

Name: _____ Date: _____

Zap the Shadows: A 4th Grade Optics Quiz

Imagine your flashlight beam hitting a puddle or passing through a glass of juice—see how light behaves during these everyday encounters.

1. Imagine you are standing in front of a shiny metal toaster. You can see your blurry face in the metal because light is doing what?

- A. Refracting
- B. Reflecting
- C. Disappearing
- D. Bending

2. Light always travels in a perfectly straight line, even when it moves from air into a thick bowl of clear corn syrup.

- A. True
- B. False

3. A student looks through a _____ lens, which is thicker in the middle than at the edges, to make tiny ant legs look much larger.

- A. Concave
- B. Flat
- C. Convex
- D. Square

4. Why does a spoon sitting in a half-full glass of milk look like it is broken or disconnected at the surface of the liquid?

- A. The milk is too heavy for the spoon.
- B. Light waves are bouncing off the spoon.
- C. Light bends as it moves from air to milk.
- D. The glass is acting like a mirror.

5. A mirror with a surface that curves inward like a cave is called a concave mirror.

- A. True
- B. False

6. When you see a rainbow in the mist from a garden hose, the sunlight is _____ through the tiny water droplets.

- A. Refracting
- B. Stopping
- C. Freezing
- D. Heating

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7. Which of these objects is designed specifically to reflect almost all of the light that hits it?

- A. A clear window pane
- B. A piece of black construction paper
- C. A bathroom mirror
- D. A pair of sunglasses

8. Eyeglasses use _____ to help people see more clearly by bending light so it hits the back of the eye correctly.

- A. Mirrors
- B. Lenses
- C. Opaque walls
- D. Shadows

9. Lenses can only be made out of glass; they cannot be made out of plastic or water.

- A. True
- B. False

10. If you shine a flashlight at a flat mirror at an angle, the light will bounce off at:

- A. The exact same angle
- B. A much wider angle
- C. A much smaller angle
- D. It won't bounce off at all