

## Forms of Energy and Energy Transformations

KEY

LT: I can identify and describe the different forms of potential and kinetic energy. \_\_\_\_\_

LT: I can give/explain examples of energy transformations. \_\_\_\_\_

### Potential and Kinetic Energy

Identify each of the following forms of energy as either potential energy (P) or kinetic energy (K).

Sound **K**

Nuclear **P**

Elastic **P**

Electric **K**

Chemical **P**

Gravitational **P**

Thermal **K**

Electromagnetic **K**

- a. Choose one of the above forms of potential energy and describe why it fits in this category.

**Answer - Nuclear is potential as the energy is stored in the nucleus of an atom. Splitting the nucleus releases this energy.**

- b. Choose one of the above forms of kinetic energy and describe why it fits in this category.

**Answer - Electric is kinetic as the energy is in the electrons which are moving from atom to atom. This movement of the electrons, which contain the energy, is movement of energy.**

### Forms of Energy

Match the energy form(s) to the description provided. Questions may have more than one answer.

\_\_\_ **H** \_\_\_ 1. A boulder at the top of a hill

a. Translational motion

\_\_\_ **C, E, J** \_\_\_ 2. Release of energy from the Sun

b. Electric

\_\_\_ **G** \_\_\_ 3. A coiled spring

c. Electromagnetic (radiant)

\_\_\_ **D** \_\_\_ 4. Batteries not in use

d. Chemical

\_\_\_ **B** \_\_\_ 5. The energy that runs a refrigerator

e. Nuclear

\_\_\_ **C, E, J** \_\_\_ 6. Nuclear fission reactors

f. Sound

\_\_\_ **F** \_\_\_ 7. The thunder from a storm

g. Elastic

\_\_\_ **A, F, J** \_\_\_ 8. Rubbing your hands together

h. Gravitational

\_\_\_ **D** \_\_\_ 9. Gasoline stored in a tank

i. Rotational motion

j. Thermal (heat)

\_\_\_ **D** \_\_\_ 10. Food before it is eaten

\_\_\_ **A, F** \_\_\_ 11. A guitar string vibrating

\_\_\_ **I** \_\_\_ 12. A top spinning

\_\_\_ **F, H** \_\_\_ 13. Sledding down a hill

\_\_\_ **J, C** \_\_\_ 14. Candle burning

\_\_\_ **G** \_\_\_ 15. A taut rubber band (fully stretched)

### Transformation of Energy II

Describe a scenario with the following energy transformations (do not include examples from above):

- a. Electric energy being converted into sound energy  
Answer - an amplifier playing music from a tablet.
- b. Chemical energy being converted to motion energy  
Answer - a car engine.
- c. Thermal energy being converted to sound energy  
Answer - a wood stove thermal fan making sound.
- d. Gravitational potential energy being converted to motion energy  
Answer - rolling down a hill on a skateboard.
- e. Electric energy being converted into electromagnetic energy  
Answer - an L.E.D light bulb.

