

LESSON PLAN

SPECIFIC OBJECTIVES

- The students will learn about
- ✧ combustion, combustible and noncombustible substances
 - ✧ 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

- ✧ Teacher will start the chapter by going through the points given in 'Know these points before you start' section.
- ✧ Teacher will define combustion by demonstrating related activity given in the chapter.
- ✧ Teacher will explain combustible and noncombustible materials by demonstrating activity given in the chapter.
- ✧ Teacher will discuss conditions necessary for combustion by demonstrating activity.
- ✧ Teacher will ask students to solve Check Point 1.
- ✧ Now, teacher will discuss firefighting and its ways.
- ✧ Teacher will discuss various types of combustion.
- ✧ Now, teacher will ask students to solve Check Point 2.
- ✧ Teacher will define flame and materials that give off flame, and will explain the structure of a candle flame.
- ✧ Teacher will explain fuel, fuel efficiency and features of a good fuel.

- ✧ Teacher will discuss the adverse impacts of burning fuels on the environment and will suggest some alternatives.
- ✧ Now, teacher will ask students to solve Check Point 3.
- ✧ Teacher will make students revise the new terms given under the head 'Know These Terms'.
- ✧ Finally, teacher will help students to solve the questions given in exercises under the head 'Practice Time' and 'Think Zone'.

BOOST UP

- ✧ Teacher should demonstrate and explain activities given in the chapter.
- ✧ Teacher should discuss the information given under the head 'Something More'.
- ✧ Teacher should discuss the conversation of Annu and Mannu given in between the topics.
- ✧ Teacher should discuss the facts given in the table.
- ✧ Teacher should encourage students to collect pictures of combustible and noncombustible substances.
- ✧ Teacher should discuss the need of learning ways of firefighting.
- ✧ Students should be encouraged to observe flames of different materials but with care.
- ✧ Teacher should also compare and discuss calorific value of some fuels.

EXPECTED LEARNING OUTCOMES

The students know about

- ✧ combustion and its types.
- ✧ combustible and noncombustible substances.
- ✧ conditions required for combustion.
- ✧ firefighting and its ways.
- ✧ flame and structure of a candle flame.
- ✧ fuel, characteristics of a good fuel and fuel efficiency.
- ✧ unit of calorific value of a fuel.
- ✧ calorific value of some fuels.
- ✧ 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?
8. What is the unit of calorific value of a fuel?

LESSON PLAN

SPECIFIC OBJECTIVES

- The students will learn about
- ✧ biodiversity
 - ✧ biodiversity in India, threats to biodiversity and its conservation
 - ✧ flora and fauna
 - ✧ endemic species
 - ✧ conservation of biodiversity
 - ✧ deforestation, its causes and consequences
 - ✧ forest conservation and management
 - ✧ wildlife and its conservation
 - ✧ migration in animals and its need

TEACHING AIDS

Pictures/charts/models/animations on deforestation, desertification, some extinct species of animals, endangered animals, vulnerable animals, rare species of animals, national park, wildlife sanctuary, biosphere reserve, etc.

LESSON PLAN

- ✧ Teacher will start the chapter by going through the points given in 'Know these points before you start' section.
- ✧ Teacher will define the term biodiversity and discuss global biodiversity and biodiversity of India.
- ✧ Teacher will discuss need of conservation of biodiversity.
- ✧ Teacher will discuss the threats to biodiversity and will explain deforestation, its causes and consequences.
- ✧ Teacher will define the terms flora and fauna, endemic and exotic species and discuss the importance of forests.

- ✧ Teacher will discuss conservation of biodiversity and explain conservation of forests and wildlife.
- ✧ Teacher will define forest conservation and management.
- ✧ Teacher will discuss the need and benefits of recycling of paper.
- ✧ Now, teacher will ask students to solve Check Point 1.
- ✧ Teacher will discuss wildlife, its conservation and causes of wildlife depletion.
- ✧ Teacher will discuss Red Data Book and its importance.
- ✧ Now, teacher will explain the strategies for wildlife conservation.
- ✧ Teacher will also discuss legal provisions for the conservation of biodiversity.
- ✧ Teacher will discuss migration in animals and its need.
- ✧ Now, teacher will ask students to solve Check Point 2.
- ✧ Teacher will make students revise the new terms given under the head 'Know These Terms'.
- ✧ Finally, teacher will help students to solve the questions given in exercises under the head 'Practice Time' and 'Think Zone'.

BOOST UP

- ✧ Teacher should demonstrate and explain activities given in the chapter.
- ✧ Teacher should discuss the information given under the head 'Something More'.
- ✧ Teacher should discuss the conversation of Annu and Mannu given in between the topics.
- ✧ Students should be asked to collect some pictures related to deforestation, its causes and consequences.
- ✧ Teacher should encourage students to collect information related to forest conservation and management.

EXPECTED LEARNING OUTCOMES

The students know about

- ✧ global and megabiodiversity and hotspots.
- ✧ threats to biodiversity.
- ✧ conservation of biodiversity and its need.
- ✧ flora and fauna, endemic species and exotic species.
- ✧ utility of forests.
- ✧ deforestation, its causes and consequences.
- ✧ afforestation.
- ✧ recycling of paper.
- ✧ threatened, endangered, vulnerable and rare species.
- ✧ the Red Data Book and its importance.
- ✧ protected areas, captive breeding and wildlife projects in India.
- ✧ legal provisions for the conservation of biodiversity.
- ✧ migration in animals.

EVALUATIVE QUESTIONS

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

1. Define biodiversity.
2. Mention the causes of loss of biodiversity.
3. Write the differences between flora and fauna.
4. What is meant by deforestation?
5. What are endemic and exotic species?
6. What does the Red Data Book contain?
7. When was Project Tiger launched? How many tiger reserves have been established under this project?