

Heat Hiding in Light

Observe clues that connect light sources and heat.

SC.3.P.11.1 "Investigate, observe, and explain that things that give off light often also give off heat."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each thing that gives off light. Circle the words that tell about heat, so you can connect the light observations with the heat observations.

A Classroom Light Test

- ① During science time, Ms. Rivera asked her class to study light and heat. An adult lit a small candle in a metal holder on a clear table. Students stood back and watched the flame shine. They did not touch the candle or holder. After a few minutes, the teacher held her hand near, not over, the flame and felt warm air.
- ② Next, the class looked at a lamp with an old-style light bulb. The teacher switched it on for five minutes. The bulb made bright light. Without touching it, students noticed that the air close to the bulb felt warmer than air farther away. The teacher turned it off and let it cool. This kept everyone safe while they observed heat.
- ③ The class also used a battery flashlight. Its beam was easy to see, but the flashlight stayed much cooler than the candle and bulb during the short test. The students learned that many things that give off light also give off heat. The amount of heat can be different for each source. Careful observations help scientists explain what is happening.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What did the teacher feel near the candle flame?

2 How did students safely observe heat from the light bulb?

3 How was the flashlight different from the candle and the old-style bulb during the test?

4 What conclusion did the class make about things that give off light and heat?

3 YOUR TURN _____ Your own words

Plan a safe test of one light source not named in the passage. Write three sentences that name it, tell how you will observe light and heat without touching a hot part, and explain what observation would show that it gives off both.

PART 1 • READ AND MARK

Underline each thing that gives off light. Circle the words that tell about heat, so you can connect the light observations with the heat observations. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What did the teacher feel near the candle flame?	The teacher felt warm air near the flame.
2	How did students safely observe heat from the light bulb?	They did not touch the bulb. They noticed that air close to it felt warmer than air farther away.
3	How was the flashlight different from the candle and the old-style bulb during the test?	The flashlight gave off light but stayed much cooler than the candle and bulb.
4	What conclusion did the class make about things that give off light and heat?	Many things that give off light also give off heat, but different light sources can give off different amounts of heat.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I will ask an adult to turn on a toaster while I stand back. I will look for glowing heating wires and ask the adult to check for warm air without touching the toaster. If the wires glow and the air is warm, the toaster gives off both light and heat.

Accept answers that use passage evidence about light and warmth or heat. For Your Turn, accept any safe adult-supervised plan with a light observation, a heat observation, and a clear connection between them.