

UNIT 10

PROPERTIES OF LIGHT

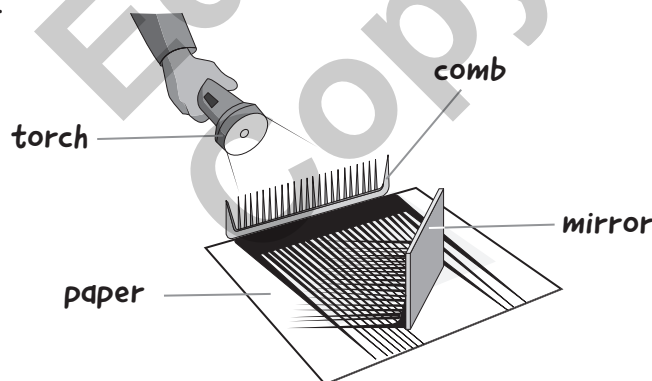


Activity 1 How Light Travels

- ▶ **Aim:** To show that light travels in straight lines
- ▶ **Process skills:** Observing, communicating, analysing
- ▶ **Materials:** White paper, torch, comb, mirror

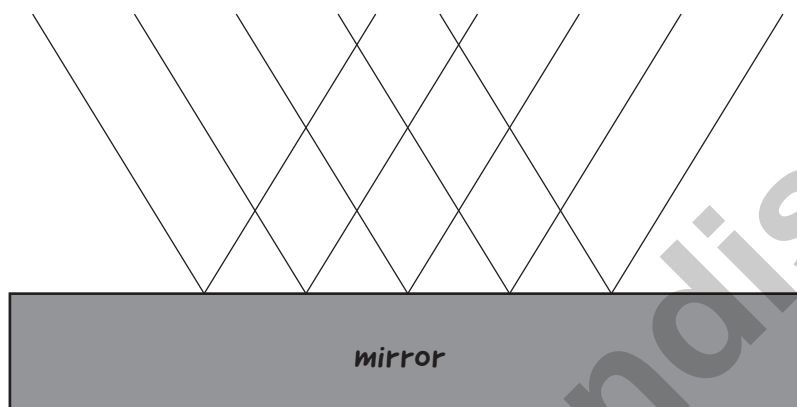
Procedure and Observations

1. Place the piece of white paper on the table.
2. Place the comb and the mirror on the white paper as shown in the diagram below.
3. Turn off the lights in the classroom. Switch on the torch and shine it at the comb as shown.



4. Observe the path the light takes and what happens when it reaches the mirror.

5. Draw arrows on the diagram to show how the light is reflected.



6. What is the function of each part in the set-up?

Torch	Comb	Mirror

Conclusion

Light travels in _____ lines. When it is _____ by the mirror, it changes direction.

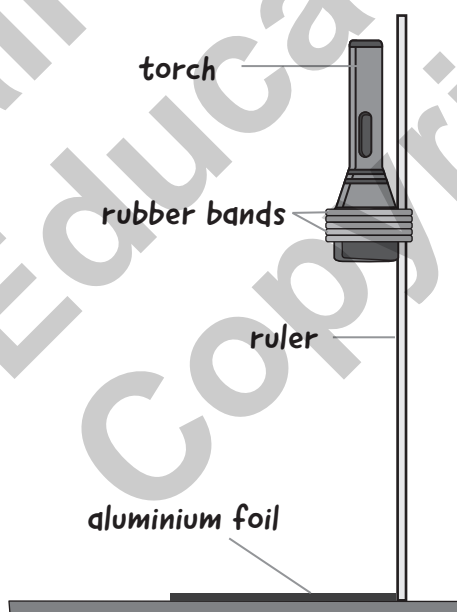


Activity 2 Reflection of Light

- ▶ **Aim:** To show that different surfaces reflect light differently
- ▶ **Process skills:** Observing, inferring
- ▶ **Materials:** Torch, ruler, rubber bands, aluminium foil, cardboard, white paper, mirror

Procedure and Observations

1. Tie the torch to the ruler with a few rubber bands.
2. Hold the ruler upright on the table as shown.
3. Place a smooth piece of aluminium foil on the table.
4. Turn on the torch. Observe if the surface of the aluminium foil looks shiny or dull.



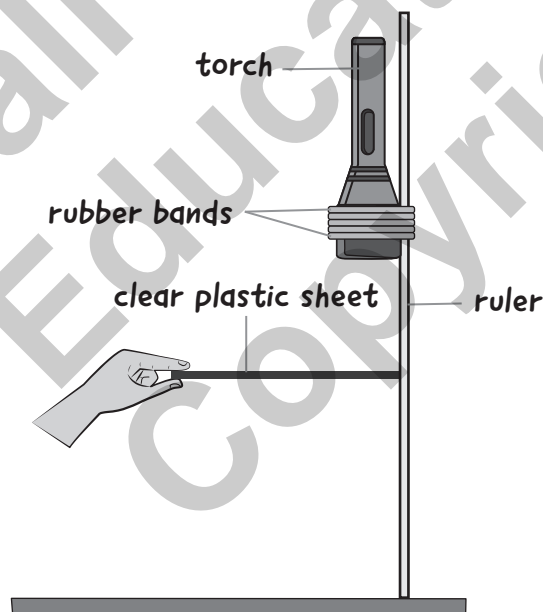


Activity 3 Transparent, Translucent and Opaque Materials

- ▶ **Aim:** To find out which materials are transparent, translucent and opaque
- ▶ **Process skills:** Observing, inferring
- ▶ **Materials:** Torch, ruler, rubber bands, clear plastic sheet, tissue, cardboard, mirror

Procedure and Observations

1. Tie the torch to the ruler with a few rubber bands.
2. Hold the ruler upright on the table.
3. Place the clear plastic sheet 10 cm away from the torch.
4. Turn on the torch. Observe how much light passes through the clear plastic sheet.





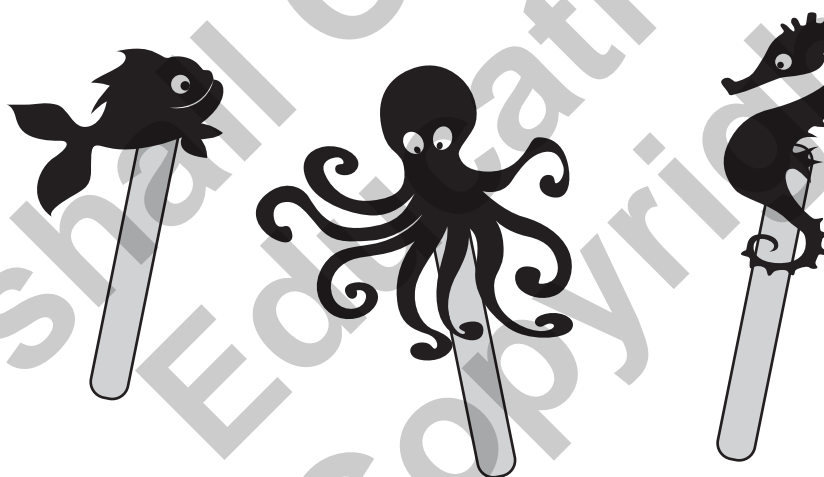
CREATIVE SCIENCE

Shadow Story

- ▶ **Aim:** To tell a story using shadows
- ▶ **Process skills:** Generating possibilities, communicating
- ▶ **Materials:** Scrap materials such as paper, cardboard and plastic wrappers, scissors, ice cream sticks, sticky tape, torch

Procedure and Observations

1. Think of a short story that can be told in two minutes or less.
2. From the scrap materials, cut out the shapes of objects that you need to tell your story.
3. Tape the shapes onto some ice cream sticks.



4. Turn off the lights in your classroom.
5. Switch on the torch and shine it at a wall in your classroom.
6. Move the shapes about in front of the torch to tell your story. Try moving the cut-out shapes closer to or further from the torch and see what happens!

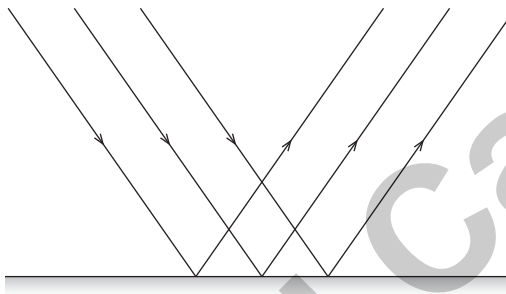
Let's Review

Section A Multiple-choice Questions

Choose the correct answer and write its number in the brackets provided.

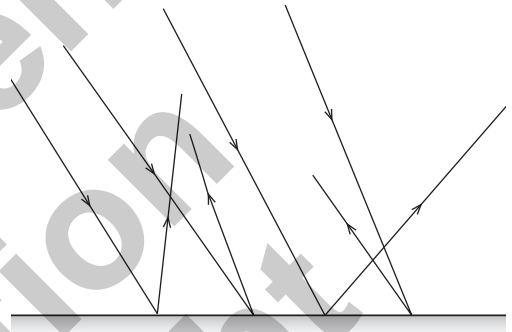
1. A student drew four diagrams to show how light is reflected from a smooth and a rough surface.

A



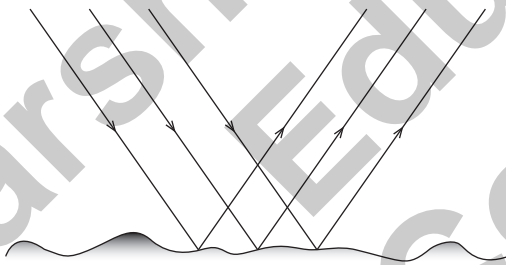
smooth surface

B



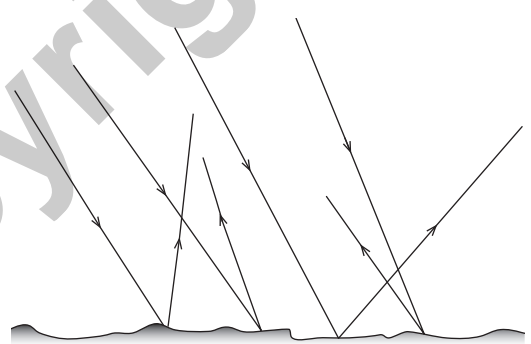
smooth surface

C



rough surface

D



rough surface

Which two diagrams show how light is reflected from a smooth and a rough surface respectively?

- (1) A and C
- (2) A and D
- (3) B and C
- (4) B and D

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