

Year 6 Science Assessment: The Science of Light

Learning objective: To understand how light travels, how shadows are formed, how we see objects, and how light reflects.

Read each question carefully before answering. Use scientific vocabulary where appropriate. This paper is worth 25 marks in total.

Nova the barn owl is observing the night sky. She notices that while the moon does not produce its own light, she can see it clearly. She also watches a beam of light from a torch shine through a glass window, but sees that the heavy wooden door blocks the light completely, creating a dark shadow on the floor.

Word bank: straight line · reflection · transparent · translucent · opaque · source · spectrum · refraction

1. Nova knows that light travels in a specific way. Complete the sentence: Light travels in a _____ from a light source. (2 marks)

2. Explain why Nova can see the wooden door even though it blocks the light. (3 marks)

3. Max the monkey is investigating materials. Define the difference between a transparent material and an opaque material. Give one example of each. (4 marks)

4. How is a shadow formed? Explain using the concept of light travel. (3 marks)

5. Pip the caterpillar is looking at his reflection in a shiny metal tray. Explain how the light reaches Pip's eyes to allow him to see his reflection. (4 marks)

6. Why do we see objects in different colours? Describe how white light interacts with an object to allow our eyes to perceive a specific colour. (4 marks)

7. Imagine you are explaining to a younger student how a rainbow is formed. Write a short paragraph explaining the role of light and water droplets in creating the colour spectrum. (5 marks)

Draw: Draw a diagram showing a torch shining on an opaque ball. Label the 'light source', the 'light ray', and the 'shadow'.



Extension challenge: Total: /25