science

FRIDAYS

AT WADE THOMAS

Week 5
September 14- 18

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ENERGY TRANSFER

Materials:
Measuring tape
Tape or tacks
Tennis ball
Slow-motion camera (e.g. iPhone)
Assistant (e.g. parent, sibling)

Procedure:
1. Pin or tape the measuring tape on a wall vertically, with the zero notch aligning with the level of the floor.
2. Have an assistant hold a tennis ball a few inches in front of the tape measure on the wall. Record the height above the floor at which they are holding the ball.
3. Hold the camera ready, making sure the entire scene including the tennis ball and the measuring tape all the way down to the floor is seen through the camera viewer.
4. Start recording video in slow-motion, then wave for your assistant to drop the ball. Stop recording when the ball has stopped bouncing and is at rest on the floor.
5. Review video. Record the height of each bounce. Why did the ball not bounce all the way back to the initial height?

Skills learned:
Measurement (height)
Data collection

Further study:
Bounce on a trampoline. Think about how energy is transferred as you bounce.

PHYSICS, GRAVITATIONAL POTENTIAL ENERGY, KINETIC ENERGY, THERMAL ENERGY (FRICTION), SOUND ENERGY, ELASTIC POTENTIAL ENERGY (BALL DEFORMATION), THE LAW OF CONSERVATION OF ENERGY