

Chapter 3

Force

LESSON PLAN

SPECIFIC OBJECTIVES

Students must learn about

- ❖ the concept of force
- ❖ force as a push or a pull
- ❖ effects of a force
- ❖ SI unit of force and resultant force
- ❖ contact and noncontact forces
- ❖ force of friction, its properties, kinds, effects, advantages and disadvantages
- ❖ friction is a necessary evil; methods to reduce and increase friction

Teaching Aids

Pictures/models showing the force as a pull or a push; different kinds of pictures showing contact and noncontact forces, and force of friction and its kinds; pictures and methods in order to reduce and increase friction.

Teaching Strategy

- ❖ The teacher should ask the students to study force as a push or a pull, its related examples and illustrations. He/She should also ask the students to perform activity 1 related to push and activity 2 related to pull given at page 41.
- ❖ The teacher should ask the students to learn something more in which applications of a force are given at page 41.
- ❖ The teacher should ask the students to study effects of a force and activity 3 showing that a force can change the speed (motion) of a moving object. He/She should also ask the students to perform activity 4 showing that a force can change the shape and size of a body given at page 43.
- ❖ The teacher should ask the students to solve check point 1 given at page 44. He/She should also ask the students to study question-answer related to force given at page 44.

- ❖ Students should be asked to study SI unit of force; resultant force; contact and noncontact forces and their examples. They should also be asked to learn question-answer related to resultant force given at page 45. They should also be asked to solve check point 2 given at page 46.
- ❖ Students should be asked to learn force of friction and its related activity 5 given at page 46. They should also be asked to study properties of friction.
- ❖ The teacher should ask the students to perform activity 6 showing that the frictional force is more for rough surfaces given at page 47 and activity 7 showing that the frictional force increases on increasing the mass of a moving object given at page 47.
- ❖ The teacher should teach the students about kinds of friction, i.e., static, sliding and rolling. He should also ask the students to perform activity 8 demonstrating static friction. He/She should ask the students to study sliding and rolling friction in detail along with something more and question-answer given at pages 48-49.
- ❖ The teacher should teach the students about effects of friction. He/She should also ask the students to learn question-answer related to effects of friction given at page 49.
- ❖ Students should be asked to perform activity 9 showing that heat is produced due to friction given at page 50.
- ❖ Students should be asked to study advantages and disadvantages of friction. They should also be asked to learn friction is a necessary and methods to reduce and increase friction given at pages 51-52.
- ❖ Students should be asked to solve check point 3 given at page 53. They should also be asked to learn wrapping it up and know these terms to recap the whole chapter. They should be asked to answer the questions given in test yourself and discuss the think zone given in it.

Boost UP

- ❖ Students should be shown few illustrations of force and they should be asked to identify push or pull of a force. They should also be asked to answer the question related to effects of a force.
- ❖ Students should be encouraged to answer the questions related to SI unit of force and resultant of force.
- ❖ Students should be asked to identify the kinds of contact and noncontact forces using illustrations made by the teacher on the blackboard.
- ❖ The teacher should also arise few questions to the students related to properties, kinds, effects, advantages and disadvantages of the friction. He/She should also ask the students to answer the questions related to methods used in reducing and increasing friction.

Expected Learning Outcomes

Students must be able to know the

- ❖ force as a push or a pull and its detail
- ❖ effects of a force.

- ❖ SI unit of force; resultant force.
- ❖ contact and noncontact forces.
- ❖ properties, effects, advantages and disadvantages of friction.
- ❖ friction is a necessary evil.
- ❖ methods to reduce and increase friction.

Evaluative Questions

The teacher should ask the following questions to evaluate the students.

1. Define a force.
2. Write the SI unit of a force.
3. Name three contact forces with examples.
4. What is meant by force of friction?
5. Write two properties of friction.
6. How can we say that friction causes tear and wear?
7. List two advantages of friction.
8. How can rolling friction of wheels be increased?