

LESSON PLAN

SPECIFIC OBJECTIVES

The students learn about

- ✧ force, its kinds and changes it can bring in an object
- ✧ work and energy, sources and forms of energy
- ✧ energy conversions and energy crisis
- ✧ simple machines

TEACHING AIDS

Pictures/animation on muscular force, gravitational force, frictional force (as given in chapter); Pushing a table and almirah; Sources of energy (as given in chapter), solar cooker, solar heater, solar cell, windmill, or dam, a hydropower station; **Pictures/samples/models** of some simple machines (those given in chapter)

LESSON PLAN

- ✧ Teacher will start the lesson with ‘Science Vocabulary’ section by telling the meaning/definition of new terms which are used in the chapter.
- ✧ Now with the help of teaching aids, teacher will describe that for pulling or pushing an object, we apply force on it.
- ✧ Teacher will ask the students to fill in the blanks given with pictures and describe what more a force can do, i.e., make an object move, stop a moving object, change the direction of a moving object.
- ✧ Now, teacher will describe types of force, i.e., muscular force, gravitational force and force of friction.
- ✧ Teacher will define the concept of work that when we apply a force on an object, we do the work.
- ✧ Then, teacher will discuss the concept of energy and explain that energy is the ability to do work.
- ✧ Now with the help of teaching aids, teacher will explain that sun, wind, water, etc. are the sources of energy.
- ✧ Teacher will discuss different forms of energy and with the help of teaching aids, will explain muscular energy, solar energy, wind energy and hydroenergy.

- ✧ Now, teacher will ask students to solve 'Check Point 1'.
- ✧ Teacher will explain that one form of energy can be changed into another form. With the help of teaching aids, teacher will discuss different examples of energy conversions (as given in chapter).
- ✧ Now, teacher will explain the term 'machine' that it is an object which makes our work easier.
- ✧ With the help of teaching aids, teacher will explain the types of simple machines and their uses in everyday life.
- ✧ Now, teacher will ask students to solve 'Check Point 2'.
- ✧ The teacher will sum up the chapter by going through the points given under the head 'Wrapping it up'.
- ✧ Finally, the teacher will help students to solve all the questions given in the 'Exercises'.

BOOST UP

- ✧ Teacher should explain the effects of force by performing some activities.
- ✧ While teaching the effect of force that changes the shape of an object, teacher can show the making of different shapes using coloured clay.
- ✧ To show the force of friction acting between the ball and the ground, teacher can demonstrate a ball rolling on the ground that stops moving after some time.
- ✧ While teaching simple machines, teacher should demonstrate how working without machine is difficult but the same work becomes easier when done with the help of some machine (as discussed in the chapter).
- ✧ Teacher can show the working of some simple machines.
- ✧ Teacher should show the picture/documentary film/video clip on a dam and if possible, arrange a tour to a dam.

EXPECTED LEARNING OUTCOMES

The students

- ✧ understand about force, its kinds and changes it can bring in an object.
- ✧ understand about work and energy.
- ✧ know different sources and forms of energy.
- ✧ understand energy conversions.
- ✧ know about simple machines.

EVALUATIVE QUESTIONS

The teacher may ask the following questions for evaluating learning and understanding of students:

1. How can we make an object move?
2. What is muscular force?
3. What is gravitational force?

4. How does friction stop a moving ball?
5. What is work?
6. What is energy?
7. In which form do we get energy from the sun?
8. In photosynthesis, how does one form of energy change into another form?
9. What are simple machines?
10. How do machines make our work easier?