

Name: _____

Date: _____ **7th Grade Science- Ms. Hart**

Circle your college: Duke ~ Cornell



5.2 – Guided Notes - Energy Transformations

Examples of Energy Transformation

A battery changes chemical energy into electrical energy.

A charger reverses this process.

In photosynthesis, plants transform the energy from sunlight into the chemical energy of sugars.

You cannot simply create energy. However, you can change energy from one form to another. An **energy transformation** is a change of one type of energy into another type of energy. For example, the energy in your body comes from the food you eat. Your body transforms chemical energy from food into another kind of chemical energy—a molecule called ATP. Your body eventually transforms ATP into the kinetic energy of motion.

In any energy transfer or transformation, some energy is always “lost” as heat. Although energy cannot be created or

destroyed, people often say that energy is “lost” because it is not available to do useful work. In physics, the word *efficiency* describes how much energy is transferred or transformed compared to how much energy is “lost”.

Directions: Choose the correct type of energy transformation from the list below for each example.

Type of Energy Transformation	Example
	Pedaling a bicycle uphill
	A bicycle rolling downhill
	A flashlight (chemical electrical light)
	Solar calculator
	Photosynthesis in plant cells
	A light bulb
	A telephone
	An electric fan

TYPES OF ENERGY TRANSFORMATION

electrical → sound,
electrical → light,
chemical → light,
light → chemical,

kinetic → potential,
potential → kinetic,
light → electrical,
electrical → kinetic

KEY POINTS:

- 1) Energy is the ability to cause change.
- 2) Energy exists in everything
- 3) Everything we do and everything that happens requires energy

Practice Questions: Energy Transformations

1. In every energy transformation, some energy is “lost” as what?

A. Heat	C. Light
B. Electricity	D. Sound

2. What word describes the amount of energy transformed compared to how much energy is “lost”?

A. eloquence	C. enantiomer
B. efficiency	D. effectiveness

3. What kind of energy transformation happens in a television?
 - A. Light is transformed into electrical energy.
 - B. Electrical energy is transformed into chemical energy.
 - C. Electrical energy is transformed into light energy.
 - D. Chemical energy is transformed into light energy.

4. What kind of energy transformation happens when a person rides a bike down a hill?
 - A. Light energy is transformed into chemical energy.
 - B. Electrical energy is transformed into kinetic energy.
 - C. Potential energy is transformed into kinetic energy.
 - D. Kinetic energy is transformed into potential energy.

Energy Transformation	Description
	A battery-powered flashlight is turned on.
	An electrical fan is turned on.
	A solar panel on a roof.
	A piece of paper is burned.
	Your cell phone rings.
	Your school lunch as you play basketball outside.

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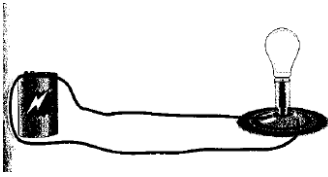
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5.2 – Energy Transformation - EXIT TICKET

1. The bulb in the drawing transforms:



- (1) electrical energy into mechanical energy
- (2) kinetic energy into electrical energy
- (3) electrical energy into heat and light
- (4) mechanical energy into heat and light

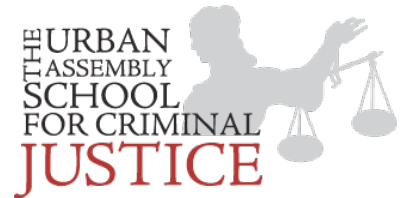
2. A television set changes electrical energy to sound and light energy. In this process, some energy is

- (1) Created
- (2) Destroyed
- (3) changed to matter
- (4) changed to heat

Name: _____

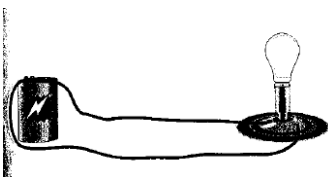
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5.2 – Energy Transformation - EXIT TICKET

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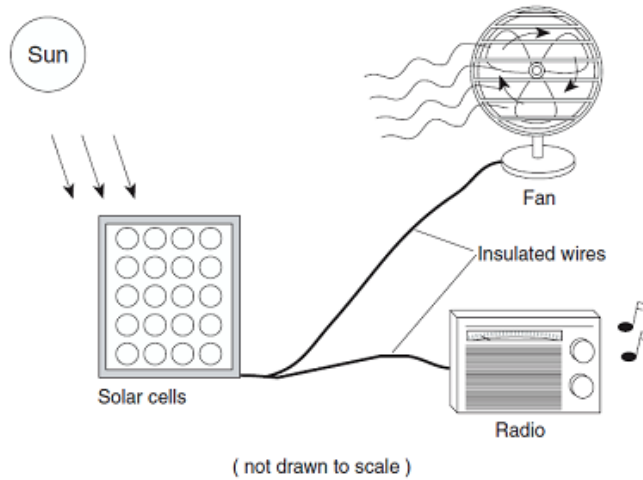


- (3) electrical energy into mechanical energy
- (4) kinetic energy into electrical energy
- (3) electrical energy into heat and light
- (4) mechanical energy into heat and light

2. A television set changes electrical energy to sound and light energy. In this process, some energy is

- (3) Created
- (4) Destroyed
- (3) changed to matter
- (4) changed to heat

3. Identify three energy transformations that are occurring in the following picture.

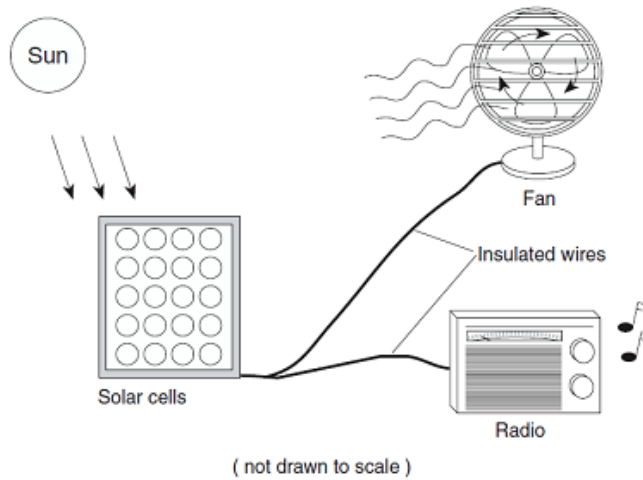


1. _____ → _____

2. _____ → _____

3. _____ → _____

3. Identify three energy transformations that are occurring in the following picture.



1. _____ → _____

2. _____ → _____

3. _____ → _____