

## Rocks and Minerals

### SPECIFIC OBJECTIVES

The students learn about

- the rocky features of the earth
- the types of rocks and their features
- the minerals and their types
- fossil fuels, their types, uses and need to conserve them

### TEACHING AIDS

**Pictures/animation** on formation of igneous rocks, sedimentary rocks and metamorphic rocks; **samples/pictures** of various types of igneous, sedimentary and metamorphic rocks; **pictures** of some metallic and non-metallic minerals (as given in chapter), **pictures/animation** on the formation of coal, petroleum; **picture** of an oil refinery, fossil fuels–coal, petroleum; CNG gas station, vehicles run by CNG.

### LESSON PLAN

- Teacher will start the chapter with 'Warm Up' section giving brief idea of extraction of metals and minerals from the earth. Teacher will help students to fill in the blank.
- Now, teacher will explain the rocky nature of the earth that it contains a large number of valuable minerals in different forms. Teacher will also define the term 'Geology', i.e., geo = earth + logy = to know or study.
- Teacher will define the three types of rocks and with the help of teaching aids, explain their formation (as given in chapter).
- With the help of teaching aids, teacher will explain the features of various kinds of rocks (as given in chapter).
- Now, to check the learning of students about the topic, teacher will ask students to solve 'Checkpoint 1'.
- Teacher will define the terms 'mineral' and 'ore' and with the help of suitable examples, will explain the features of metallic and non-metallic minerals (as given in chapter).
- Now, teacher will define the fossil fuels and tell how they were formed. With the help of teaching aids, teacher will explain how coal and petroleum were formed and how petroleum is purified (as given in chapter).

- With the help of teaching aids, teacher will discuss the uses of fossil fuels.
- Now, teacher will discuss the need and conservation of fossil fuels, and explain the alternative sources of energy.
- Now, teacher will ask the students to solve 'Checkpoint 2'.
- At last, teacher will sum up the chapter by going through the points given under the head 'At One Go' and make students revise the new terms given under the head 'Remember These Terms'.
- Teacher will also help students to solve the questions given under the head 'Check Your Study'.

## BOOST UP

- To make the students understand how layers of sedimentary rocks are cemented, teacher should perform the activity given in the chapter.
- Students should be encouraged to explore the materials used in the making of famous monuments such as Taj Mahal, Red Fort, etc.
- Teacher should discuss the ways to save fossil fuels.

## EXPECTED LEARNING OUTCOMES

The students

- understand the rocky nature of the earth.
- know the formation and types of rocks.
- know about minerals and their types.
- know about fossil fuels and their uses.
- understand the need of conserving fossil fuel.
- know alternative sources of energy.

## EVALUATIVE QUESTIONS

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

1. Which planet is called 'the third rock from the sun'?
2. What is geology?
3. Which rocks are called fire rocks?
4. How are layers of sedimentary rocks held together?
5. Which types of minerals are used in making of gemstones?
6. Which type of rock is the coal?
7. What is green diesel?
8. Name some alternative sources of energy.