### Do you know!

PURE bathing soap with glycerine. MKTD by glc, Gk street, Mumbai 400900 Maharashtra. Use before 24 months from the date of packing. Evaluated for dermatological safety. ML No 112/3423. MRP(Inclusive of all taxes)Net Wt When Packed 75 gm.

Ingredients: Water, Sodium palmate, glycerol, perfume, BHT, CI789.

**PURE  
BATH SOAP**

As all the information is not printed on the label of products, a consumer does not get the opportunity to choose the particular one he wants.

Imitations of popular brands are so cleverly disguised that the consumer finds it difficult to differentiate genuine and misleading labels.

Some examples of substandard / misleading labelling are given below:

- a. Some manufacturers pack substandard products in packaging similar in size, shape, colour and label to those of popular brands, so that the consumer is misled. No difference is assumed by consumers.
- b. Free attractive gifts and discounts are offered with low quality products. Also sometimes the consumer is forced to take certain free gifts with some essential items. eg. Every time the consumer buys detergents he gets free bath soap.
- c. Improper information regarding composition, mode of storing and the method of using are used in poor quality products. Date of expiry ensures your safety when you use the packed product.

### F. Customer Persuasion by Shop Keepers

Suppose you want to buy a packet of rice of a particular brand when you approach a shop, the shopkeeper persuades you to purchase another brand? Do you wish to approach such a shop again?

The shopkeeper persuades consumers to purchase a particular product. Do you know why?

- .....

It demands higher rate of commission for them. A vigilant and sensible consumer should persuade the shopkeeper to get variety so as to select a better product.



**G. False Advertisement**

“Our Health drink has made the students of Class A score better than those of Class B” This is an advertisement of a formula drink. Do you think this advertisement is genuine?

Markets are flooded with innumerable brands that it becomes difficult for a consumer to make the right choice.

Advertisements are a major way to attract consumers. It is a very forceful tool for persuading and influencing consumers. The product is so attractively and convincingly advertised that the consumer feels tempted to purchase it. While advertising manufacturers give an exaggerated picture of their product and the consumer gets disillusioned, when these products do not measure upto the quality advertised.

**Let us do**



*Analyse advertisements of various products and prepare a report on their genuineness.*

**H. Delayed and Inadequate Consumer Services**

Read the newspaper.

**Youth loses job due to postal delay**

The Department of Posts in Odisha has instituted a probe into the unsavoury episode of a teenager failing it to make it to the interview for a sailor’s job in the Indian Navy following delayed delivery of the interview letter. The interview letter dispatched from Delhi on

August 25 moved at a snail’s pace and took 14 days to reach Erasama post office in Jagatsinghpur district. Two more days were consumed for the delivery of the letter to the addressee’s home which was hardly 2 km from the post office. **From The Hindu**



What is your reaction to this news?

- .....
- Health, water, electricity, post and telegraphs are the services experienced by a large number of consumers. Some examples from daily life are given below.
- a. Consumers often encounter problems of disruption in electricity and water supply along with wrong billing and over charging.
  - b. Complaints are often ignored or work is not done until the workers are tipped.
  - c. Poor maintenance of services often bring inconveniences to consumers.

### I. Adulteration

An adulterant is a substance found within other substances (eg. food, beverages, fuels) although not allowed for legal or other reasons. The addition of adulterants is called adulteration. An adulterant is distinct from permitted food additives. There can be a fine line between adulterant and additive; chicory may be added to coffee to reduce the cost—this is adulteration if not declared, but may be stated on the label. The term “contamination” is usually used for the inclusion of unwanted substances due to accident or negligence rather than intent.

Adulterants added to reduce the amount of expensive product in illicit drugs are called cutting agents. Deliberate addition of toxic adulterants to food or other products for human consumption is poisoning. Adulteration can be defined as adding extraneous, improper or inferior ingredients to make a product impure. Adulteration in food is a serious issue so we will discuss this in detail.

### Let us do



*Collect newspaper cuttings related to such malpractices prevailing in our society and categorise them and prepare a note based on this. Give a complaint against this to the authority.*

### Check your progress

1. Define consumer education.
2. What do you mean by hoarding of commodities?
3. How are consumers cheated while buying loose products?
4. Write the role of advertisements in the purchase of goods?
5. What are the advantages of consumer education?
6. Write short notes on labels.

## 12.2. Food Adulteration

Adulteration is a very serious and common problem faced by Indian consumers. It may be done on food, fibre and other material goods. Since food adulteration is a serious health hazard to mankind, let us learn it in detail.

Adulteration means addition or removal of any substance from the original product so as to change its nature, composition or quality. Adulteration can be intentional or incidental. Intentional adulteration is the mixing of adulterants intentionally to make more profit. Incidental adulteration is due to the accidental mixing of certain products during manufacturing, packing, transporting or storing the products. Metallic contamination can be incidental or intentional. We have to be alert against such malpractices.

### Safety Against Food Adulteration

The Food Safety and Standards Authority of India (FSSAI) has been established under the Food Safety and Standards Act, 2006 as a statutory body for laying down science based standards for articles of food and regulating, manufacturing, processing, distribution, sale and import of food, so as to ensure safe and wholesome food for human consumption.



#### Do you know!

The FSSAI is an agency of the Ministry of Health and family welfare, Govt. of India. FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety. FSSAI has been established under food safety and standards Act 2006 which is a consolidating statute related to food safety and regulation in India.

According to FSSAI food is declared adulterated if:

- a substance when added depreciates or injuriously affects the food
- cheaper or inferior substances are substituted wholly or in part
- any valuable or necessary constituent has been wholly or in part extracted
- it is an imitation
- it is coloured or otherwise treated to improve its appearance or if it contains any added substance injurious to health. For whatever reasons its quality is below the standard.

Now we have learned what adulteration is. Let us conclude what adulterants are. An adulterant can thus be defined as ‘any cheap outside item which looks the same as the original food stuff which mixes very well with it and is not very easy to detect’.

### Types of Adulterants and its Health Hazards

Regular intake of adulterated food can lead to many health problems. Adulterants are of three types A. Intentional B. Incidental and C. Metallic contamination of adulterants can cause long term health hazards or even death. Here we discuss about types of adulterants and its health hazards.

**A. Intentional Adulterants and Health Hazards:** Intentional adulterants are those substances which are added to the original food stuff purposefully to make more profit. The common adulterants of this type are sand, marble chips, stones, mud, other filth, talc, chalk powder, water, mineral oil or harmful colour. Certain health hazards of intentional adulterants in food items are discussed in Table 12.1

Sl No.	Adulterants used	Food commonly involved	Health Hazards
1	Stones, mud, grit, dry twigs, stems etc	Cereals and pulses	Stomach disorders, damage to teeth and gums.
2.	Kesari dal	Channa dal and arhar red gram	A crippling paralytic stage called lathyrism.
3.	Metanil yellow	Yellow colored pulses, dals, sweets, jaggery, turmeric powder etc.	Cancer, abnormalities in skin, eyes, lungs and bones. Degeneration of reproductive organs- ovaries, testis. Its excessive use leads to sterility. Abnormalities in foetus, Mental retardation, anaemia etc.

Sl No.	Adulterants used	Food commonly involved	Health Hazards
4.	Argemone seeds and oil	Mustard seed and mustard oil.	Argemone oil is very toxic and regular consumption may lead to blindness, oedema, epidemic dropsy etc.
5.	Mineral oils	Edible oils	Fat soluble vitamins are destroyed by even a little consumption of these oils. Excessive consumption may lead to vomiting and intestinal problems. Certain mineral oils may cause cancer.

*Table 12.1 Health Hazards of Intentional Adulterants in Food Items*

*Source B. Srilakshmi. (2011)*

**B. Incidental Adulterants and Health Hazards :** Incidental adulterants are those substances which may be mixed accidentally due to ignorance during manufacturing, processing or packing or transportation or any other means. Pesticide residues, droppings of rodents, larvae in foods etc. are some of the examples of this kind.

Raw foods such as meat, fish, milk and vegetables grown on sewage are likely to be contaminated with harmful micro organisms. These are generally destroyed during cooking or processing of food. Some of the micro organisms may survive due to inadequate heat processing. Further some of the foods, if consumed in the raw state, may cause food poisoning. Recent studies have shown that food grains, legumes and oil seeds when stored in humid atmosphere are infected by pathogenic organisms which cause serious illness. Some incidental adulterants used in food and their health hazards are given in Table 12.2.

SI No.	Pathogenic Organisms	Food commonly involved	Health Hazards
I	(a) Bacterial Bacillus cereus	Cereal Products	Nausea, vomiting abdominal pain
	(b) Clostridium botulinum	Defectively processed meat and fish.	Botulism (muscular), paralysis, death due to respiratory failure
	(c) Clostridium perfringens	Defectively processed pre- cooked meat	Nausea, abdominal pain and diarrhoea
II	(a) Fungal Aspergillus flavus (aflatoxin)	Corn and groundnut	Liver damage and cancer
	(b) Penicillium islandicum	Rice	Liver damage
III	(a) Parasitic Trichinella spiralis	Pork and pork products	Nausea, vomiting, diarrhoea, colic and muscular pain
	(b) Ascaris lumbricoides	Raw vegetables grown on sewage farms	Ascariasis

*Table 12.2 Incidental Adulterants used in Food and Its Health Hazards  
Source B. Srilakshmi (2011)*

### C. Metallic Contamination and Health Hazards

Don't you buy milkmaid to make payasm?. In which type of container do you get it?

- .....
- Materials used for making tin containers may be lead or similar materials. Lead is a toxic element and contamination of food with lead can cause toxic symptoms. eg. Turmeric is coated with lead chromate to enhance its appearance. Presence of lead brings hazardous problems like pathological pain, anaemia, insomnia, muscular paralysis and brain damage.

Studies show that silver foil used for sweets and in pan masala contain carcinogenic nickel, lead, chromium, and cadmium. Silver metal is transformed into the thin foil used in sweets by workers in small factories. Certain metallic contaminants are arsenic (from pesticides), lead (from water), effluents (from chemical industries) and tin (from cans). This may be done either intentionally or incidentally. Toxic effects of certain metals and chemicals are given in Table 12.3

Sl No.	Name	Food commonly involved	Toxic Effects
1.	Arsenic	Fruits sprayed with lead arsenate, drinking water	Dizziness, chills, cramps paralysis leading to death
2.	Barium	Foods contaminated by rat poison	Violent paralysis, muscular twitching and convulsions
3.	Cadmium	Fruit juices and soft drinks, that come in contact with cadmium and plated vessels, crabs, oysters and kidneys	Excessive salivation, liver and kidney damage, prostrate cancer, multiple fractures
4.	Cobalt	Water, beer	Cardiac failure
5.	Copper	Acid foods in contact with tarnished copper ware	Vomiting, diarrhoea, abdominal pain

*Table 12.3 Toxic Effects of some Metals and Chemicals*  
 Source : B. Srilakshmi, (2011)

**Common Adulterants Present in Different Food Stuffs and their Detection.**

There are certain methods to detect the adulterants present in common food stuffs. These are summarised in Table 12.4

Food Stuff	Adulterant	Test	Observation	Result
Rice	Stone Chips	Wash rice in water	Stone chips will settle down	Adulterant is present
Suji	Stone chips	Wash suji in water	Stone chips will settle down	Adulterant is present
Channa dal	a) Kesari dal	Add 5ml of dilute HCL to dal. Keep the glass in simmering water for 15 minutes	If pink color appears	Kesari dal is present
	b) Metanil yellow	Soak 5gm of dal in 5ml of water and add concentrated Hcl	Magenta colour appears	Adulterant is present
Milk	a)Water	Transfer milk from one glass to another	Milk is not sticky on the glass	Adulterated with water
	b)Starch	Add a few drops of iodine solution	Milk turns bluish black	Starch is present
Tea leaves	Used and dyed leaves	Put the sample on wet blotting paper	If brown colour appears	Adulterant is present
	Iron fillings	Pass magnet over tea leaves.	Iron stick to magnet Pure coriander	Adulterant is present.
Coriander powder	Dirt, grit	Add 5cc of carbon tetra chloride to coriander powder.	powder will float on the beaker and dirt will settle down.	

Table 12.4

*Intentional Adulterants and Methods of Detection Source: Aradhana Bhattacharya*

**Let us do**



*Collect at least 5 sample materials given in the above list from 5 different shops and conduct a test to analyse the adulteration*

**12.3 Consumer Aids**

What do you mean by an aid?

- .....

Can you name an aid which helps consumers in purchasing things?

- .....

Consumer aids are those tools that guide and assist consumers in selecting and buying a product according to their requirement. Following consumer aids help the consumer in making purchases in the market.

**A Standard/Certification Mark**

Considering the interest of Indian consumers, our government has undertaken various initiatives for keeping and upgrading the quality of the products. So our government is operating a certification scheme under which standard marks are provided to the items. Government has made the use of standard mark mandatory on some item of mass consumption connected with health and safety.

The standard mark indicates that the product has been produced in accordance with the norms laid down by the standardising agency. Standard marks also encourage manufacturers to provide better competition in the market and also upgrade the quality of their products. Each standard mark plays a unique role.

Name any two standard marks used in the market?

- .....

While inspection of two wheeler passengers police charge them if they do not wear ISI marked helmets. What do you mean by ISI mark?

What is the standard mark used in gold jewellery?

- .....

Gold merchants usually claim that their gold is marked with BIS. What is BIS?

- .....

Bureau of Indian Standards (BIS) earlier known by the name Indian Standards Institution (ISI) gives manufacturers the licence to use the familiar standard mark. Under this scheme licenses are granted only after ensuring that the manufacturer is capable and competent of producing the products as per the requirements of BIS on a continuous basis.



ISI mark is given to variety of products like electrical goods, soaps, gas stoves of cylinders, cement, custard powder, common salt, biscuits, baking powder, cocoa, milk powder, condensed milk, wafers, coffee powder, ice cream, chewing gum, drinking chocolate, mineral water etc.

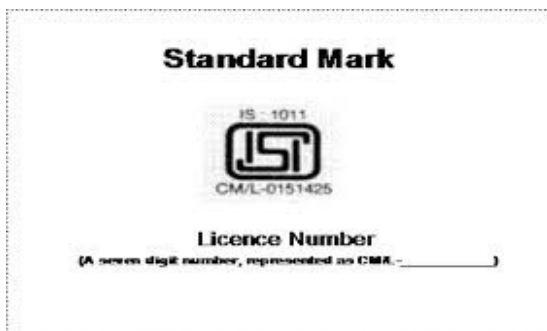
After every five years, each standard mark is reviewed for amendments. Some types of improper use of standard marks are:

- Using standard mark on a product/its packaging/ advertisement without a licence
- Using imitation of the mark
- Misusing the use of BIS or ISI name
- Claim of conformity to Indian Standards
- Using standard mark on products that are inferior in quality
- Misrepresentation that the manufacturer is registered with BIS or is holding a licence



The certification scheme is basically voluntary in character but some of the items require compulsory BIS certification scheme under PFA act (Prevention of Food Adulteration). They are food colours, food colour preparation, natural food colours, food additives, infant milk food, infant formula, milk-cereal based weaning food, milk powder and condensed milk.

In addition to ISI and BIS mark some other examples of standard marks are given below.



The ghee bottle is marked with AGMARK. What is meant by AGMARK?

**a. The AGMARK Standard:** The word AGMARK is derived from agricultural marketing. The AGMARK standard was set up by the Directorate of Marketing and Inspection of Government of India by introducing and Agricultural Products Act in 1973. Its main features are:



- i. It categorises commodities into various grades depending on the degree of purity. These grades are 1, 2, 3, 4 or extra large, large, medium, small etc.
- ii. These standards also specify the type of packing to be used for different products, for eg. Special egg trays, milk poly bags, oil bags or cartons.
- iii. It also helps in the establishment of healthy market practices such as use of standard weights and measures, licensing of market functioning rises, arrangements for settlements of disputes in regard to quality, weights and discounts.
- iv. AGMARK is given to ghee, butter, oil, wheat flour, rice, sugar, jaggery, honey, gram flour, spices, eggs, peanuts, tea leaves, fruits, potato etc.

List some brands and products with real Agmark

- .....

**b. Fruit Products Order**

You might have observed this emblem on some products.

- .....

The Government of India promulgated a fruit products order in 1946. In 1955, the order was revised. This order is operated by the food and nutrition board of the Ministry of Food Processing Industries. Its features are:

- i. It lays minimum standards relating to quality of various preserved foods made from fruits and vegetables
- ii. It also lays standards of hygiene and sanitation
- iii. It lays minimum standards that must be maintained throughout the farming, manufacturing, processing and retailing of the product
- iv. It also gives instructions for packaging, labelling and temperature of food containers



v. The agricultural marketing advisor is authorised by law to issue a license for manufacturing fruits and vegetable products. FPO mark is given to food products like pickles, jams, squashes, fruits juices, ketchups, sauces and marmalades, frozen and canned foods.

c. **ECO Mark:** These marks have been recently introduced by BIS. These marks are testimony of not only ISI standard of the product but also ensure recycling and control the pollution in the environment. This mark is given on products like paper bags, jute bags, plastic goods, packing material etc.



d. **Wool Mark:**

This mark is awarded by the International Wool Secretariat. It ensures that the product with this mark



is of pure wool or the label should mention the percentage of wool and other fibre used in the finished product.

e. **Silk Mark:** This mark is awarded by the Indian Silk Organisation. This mark ensures that the product has been made of pure silk.



f. **100% vegetarian mark:** This mark ensures that all the ingredients in the product are 100% vegetarian.

The green dot symbol identifies vegetarian food and the brown dot symbol identifies non-vegetarian food.



It is applicable for packaged food products.

### Let us do



- Identify some preserved products and categorise the types/brands with vegetarian and non-vegetarian symbols.
- Find out some standard marked items from the market and categorise them
- Bring the label of a soap or rice powder from the market and analyse. What all information you get from it?

### **Limitations of Standard Marks**

- Replica of Standard Marks may be used
- Manufacturers may claim conformity to certification marks or claim to hold licence even when they are cancelled.

### **B. Labels and Price Lists**

Label informs the consumer about the quality and method of its usage. Label is engraved, printed or pasted on the packing of the product. Bureau of Indian Standards has fixed certain standard for a complete label. A good label must provide the following information.

- i. Name of the product
- ii. Brand name
- iii. Trade mark
- iv. Manufacturer's name and address
- v. Name of country in which product made
- vi. Contents / ingredients
- vii. Net weight / volume / length
- viii. Instruction for use
- ix. MRP (Maximum Retail Price)
- x. Warnings and precautions
- xi. Directions for use, care, maintenance, storage
- xii. Date of manufacture and expiry.

### **Advantages of Labels**

The advantages of labels are:

- a. Labels assist a consumer in making right choice of the product
- b. The list of ingredients especially in the case of food products and medicines may be helpful if a person is allergic to some ingredients
- c. Standard marks helps to see whether the product maintains quality
- d. Help to identify, compare and check the rates and amounts
- f. In the case of any complaint, the consumers can be contacted directly from the address given in the label
- g. Labels provide guidance to consumers about the storage and use of the product
- h. Any special schemes like price discounts, gifts etc. is also mentioned on the labels

- i. A consumer can refer to a label as and when required.

### **Limitations of Labels**

The limitations of labels are

- a. Some labels may not give complete and correct information on all the above aspects
- b. The print may not be very clear or very small or overlapping
- c. Labels may mislead the consumer regarding the quality or quantity of the product.

### **C. Packing**

Did you ever open a branded electronic product like mobile phone? Did you observe how safe its packing is? Why?

- .....

Packed products are safe in many ways. What are the advantages of the packed product?

### **Advantages of Packing**

Advantages of packing are:

- a. It provides attraction to the product
- b. Does not get spoiled that is protect the contents from contamination or damage or evaporation
- c. Is safe against breakage
- d. There is no possibility of adulteration
- v. There is no possibility of pilferage
- vi. Easy to carry
- vii. To indicate the quality of the product through standardized mark.

### **Limitations of Packing**

The limitations of packing are:

- a. Complete information may not be given
- b. Inferior products can sold in the attractive packages
- c. Low quality packing may destroy the product
- d. Packing charge increase the product price
- e. Packing materials may not be environment friendly
- f. The size of the packing may mislead the consumer about the size of the product.

### D. Advertisements

Do you think advertisements give any benefits to the consumer? Draw your conclusion

- .....
- Advertisements provide information regarding the availability, quality and method of use of product. Manufacturers advertise their products through television, newspaper, radio, magazine etc. A consumer tries to get information regarding availability of new products from advertisements. Purchasing should be made only on the basis of requirement and common sense. It is an important and easy way to promote sales.

#### Advantages of Advertisements

The advantages of advertisements are:

- a. It is a very forceful tool of persuading and influencing the consumer's judgement
- b. They help the consumer to know and compare various products available in the market
- c. Help to know the price of the product.

#### Limitations of Advertisements

The limitations of advertisements are:

- i. These are usually persuasive, exaggerated and misleading. The products are not as effective as claimed
- ii. Complete information is not given through advertisements
- iii. They are shown for a very brief period and information cannot be stored for future reference.

#### Let us do



*Observe the 5 different types of consumer aids for 5 different products and analyse their merits and demerits*

### E. Consumer Forums and Consumer Societies

Sometimes consumers purchase items from consumer societies. Through these societies, the consumer gets good quality products at reasonable prices. Mostly these societies do not earn profit. Their overload charges are comparatively less because the members render free services.

These societies buy good quality products at reasonable prices directly from the manufacturers and sell them to consumer at the same price. These cooperative societies get grants and tax exemption from government. Agriculture bank too provide loans to them at low interest rate.

Some autonomous bodies also safeguard the interest of consumers. Super bazaars, cooperative stores etc provide good quality products at reasonable rates to consumers. Super bazaar has its own laboratories, where tests especially of food products are done from time to time.

### Let us do



*Visit any two consumer societies in your neighbourhood and compare the price of goods with that of open market.*

## F. Laws for Consumer Protection

Read the newspaper cutting given below:

Our government passed certain laws to protect our rights as a consumer. Under these laws any consumer with a genuine grievance can file a formal complaint against a trader and take him to court. These laws are briefly discussed below.

### a. Agricultural produce (Grading and Marketing) Act:

Under this Act, AGMARK standardisation mark is given by the Government to agricultural or

farm produce. eg. wheat flour, gram flour, honey, spices, ghee etc. This law ensures that these products are tested for purity, graded according to their quality and packed suitably.

**b. Drugs and Cosmetics Act:** It regulates and ensures that only standard quality medicines and cosmetics are sold in the market with a proper cash memo or bill.

**c. Prevention of Food Adulteration Act:** This law protects the consumer against adulterated and spoilt food stuff.

NEW DELHI, September 9, 2013

### Bank fined Rs.2 lakh by consumer court

Standard Chartered bank has been directed by a consumer forum here to pay Rs.2 lakh as compensation to a customer for repossessing his car without giving him notice for alleged default on his loan payment. The New Delhi District Consumer Disputes Redressal Forum awarded the damages to the complainant after observing that the bank had not shown the account statements of the loan paid and balance due. PTI

- d. Essential Commodities Act:** As per this Act, the government ensures that all goods and services essential to life are available in the market at a reasonable price. The Government list of essential commodities includes items like cereals, pulses, sugar, raw jute, cotton and woolen textiles, medicines, paper, coal, petrol, and petroleum products, iron, steel, cattle fodder etc.
- e. Standards of Weights and Measures:** This Act prevents the use of non-standard weights and measures. It makes it compulsory for all products to bear a detailed label.
- f. Fruit Product Order (FPO):** Under this Act, it is compulsory for all manufacturers of fruit and vegetable products to maintain certain standards with respect of quality, packing, labeling and sanitary conditions followed during production, storage and sale. It ensures that safe canned, preserved and processed products like pickles, jams, juices, squashes, frozen vegetables and fruits are sold in the market. All products that meet the FPO specification are given in the FPO standardisation mark.

### Let us do



*Find more laws for the protecting consumers and present it in your school bulletin board*

### G. Booklets and Leaflets

Manufacturers publish booklets or leaflets to give information regarding their products.

The advantages of booklets/leaflets are:

#### Advantages of booklets/leaflets

- They inform the consumer about the existence of the product
- They contain information of full range of products available, their salient features, specifications and uses
- They also give some details of cost of equipment, instructions for installation and maintenance.

#### Limitations of booklets/leaflets

The limitations of booklet/leaflets are:

- They are not readily available
- Most of the time they are packed inside the product



- c. Shopkeepers refuse to open them unless the consumer buys the product
- d. Information given is not complete
- e. Print is blurred, too small or overlapping

#### H. Consumer Redressal Forum

Various committees and forums have been set up in order to protect the consumer from the malpractices of the manufacturers. If a consumer after purchasing feels that the product is not upto the mark he can approach this forum. The situations in which one can approach this forum are:

- Service is substandard
- Adulterated
- Charged more than permitted price
- Lesser in quantity than the permitted one
- Gave poor service

Anyone can file a complaint against the seller in consumer redressal forum. Now our government has introduced many programmes to safe guard the interests of the consumers

### 12.5 Consumer Protection (Amendment) Act-2011

Our government has introduced **Consumer Protection Amendment Bill 2011** in Loksabha on December 16<sup>th</sup> April 2011 to facilitate quicker disposal of cases and to widen and amplify the scope of some of the provisions of the Act.

The enactment of the Consumer Protection Act 1986 was an important milestone in the field of consumer protection. In terms of the Act, consumer disputes redressal agencies have been set up at the 629 districts, 35 states and National levels to render simple, inexpensive and speedy justice to consumers in respect of complaints against defective goods, deficient services and unfair/restrictive trade practices. With a view to the fast redressal of complaints and to rationalise procedure of appointments in consumer disputes in redressal agencies it has been felt necessary to amend the Act.

#### Salient Features of Consumer Protection Act

- a. This act is applicable on both goods and services. Goods are manufactured by the manufacturer and consumer buys them from manufacturer or seller. Services include transport, electricity, water, roads, etc.

- b. Consumer redressal forum- Consumer redressal forums/courts are institutions that hear grievances of consumers of products or services of companies/firms/sellers/shops regarding the alleged misspelling, unsatisfactory service for repair and maintenance against guarantees/warrantees given, selling of defective products, accidents and damage caused by selling of unsafe products and arrange for redressal of consumers grievance after finding out the truth. Their orders to the sellers of products and services are legally binding. Under Consumer Protection Act, three judicial systems have been set up to provide relief to consumers. In this system, consumer forums have been set up at various levels which are functioning to safe guard the interests of consumers. Under this system, many forums and commissions have been set up at various levels where consumers can lodge their complaints.
- i. At the district level there is Consumer Dispute Redressal forum. It is headed by a judicial officer equivalent to Session Judge. He is assisted by two members. Cases involve compensation upto 20 lakh are entertained in this forum
  - ii. At the state level there is State Consumer Dispute Redressal Commission. It is headed by a judicial officer equivalent to High Court Judge. He is also assisted by two members. Here cases involve compensation from 20 lakh to one crore are entertained
  - iii. At the national level there is National Consumer Dispute Redressal Commission. It is headed by a Judge of Supreme Court. He is assisted by four members. Here cases involve compensation above one crore are entertained. National Commission has jurisdiction for appeals coming up against orders of State Commission. Supreme Court is the final deciding authority.
- c. Under this act there is provision to settle the complaint within three months of filing it. If the complaint needs laboratory testing, the period is extended to five months.
- d. In Consumer Protection Act, Clause VI defines the rights of the consumer.
- e. There is no fee for lodging a complaint. Even poor people can get justice.
- f. Clause II of this Act has defined some terms used by Cosumer Protection Act such as:
- **Defect**-It is any fault or short coming in quality, quantity, purity, potency or standard fixed by the government.

- **Deficiency**-It is any fault, shortcoming or imperfection in quality or performance.
- **Unfair Trade Practice**-It is unfair and deceptive procedure used to promote sale or supply of goods and services like lottery, chit fund, conducting competitions etc.

### Procedure for Seeking Redressal

What will we do if our fridge does not function properly even after repeated complaints to the shopkeeper?

- .....

#### Who can file a complaint?

A consumer, consumer organisation, any voluntary consumer society registers under present law, State or Central government can file a complaint. In case complaints are more than one, a joint complaint can be filed. eg. If there is a problem of drinking water in any locality, the people of that locality can jointly file a complaint.



#### Do you know!

World Consumer Rights Day:

15th March is observed as World Consumer Rights Day throughout the world every year. Its aim is to make the consumer aware about his/her rights.

#### When to file a Complaint.

- If there is any defect in the goods
- If the services are not up to the mark
- Charging more than the maximum retail price
- If goods are under weight
- If there is any loss or damage due to unfair trade practices.

All complaints should be filed within two years from the date of purchase of goods or services

#### Where to File a Complaint ?

The level of forum where a complaint is to be lodged is determined by the probable amount of compensation.

#### How to File a Complaint?

- The complaint can be filed personally or through registered post
- The complaint should be filed on a complete form

- iii. The defendant should be informed about the complaint by registered post. A period of 15 days should be given to him to clear his position or redress the grievances
- iv. The complainant should assure that the complaint is genuine before filing it. Documents like bill, cash receipt, warranty card etc. should be attached along with the complaint to prove its validity
- v. The complaint form should contain the full details of the complaint, details of the loss and compensation demanded
- vi. Three copies of complaint along with relevant documents are to be submitted in the consumer forum or consumer commission
- vii. An affidavit along with complaint should be submitted wherein it should be specifically stated that the contents of the complaint are true and correct and accompanying documents are true and duly attested. When the consumer lodges a complaint, the court can issue the following orders
  - To rectify the defect
  - To replace the goods
  - To refund the cost of goods
  - To compensate in case of loss

In case the product is harmful to life, the complainants demand the removal of the product from the market with immediate effect

### Let us do



*Suppose your mother purchased a television from a store and it is damaged within one month. But the shopkeeper did not replace it or return your money. The shopkeeper didn't take any action even after repeated complaints. In these circumstances prepare an action plan to protect your right as a consumer.*

### Check your progress

1. List the advantages of labels.
2. Name the standard marks given to ghee and biscuits?
3. List consumer aids.
4. Write short notes on Consumer Amendment (Protection) Act.

### Let us sum up

A consumer is one who buys and uses various products. A consumer faces many problems such as variation in prices, non-availability of items, adulteration, hoarding of

commodities, unfair means of measurement, misleading advertisements, substandard products, malpractices adopted by manufactures and sellers etc. Among this, adulteration is a major problem, because it affects our health. In the present times, the biggest problem is that, the consumer does not get pure commodities like ghee, butter, milk, spices etc. even if one is prepared to pay higher profits. Major health hazards occur as a result of consuming adulterated food stuffs. There are various measures to detect the adulterants present in different food stuffs. AS a result of modernization, there are number of goods and services are available in the market used in everyday life. Consumer education helps to make wise choices from a variety of products. A consumer aid guide the consumers in selecting goods according to their requirement. Consumer aids like standard marks, labels, price lists, packings', advertisements, food laws, consumer societies, booklets and leaflets and consumer redressal forums help the consumer in making wise choices.

Consumer Protection Act was promulgated on 15 April, 1987 throughout the country concerning consumer protection. This Act is applicable on both goods and services. Three tier judicial system has been set up to provide relief to consumers. Every consumer have the right to select products according to their need and should be aware about the malpractices followed by manufacturers and sellers.

### Learning Outcomes

- Evaluates the problems faced by consumers
- Demonstrates, identifies and experiments common adulterants present in food stuffs
- Identifies different consumer aids and differentiates their merits and demerits

### 12.4 Explains COPRA

#### Evaluation Questions

1. How do advertisements mislead consumers?
2. Explain the salient features of Consumer Protection Act 2011.
3. List the advantages and limitations of packing.
4. Name the adulterant present in tea leaves. How will you detect it?.
5. Compare labels and leaflets.
6. Explain different types of adulterants.

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