Name _____

Bouncing Poppers

Goggles must be worn during this investigation!

Background Information:

- Potential energy is the energy an object has because of its position.
- The higher an object is, the greater its potential energy.
- As an object falls or moves, its potential energy is converted to kinetic energy.
- Kinetic energy is the energy an object has because of its motion.
- The faster or farther something moves, the greater its kinetic energy.

Materials:

Poppers	Meter stick	Carpet sample	Cardboard
Masking tape	Goggles		

Procedure:

1. Tape the meter stick to the wall or you table leg with the "0" end on the floor.
2. Turn the popper inside-out and place it on the tile floor.
3. Estimate the height in **cm** to which the popper bounces back. Practice until you can estimate accurately.
4. When you can accurately estimate the bounce height, drop the popper and measure the bounce height. Record your data.
5. Repeat for a total of 5 trials.
6. Place the cardboard on floor next to the meter stick.
7. Repeat steps 2 – 5.
8. Replace the cardboard with the carpet square.
9. Repeat steps 2 – 5.

Data:

Popper Bounce Height (cm)			
	Surface		
Trial	**Tile**	**Cardboard**	**Carpet**
1			
2			
3			
4			
5			
Average			

Data Analysis:

Graph your data using an appropriate graph.

What type of graph did you choose for this data? _____

Why? _____

What types of differences do you see in the data?

_____

_____

What does this tell you about the surfaces?

_____

_____

Questions & Conclusions:

1. When do you do ***work*** on a popper?

   _____

2. What kind of energy does the popper get from the work it takes to turn it inside-out? _____
3. When does the popper have potential energy?

   _____

4. When does the popper have kinetic energy?

   _____

5. How does the type of surface affect the conversion of potential energy to kinetic energy? Explain your answer.

   _____

   _____

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