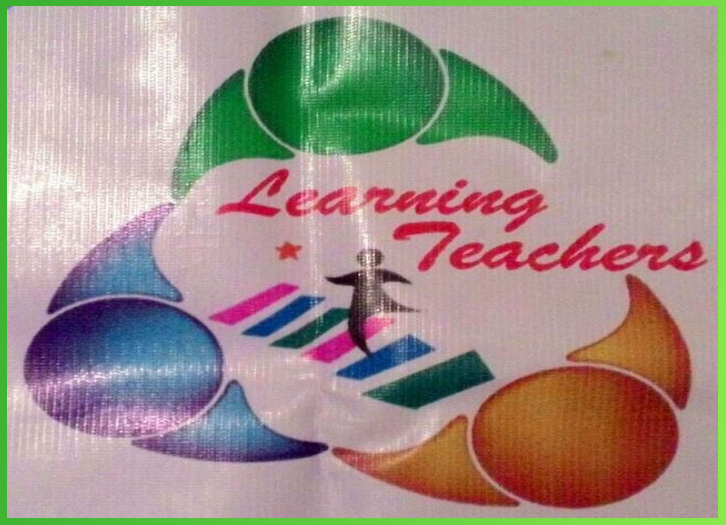
Along with motion



T Sreelal

NSS UP Scool Uppada

Learning teachaers Kerala

Along with motion

- Is the water in moving ?

Is the train in moving ?

Can a ferris wheel move ?

Is the mountain in moving ?

Can it move ?

What's about a rock ?

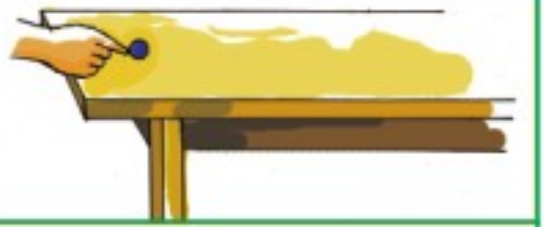
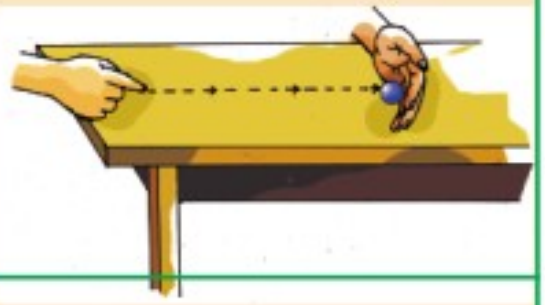
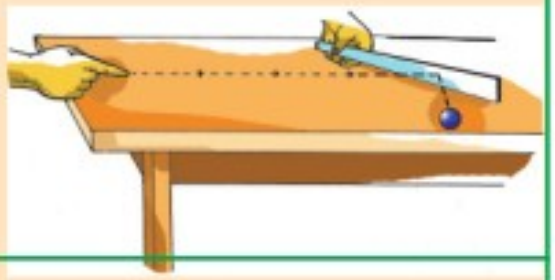
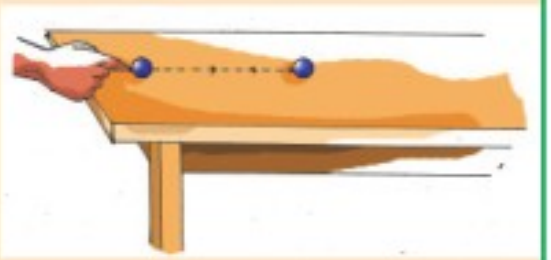
.....a building ?

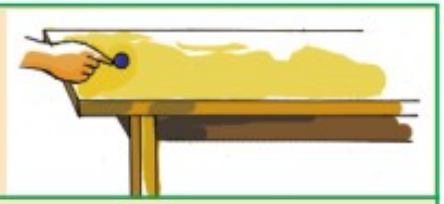
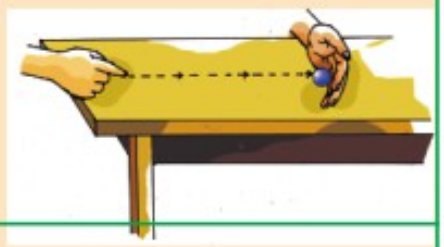
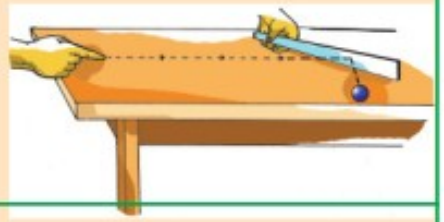
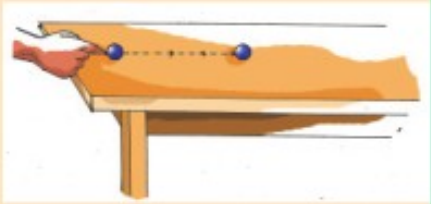
Let's observe...

Motion with in the body

- Blood circulation
- Breathing
- Heart beating
- ……

Let's do these activities

1. Place a marble *(goli)* at one end of a desk and strike it using a finger.	
2. Allow the marble to roll slowly on the desk. Gently place your hand blocking its path.	
3. Allow the marble to roll with a considerable speed on the desk. Hold a scale in a slightly inclined position in its path.	
4. Roll the marble slowly on the desk. Roll another marble in the same direction at a greater speed so that it collides with the first one.	

1.	Place a marble *(goli)* at one end of a desk and strike it using a finger.	
2.	Allow the marble to roll slowly on the desk. Gently place your hand blocking its path.	
3.	Allow the marble to roll with a considerable speed on the desk. Hold a scale in a slightly inclined position in its path.	
4.	Roll the marble slowly on the desk. Roll another marble in the same direction at a greater speed so that it collides with the first one.	

When did the marble, which was at rest, start moving?

When did it come to rest?

When did it change its direction of motion?

When did the speed of the rolling marble increase?

Force and motion

- We can move objects at rest by applying force
- We can make moving objects to the state of rest by applying force
- We can change the direction of motion by applying force
- We can increase the speed of motion by applying force
- We can decrease the speed of motion by applying force

Types of motion

Swirling a stone tied to a rope.

A rotating top.

A ripe mango falling down.

The wheel of a vehicle rotating.

Lift going up.

Toy train running along a circular path.

Observe these motions. Which of them resemble the different motionsof the pencil?

പെൻസിലിന്റെ വിവിധ ചലനങ്ങളുമായി സമാനതകൾ ഉള്ളവ

Those resembling the action of sharpening the pencil	Those resembling the action of of drawing a circle using the compass	Those resembling the action of drawing a straight line by using a scale
Rotation of a top	Swirling a stone tied to a rope	Ripe mango falling down
The wheel of a vehicle rotating.	Toy train running along a circular path.	Lift going up.

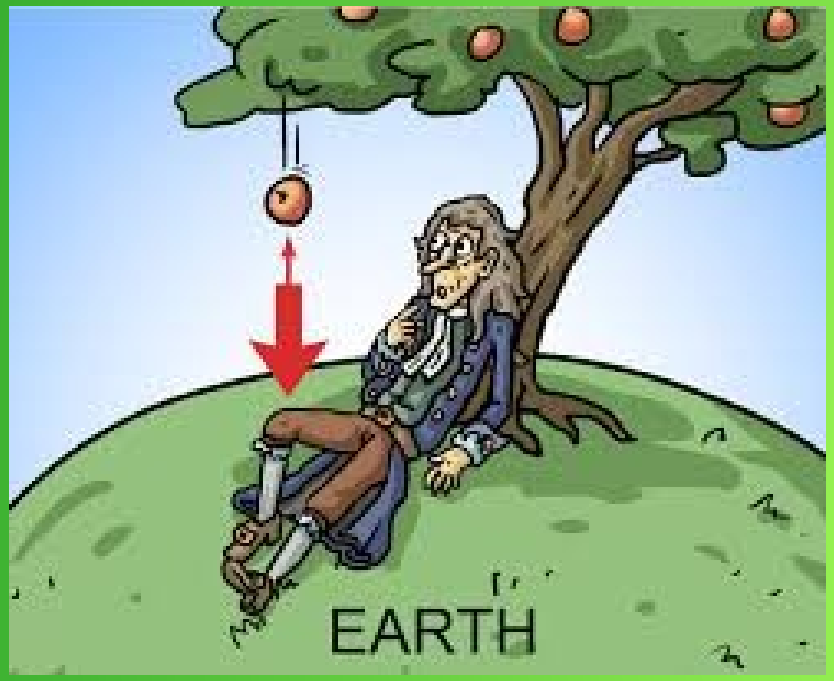
What is the common feature of the motion in each group?

How do groups one and two differ?

Watch this video

[Types of motion]

Find out the similarity among the following motions...



Linear motion

- The motion of an object along a straight line is called linear motion.

  Examples ;

  falling of a mango,
  dripping rain water,
  bullet from the gun,
  a smashed ball .....etc

See the similarities

Circular motion

- The motion of an object along a circular path is called circular motion.
- Example

  hands of a clock,
  leaves of a fan,
  swirling a stone tied to rope,
  pencil fixed in compass .....etc

Notice the similarity in the movement of these things.....

Rotation

- The movement of an object about its own axis is rotation.
- Example

  rotation of a top,
  wheels of a vehicle,
  rotor of a fan .....etc

Notice the similarity in the movement

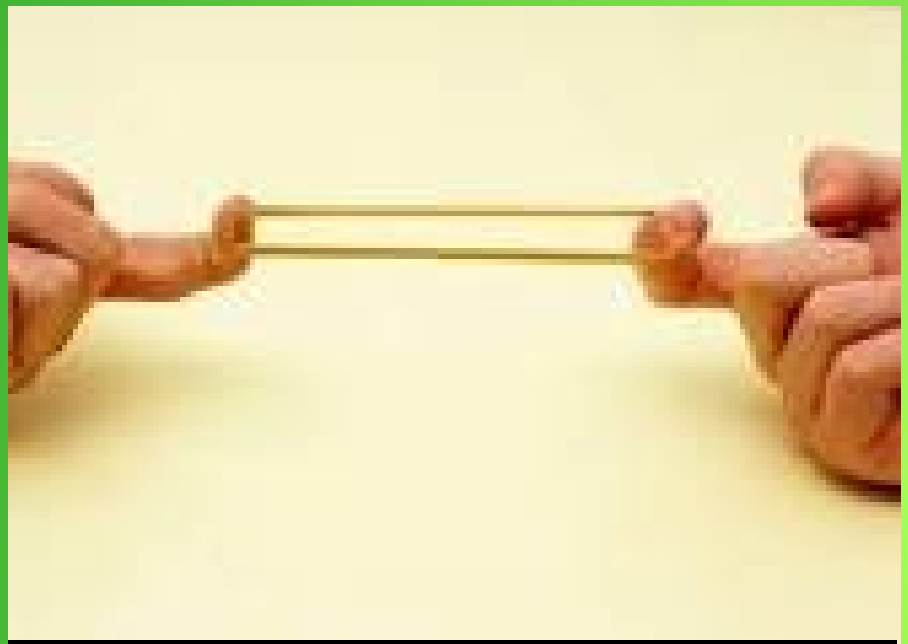
- .

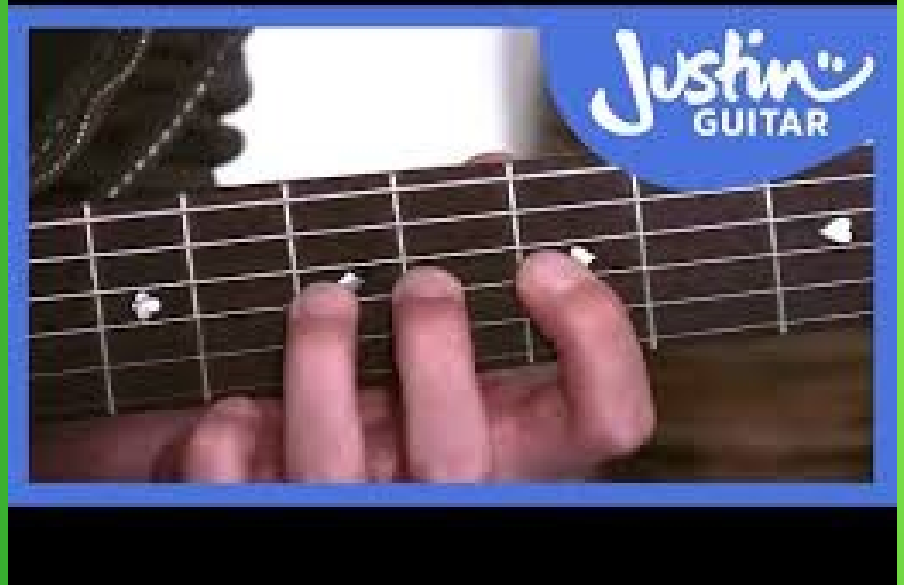
Oscillation

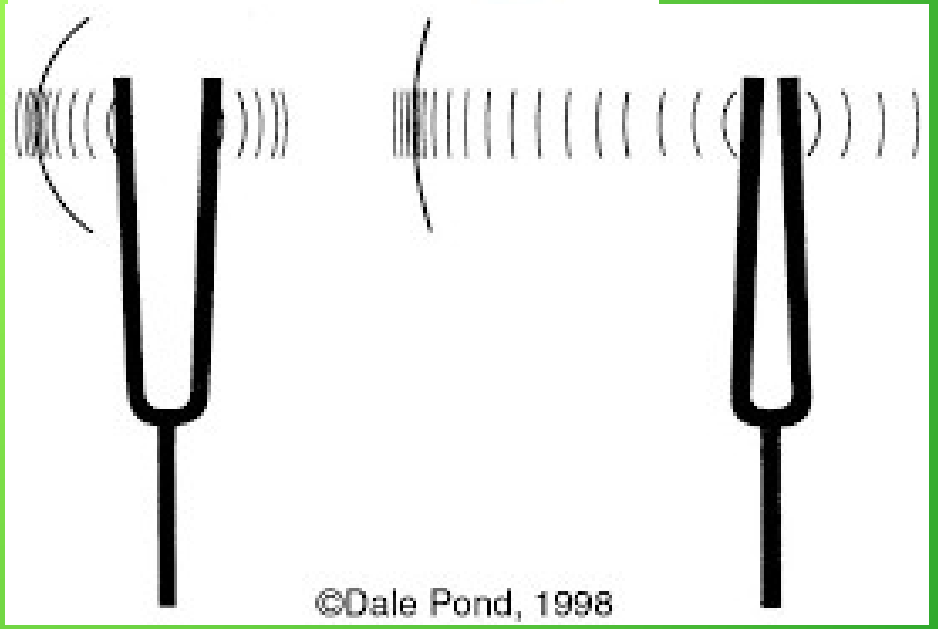
- The to and fro motion of an object about a mean position is called oscillation.
- Example

  motion of a swing,
  motion of a pendulum,
  motion of hanging lamp .....etc

Which type of motion they have....?







Vibration

- Fast oscillations are referred to as vibrations
- Examples

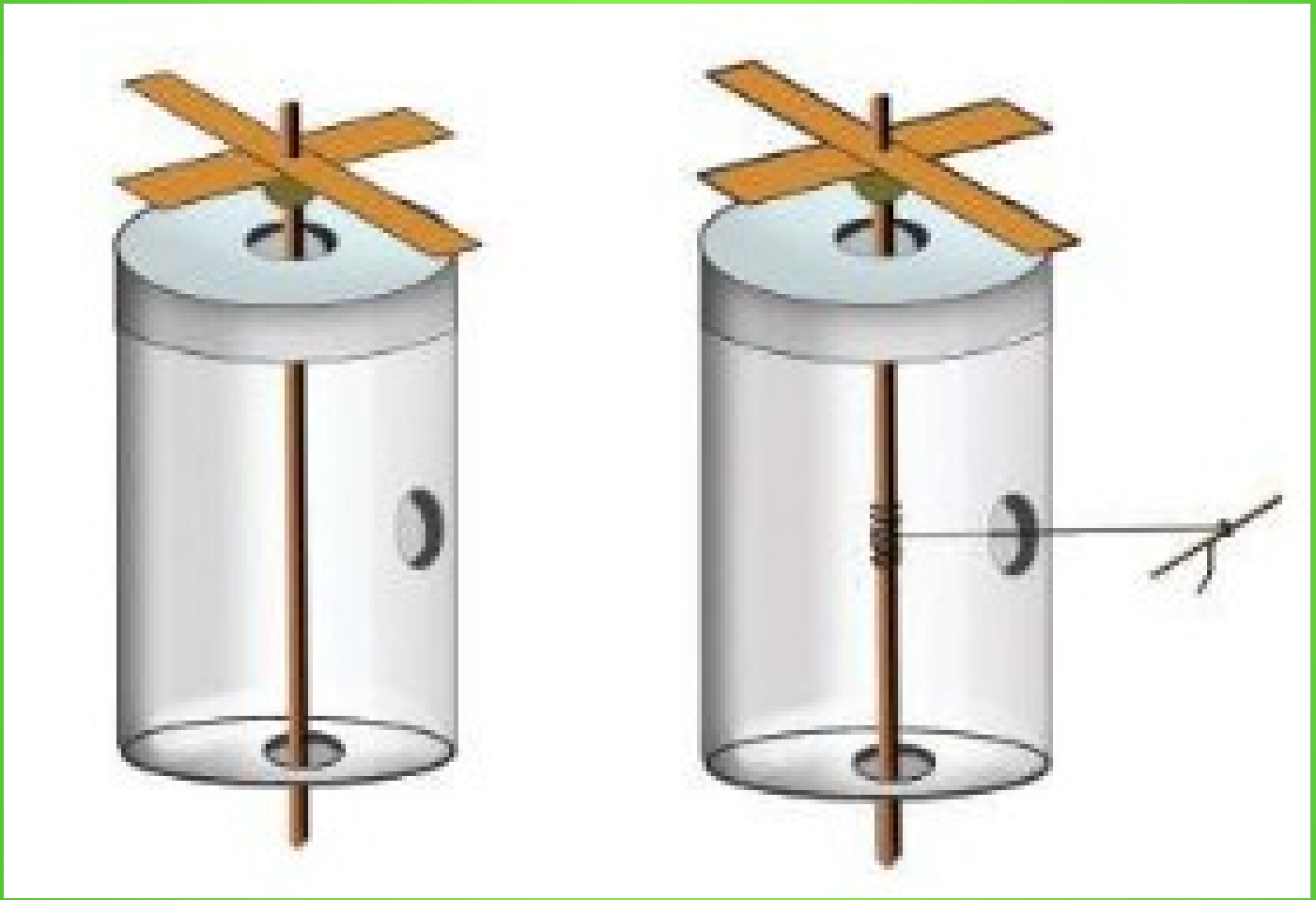
  motions of;

  a stretched rubber band,
  tuning fork,
  string of a guitar .....etc

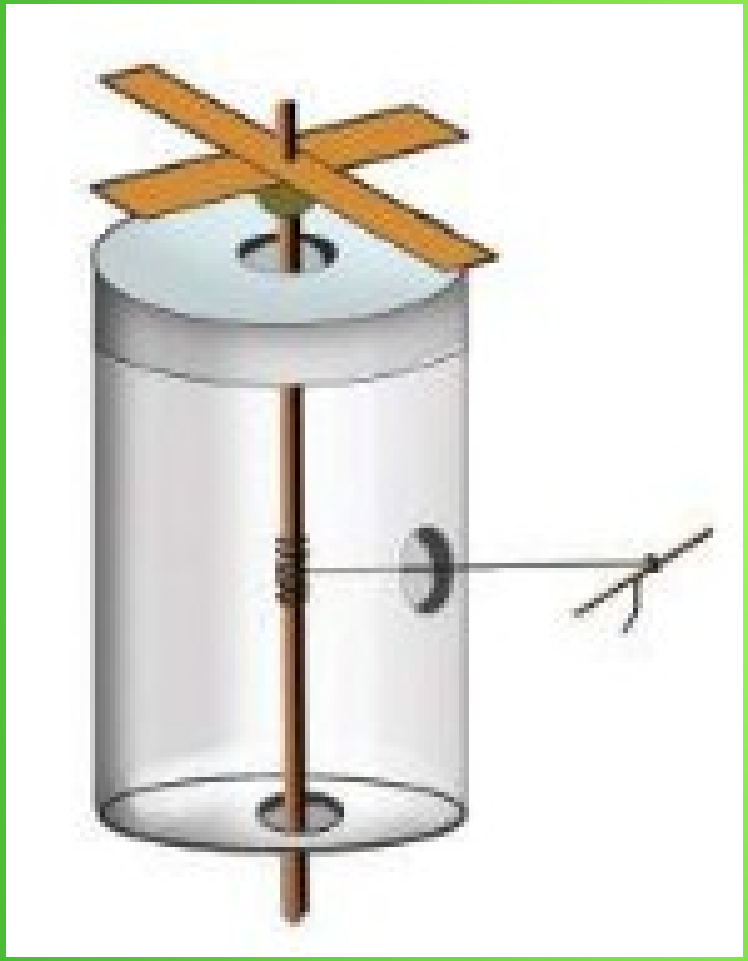
Complete the table

Body in motion	Type of motion	Use
The membrane of a 'chenda' (drumhead)	oscillation	produces sound
A rotating chair		
The tip of a clock's hand		
The smaller wheel of a sewing machine		
A lift		
A swing		
The string of a veena		
Wheels of a flourmill		

Let’s make a toy fan



Let’s make a toy fan



Let’s rotate the fan

How did the motion of the thread pass to the leaf of the fan?

Transmission of motion

Where do we apply force while cycling? How is this rotation transferred to other parts?

How is it in a stitching machine?

Which part is set to motion first while working a flour mill?

How is this rotation transferred to other parts

Transmission of motion

- The force applied on a machine can be transferred to other parts of the machine or other machines thus setting them into motion.
- We make use of ...
- the chain,
- belt,
- wheel and axil, etc.. for this purpose.

Gears

- Gears are used to change the speed and direction of motion. They help us to set in motion more than one part of a machine at different speeds and in different directions.
- When a big wheel is turned using a small wheel, the speed of rotation decreases and when it reversed, the speed increases.