

Skills Worksheet

Directed Reading B

Section: Refraction (pp. 90–97)

REFRACTION AND MEDIA

- d. 1. Refraction happens when
- a. a medium's density does not change.
 - b. light follows the law of reflection.
 - c. the wave changes light energy into chemical energy.
 - d. the medium that it travels through changes.
2. A substance through which a wave can travel is called a(n) medium.
3. The bending of a wave as the wave passes at an angle from one medium to another is called refraction.
4. Give an example of an optical illusion that can be caused by refraction.
- Fish in an aquarium seem to be in two places at once when viewed from the edge angle.
5. Light waves with short wavelengths bend more than light waves with long wavelengths.
6. When white light separates into different colors during refraction and sunlight is refracted by water drops, a(n) visible spectrum (rainbow) forms.

LENSES AND REFRACTION OF LIGHT

- c. 7. How does a lens form an image?
- a. The lens reflects light.
 - b. The lens bends light.
 - c. The lens absorbs light.
 - d. The lens transmits light.

Directed Reading B *continued*

Match the description with the correct term. Write the letter in the space provided.

lens

8. transparent object that forms an image by refracting light

a. focal length

b. lens

focal point

9. point at which light beams cross after passing through a lens

c. focal point

focal length

10. distance between the lens and focal point

Match the correct description with the correct term. Write the letter in the space below.

convex lens

11. is thicker in the middle than at the edges

a. convex lens

virtual image

12. is formed when an object is less than 1 focal length from a convex lens

b. virtual image

c. real image

real image

13. is formed when an object is more than 2 focal points from a convex lens

14. How do a real image and a virtual image of an object differ?

The virtual image is right-side up, while the real image is upside down

15. How are a magnifying glass and the human eye similar?

They both are convergent convex lenses, they bend light rays together to a focal point

16. Which two parts of the eye refract light?

The cornea and the lens

17. Name two animals whose eyes process images differently than the human eye does.

Flies, tarantula and the four eyed fish

18. What is the difference between a concave lens and a convex lens?

A convex lens converges light onto a focal point on the opposite side of the object. Convex lenses correct far-sightedness.
A concave lens diverges light to make an image on the same side of the object. Concave lenses correct near-sightedness.