

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Per: \_\_\_\_\_

# ENERGY



## **OBJECTIVES:**

- 1. Explain what energy is.**
- 2. Distinguish between kinetic and potential energy.**
- 3. Identify 5 forms of energy.**
- 4. Recognize that energy is conserved when changing from one form to another.**
- 5. Explain what renewable and non-renewable means.**
- 6. Describe alternative energy resources advantages and disadvantages.**

## VOCABULARY

<b>ENERGY</b>	<b>KINETIC ENERGY</b>	<b>POTENTIAL ENERGY</b>
<b>ELASTIC POTENTIAL ENERGY</b>	<b>GRAVITATIONAL POTENTIAL ENERGY</b>	<b>MECHANICAL ENERGY</b>
<b>THERMAL ENERGY</b>	<b>CHEMICAL ENERGY</b>	<b>ELECTRICAL ENERGY</b>
<b>ELECTROMAGNETIC ENERGY</b>	<b>NUCLEAR ENERGY</b>	<b>ENERGY CONVERSION</b>
<b>LAW OF CONSERVATION OF ENERGY</b>	<b>FOSSIL FUELS</b>	

## WHAT IS ENERGY?

- THE ABILITY TO DO WORK
- WORK IS A TRANSFER OF ENERGY

## TWO GENERAL KINDS OF ENERGY

### 1. KINETIC ENERGY

ENERGY OF \_\_\_\_\_

DEPENDS ON: \_\_\_\_\_ & \_\_\_\_\_

EQUATION:

$$KE = \frac{\text{_____}}{2}$$

IF YOU ROLL A BOWLING BALL AND A GOLF BALL ACROSS THE FLOOR AT THE SAME VELOCITY, WHICH HAS MORE KINETIC ENERGY?

\_\_\_\_\_

WHY? \_\_\_\_\_

### 2. POTENTIAL ENERGY

ENERGY OF \_\_\_\_\_

2 TYPES:

ELASTIC POTENTIAL ENERGY

Ex)

GRAVITATIONAL POTENTIAL ENERGY

EQUATION:

Ex)

# **DIFFERENT FORMS OF ENERGY**

**1) MECHANICAL**

**2) THERMAL**

**3) CHEMICAL**

**4) ELECTRICAL**

**5) ELECTROMAGNETIC**

**6) NUCLEAR**

## QUESTIONS:

1. ARE ENERGY AND WORK THE SAME THING? EXPLAIN?
2. HOW ARE KINETIC AND POTENTIAL ENERGY DIFFERENT?
3. LIST THE FORMS OF ENERGY AND GIVE AN EXAMPLE OF EACH?
4. A BOULDER THAT WEIGHS 200N IS PERCHED AT THE EDGE OF A 100M CLIFF. WHAT IS THE GRAVITATIONAL POTENTIAL ENERGY?

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ENERGY CONVERSION- A CHANGE OF ONE FORM OF ENERGY TO ANOTHER

EX)

EX)

EX)

KINETIC TO POTENTIAL

JUGGLING

WATERFALL

## POLE VAULT

## PENDULUM

### LAW OF CONSERVATION OF ENERGY

ENERGY CANNOT BE CREATED OR DESTROYED

TOTAL AMOUNT OF ENERGY IS THE \_\_\_\_\_ BEFORE AND AFTER  
A PROCESS

### ENERGY AND FRICTION-

WHEN AN OBJECT EXPERIENCES FRICTION, THE MOTION (KE) OF  
THE ATOMS OR MOLECULES \_\_\_\_\_. THEREFORE  
\_\_\_\_\_ ENERGY INCREASES. THIS IS HOW ENERGY IS  
CONSERVED.

FRICTION CONVERTS \_\_\_\_\_ ENERGY TO \_\_\_\_\_.

### ENERGY AND MATTER-

### QUESTIONS:

1. WHAT IS ENERGY CONVERSION?

2. STATE THE LAW OF CONSERVATION OF ENERGY IN YOUR OWN WORDS?

3. DESCRIBE THE ENERGY CONVERSIONS THAT OCCUR WHEN A BALL IS  
DROPPED AND BOUNCES BACK UP. WHY DO YOU THINK THAT BALL  
BOUNCES A LITTLE LOWER EACH TIME?