

Nova's Night-Time Light Investigation

Learning objective: To understand how light travels in straight lines and how we see objects.

Read the text carefully and answer the questions below. Ensure you use full sentences for your answers.

Nova the owl loves the night sky, but even with her incredible eyes, she cannot see in total darkness. Nova knows that light travels in straight lines from a light source, such as the Moon or a distant star. When light hits an object, it bounces off and travels into our eyes, allowing us to see. If an object is opaque, it blocks the light and creates a shadow. Because light cannot bend around corners, the shadow forms exactly where the light is obstructed. Nova often watches the trees in the forest. When the bright moonbeams hit the leaves, the light reflects back to her. However, when a thick cloud covers the Moon, the light source is hidden, and the forest becomes dark. Nova understands that we only see objects when light from a source reflects off them and reaches our pupils. This simple movement of light is what makes the world visible. Whether it is a flashlight, a lamp, or the Sun, light is the key to all discovery in the natural world.

Word bank: transparent · opaque · reflection · straight · luminous · source

1. According to the text, in what way does light travel from a source? (1 mark)

2. What happens to light when it hits an opaque object? (1 mark)

3. Why is Nova unable to see clearly when a thick cloud covers the Moon? (2 marks)

4. Explain why you think shadows change size throughout the day even though light travels in straight lines. (2 marks)

5. Do you think it would be possible to see an object in a room with no light sources at all? Explain your reasoning. (2 marks)

Draw: Draw a diagram showing a flashlight shining light onto a ball, with a shadow appearing on the wall behind it. Label the 'light source', the 'opaque object', and the 'shadow'.



Extension challenge: Research how a mirror works. Write a short paragraph explaining why you can see your reflection in a mirror but not on a piece of matte paper.