

Energy On the Move

Trace how electrical energy changes in familiar devices.

5.4.d “electrical energy can be transformed into radiant, mechanical, and thermal energy; and”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle each electrical device. Underline the words that name the energy made from electrical energy, then write R for radiant, M for mechanical, or T for thermal beside each underlined part.

Morning in the Greenhouse

- ① At the community garden, Maya helps prepare a small greenhouse for cool mornings. A lamp receives electrical energy from an outlet. Inside the lamp, electrical energy changes into radiant energy, which travels as light. The light helps gardeners see seedlings before sunrise. The lamp may also become a little warm, but its main useful output is light.
- ② Near the door, an electric fan moves air through the greenhouse. Electrical energy reaches the fan's motor. The motor changes electrical energy into mechanical energy. Mechanical energy causes the blades to spin and push air. Moving air can help cool plants on a warm day. The motor can make sound and some heat, yet the spinning blades do the fan's main job.
- ③ On a chilly afternoon, Maya plugs in a small electric heater only with an adult's help. Electrical energy flows to a heating part inside the heater. That part changes electrical energy into thermal energy. Thermal energy raises the temperature of the heater and the nearby air. Maya keeps paper and water away from the heater because hot objects can cause burns or fires.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What form of energy is the lamp's main useful output? What does it help the gardeners do?

2 How does the fan change electrical energy, and what is the evidence in the passage?

3 What form of energy does the heater make? Name two things that this energy warms.

4 How are the fan's and the heater's main energy transformations different?

3 YOUR TURN _____ Your own words

Choose three electrical devices not named in the passage. Use one device that mainly produces radiant energy, one that mainly produces mechanical energy, and one that mainly produces thermal energy. Complete the table with each device's main energy output and an observable result.

ELECTRICAL DEVICE	MAIN ENERGY MADE	OBSERVABLE RESULT

PART 1 • READ AND MARK

Circle each electrical device. Underline the words that name the energy made from electrical energy, then write R for radiant, M for mechanical, or T for thermal beside each underlined part. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What form of energy is the lamp's main useful output? What does it help the gardeners do?	Radiant energy. It provides light so gardeners can see seedlings before sunrise.
2	How does the fan change electrical energy, and what is the evidence in the passage?	The fan changes electrical energy into mechanical energy. Its blades spin and push air.
3	What form of energy does the heater make? Name two things that this energy warms.	Thermal energy. It warms the heater and the nearby air.
4	How are the fan's and the heater's main energy transformations different?	The fan transforms electrical energy into mechanical energy for spinning blades. The heater transforms electrical energy into thermal energy for heating.

PART 3 • YOUR TURN (SAMPLE ANSWER)

ELECTRICAL DEVICE	MAIN ENERGY MADE	OBSERVABLE RESULT
Flashlight	radiant energy	gives off light
Blender	mechanical energy	blades spin
Electric kettle	thermal energy	water gets hot

Accept reasonable electrical devices with a correct main transformation and observable result. Devices may also produce other forms of energy, but each row should correctly identify the requested main useful output.