

Guiding Question: What are the different forms of energy and how is energy transformed between them?

Learning Goal: Describe how energy transforms between one form to another.

## Agenda

- 1) Energy Pretest
- 2) Review the 7 Categories of energy
- 3) The 2 major groups of energy
- 4) Energy Transformations activity
- 5) Poplit for energy transformations

## Words of the day

Potential Energy

Kinetic Energy

## **Energy Definitions**

**Mechanical Energy** – related to the movement of objects or its position in gravity.

**Sound Energy** – relates to the repetitive compression (squeezing) and rarefaction (letting out) of molecules in a substance (solid, liquid, gas).

**Chemical Energy** – related to the potential energy stored in the bonds between atoms in a compound.

**Radiant (Light) Energy** – related to the vibrations of an electrical charge or magnetic field that produces electromagnetic waves that can travel through a vacuum such as space.

**Electrical Energy** – related to the movement or flow of electrons which carry a charge.

**Thermal (Heat) Energy** – related to the motion of atoms or molecules in a substance.

**Nuclear Energy** – related to the potential energy stored in bonds between particles in the nucleus of an atom.

# Card sort lab sheet

## Part 2

### Part 1: Your 2 Groups

Group Title		
Cards in the group		

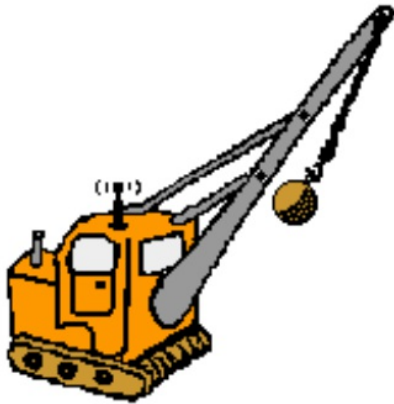
### Part 2: The 2 Groups

Group Title		
Cards in the group		

# WOD

## Potential Energy

Stored energy and the energy of position  
(gravitational)



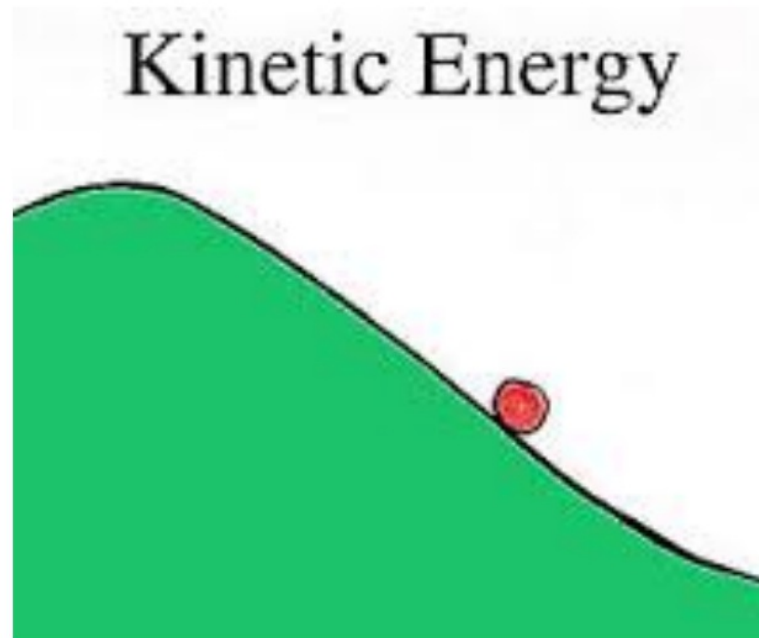
The massive ball of a demolition machine and the stretched bow possesses stored energy of position - potential energy.



WOD

## Kinetic Energy

The motion of waves, electrons, atoms, molecules, and substances.



Open the Bookmark of Exam Login

Take the Energy Unit pretest

2nd Period: kyshv

4th Period: kyshm

9th Period: kyssc6

No DSR Today





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**Mechanical**

**Nuclear**

**Radiant / Light**

**Sound**

**Electrical**

**Thermal / Heat**

**Chemical**

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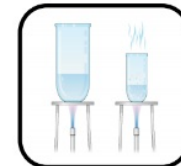
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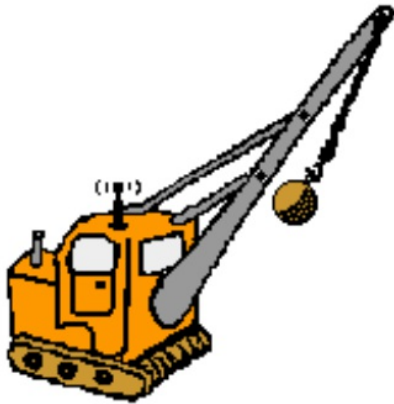
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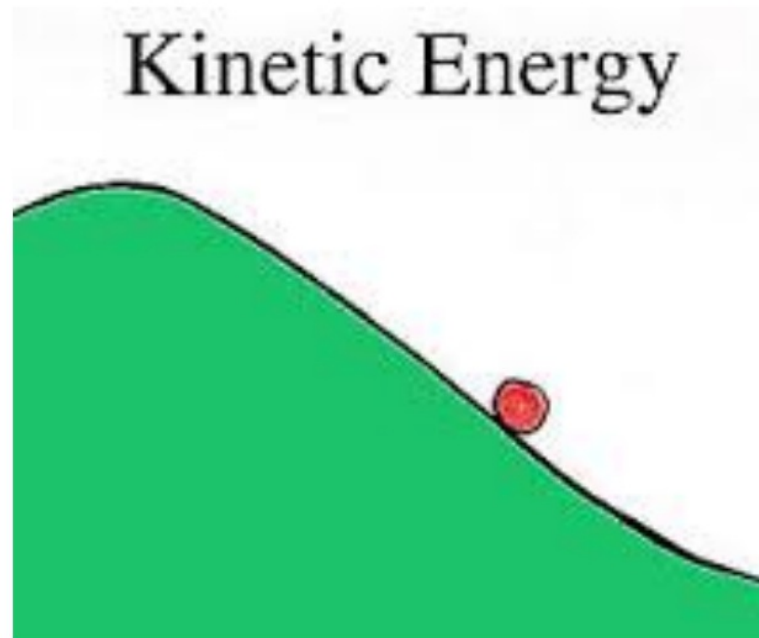
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WOD

## Kinetic Energy

The motion of waves, electrons, atoms, molecules, and substances.







## Forms of Energy

All forms of energy fall under two categories:



### POTENTIAL

Stored energy and the energy of position (gravitational).



**CHEMICAL ENERGY** is the energy stored in the bonds of atoms and molecules. Gasoline and a piece of pizza are examples.

**NUCLEAR ENERGY** is the energy stored in the nucleus of an atom – the energy that holds the nucleus together. The energy in the nucleus of a plutonium atom is an example.

**ELASTIC ENERGY** is energy stored in objects by the application of force. Compressed springs and stretched rubber bands are examples.

**GRAVITATIONAL POTENTIAL ENERGY** is the energy of place or position. A child at the top of a slide is an example.



### KINETIC

The motion of waves, electrons, atoms, molecules, and substances.



**RADIANT ENERGY** is electromagnetic energy that travels in transverse waves. Light and x-rays are examples.

**THERMAL ENERGY** or heat is the internal energy in substances – the vibration or movement of atoms and molecules in substances. The heat from a fire is an example.

**MOTION** is the movement of a substance from one place to another. Wind and moving water are examples.

**SOUND** is the movement of energy through substances in longitudinal waves. Echoes and music are examples.

**ELECTRICAL ENERGY** is the movement of electrons. Lightning and electricity are examples.

# Kinetic Energy

# Potential Energy

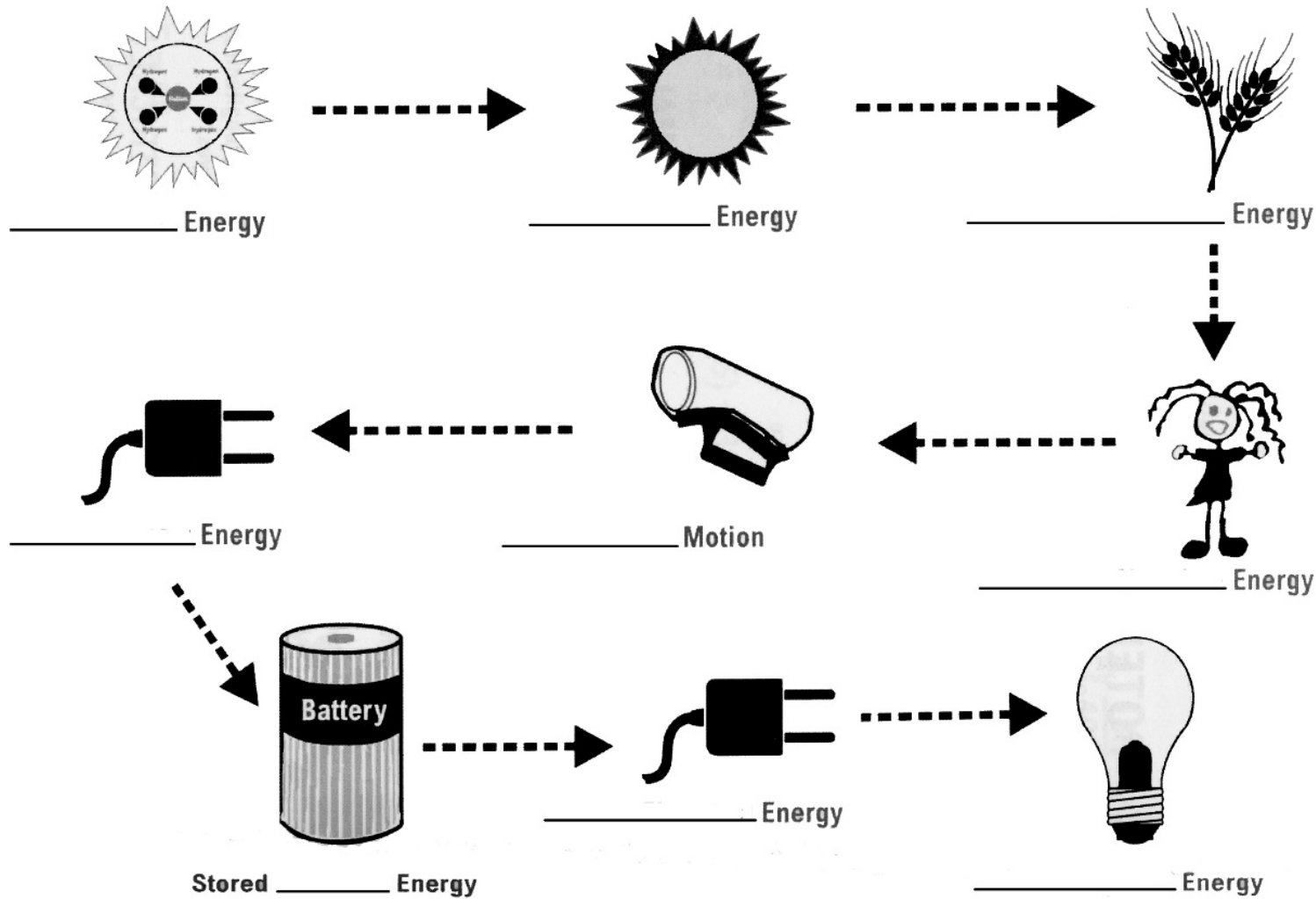


# Energy Transforms from one form to another

Trans = across

## ENERGY TRANSFORMATIONS

### Hand Generated Flashlight





Get a set of energy transformation cards,

Put the cards in order

Write out the steps in your notebook  
labeling the form of energy at each stage.