

Grade 4 Science Assessment: The Wonders of Light

Learning objective: To assess understanding of how light travels, reflection, shadows, and the role of light in seeing objects.

Read each question carefully. Answer in full sentences where required. Ensure you use scientific vocabulary correctly.

Nova the barn owl is exploring the forest at night. She notices that she can see the moon clearly, but she cannot see anything inside a dark, hollow log until she turns her head to let moonlight shine inside. Max the monkey is nearby, using a shiny metal tray to bounce sunlight onto the forest floor to help them see.

Word bank: Reflection · Light source · Straight lines · Opaque · Transparent · Translucent · Shadow · Ray

1. Using Nova's experience in the passage, explain why we need a light source to see objects. (2 marks) (2 marks)

2. Light travels in a specific way. Describe how light moves from a light source. (1 mark) (1 mark)

3. Define the terms 'opaque', 'transparent', and 'translucent'. Give one example of each material. (3 marks) (3 marks)

4. Max uses a shiny metal tray to bounce sunlight. What is the scientific name for this process, and why does it happen? (3 marks) (3 marks)

5. Explain how a shadow is formed. What happens to the size of a shadow if the light source moves closer to the object? (4 marks) (4 marks)

6. Why is it dangerous to look directly at the Sun, even with sunglasses on? (2 marks) (2 marks)

7. Extended Writing Task: Imagine you are Pip the caterpillar. You are hiding under a leaf on a sunny day. Describe how the light interacts with the leaf and your surroundings. Use the words: 'ray', 'opaque', and 'reflection' in your explanation. (5 marks) (5 marks)

Draw: Draw a diagram showing a light ray hitting a apartment mirror and reflecting off it. Label the 'incident ray' and the 'reflected ray'. (5 marks)



Extension challenge: Total: /25