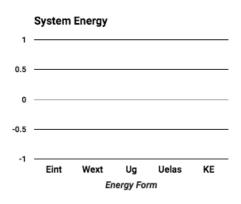
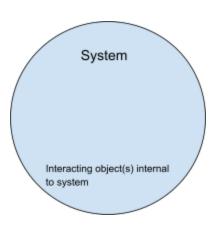
Using a Systems Approach for Energy Problems

$$\begin{aligned} Work_{fric} &= \Delta E_{int} \ KE = \frac{1}{2} m v^2 \ U_g = mgh \ U_{elas} = \frac{1}{2} k x^2 \\ W_{ext} &= F \cdot \Delta x \cdot cos\theta \end{aligned}$$

Interacting object(s) external to system





1. 5 kg rock falling from 15 meters. What is the velocity just before hitting the ground?

System
Rock
Interacting object(s) internal to system

Interacting object(s) external to system: Earth

	System Energy							
1								
0.5								
0								
-0.5								
-1								
	Eint	Wext	Ug	Uelas	KE			
	Energy Form							

	System Energy							
1								
0.5								
0								
-0.5								
-1								
	Eint	Wext	Ug	Uelas	KE			
	Energy Form							

2. 5 kg rock falling from 15 meters. What is the velocity just before hitting the ground?

System

Interacting object(s) external to system:

None

Interacting object(s) internal to system

Rock Earth