**18th May, 2020 JESUS AND MARY SCHOOL AND COLLEGE MODULE 2**

**CLASS – 6**

**SUBJECT- PHYSICS**

**CHAPTER- FORCE**

* ***FORCE*-** A force is a push or pull on an object. **Example-** When you push your friend on a swing, you are using a force, when you kick the ball, you are applying force on it, etc.
* ***EFFECTS OF FORCE*-** Force as a push or pull acting on a body which changes or tends to change the state of the body (rest or motion) or the speed or direction of motion, or its shape or size. **When the speed of the bodyis zero, it is considered to be at rest.**
* ***CHANGE IN STATE OF MOTION* -** If the force applied on the object is in the direction of its motion, the speed of the object increases.**Ex-** Ball cannot move on its own, neither can a chair or table. All non-living objects are stationary unless a force is acting on them.
* ***FORCE CAN CHANGE THE DIRECTION***-We can also change the direction of a moving body by applying force in the desired direction. **Ex-** In a cricket match, when a batsman hits the moving ball with his bat, the direction of the ball changes.
* ***FORCE CAN STOP MOTION-***If an object is moving and there is an applied force in the opposite direction of the motion. **Ex-** We can stop a moving ball with our hands by applying force.
* ***FORCE CAN CHANGE THE SHAPE AND SIZE OF AN OBJECT***- We can change the shape and size of object by applying force. **Ex-** When you mould clay, the clay changes shape, when you crumble paper, the paper changes its shape. Similarly, we can change the shape and size of a spring.
* **Force** is usually denoted by letter **F.** Force can be expressed in gram force (gf), kilogram force (kgf), dyne or newton (N). The SI unit for force is **Newton**. Force is measured with the help of a device called **spring balance.**
* ***TYPES OF FORCES*–** Force can be classified primarily into two categories.

1. **Contact Forces**
2. **Non-contact Forces**

* ***Contact Forces –***Forces in which two or more objects or bodies touch each other directly are called contact forces. There are various kinds of contact forces like applied force, normal force, tension, muscular force, collision force, friction, mechanical force, etc.
* **Applied Force –** A force that is applied to an object by a person or another object. **Ex-** when a table, desk or chair is pushed.
* **Normal Force –** The normal force is a force of contact when two surfaces are not in connection. **Ex-** when a book is placed as a table, table exists normal force.
* **Tension –** The force that is transmitted through a rope, string or wire. **Ex-** when we pull a cart with a rope.
* **Muscular Force –** The force exerted by the muscles of our body is called muscular force. **Ex-** while walking, running, lifting etc.
* **Collision Force –** When two bodies collide (contact) with each other is called collision force. **Ex-** when two cars collide, they exert force on each other.
* **Friction -** A force that exist between two surfaces in contact and always opposes the motion of one surface over the object. When two surfaces in contact move with respect to each other is called friction.
* **Mechanical Force –** The force produced by machines is called mechanical force **Ex-** The engine of a bus runs with the help of fuel and moves the bus.
* ***Non–contact Forces –*** These are the forces that act between two bodies and that do require physical contact between the bodies. There are various kinds of non-contact forces such as magnetic, electrostatic, gravitational force, etc.
* **Electrostatic Force –** The force exerted by a charged body on another charged body or uncharged is known as electrostatic force.
* **Gravitational Force –** It is the force which attracts any two objects with a mass, the force with which earth attracts an object of mass towards itself. **Ex-** The force that causes a ball that is thrown up in the air comes back due to gravitational force.

**WORKSHEET**

***Ques. Fill in the blanks.***

1. When speed of a body is zero, it is considered to be at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. For the force to act, the two bodies must \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with each other.
3. By applying force in the direction opposite to the direction of the motion of a body, we can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its speed.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes the state of rest or state of motion of a body.
5. The SI unit of force is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Ques. Write TRUE or FALSE.***

1. The force acting on a body increases the mass of the body.
2. Force can change the direction of motion.
3. If the applied force is not enough, the object may not move.
4. Force can change the shape and size of a body.
5. Frictional force is a non-contact force.

***Ques. Answer the following questions.***

1. Give the names of different types of non-contact force.
2. When is an object said to be at rest?
3. What is force?
4. Differentiate between contact and non-contact force.
5. Give an example of force as push.
6. Give the names of different types of non-contact force.

**NOTE: Please do all this work in your copies which will be checked when the school reopens. Please consider this important.**

**SOLUTION TO MODULE-1**

***Ques. Fill in the blanks.***

1. Identical
2. Less, more
3. Zig-Zag
4. More
5. Less

***Ques. TRUE or FALSE.***

1. True
2. True
3. False
4. True
5. True

***Ques. Answer the following questions.***

1. L.P.G. or Butane
2. Iron and Wood
3. Matter is anything that occupies space and has weight.
4. Solids have definite shape and volume.
5. Force of attraction between molecules of a substance is called Intermolecular force.

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