

Name: _____ Date: _____

The Secret Language of Light: A First Grade Optics Quest

Young scientists engineer solutions for seeing around corners and directing light beams to solve real-world visibility challenges.

1. You are trapped in a dark cave with only a tiny flashlight. To signal a friend hiding around a sharp corner, which tool would help you 'bend' the light to reach them?

- A. A piece of black cardboard
- B. A shiny handheld mirror
- C. A wooden spoon
- D. A wool sweater

2. If you want to build a 'periscope' to look over a tall wall, you must place your mirrors so the light _____ off the top one and down to the bottom one.

- A. Stops
- B. Bounces
- C. Disappears
- D. Melts

3. True or False: A window made of clear glass is a good tool for bouncing light to a specific spot.

- A. True
- B. False

4. Imagine you are an engineer. You need to make a light beam from a lighthouse reach a boat far away. What shape of glass helps pull the light together into one strong beam?

- A. A flat, thin window
- B. A curved, thick lens
- C. A piece of sandpaper
- D. A hollow tube

5. When you put a pencil in a glass of water, it looks broken because the light _____ when it moves from the water into the air.

- A. Changes color
- B. Bends
- C. Freezes
- D. Shrinks

6. If you are designing a pair of glasses for a giant who wants to see tiny ants, what should the glass do to the light?

- A. Make the light scatter everywhere
- B. Make the ants look bigger using a lens

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- C. Make the ants look darker
- D. Block the light completely

7. True or False: If you shine a light at a bumpy, rough rock, the light will bounce back in one straight, perfect line.

- A. True
- B. False

8. To create a rainbow on your wall, you could shine a white light through a triangular piece of glass called a _____.

- A. Mirror
- B. Prism
- C. Shadow
- D. Flashlight

9. You are making a 'Shadow Theater.' Which material would be BEST for the screen so you can see the light but not the person holding the puppet?

- A. Clear plastic wrap
- B. Thin white tissue paper
- C. A heavy metal tray
- D. A brick wall

10. True or False: A shiny silver spoon can act like a mirror and change how your face looks.

- A. True
- B. False