Science 9

Physics I

Name:
Date:
Block:

1. **Energy**
2. **Types of Energy**

Energy

_____ is all around us. It is defined as the _____ _____ _____ _____. If an object or organism does work (_____ a force over a distance to move an object), it uses energy.

- Examples: a _____ uses energy to carry people
  : electric _____ in a current uses energy to _____ _____ a _____

Energy is _____ _____ or _____. It can be _____ from one kind of energy to another kind of energy. This means that energy is _____.

We are able to _____ many types of energy into forms of energy.

Forms of Energy

There are two main forms of energy: _____ _____ and _____ _____.

What is Kinetic Energy?
Kinetic energy is the _____ _____ _____.

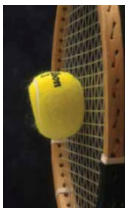
Examples of Kinetic Energy:

- _____ **Kinetic Energy**
  - Energy of an object that is in motion
- _____ **Energy**
  - Energy of _____ waves from an energy source. This source of energy generally comes from the _____.
- _____ **Energy (Heat)**
  - Energy of _____ _____ of particles in a substance; it is detected as _____.
    - Example: geysers, volcanoes, hot springs
- _____ **Energy**
  - Energy of _____ of particles
- _____ **Kinetic Energy**
  - Energy of electrons moving along a _____

What is potential energy?

_____ _____ is the _____ _____ of an object as a result of its condition or its _____.

Types of Potential Energy



- _____ **Potential Energy**
  - Energy stored in a _____ or _____ object
- _____ **Potential Energy**
  - Energy stored in _____ _____
  - This is the form of energy we acquire from food and store in our muscles.
    - Example: batteries store chemical energy; fossil fuels (coal, oil, natural gas) store chemical energy.
- _____ **Potential Energy**
  - Energy due to the _____ of an object
- _____ **Energy**
  - Energy stored in the _____ of an atom
  - When the nucleus of an atom _____ or _____ (with another), nuclear energy is released.
  - This takes the form of _____ (solar) and _____.
  - This is the most _____ form of energy.
  - There are two main ways we can get nuclear energy:
    - Nuclear _____: New atoms are made as smaller atoms collide and fuse together (occur on the Sun and in stars)
    - Nuclear _____: New atoms are made by splitting larger atoms (carried out in reactors on Earth).
- _____ **Potential Energy**
  - Energy is stored by a _____ of positive and negative charges
- _____ **Potential Energy**
  - Energy stored in a _____ _____

<u>Work on Intro to Energy Worksheet</u>

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Intro to Energy Worksheet

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Part 1. 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.

_____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

_____6. A match burning

_____7. A running refrigerator motor

Part 2. Definitions of Energy
Directions: Write down the definition for each of the following terms.

ENERGY:

KINETIC ENERGY:

POTENTIAL ENERGY:

Part 3. Forms of Energy Continued
Directions: Match the energy form(s) to the description provided. A few questions may have more than one answer. You may use these options more than once.

_____1. Falling rocks from the top of a mountain (a) Mechanical

_____2. Release of energy from the Sun (b) Electrical

_____3. Energy used to throw a baseball (c) Heat

_____4. Batteries (d) Solar

_____5. The energy that runs a refrigerator (e) Chemical

_____6. Nuclear fission reactors (f) Nuclear

_____7. The rumble of thunder from a storm (g) Sound

_____8. Food before it is eaten

Part 4. Transformation of Energy

Directions: Use the following forms of energy to fill in the table below: **mechanical, electrical, heat, solar, 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 nuclear power plant		
5. Gasoline powering a car		
6. A light bulb		
7. Photosynthesis		