PreAP: due Wed., Nov 9 (Assigned: Mon., Nov 7)
Reg: due Thurs., Nov 10 (Assigned:Tues., Nov 8)

Energy 4

1. At the right draw a lever that makes it easy to lift an object.
   (Make a box the object.)

2. A person pushes with 35 N to move a box up to the back of a 1.4 meter truck. The object is 350 N and the ramp is 16 meters long. Find the efficiency of the ramp.

3. A ball is dropped from 18 meters.
   A. What kind of energy does it have before?
   B. What kind of energy does it have afterward?
   C. What Law tells us that they are equal?
   D. Find the velocity of the object just before it hits the ground.

4. A 100kg car is going 10 m/s. A force pushes on it to speed it up to 20 m/s.
   A. What kind of energy did it have before?
   B. What kind of energy did it have afterward?
   C. What made it speed up?
   D. If a force pushed on it for 10 m, find the strength of the force.

5. A 2 kg object going 4.5 m/s stops when it compresses a spring (spring constant is 1.2 N/m).
   A. What kind of energy does it have before?
   B. What kind of energy does it have afterward?
   C. Find how far the spring was compressed.

6. A 6 kg object going 10 m/s stops because of friction.
   A. What kind of energy did it have before?
   B. Where did the energy go?
   C. If the force of friction is 2.3 N, find how far it takes to stop it.

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7. Use this equation to answer the following: $\_\_\_ C_6H_{12}O_6 + \_\_\_ O_2 \rightarrow \_\_\_ CO_2 + \_\_\_ H_2O + \text{energy}$
   A. Is this respiration or photosynthesis?
   B. What is the energy?
   C. Balance the equation.

8. Name the 5 major organelles and their functions.

9. Give 2 examples of things you do to maintain homeostasis.