

S. No.	Topic	Details
1.	Science Skills and Safety	<ul style="list-style-type: none"> • Understanding scientific methods and working in the laboratory. • Follow instructions in the laboratory • Identify and use basic laboratory equipment • Draw scientific diagrams of apparatus • Measure temperature and volume • Follow safety techniques when using equipment • Make observations using the five senses • Describe the scientific method • Make inferences based on observations • Record a science experiment using standard headings • Use scientific language • Collect, represent and interpret data in tables and graphs
2	Pushes and Pulls	<ul style="list-style-type: none"> • Understanding of what forces are and what they can do • Measure forces using a spring balance • Describe what forces are and what they can do • Calculate the density of an object • Carry out experiments with friction, gravity and density. • Explain the difference between mass and weight • Say what friction is and explain how it can be helpful or a nuisance. • Explain things in terms of the pull of gravity
3	Survival in the Environment	<ul style="list-style-type: none"> • Understanding of how physical and behavioural adaptations help animals survive. • Define the terms habitat and adaptation • List characteristics that help an organism survive • Distinguish between an animal's living and physical environment • Classify adaptations as structural or behavioural

		<ul style="list-style-type: none"> • List the physical conditions that affect aquatic animals • Research, carry out and write up a study of a particular environment • Make inferences from observations
4	Solids, Liquids and Gases	<ul style="list-style-type: none"> • Understanding of the differences between solids, liquids and gases. • Explain the three states of matter • Measure the temperature of melting ice • Recall the boiling point of water and the melting point of ice • Draw simple graphs • Calculate the density of materials • Measure mass using a balance • Use a particle model
5	Responding	<ul style="list-style-type: none"> • Define the terms stimulus and respond and how they relate • Understanding of how our body senses help us respond to our environment. • Describe how nerves carry messages • Describe the various senses in our body • Investigate the senses • Investigate how fast our muscles react • Explain how muscles move arms and legs
6	Energy	<ul style="list-style-type: none"> • Understanding of the different types of energy and energy changes. • Identify and describe the various forms of energy • Describe what energy is and where it comes from • Explain the difference between stored energy in action • Understand how sound is caused • Explain everyday happenings in terms in energy changes • Understand that fossil fuels are a non-renewable resource • Use different forms of energy to make an object move

		<ul style="list-style-type: none"> • Conduct an experiment involving energy changes
7	How Life Begins	<ul style="list-style-type: none"> • Understanding of how new life is created in humans. • Describe the sex cell of humans • Describe the differences between animal and plant cell • Describe the human reproductive organs • Observe the development of a baby during pregnancy • Understand the changes that take place in boy's and girl's bodies during puberty
8	Solving Problems in Science	<ul style="list-style-type: none"> • Understanding the scientific method. • Write up report of experiments • Describe the scientific method • Write hypothesis • Test a hypothesis by doing an experiment • Design an experiment using the scientific method
9	Acids and Bases	<ul style="list-style-type: none"> • Understanding what are acids and bases. • Understand ph and its practical uses define neutralisation • Describe the properties of acids and bases • Use ph paper to check acidity • Use and make indicators • Use acids and bases safely • To be aware of the formation and effect of acid rain • Apply knowledge of acids and bases to everyday situations
10	Interdisciplinary "Space" Studying the Universe	<ul style="list-style-type: none"> • Know the order of the planets • Understanding our solar system and space exploration. • Describe key features of each planet • Describe spiral, elliptical and irregular galaxies • Distinguish between comet, asteroids and meteors

		<ul style="list-style-type: none"> • Explain the significance of star colour • Be aware of the impact of space exploration • Identify major constellations • Make scale model of planets • Plot positions of stars • Design and make a space mobile or building from recycled materials
11	Materials from the Earth	<ul style="list-style-type: none"> • Understand what natural resources are • Understanding natural resources, where they are found and what they are used for. • Present information on renewable resources • name useful substances made from natural materials e.g. glass and concrete • Find out whether or not natural resources are renewable • Understand how materials and rocks are mined and how they are used • Map the locations of various mineral resources around the world Understand how fossil fuels, uranium and water are used to provide energy
12	Science and technology	<ul style="list-style-type: none"> • Explain the difference between science and technology • Understanding of how technology has been used to solve problem. • Find out about some inventors and inventions • Be aware of inventions • Design a test to solve an everyday problem • Carry out a science fair experiment • Research to find relevant information
13	Keeping Healthy	<ul style="list-style-type: none"> • Understanding the digestive and circulatory systems. • Use the model to explain how food passes from the small intestine to the bloodstream • Explain what the part of the digestive system do during digestion

		<ul style="list-style-type: none"> • Describe the importance of fibre in the diet • Understand the effect of exercise on pulse and breathing rates • Investigate the structure and care of teeth • Describe how the blood carries food and oxygen to the body cells • Describe the structure of the heart and how to take care of it
14	Batteries and Bulbs	<ul style="list-style-type: none"> • Understanding of batteries' concept and circuits. • Draw circuit diagrams • Make simple circuits • Know the difference between series and parallel circuits • Understand about resistance and short circuits • Describe the properties of conductors and insulators • Explain how electrical safety device work (fuses and earths) • Know the component of electrical plug • Understand the rules for using electrical safely
15	Atoms and Molecules	<ul style="list-style-type: none"> • Describe the practical theory to explain the properties of solids, liquids and gases • Understanding of atoms, molecules, elements and compounds. • Know the name of some common molecules • Explain that matter is made of atoms and molecules • Describe what elements and compounds are • Understand the basic structure of the atom • Know the first twenty elements and their symbol from the periodic table • Explain the difference between elements and compounds in termof atoms and molecules • Know about some of the people who discovered different elements • Write a simple word equation • Know the formula of some common compounds

16	Cycles in nature	<ul style="list-style-type: none"> • Understanding of food chains and webs • Describe how bacteria and fungi recycle substances • Use food chains to show the link between animals and plants • Construct food webs • Know the difference between scavengers and decomposers
17	What are Things made of	<ul style="list-style-type: none"> • Understanding of the concept of the periodic table and the elements • Review particle theory, atoms, molecules, elements and compounds • Atoms and Molecules • Understand basic patterns of the periodic table • Learn to write simple equation • Learn the first 20 elements by symbol and name • Know the basic structure of the atom, protons, neutrons, electrons • Know about alloy • Look at where metals and other important materials come from and what they are used for
18	Diseases	<ul style="list-style-type: none"> • Understanding how infections disease is caused and transmitted • Know which organism cause common diseases • Describe the microorganisms that cause disease • Understand how our body fights disease • Understand about how antibiotics are used to fight disease • Understand the history of disease and vaccination
19	Global Consumer Science	<ul style="list-style-type: none"> • Understanding of scientific testing of consumer product and the impact of consumerproducts on our health and environment. • Understand the difference between objective and subjective testing • Use the steps of scientific testing • Calculate the waste from packaging • Know about the argument surrounding genetically modified foods

		<ul style="list-style-type: none"> • Understand how long different substances take to break down • Research recycling • Understand the impact of consumer products on our environment
20	Science and the Road	<ul style="list-style-type: none"> • Understanding of Newton's First Law (Inertia), friction, Reaction Time, Acceleration, Carsafety. • Know about car safety features • Understand the main reasons for car accidents • Be aware of road safety • Measure reaction time • Calculate speed and acceleration • List the factors affecting stopping time
21	Interdisciplinary "The Body" Life Goes On	<ul style="list-style-type: none"> • Understanding of human reproduction and inheritance. • Recognise variation in human characteristics • Describe the structure and function of the male and female reproductive system • Describe the role of genes and chromosomes in human inheritance • Be able to calculate the chance of children being born male or female using model • Use family trees to determine the features of family members • Use grids to predict variation in offspring characteristics • Describe genetic engineering and social implications
22	Light and Colour	<ul style="list-style-type: none"> • Understanding of how light and colour are produced. • Explain why things are coloured • List the colours of spectrum • Describe how long and short sightedness can be corrected with lenses • Find out how we see colours and why colour blindness occurs • Observe how light travels in straight lines

		<ul style="list-style-type: none"> • Investigate how different colours are made • Observe how images form when light reflects from a mirror • Predict the colour produced when filters are used • Investigate how lenses bend light to form images
23.	Forensic Science	<ul style="list-style-type: none"> • Understanding of how science is used in crime detection. • Understand how scientists collect and interpret the physical evidence from a crime • Describe the job of a forensic scientist • Investigate hypothetical crimes • Use chromatography to examine ink samples • Examine fingerprints • Use an indicator to detect the presence of certain substances • Understand about ballistic and genetic evidence • Examine evidence using a microscope • Understand about the use of atomic absorption spectrophotometers to examine traces of chemical • Write hypothetical forensic reports • Construct an evidence table and detect patterns
24.	Mathematics Ability	<ul style="list-style-type: none"> • Understanding of the mathematics • Statistics • Fraction • Simple Trigonometry • Logarithms • Simple Geometry • Arithmetic and Geometric Progression • Power and square roots • Quadratic Equations

