

8th Grade Science-Uddo
Energy Review

Name _____
 Date _____

Part 1. Definitions of Energy.

Directions: Write down the definition for each of the following terms.

ENERGY:

KINETIC ENERGY:

POTENTIAL ENERGY:

Part 2. The two basic types of energy

Directions: Determine the best match between basic types of energy and the description provided. Put the correct letter in the blank.

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|---|--------------------------|
| _____ 1. A skier at the top of the mountain | (a) Kinetic Energy |
| _____ 2. Gasoline in a storage tank | (b) Potential Energy |
| _____ 3. A race-car traveling at its maximum speed | (c) Both forms of Energy |
| _____ 4. Water flowing from a waterfall before it hits the pond below | |
| _____ 5. A spring in a pinball machine before it is released | |

Part 3. Potential Energy

Directions: Underline the situation in each pair that has the greater amount of **potential energy**.

1. A stretched or unstretched spring?
2. A ticking or newly wound-up clock?
3. A new battery in an unlit flashlight or in one which is lit?
4. A roller coaster car at the top of a hill or at the bottom?
5. A match before it is lit or a match while it is burning?

Part 4. Kinetic energy.

Directions: Underline the situation in each pair that has the greater amount of **kinetic energy**.

1. A pole vaulter before jumping or in mid-air at the top of his jump?
2. A bowling ball when your arm is all the way back or as it hits the pins?
3. A baseball bat just before it is swung or right after it is swung?
4. You before you get out of bed in the morning or you when you go to bed at night?
5. A match before it is lit or a match while it is burning?

Part 5. Forms of energy.

Directions: Determine the type of energy for each form (Kinetic, Potential, or Both) and give an example.

Form	Definition	Type (KE, PE, or Both)	Example (for each type if both)
Mechanical (motion) energy	An object's movement creates energy		
Thermal (heat) energy	The vibration and movement of molecules		
Radiant energy	Electromagnetic waves		
Electrical energy	Movement of electrons		
Chemical energy	Stored in bonds of atoms and molecules		
Nuclear energy	Stored in the nucleus of an atom; released when nucleus splits or combines		
Sound energy	Vibration of waves through material		
Gravitational energy	Energy of position or height		

Part 6. Forms of Energy Continued

Directions: Match the energy form(s) to the description provided. A few questions may have more than one answer.

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|--|----------------|
| _____ 1. Falling rocks from the top of a mountain | (a) Kinetic |
| _____ 2. Release of energy from the Sun | (b) Electrical |
| _____ 3. Food before it is eaten. | (c) Thermal |
| _____ 4. Energy released from food after it is eaten | (d) Radiant |
| _____ 5. The energy that runs a lamp | (e) Chemical |
| _____ 6. Nuclear fission reactors | (f) Nuclear |
| _____ 7. The rumble of thunder from a storm | (g) Sound |
| _____ 8. Rubbing your hands together | (h) Potential |
| _____ 9. Gasoline | |
| _____ 10. Batteries | |

Directions: Energy can change from one type to another. This is called **energy transformation**. Using the types of energy listed above in the table, answer the following questions.

- In a computer monitor, _____ energy is changed to _____ energy and sound energy.
- When you burn wood in a campfire, _____ energy is converted to _____ and light energy.
- Through the process of photosynthesis, _____ energy from the sun is changed to stored _____ energy.
- At a hydropower facility, the _____ energy of flowing water can be used to spin a turbine and power a generator, creating _____ energy.
- In a car, the _____ energy in gasoline is burned to create heat energy, which is converted to _____ energy.

Part 7. Transformation of Energy

Directions: Use the following forms of energy to fill in the table below: **mechanical, electrical, heat, radiant, chemical, nuclear, and sound**. The first one has been done for you.

	ORIGINAL ENERGY FORM	FINAL ENERGY FORM
1. Electric motor	electrical	mechanical
2. A battery that runs a moving toy		
3. A solar panel on the roof of a house		
4. A person lifting a chair		
5. A nuclear power plant		
6. A toaster		
7. A church bell		
8. Gasoline powering a car		
9. A light bulb		
10. Photosynthesis		

