

Advanced Optics for Young Scientists

Optics · Answer Key · 10 Questions

1. What term describes light bending as it passes from one medium, like air, into another, like water?

- A) Reflection
- B) Refraction**
- C) Absorption
- D) Transmission

2. Which type of lens is thicker in the middle than at the edges and brings light rays together at a focal point?

- A) Concave lens
- B) Convex lens**
- C) Plane mirror
- D) Cylindrical lens

3. When white light passes through a prism, which color is refracted the most due to its shorter wavelength?

- A) Red
- B) Green
- C) Yellow
- D) Violet**

4. What are the three primary additive colors of light used to create white light?

- A) Red, Yellow, Blue
- B) Red, Green, Blue**
- C) Cyan, Magenta, Yellow
- D) Orange, Green, Violet

5. An object that does not allow any light to pass through it is classified as being what?

- A) Transparent
- B) Translucent
- C) Opaque**
- D) Reflective

6. Which part of the human eye contains light-sensitive cells and acts as the surface where images are formed?

- A) Iris
- B) Pupil
- C) Retina**
- D) Cornea

7. What is the approximate speed of light in the vacuum of space?

- A) 3,000 kilometres per second
- B) 30,000 kilometres per second
- C) 300,000 kilometres per second**
- D) 3,000,000 kilometres per second

8. In a shadow, what is the name of the darkest inner part where the light source is completely blocked?

- A) Penumbra
- B) Antumbra
- C) Umbra**
- D) Eclipse

9. Which scientist is famous for using a prism to prove that white light is actually made up of a spectrum of colors?

- A) Albert Einstein
- B) Galileo Galilei
- C) Isaac Newton**
- D) Thomas Edison

10. What type of reflection occurs when light hits a perfectly smooth surface, like a mirror, and reflects at a definite angle?

- A) Diffuse reflection
- B) Specular reflection**
- C) Refracted reflection
- D) Internal reflection