

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Bending Light: Third Grade Advanced Refraction and Reflection Quiz

Learners synthesize optics concepts by predicting light behavior through prisms and periscopes to master how visible energy interacts with various materials.

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**1. If you are designing a periscope to see over a tall wall, how must you position the two mirrors to ensure the light reaches your eye?**

- A. Facing each other at 45-degree angles
- B. Facing away from each other horizontally
- C. Stacked flat on top of one another
- D. At the bottom of the tube only

**2. A scientist notices that a beam of light passes from the air into a thick piece of clear gelatin. The light beam will \_\_\_\_\_ because it is moving into a denser material.**

- A. speed up
- B. change color
- C. slow down
- D. disappear

**3. A triangular glass prism creates a rainbow because it reflects the sunlight off its silvered inner surface.**

- A. True
- B. False

**4. You are looking at a shiny silver spoon. Why does your reflection look upside down when you look into the 'bowl' part of the spoon?**

- A. The spoon absorbs all the upright light
- B. The inward curve crosses the light rays
- C. The spoon is acting like a prism
- D. The light is refracting through the metal

**5. When light hits a rough piece of sandpaper, it bounces off in many different directions. This specific type of reflection is called \_\_\_\_\_ reflection.**

- A. specular
- B. diffuse
- C. refractive
- D. opaque

**6. A lens that is thicker in the middle than at the edges will cause light rays to spread apart.**

- A. True
- B. False

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**7. Imagine you are trying to grab a toy at the bottom of a pool. Why does the toy appear to be in a different spot than it actually is?**

- A. The water reflects the toy's shadow
- B. Light bends as it moves from water to air
- C. The pool liner is acting as a mirror
- D. Water makes light travel faster than air

**8. If you shine a flashlight at a mirror at a sharp 10-degree angle, the light will bounce off the mirror at an angle of \_\_\_\_\_ degrees.**

- A. 20
- B. 90
- C. 0
- D. 10

**9. An object that is 'opaque' does not allow any light to pass through it, which is why it creates a dark shadow.**

- A. True
- B. False

**10. Why does wearing white clothes keep you cooler in the sun than wearing black clothes?**

- A. White light refracts through the fabric
- B. White surfaces reflect most of the light
- C. Black surfaces create their own light
- D. White fabric is always thinner than black