

Nova's Light and Optics Challenge

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

Join Nova the Barn Owl on a night-time flight through the world of light! Read each question carefully and circle your chosen answer.

Answer Key: 1. B, 2. True, 3. Light source, 4. C, 5. False, 6. Opaque, 7. C, 8. True, 9. Straight lines, 10. Reflection.

Word bank: light source · reflection · straight lines · opaque · transparent · translucent · shadow · spectrum

1. 1. How does light travel from a torch? A) In wavy lines B) In straight lines* C) In circles D) In zig-zags (1 mark)

2. 2. True or False: We see objects because light reflects off them and enters our eyes. (1 mark)

3. 3. What do we call an object that creates its own light, like the Sun or a lightbulb? (1 mark)

4. 4. Which material blocks light completely, creating a dark shadow? A) Clear glass B) Tissue paper C) A wooden door* D) A plastic ruler (1 mark)

5. 5. True or False: Shadows change size depending on how far the light source is from the object. (1 mark)

6. 6. Fill in the blank: A material that lets some light through but is not fully clear is called _____. (1 mark)

7. 7. What happens when light hits a mirror? A) It is absorbed B) It disappears C) It reflects* D) It bends (1 mark)

8. 8. True or False: You can see your own reflection in a window at night because the glass acts like a mirror. (1 mark)

9. 9. A shadow is formed when an object blocks light. What path does the light try to take before it is blocked? (Answer: _____) (1 mark)

10. 10. Which word describes the bouncing back of light from a surface? A) Refraction B) Absorption C) Reflection* D) Dispersion (1 mark)

Draw: Draw a diagram showing a torch shining light onto a ball, including the shadow it casts on the wall behind it. Label the 'light source', the 'opaque object', and the 'shadow'.



Extension challenge: Nova wants to know: If you were in a completely dark room with no light sources, would you be able to see your own hand? Explain your answer in two sentences using the word 'reflection'.