

Nova's Guide to the Science of Light

Learning objective: To explain how we see light, how shadows are formed, and the importance of light safety.

Use this writing frame to help you compose an information report about light. Remember to use formal scientific language and refer back to your observations from our class experiments.

Light is a form of energy that allows us to perceive the world around us; without it, our surroundings would remain hidden in total darkness.

Word bank: luminous · non-luminous · transparent · translucent · opaque · reflection · refraction · shadow · source · consequently · furthermore · in contrast · therefore

1. What is a light source and how does it differ from a non-luminous object? Provide examples. (2 marks)

2. Explain the process of how we see objects. Why do we need a light source to see things that do not produce their own light? (3 marks)

3. Describe how a shadow is formed. What happens to the size of a shadow if the light source moves closer to the object? (3 marks)

4. Compare and contrast transparent, translucent, and opaque materials. Justify why curtains are usually made from opaque fabric. (4 marks)

5. What might happen if light reflected off a mirror hit your eye? Explain the safety implications of looking directly at the Sun. (3 marks)

6. Evaluate the importance of light in our daily lives. If you were designing a room with no windows, how would you use light to make it feel bright and spacious? (5 marks)

Extension challenge: Imagine you are an astronomer like Nova. Write a persuasive paragraph explaining why light pollution in cities makes it difficult to stargaze, and suggest one scientific solution to reduce it.