

Nova's Night-Time Light Investigation

Learning objective: To identify that light is needed to see things and that dark is the absence of light, and to recognise that light from the sun can be dangerous.

Read each question carefully and use your scientific knowledge to answer in full sentences. Remember to use the word bank to help you with your spelling.

Nova the owl is an expert on the night sky. She knows that even though she can see well in low light, she still needs a light source to see the world around her. Whether it is the moon reflecting sunlight or the stars twinkling in the distance, light is essential for all living things to navigate their environment safely.

Word bank: reflection · source · shadow · transparent · opaque · ultraviolet · darkness · vision

1. Nova says that we need light to see objects. Explain why you cannot see anything in a room that is completely dark. (2 marks)

2. Identify two natural light sources and two artificial light sources that humans might use. (2 marks)

3. If you hold a piece of cardboard in front of a torch, a shadow is formed. Why does the shadow appear on the wall behind the cardboard? (2 marks)

4. Nova warns her friends never to look directly at the Sun, even when wearing sunglasses. Why is the Sun dangerous to our eyes? (1 mark)

5. Sort the following materials into 'Opaque' or 'Transparent': A glass window, a wooden door, a clear plastic ruler, a thick woollen blanket. (2 marks)

Draw: Draw a diagram showing a torch shining light onto a shiny metal spoon. Use arrows to show the path of the light reflecting off the spoon.



Extension challenge: Research why shadows change size throughout the day. Write a short paragraph explaining how the position of the Sun affects the length of a shadow.