

# **HOLY TRINITY INTERNATIONAL SCHOOL**

**MELPALAI. EDAICODE P.O., K.K. DIST**

**Grade VIII**

**Science**

**Force and Motion**

## **I. Read and learn the answers for the following questions.**

1. What is force?

A push or pull on an object is called force.

2. Give two example of each of selections in which you push or pull to change the stat of motion of an object?

- i. We push a tricycle to move it.
- ii. We pull the door to open.

3. What is the resultant force when two forces act in the direction?

Forces applied on an object in the same direction they add to one another.

4. What will be the resultant force, when two forces act in opposite direction on an object?

When two forces act in opposite direction on an object then the net force will be the difference between two forces.

5. What are the various effects on the force of different objects?

The various effects of forces are

- A force can make an objects move from rest.
- It can change the speed of a moving object.
- It can change the shape of object.
- It can change the direction of motion of an object.

6. What are the two factors on which effect of force depends?

There are two factors on which the effect of force depends.

Magnitude:

The strength of force is usually expressed by its magnitude

- Direction of force

We have also to specify the direction of force in which it acts.

If the direction magnitude of force changes, this effect also changes

7. What are states of motion.

An object can be in two positions one is at rest or other in motion both are its state of motion. Any change in this position can be called the charge in the state of motion. The state of motion. Any change in the state of motion. The state of motion of an object is described by its speed and the direction of motion.

8. How can a force change the stes of motion?

There are two states of an object.

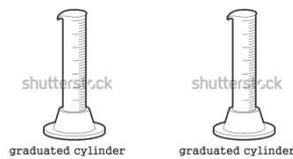
- i. Rest
- ii. Motion.

When a force is applied on a body them it can move in the same way a force can change the direction of a moving object as well as its speed. A force can stop a moving object.

If the force is applied in the direction of motion at an object, then its speed is increased. If the force acts in opposite direction then the speed of an object is decreased.

9. Prove that the pressure exerted by water at the bottom of container depends on the height of its column.

Take a transparent glass tube or a plastic pipe. Also take a piece of this sheet of a good quality rubber or a rubber balloon stretch the rubber sheet tightly over one end of the pipe. Hold the pipe at the middle, keeping it in a vertical position. Pour some water in the pipe. Note the height of the water column in the pipe pour some water. Observe again the bulge in the rubber sheet and the height of the water column in the pipe. Repeat this process a few more times. We observe that as the height of water column increases the bulge in the rubber also increases



10. Show that a liquid exerts pressure on the walls of the container?

Take a plastic bottle. Fix a cylindrical glass cube, a few cm long near its bottom. You can do so by slightly heating one end of the glass cube and then quickly inserting it near the bottom of the bottle. Make sure that the water does not leak from the joint. If there is a leakage seal it with moun. Wax cover the mouth of the glass cube with a thin rubber sheet. Now just the bottle upto half with water. We observe the bulge rubber sheet. Pour some water in the bottle. Is there any change in the hudge of the rubber we see more bulge in this activity.



11. In the following students identify the agent exerting the force and the object on which it acts state the effect of force in each case.

- Squeezing a lemon between the fingers to extract its juice?
- Taking out paste from toothpaste tube.

The hand is the agent tooth paste tube is object and the coming out of paste from toothpaste tube is the effect of force.

- A load suspended from a spring while its other end is on a hook fixed to a wall.

Suspended load is agent spring is the object, the effect of force can be seen in the form of elongation of spring on suspension of load.

d. An athlete making high jump to clear the bar at a certain height.

Athlete is agent, bar is the object. The force can be seen in the form of jump

12. A black smith hammers a hot piece of iron while making a tool. How does the force due to hammering affect the piece of iron?

A force due to hammering causes the changes in shape of iron, and iron can be moulded in the shape of the required tool.

13. Name the forces acting on a plastic bucket. Containing water held above the ground level in your hand. Discuss why the force acting on the bucket do not bring a change in its state of motion?

Muscular and gravitational forces act on plastic bucket, the forces acting on the bucket do not bring a change in state of motion because they are acting in opposite directions with equal magnitude therefore the net force on bucket remains zero.