

LESSON PLAN

SPECIFIC OBJECTIVES

The students will learn about

- ✧ light and its characteristics
- ✧ sources of light
- ✧ luminous and nonluminous objects
- ✧ opaque, transparent and translucent objects
- ✧ rectilinear propagation of light
- ✧ brief concept of rays and beams
- ✧ shadow and its characteristics
- ✧ pinhole camera, its construction and working
- ✧ mirrors and image
- ✧ differences between an image and a shadow

TEACHING AIDS

Pictures/charts/models/animation on sources of light – bulb, candle, CFL, etc.; organisms showing bioluminescence; a ray of light, a beam of light, divergent beam, convergent beam; shadow of an object, plane mirror, curved mirror; reflection of light from plane mirror, reflection from curved surface; pinhole camera.

LESSON PLAN

- ✧ Teacher will start the lesson with ‘Science Vocabulary’ section by telling the meaning/definition of new terms which are used in the chapter.
- ✧ The teacher should define concept of light and its characteristics.
- ✧ The teacher should discuss different sources of light.
- ✧ The teacher should define luminous and nonluminous bodies and make students perform Activity 1 in the class.
- ✧ The teacher should discuss different types of objects based on passage of light through them, i.e., transparent, opaque and translucent objects.
- ✧ The teacher should explain the rectilinear propagation of light with the help of the Activities 2 and 3.

- ✧ The teacher should define a ray of light.
- ✧ Now, teacher should define shadow and its characteristics.
- ✧ The teacher should perform activities 4, 5 and 6 in the class to explain the characteristics of a shadow.
- ✧ The teacher should tell students about pinhole camera, its construction and working, i.e., formation of image by a pinhole camera and its nature.
- ✧ Now, teacher should define mirror and discuss the image formation.
- ✧ The teacher should also define reflection and explain the reflection of light by plane mirror by performing Activity 6.
- ✧ The teacher should perform Activity 7 to explain the formation of an image on a curved metal surface.
- ✧ The teacher should explain differences between an image and a shadow.
- ✧ Students should be asked to solve Check Points 1 and 2.
- ✧ The teacher will help the students to solve the questions given in exercises under the head 'Let's Drill Our Skills' and to complete the flowchart given under the head 'Let's Memorise'.

BOOST UP

- ✧ The teacher should call students one-by-one and ask them to write one example each of luminous and nonluminous objects.
- ✧ The teacher should ask the students to tell one example each of opaque, transparent and translucent objects.
- ✧ The teacher may give the examples of sundial and X-ray photographs while teaching formation of shadows.
- ✧ The teacher should explain that water surface acts as mirror and reflects the light falling on it.

EXPECTED LEARNING OUTCOMES

The students understand and know the

- ✧ concept of light and its characteristics.
- ✧ luminous and nonluminous objects.
- ✧ opaque, transparent and translucent objects.
- ✧ rectilinear propagation of light.
- ✧ formation of shadow and its characteristics.
- ✧ mirror and formation of image.
- ✧ pinhole camera and image formation by pinhole camera.
- ✧ differences between an image and a shadow.

EVALUATIVE QUESTIONS

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

1. What makes things visible and helps us to see?
2. What is the difference between luminous and nonluminous bodies?
3. Give two examples each of transparent and translucent objects.
4. How is a shadow formed? Mention three characteristics of a shadow.
5. Define reflection.
6. What is pinhole camera?