

LESSON PLAN**SPECIFIC OBJECTIVES**

The students will learn about

- ✧ friction and its causes
- ✧ types of friction; measuring friction; factors affecting friction
- ✧ need of friction as necessary evil; importance of friction
- ✧ friction in fluids

TEACHING AIDS

Pictures/charts/models/animations on spring balance; ball bearing, roller bearing, worn out tyres, etc.

LESSON PLAN

- ✧ The teacher should start the chapter with Gear Up and ask students the questions given in this section.
- ✧ Now, the teacher should define friction and discuss its causes and types.
- ✧ The teacher should explain how to measure friction by demonstrating Activity 1.
- ✧ The teacher should discuss the factors affecting friction by demonstrating Activities 2 and 3.
- ✧ Now, the teacher should discuss the significance of friction by demonstrating Activity 4.
- ✧ The teacher should discuss the ways for increasing and reducing the friction.
- ✧ Now, the teacher should discuss friction in fluids by demonstrating Activities 5 and 6.
- ✧ Now, students should be asked to solve Check Points 1, 2 and 3.
- ✧ At last, the teacher will sum up the lesson by going through the points given under the head 'Wrap Up Now'.
- ✧ The teacher will help the students to solve all the questions given in exercises under the head 'Practice Time' and will also discuss the topics given under the head 'Formative Tasks'.

BOOST UP

- ✧ The teacher should encourage students to find out some examples of different kinds of friction.
- ✧ Students should be asked to tell some events when increasing friction become a necessity.
- ✧ The teacher should explain the applications of friction in fluids.

EXPECTED LEARNING OUTCOMES

The students know about

- ✧ friction and its causes.
- ✧ different types of friction and their applications.
- ✧ factors which affect the friction.
- ✧ importance of friction as a necessary evil.
- ✧ ways for increasing and decreasing friction.
- ✧ friction in fluids.

EVALUATIVE QUESTIONS

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

1. Define friction and mention its causes.
2. How can we measure the friction?
3. What is meant by static friction? Write its one example.
4. Mention the factors which affect the friction.
5. How can we increase the friction?
6. What is meant by lubrication?
7. Why do we use ball-bearing in wheels and talcum powder on a carom board?