

Conservation of Energy VIDEO GUIDE

Name _____

Instructions: Use the Energy Conservation Video at www.crsci.org to help complete the guide below!

1) What is usually different about the **FIRST** hill of a rollercoaster, compared to the rest of the hills?



WHAT IS ENERGY?

-Energy is the _____ to do _____ (0:54)

2) What **INCREASES** the ENERGY in a rubber band?

- a) How far it shoots an object b) the distance it is stretched c) how orange or yellow it is d) none of these



WHAT IS ENERGY?

-Potential Energy is _____ energy due to _____ (1:33)

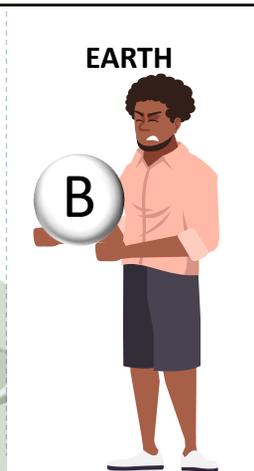
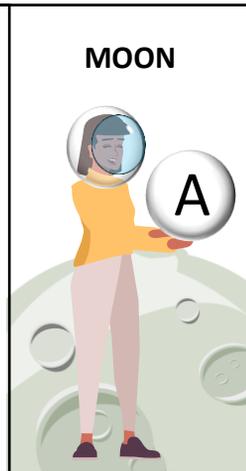
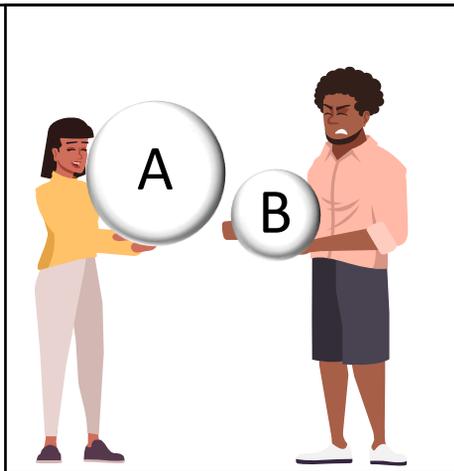
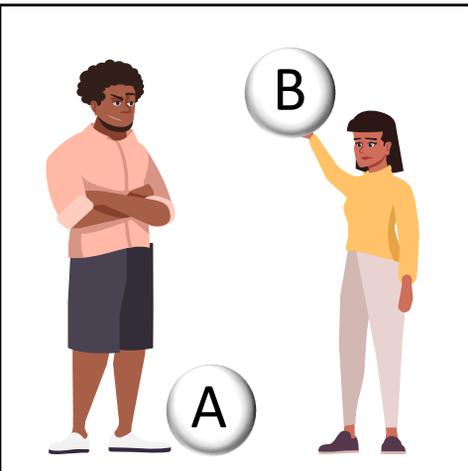
TYPES of POTENTIAL ENERGY

Match the type of Potential Energy (PE) on the right to its definition on the left.

- _____ Energy stored in the bonds of chemical compounds
- _____ Energy stored in stretched or compressed objects
- _____ Energy stored due to its position in a gravitational field
- _____ Energy stored in the nuclei of atoms
- _____ Energy stored due to location of charges

- a. **Gravitational PE**
- b. **Electric PE**
- c. **Nuclear PE**
- d. **Chemical PE**
- e. **Elastic PE**

In each scenario below select the object has the higher ability to do WORK on something if DROPPED and explain why?



3) **A or B?**

Why? _____

4) **A or B?**

Why? _____

5) **A or B?**

Why? _____

6) What are the three factors that affect Gravitational Potential Energy (GPE)?

GPE = _____ x _____ x _____
 (kg) (m/s²) (m)

7) We know that the ball Alicia is holding **COULD** do work on the egg below...because it has been raised to a certain _____. However, it will never do work until it begins to _____.

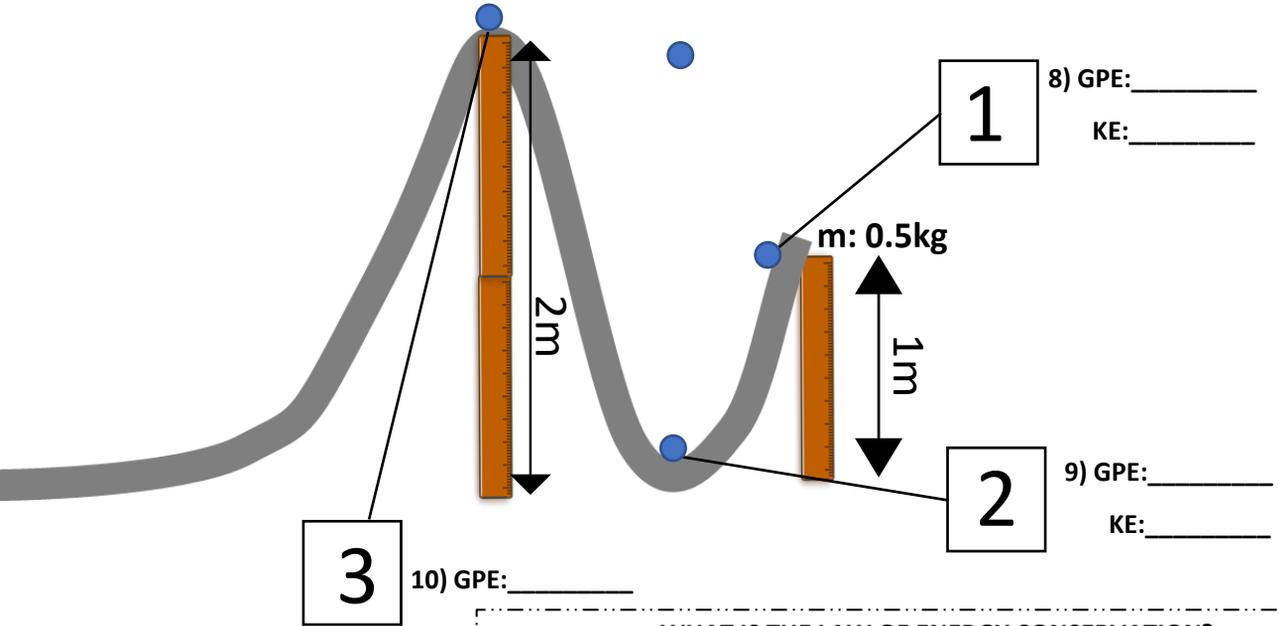


WHAT IS KINETIC ENERGY?

-Energy associated with an object's _____ (3:14)



$KE = \frac{1}{2} \text{ _____ } \times \text{ _____ }^2$



11) Would the marble be **ABLE** to make it to **POINT 3**? Explain in terms of energy.

12) Using your knowledge of Energy Conservation, determine the amounts of energy at the locations on the coaster.

WHAT IS THE LAW OF ENERGY CONSERVATION?

-Energy _____ be _____ or _____, just _____ and _____

-**MECHANICAL ENERGY** is the _____ of all _____ and _____ Energy

$ME_i = ME_f$

$ME = KE + PE$

