

Potential Energy

Materials:

Tape measure or meter stick
Basketball
Small ball (such as a tennis ball)
Masking tape

Procedure:

1. Read through steps 1-5 of the activity and predict what you think will happen. Then, complete steps 1-5.
2. Hold the tennis ball at a height of $\frac{1}{2}$ meter. Drop the ball and catch it when it bounces to its highest height (you may need to practice a few times).
3. Record the height of the bounce on the data table.
4. Repeat steps 2 & 3 for heights of 1 and $1\frac{1}{2}$ meters.
5. Repeat steps 2-4 with the basketball.

Predictions: (*use complete sentences*)

From which height will **each** ball bounce the highest? _____

Which ball, when dropped from the same height, will bounce the highest? _____

DATA TABLE

	$\frac{1}{2}$ meter	1 meter	$1\frac{1}{2}$ meters
Small Ball			
Basketball			

Record all bounce heights in centimeters.

ANSWER THE QUESTIONS ON THE BACK!

Questions: (use complete sentences)

1. Which height gave each ball the most potential energy?
2. What type(s) of potential energy were used during this activity?
3. Draw and label a diagram to show when the ball had potential energy (and what type) and kinetic energy.
4. Which ball had the greatest potential energy? How do you know?

Now try this:

1. Go outside to the sidewalk with the small ball and the basketball.
2. Hold the tennis ball directly on top of the basketball, touching.
3. Drop them to the sidewalk. Don't throw them down, just drop them together.

Describe what happens:

Explain why this happened, in terms of energy.

4. Now, reverse the positions of the balls and try it again.

Describe what happens:

Explain why this happened, in terms of energy.