Light Travels in Straight Lines

You can hear a friend round a corner but not see them: sound bends, light travels in straight lines. We draw its path as a ray.

Name: Date: Score: ____ / 17

A. Fill in the blanks

1. In a uniform medium light travels in ____ lines.

2. A ray shows the path and ____ of light.

3. A bundle of rays is called a ____.

4. Sharp ____ are evidence that light travels in straight lines.

B. True or False

5. Light bends around corners as easily as sound. True / False

6. In the 3-card test, light passes only when the holes are in a line. True / False

7. A ray is drawn as a line with an arrow. True / False

8. Shadows form because light passes through opaque objects. True / False

C. Assertion and reason

9. Assertion (A): Opaque objects cast sharp shadows.
Reason (R): Light travels in straight lines.

(a) Both A and R are true, and R explains A
(b) Both A and R are true, but R does not explain A
(c) A is true, R is false
(d) A is false, R is true

Answer: _____

10. Assertion (A): Light bends round corners like sound.
Reason (R): Light has a much shorter wavelength than sound.

(a) Both A and R are true, and R explains A
(b) Both A and R are true, but R does not explain A
(c) A is true, R is false
(d) A is false, R is true

Answer: _____

D. Choose the correct option

11. Sharp shadows show that light:

(a) bends
(b) travels in straight lines
(c) is a sound
(d) is slow

Answer: _____

12. We hear but do not see around a corner because sound:

(a) is faster
(b) has a much longer wavelength
(c) is louder
(d) is a particle

Answer: _____

13. A ray of light is:

(a) a beam
(b) the path and direction of light
(c) a shadow
(d) a mirror

Answer: _____

14. In the 3-card test, the candle is seen only when:

(a) the holes are aligned
(b) cards touch
(c) lights are off
(d) cards are bent

Answer: _____

E. Short answer questions

15. Describe the 3-card activity and its conclusion.

16. Why can we hear a person around a corner but not see them?

F. Match the columns

17. Match each item in Column A with the correct item in Column B.

Column A	Column B	Your answer
1. Ray	(a) Bends around corners	1 → ____
2. Beam	(b) Path and direction of light	2 → ____
3. Sharp shadow	(c) Straight-line travel	3 → ____
4. Long wavelength	(d) Many rays	4 → ____

Detailed solutions

1. straight

2. direction

3. beam

4. shadows

5. False. Light's wavelength is tiny, so it hardly bends.

6. True. It travels straight.

7. True. The arrow shows direction.

8. False. Opaque objects block light.

9. (a) Rays cannot curve into the shadow; R explains A.

10. (d) A is false; R is true and is why light does not bend noticeably.

11. (b) travels in straight lines. Straight-line travel.

12. (b) has a much longer wavelength. Long waves bend round obstacles.

13. (b) the path and direction of light. Definition.

14. (a) the holes are aligned. Straight path needed.

15. Make holes in three cards and line them up between a candle and your eye. You see the flame only when the holes are in a straight line, so light travels in straight lines.

16. Sound waves (about 1 m long) bend round the corner; light waves are far shorter than 0.001 mm, so they practically do not bend.

17. 1 → (b), 2 → (d), 3 → (c), 4 → (a). Straight-line travel explains shadows and the 3-card test.