

Chapter 3

Energy

LESSON PLAN

SPECIFIC OBJECTIVES

Students will learn about

- ❖ energy and related few examples
- ❖ work-energy relationship
- ❖ units of energy
- ❖ various forms of energy
- ❖ interconversion of energy
- ❖ law of conservation of energy
- ❖ examples and applications of conservation law of energy

Teaching Aids

Pictures/charts/models/animation based on energy and its different forms used in daily life; few important formulae used in solving numerical problems related to kinetic and potential energies.

Teaching Strategy

- ❖ Students should be encouraged to study definition of energy and also its related examples. They should also be asked to study work-energy relationship and related question-answer given at page 42.
- ❖ Students should be asked to study various forms of energy; to perform activity 1 showing that an object possesses energy; to learn hydroelectricity given in screen; to perform activity 2 showing that a ball bounces due to potential energy of the compressed spring.
- ❖ Students should be asked to study kinetic energy and its related activities 3 and 4 given at page 45. They should also be asked to study something more related to ocean waves and sea tides given at page 45. They should also be asked to solve check point 1 given at page 45.
- ❖ Students should be encouraged to study chemical, heat, light, electrical, magnetic, sound, nuclear, solar and muscular energy with definition, examples and illustrations given at pages 45–48. They should also be asked to solve check point 2 given at page 49.

- ❖ The teacher should teach the students about interconversion of energy with examples and illustrations given at pages 49–50.
- ❖ Students should be encouraged to perform activity 5 showing interconversion of energy.
- ❖ Students should be suggested to study law of conservation of energy. They should also be asked to study examples and applications of conservation law of energy related to oscillating pendulum, motion of a roller coaster and production of hydroelectricity and electricity in thermal power plant. They should also be asked to learn something more related to dissipation of energy given at page 54.
- ❖ Students should be asked by the teacher to recap the chapter using wrapping it up and know these terms. They should also be asked to solve test yourself and discuss the think zone given in it.

Boost UP

- ❖ The teacher should ask each student of the class to define energy and give its few examples. He/She should ask each student to tell the unit of energy and also asked to tell the relationship between calorie and joule.
- ❖ The teacher should write few examples of energy and ask each student of the class to identify the form of energy.
- ❖ Students should be asked to tell the questions related to interconversion of energy and law of conservation of energy.

Expected Learning Outcomes

Students will be able to know the

- ❖ definition of energy and its detail.
- ❖ work-energy relationship.
- ❖ units of energy; relation between calorie and joule.
- ❖ various forms of energy.
- ❖ interconversion of energy.
- ❖ law of conservation of energy.

Evaluative Questions

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

1. Define energy and give its one example.
2. What is the SI unit of energy?
3. Establish the relation between calorie and joule.
4. Define kinetic energy. Write its formula.
5. Write two examples of heat energy.
6. What is meant by interconversion of energy?
7. State law of conservation of energy.
8. Write two applications of law of conservation of energy.