

Name:

Class:

Date:

Part 1: Introduction to Energy

Energy is the **ability to do work**. Without energy, machines and people will not be able to do work.

The SI unit of energy is **joule (J)**.

According to the law of conservation of energy, **energy cannot be created or destroyed**. Energy is a constant. The **energy** of an object may shift form, **be converted or transformed into other types of energy, or be transferred to another object** (or objects), but the total amount of energy in the universe remains the same.

Part 2: Types of Energy

Match each type of energy with its correct definition by drawing a line to connect them:

- | | |
|----------------------------|---|
| 1. Electrical Energy • | • Energy possessed by an object due to its motion |
| 2. Heat (Thermal) Energy • | • Energy produced when objects vibrate |
| 3. Kinetic Energy • | • Energy stored in an object due to its position |
| 4. Light Energy • | • Energy produced by the movement of electrons |
| 5. Potential Energy • | • Energy that travels in waves and can be seen |
| 6. Sound Energy • | • Energy from the movement of atoms and molecules |

Part 3: Identifying Energy Types in Everyday Life

For each example below, identify the MAIN type of energy present. Choose from:

- | | | |
|-------------------------|--------------------|----------------|
| • Electrical Energy | • Kinetic Energy | • Sound Energy |
| • Heat (Thermal) Energy | • Light Energy | |
| | • Potential Energy | |

1. A ball sitting at the top of a hill: _____

2. A television that is turned on: _____

3. A person speaking: _____
4. A moving car: _____
5. A lightbulb: _____
6. A hot cup of tea: _____
7. A stretched rubber band: _____
8. A radio playing music: _____
9. A battery: _____
10. The sun: _____

Part 4: Energy Conversions

Energy conversion is the process of changing one form of energy into another.

Fill in the blanks to show the energy conversion in each situation. Use the energy types listed above.

1. In a torch/flashlight:
_____ energy from the battery is converted to _____ energy.
2. When you turn on an electric heater:
_____ energy is converted to _____ energy.
3. When you drop a ball:
_____ energy is converted to _____ energy.
4. In a microphone:
_____ energy is converted to _____ energy.
5. In a solar panel:
_____ energy from the sun is converted to _____ energy.
6. In an electric bell:
_____ energy is converted to _____ energy.
7. When burning wood:
_____ energy is converted to _____ and _____ energy.
8. In a hydroelectric dam:
_____ energy of water is converted to _____ energy.

Part 5: Think and Apply

Draw lines to match these everyday objects with ALL the types of energy they use or produce:

- | | |
|--------------------|---|
| 1. Phone | <ul style="list-style-type: none">• Electrical Energy• Heat Energy• Light Energy• Sound Energy |
| 2. Car | <ul style="list-style-type: none">• Kinetic Energy• Heat Energy• Light Energy• Sound Energy• Potential Energy• Electrical Energy |
| 3. Electric Kettle | <ul style="list-style-type: none">• Electrical Energy• Heat Energy• Sound Energy |
| 4. Bicycle | <ul style="list-style-type: none">• Kinetic Energy• Potential Energy• Sound Energy |