

Energy Change Detectives

Trace how electricity becomes useful energy in everyday devices.

SC.5.P.10.4 "Investigate and explain that electrical energy can be transformed into heat, light, and sound energy, as well as the energy of motion."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each complete sentence that contains the exact words *changes electrical energy into*. Circle the device name in each sentence you underline, then use the words after *into* to identify the new energy form.

Electricity at Work

- ① At breakfast, a toaster changes electrical energy into heat energy. Its metal wires get hot and toast bread. A desk lamp changes electrical energy into light energy. The lamp's bulb also gives off some heat energy. These changes do not create energy. They transform electrical energy into different forms that people can observe every day.
- ② An electric fan changes electrical energy into energy of motion. The fan's motor turns, and its blades push air across a room. A speaker changes electrical energy into sound energy. Inside the speaker, a vibrating part moves back and forth to make sounds that you can hear. The speaker may feel warm because some electrical energy becomes heat.
- ③ An electric hair dryer changes electrical energy into heat energy and energy of motion. A heating part warms the air, while a motor moves the air out of the dryer. The moving air and motor also produce sound energy. When you investigate a device, look for evidence such as warmth, light, movement, or sound. Evidence helps explain each energy transformation.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What energy transformation happens in a toaster? What evidence from the passage shows that this transformation happens?

2 What two energy forms does a desk lamp produce, according to the passage?

3 How does an electric fan transform electrical energy? Give one detail that shows energy of motion.

4 A speaker and a hair dryer both make sound. What transformation does the speaker make? Name the two transformations stated in the hair dryer's first sentence.

3 YOUR TURN _____ Your own words

Choose one device named in the passage. Write three sentences: state one energy transformation, describe one safe observation that would show it, and explain why that observation is evidence.

PART 1 • READ AND MARK

Underline each complete sentence that contains the exact words *changes electrical energy into*. Circle the device name in each sentence you underline, then use the words after *into* to identify the new energy form. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What energy transformation happens in a toaster? What evidence from the passage shows that this transformation happens?	A toaster changes electrical energy into heat energy. Its metal wires get hot and toast bread.
2	What two energy forms does a desk lamp produce, according to the passage?	A desk lamp produces light energy and some heat energy.
3	How does an electric fan transform electrical energy? Give one detail that shows energy of motion.	An electric fan changes electrical energy into energy of motion. Its motor turns and its blades push air.
4	A speaker and a hair dryer both make sound. What transformation does the speaker make? Name the two transformations stated in the hair dryer's first sentence.	A speaker changes electrical energy into sound energy. A hair dryer changes electrical energy into heat energy and energy of motion.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A desk lamp changes electrical energy into light energy. With an adult's help, I can switch on the lamp and see light from its bulb. The visible light is evidence that the lamp transformed electrical energy into light energy.

Accept any device named in the passage and any accurately stated electrical-energy transformation from the text. The observation must match the claimed output, such as warmth for heat, visible light for light, movement for motion, or audible sound for sound.