Glue this side into your notebook

LAB: YOU'VE GOT POTENTIAL!

Objects with energy can exert forces on other things to cause them to change their motion. Forces can change the energy an object has. But how can the amount of potential energy change for an object? Different factors affect different types of energy differently. However, if an object has to work hard to get to its location, or it's hard to change the shape of the object, then it has gained more potential energy "stored" up in it, waiting to be used. **It's now "ready to do something."**

Here's a hint to help you: when you think about the object, think about if it was hard or easy to get it to that location or situation in the lab – the harder it was to get it to that point, the more energy is stored up.

Gravitational Potential Energy		
IV *In what ways did you change the IV to test it?*		DV *What observations and data did you observe/collect that could indicate the amount of energy present?*
height/distance drop the weights from different heights into the sand		**evidence for the amount of potential energy** measure the diameter of the dent in the sand
levels		
What's the relationship between height and amount of gravitational potential energy?		
mass drop different masses from the same height into the sand		**evidence for the amount of potential energy** measure the diameter of the dent in the sand
levels		
What's the relationship between mass and amount of gravitational potential energy?		

Elastic Potential Energy

IV *In what ways did you change the IV to test it?*		DV *What observations and data did you observe/collect that could indicate the amount of energy present?*
distance from starting point pull back the slinky OR car different distances from resting point		**evidence for the amount of potential energy** time how long it takes for the slinky to stop OR how far the car goes
levels	slinky:	
	slinky:	
	car:	
	car:	

What's the relationship between distance and amount of elastic potential energy?

ability to compress/stretch list the different materials of the balls		**evidence for the amount of potential energy** measure the height they bounce back
levels	harder to compress:	
	easier to compress:	

What's the relationship between ability to compress/stretch and amount of elastic potential energy?

Electrical Potential Energy

IV *In what ways did you change the IV to test it?*		DV *What observations and data did you observe/collect that could indicate the amount of energy present?*
distance change the distance of the straw from the pith balls OR between the water and balloons		**evidence for the amount of potential energy** describe the distance the balls/water move
levels	pith balls:	
	pith balls:	
	balloon/water:	
	balloon/water:	

Can a balloon do more work (move/change something) if the object is closer or farther?

Can a charged balloon do more work (move/change something) if the charge is strong or weak?

Chemical Potential Energy

IV *In what ways did you change the IV to test it?*		DV *What observations and data did you observe/collect that could indicate the amount of energy present?*
material list the objects		**evidence potential energy changed or not** list what you saw that produced
levels		

What's the evidence we often see to show that an object used its chemical potential energy?

What does chemical potential energy depend on inside of an object? (research if you need to!)

Magnetic Potential Energy

IV *In what ways did you change the IV to test it?*		DV *What observations and data did you observe/collect that could indicate the amount of energy present?*
Distance bring magnets closer and farther from the pop can in the video		**evidence for the amount of potential energy** describe how the pop can was affected
levels		

Can a magnet do more work (move or change something more) if the object is closer or farther?

Can a magnet do more work (move or change something) if the object is a metal versus a nonmetal?