

Compare potential and actual kinetic energy.



$$E_K = (1/2)mv^2$$

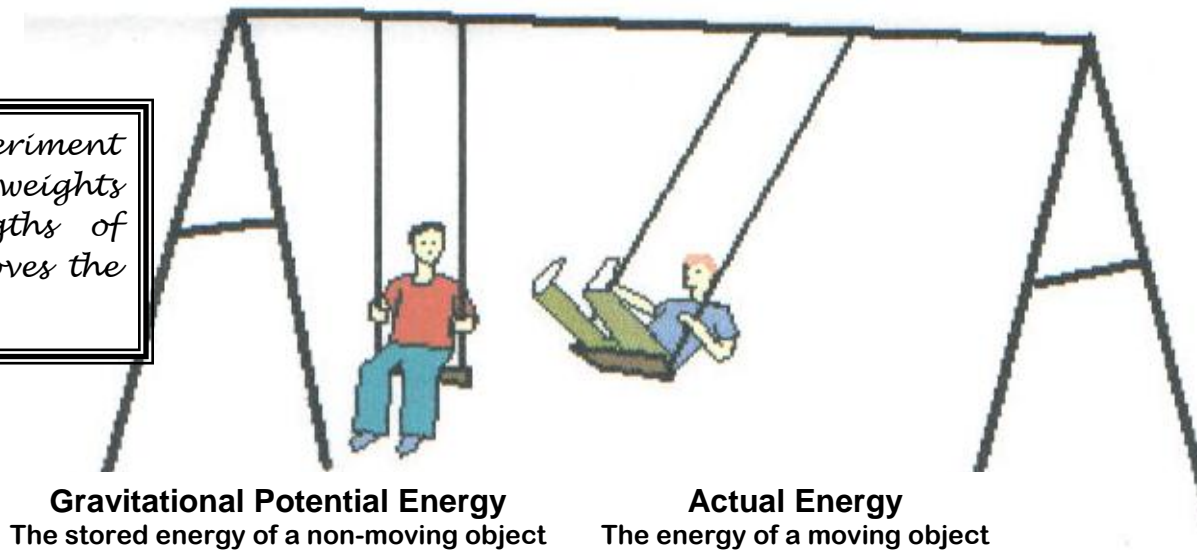
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Compare potential and actual kinetic energy.

Make a pendulum to demonstrate potential and actual energy. A bolt or other weight tied to a string can be used. Let the weight hang freely down from the string so that the weight is behind a toy car or small ball. Now bring the weight to a 180 degree angle and parallel to the floor. This is gravitational potential energy. Now let the weight drop so it swings down and hits the car or ball. Note how far the car moved. This is kinetic energy, or energy in motion.

Repeat the experiment above using heavier weights and different lengths of string. Which moves the car the furthest?



The amount of energy increases with mass and speed. The speed would increase with height..

Imagine the energy in a wrecking ball.

$$E_K = (1/2)mv^2$$

$$\text{Kinetic Energy} = \frac{1}{2} \text{ mass } \times \text{ velocity}^2$$

## Information Pieces

### **Actual Energy**

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### **Gravitational Potential Energy**

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The stored energy of a non-  
moving object

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The energy of a moving  
object

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### **Kinetic Energy**

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$\frac{1}{2}$  **mass**

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**velocity<sup>2</sup>**

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