

DELHI MODERN PUBLIC SCHOOL, PAMPORE

Class: 4th

Subject: Science

Study Material: Term-I

Lesson no. 13

Topic: Force, Work and Energy

In this chapter, we are going to learn about force, different kinds of forces, work and machines, energy, various sources of energy, various forms of energy.

- Understand and distinguish between different kinds of forces.
- Know about work and machines.
- Identify the sources and forms of energy.

DAY 1:

Read half lesson and underline the main points and learn them.(page no. 132-135)+ Do page no. 132 on book.

DAY 2:

Read the half lesson and underline the main points and learn them (page no. 136-138) and underline the important points and learn them.+ Do practice zone.

DAY 3:

Read full lesson and do review zone.

DAY 4:

Recapitulate the lesson and do part A on book.

A) Tick (✓)the correct answer:

1. All of these.
2. energy
3. changing the position of a sofa.
4. Pulley
5. gravitational force.

DAY 5:

Do part B, C on book.

B)State True or False:

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

C)Match the following:

- d
- e
- b

a

c

DAY 6:

Do part D short answer questions:

1. A force acting on an object may cause the object to change shape, to start moving, to stop moving, to accelerate or decelerate.

2. Friction is the resistance of motion when one object rubs against another.

Anytime two objects rub against each other, they cause friction .

Friction works against the motions and acts in the opposite direction.

3. Work is said to be done when an object moves as a result of a force acting on it.

For example, work is done when a box is pushed and its position changes.

4. The wheel and axle is a machine consisting of a wheel attached to a smaller axle so that these two parts rotate together in which a force is transferred from one to the other.

Machines such as steering wheels in cars, roller skates and door knobs make use of wheel and axle.

5. Geothermal energy is the energy obtained from the earth (geo) from the hot rocks present inside the earth.

DAY 7:

Do long answer questions (3 questions)

1. a) The difference between muscular force and mechanical force is: the muscular force is exerted by our muscles whereas the mechanical force is exerted by machines.

b) An example of a muscular force is to lift your school bag. An example of a mechanical force is someone pushing a door.

2. The gravitational force is a force that attracts any two objects with mass. We call the gravitational force attractive because it always tries to pull masses together, it never pushes them apart. The sun's gravitational pull keeps our planet orbiting the sun. The motion of the moon is affected by the gravity of the sun and the earth. The moon's gravity pulls on the earth and makes the tides rise and fall every day. Gravity helps the earth to stay just the right distance from the sun, so it's not too hot or too cold.

3. Friction is a force exerted when two surfaces are in contact with each other.

Friction acts on all the moving objects but the direction of the force of friction is always opposite to the direction of movement of the object.

Anything that started to move would never stop without friction.

DAY 8:

Do 3 long answer questions:

4. A simple machine is a tool, device or object with few moving parts that helps us do work and that make work easier for us.

There are six types of simple machines_____ the lever, the pulley, the wheel and axel, the inclined plane, the wedge and the screw.

5. The difference between an inclined plane and a wedge are as follows:

a) the inclined plane stays still while as wedge moves to do its work.

b) An inclined plane is a simple machine . It allows one to use less force to move an object while as a wedge is made up of two inclined planes. The edge of a wedge is often called the blade.

c) Examples of inclined planes are ramps, sloping roads while as examples of a wedges are knives, axes, forks.

6.

a) Lever: A lever is a long rod that can be used to cut things, move heavy objects or open tins. A hammer , a bottle opener and see- saw are examples of lever.

b) Pulley: A pulley is made up of a grooved wheel and a rope . It is used to lift loads .In villages ,people draw water out of wells using pulleys . Machines such as cranes and sailboats also make use of pulleys.

c) Screw: A screw is a special form of an inclined plane. It is an inclined plane wrapped around a cylinder. Screws are used to hold objects together . They are used in key rings, bottle caps and many other things.

DAY 9:

Make a simple pulley for a school project.