

Nova's Luminous Light Quiz

Learning objective: To demonstrate an understanding of how light travels, how shadows are formed, and how we see objects.

Join Nova the barn owl on an illuminating journey! Read each question carefully. For multiple-choice questions, select the correct letter. For True/False and short-answer questions, provide your best scientific explanation.

Answer Key: 1.C, 2.True, 3.False (light travels in straight lines), 4.Opaque, 5.Reflection, 6.False (it travels into our eyes), 7.Refraction, 8.Straight line, 9.Translucent, 10.A. Marks: 1 mark per correct answer.

Word bank: Reflection · Refraction · Opaque · Transparent · Translucent · Spectrum · Source · Straight line

1. **1. Nova is stargazing! Which of these is a natural light source? A) The Moon B) A mirror C) The Sun D) A plastic ball *C (1 mark)**

2. **2. True or False: Shadows are created when an object blocks light from travelling in a straight line. (1 mark)**

3. **3. True or False: Light travels in curved, zig-zagging patterns. (1 mark)**

4. **4. What term describes an object that allows no light to pass through it, creating a dark shadow? (1 mark)**

5. **5. What is the name of the phenomenon that occurs when light bounces off a shiny surface, like a polished silver tray? (1 mark)**

6. **6. True or False: We see objects because our eyes send beams of light out to touch them. (1 mark)**

7. **7. When a straw looks 'bent' in a glass of water, this is caused by light changing direction as it passes through different mediums. What is this called? (1 mark)**

8. **8. Light travels from a source in a _____. (1 mark)**

9. **9. A piece of tracing paper allows some light to pass through but blurs the image. Is this object opaque, transparent, or translucent? (1 mark)**

10. 10. Which colour of the visible spectrum has the longest wavelength? A) Red B) Violet C) Green D) Blue *A (1 mark)

Draw: Draw a scientific diagram showing a torch shining on a wooden block. Label the 'Light Source', the 'Opaque Object', and the 'Shadow'. Include arrows to show the path of the light.



Extension challenge: 1. Explain why a shadow changes size and shape throughout the day as the Sun moves across the sky. 2. Compare and contrast how light behaves when hitting a mirror versus a piece of matte black card. 3. Justify why it is dangerous to look directly at the Sun. 4. What might happen if light did not travel in straight lines? 5. If you were designing a window for a bathroom, would you choose transparent or translucent glass? Why? 6. Research and describe how a prism separates white light into a rainbow of colours.