



Potential and Kinetic Energy



There are two kinds of energy, potential and kinetic. Whether energy is kinetic or potential depends on whether an object is moving or not. Anything that is moving has kinetic energy. The scientific name for the energy of motion is kinetic energy.

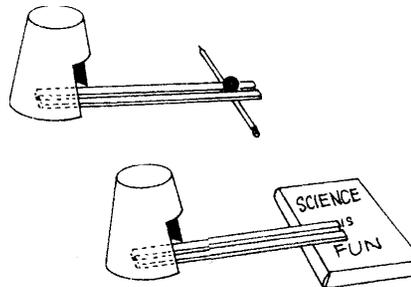
Sometimes when you transfer energy to an object, you change its position or shape. For example, you lift a book up to your desk or you compress a spring to wind up a toy. Unlike kinetic energy potential energy is stored energy. It might be used later when the book falls to the floor and hits your foot or when the toy's spring unwinds. Energy that is stored and held in readiness is called potential energy.

Gravity has a great deal to do with potential energy. The higher an object is from the surface of the earth, the more potential energy it has. So, a book on the table has more potential energy than a book on the floor.

Materials: marble, ruler with center groove, Styrofoam cup with 1" square cut out, pencil, book, meter stick

What To Do:

1. Set up the ruler and pencil as shown in the picture.
2. Place the cup over the ruler.
3. The end of the ruler should **touch the back of the cup.**
4. Place the marble in the center groove of the ruler at the highest point.
5. Release the marble and observe what happens to the cup.
6. Measure how far the cup travels on your table with the meter stick.



7. Record in the table below.
8. Repeat 2 more times.
9. Place the ruler on the edge of the book.
10. Place the cup over the ruler again.
11. Place the marble on the ruler and release it.
12. Measure how far the cup travels on your table.
13. Record in the table below.
14. Repeat 2 more times.
15. Find the average of each set of trials.

Trials	How far the cup traveled when started on the pencil (cm)	How far the cup traveled when started on the book. (cm)
1		
2		
3		
AVG.		

Questions:

1. Did the cup move farther when started on the pencil or started on the book? _____
2. Why?

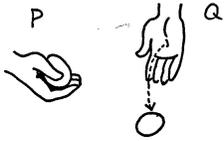
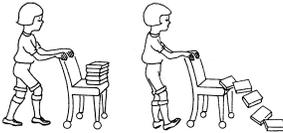
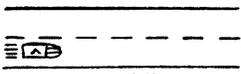
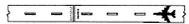
3. In what place does the marble have potential energy?

4. When does it start to have kinetic energy? _____
5. When does it stop having kinetic energy? _____
6. A good conclusion for this investigation would be: The (higher, lower) the marble, the more potential energy it has.



Activity 2

Always ask yourself – is it moving? If moving – it’s kinetic!

<p>1. What type of energy is found at P? <i>Potential</i> <i>Kinetic</i></p> <p>2. What type of energy is found at Q? <i>Potential</i> <i>Kinetic</i></p>	
<p>3. What type of energy is found in this picture? <i>Potential</i> <i>Kinetic</i></p> <p>4. What would have to happen to change the type of energy? _____</p>	
<p>5. What type of energy is found is found in the books on the chair? <i>Potential</i> <i>Kinetic</i></p> <p>6. What type of energy is found in the books falling from the chair? <i>Potential</i> <i>Kinetic</i></p>	
<p>7. The car is speeding down the highway. What type of energy is found in the speeding car? <i>Potential</i> <i>Kinetic</i></p>	
<p>8. The airplane is landing on the runway. What type of energy is found in the plane at this time? <i>Potential</i> <i>Kinetic</i></p>	

Activity 3 (DO NOT GLUE until teacher says)

Kinds of Energy

KINETIC ENERGY

Kinds of Energy

POTENTIAL ENERGY

Under the flap do the following:

Describe the term
Draw a picture
Give a real world example

Place glue on back of this anchor tab

Under the flap do the following:

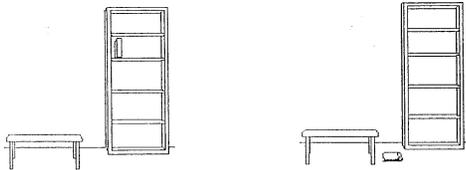
- Describe the term
- Draw a picture
- Give a real world example

Name _____ period ____

EXIT TICKET

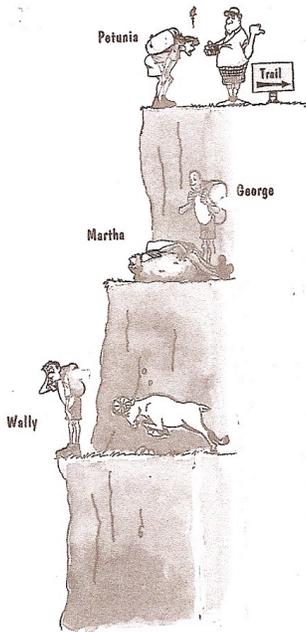
Potential and Kinetic Energy

1. Circle the book in the pictures below that has the most potential energy.



2. Which person on the cliff has the most potential energy?

3. Which person on the cliff has the least potential energy?

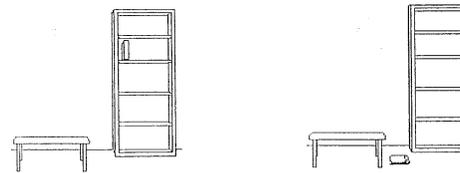


Name _____ period ____

EXIT TICKET

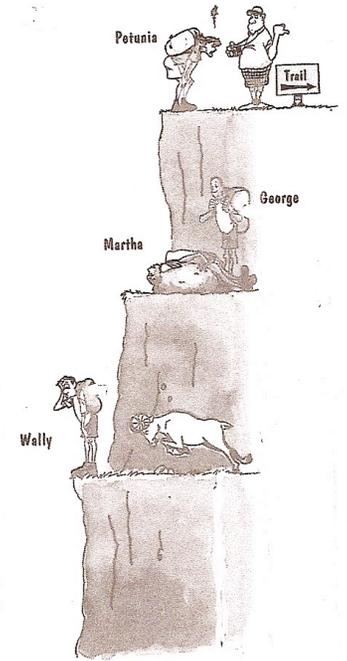
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Conclusion: (stored, potential, surface, kinetic, height, motion)

The two kinds of energy are _____ and _____.

Energy that is _____ or held in readiness is potential energy. The scientific name for the energy of _____ is kinetic energy. The potential energy of an object is influenced by its _____ from the earth's _____.

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