

Light Path Detectives

Trace straight paths and changes when light meets materials.

SC.3.P.10.3 "Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each word or phrase that tells where light travels in a straight line. Circle each word or phrase that tells light strikes an object or moves from air into water, and if marks overlap, you may both underline and circle the words.

Maya Tests a Flashlight

- ① At sunset, Maya aimed a flashlight across a dark room. In the clear air, the beam traveled from the flashlight to the wall in a straight line. She placed a piece of cardboard in the beam. The cardboard was opaque, so light could not pass through it. The bright spot on the wall disappeared because the cardboard blocked the light after the beam struck it.
- ② Next, Maya shone the flashlight toward a clear bowl of water. Light moved in a straight line through the air above the bowl. At the water's surface, the light traveled from air into water. Its path changed direction there, so the beam looked bent in the water. Light can change direction when it travels from one medium, such as air, into another medium, such as water.
- ③ Maya also noticed a shadow behind the cardboard. The cardboard stopped some light from reaching that area of the wall. The shadow showed that light had been traveling along straight paths before it struck the cardboard. A mirror can send light in a new direction after light strikes it. In each test, Maya traced where the light traveled before and after it met something.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How did the flashlight beam travel through the clear air in Maya's room?

2 What happened when the flashlight beam struck the opaque cardboard?

3 At the surface of the bowl, what two media did the light travel between, and what happened to its path?

4 What observation showed that light had traveled in straight paths before it struck the cardboard?

3 YOUR TURN _____ Your own words

Make a two-panel sketch. In Panel 1, draw a flashlight beam traveling through air until it hits an opaque object. In Panel 2, draw a beam going from air into water. Use arrows to show each path, and write one sentence under each panel explaining what happens.



PART 1 • READ AND MARK

Underline each word or phrase that tells where light travels in a straight line. Circle each word or phrase that tells light strikes an object or moves from air into water, and if marks overlap, you may both underline and circle the words. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How did the flashlight beam travel through the clear air in Maya's room?	It traveled in a straight line.
2	What happened when the flashlight beam struck the opaque cardboard?	The cardboard blocked the light, so the bright spot on the wall disappeared.
3	At the surface of the bowl, what two media did the light travel between, and what happened to its path?	It traveled from air into water, and its path changed direction.
4	What observation showed that light had traveled in straight paths before it struck the cardboard?	The shadow behind the cardboard showed that light had traveled in straight paths before striking it.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: A sketch shows a straight arrow from a flashlight through air to an opaque book. The light travels straight through air until the book blocks it. Panel 2: A sketch shows a straight arrow in air that changes direction after entering water. The light changes direction when it enters the water.

Accept answers that state that light travels straight through one medium until it strikes an object or enters another medium. For the sketch, accept any accurate opaque object and arrows that show a straight path in air and a changed path at the air-water boundary.