

Nova's Guide to the Marvellous Mechanics of Light

Learning objective: To explain how light travels, how we see objects, and how shadows are formed using scientific vocabulary.

Use this writing scaffold to construct a scientific report on the properties of light. Ensure you use technical terms such as 'rectilinear propagation', 'reflection', and 'opaque'. Follow the structure below to build your explanation.

Light is a form of energy that behaves in predictable ways, allowing us to observe the magnificent world around us.

Word bank: travels in straight lines · rectilinear propagation · transparent · translucent · opaque · reflection · incident ray · reflected ray · light source · consequently · furthermore · in contrast · specifically

1. Introduction: How does light travel from a source? Begin by stating that light... (2 marks)

2. Seeing Objects: Explain how light enters our eyes. Start with the process of reflection by saying... (3 marks)

3. Shadow Formation: Describe what happens when light hits an opaque object. Explain why a shadow is formed by stating... (3 marks)

4. Compare and Contrast: Compare a transparent material with an opaque material. Use the connective 'whereas' to show the difference... (4 marks)

5. Justify your answer: Why is it impossible to see in a room with no light source? Explain your reasoning by saying... (4 marks)

6. What might happen if: Imagine light did not travel in straight lines. How would this affect the shadows cast by trees? Consider... (4 marks)

Extension challenge: Nova the owl wants to test your knowledge! Write a short paragraph explaining how a periscope works using your understanding of reflection. Justify why the mirrors must be placed at a 45-degree angle to be effective.