

# 6

## Combustion and Flame

### LESSON PLAN

#### SPECIFIC OBJECTIVES

The students will learn about

- ✧ combustion
- ✧ conditions necessary for combustion
- ✧ firefighting
- ✧ types of combustion
- ✧ flame and its structure
- ✧ fuel, characteristics of a good fuel, fuel efficiency and impacts of its uses on environment

#### TEACHING AIDS

**Pictures/charts/models/animations** on wood, petrol, kerosene, coal, LPG; a fire brigade; carbon dioxide fire extinguisher; forest fire; flames of different materials, zones of a candle flame.

#### LESSON PLAN

- ✧ The teacher should start the chapter with Gear Up and ask students the questions given in this section.
- ✧ The teacher should define combustion by demonstrating Activity 1 and discuss combustible and noncombustible materials by demonstrating Activity 2.
- ✧ The teacher should discuss conditions necessary for combustion and demonstrate Activity 3.
- ✧ Now, the teacher should discuss firefighting and its ways.
- ✧ The teacher should demonstrate Activity 4 and discuss the use of carbon dioxide fire extinguisher.
- ✧ The teacher should also discuss types of combustion.
- ✧ The teacher should define flame, materials that give off flame and structure of flame and demonstrate Activity 5.
- ✧ The teacher should be define, fuel efficiency and features of a good fuel.

- ✧ The teacher should discuss the impacts of burning fuels on environment and its alternatives.
- ✧ Now, the teacher should ask students 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 collect pictures of combustible and noncombustible substances.
- ✧ The teacher should discuss the need of learning firefighting for every one.
- ✧ Students should be encouraged to observe flames of different materials but with care.

### **EXPECTED LEARNING OUTCOMES**

The students know about

- ✧ combustion and its types.
- ✧ conditions required for combustion.
- ✧ firefighting and its ways.
- ✧ flame and structure of a candle flame.
- ✧ fuel, characteristics of a good fuel and fuel efficiency.
- ✧ environmental impact of burning fuels and its alternatives.

### **EVALUATIVE QUESTIONS**

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

1. Define combustion.
2. Mention the conditions necessary for combustion.
3. Write the steps taken in order to fight a fire.
4. Define spontaneous combustion.
5. Describe the structure of a candle flame.
6. Mention the characteristics of a good fuel.
7. What is meant by calorific value of a fuel?