Item#: 54 2.4 Reading Guide Name: _____

1) Using the wind-up toy, explain when you did work.

2) When you released the toy, the work was transformed from _____ energy to _____ energy.

3) With the Newton's cradle, (a) explain when you did work.

b) What kind of energy did the cradle have when you held the ball in the air?

c) What kind of energy did the cradle have after you let the ball go?

4) How/when is elastic potential energy stored?

Ex: the wind-up toy—describe where potential energy is stored. _____

Ex: stretched rubber band to released rubber band— _____ _____ _____ is transformed into _____ _____.

Ex: Bouncy ball—explain when a bouncy ball stores elastic potential energy:

_____

_____

_____

5) When you lift the steel ball in Newton's cradle, identify the potential energy.

6) When you release the ball, its _____ _____ _____ is transformed into _____ _____ which is then transferred the other steel balls.

Example: the higher you lift the ball the _____ GPE is stored.

Bouncy Ball Experience

When you lift the ball, you are doing _____ to _____ its GPE. When you release the ball, the energy is _____ into _____. Then the ball hits the floor and the ball's shape _____ as it flattens against the floor. The ball stops moving for an instant, so it no longer has kinetic energy. All of the ball's _____ has been transformed into _____ potential energy. The ball then bounces upward, releasing its _____ potential energy which is transformed back into _____ energy and so on.

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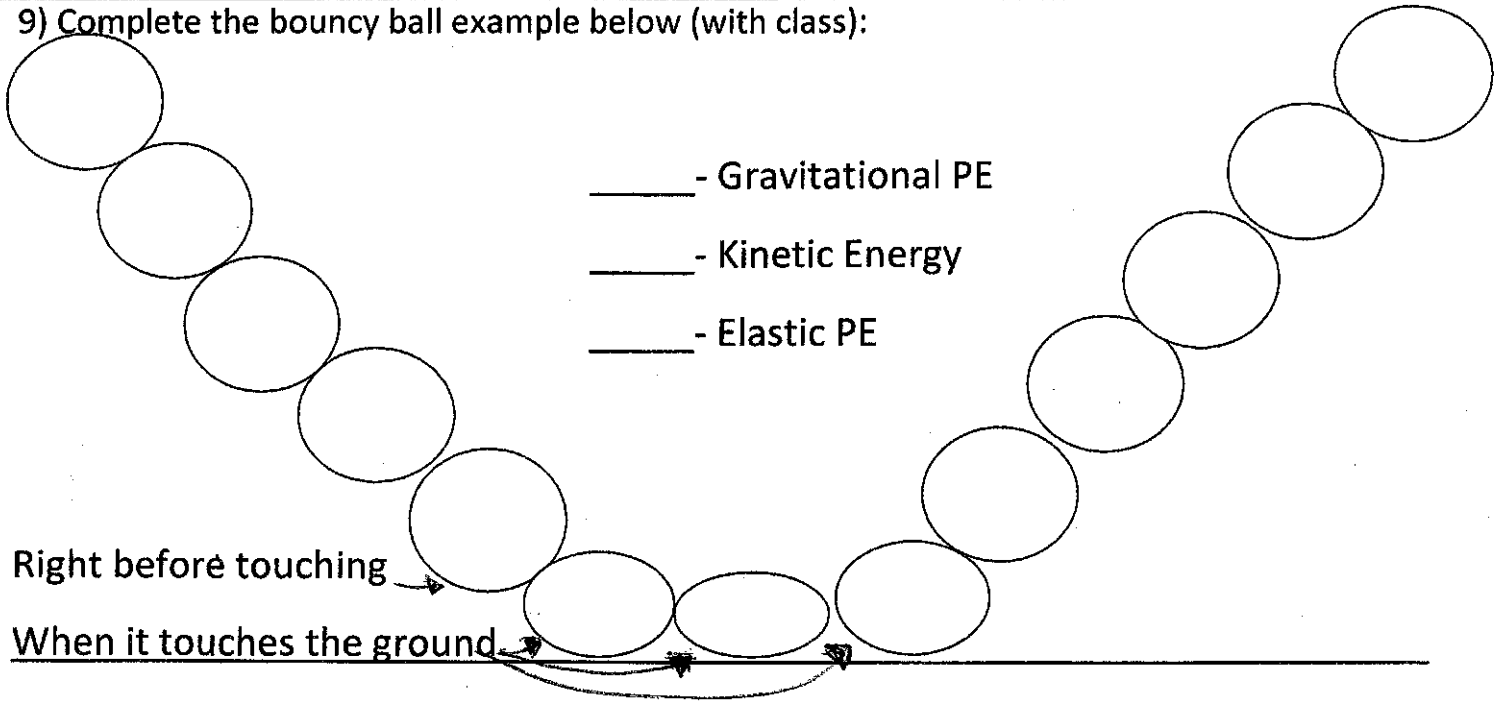
9) Complete the bouncy ball example below (with class):



_____- Gravitational PE

_____- Kinetic Energy

_____- Elastic PE

Right before touching

When it touches the ground

Example of tennis ball on a string (with class):

___ Kinetic Energy (KE)

___ Gravitational PE