

Problem: To observe the relationship between potential and kinetic energy.

Materials:

Small rubber ball	Meter stick	3" wide masking tape
Pen		

Procedure:

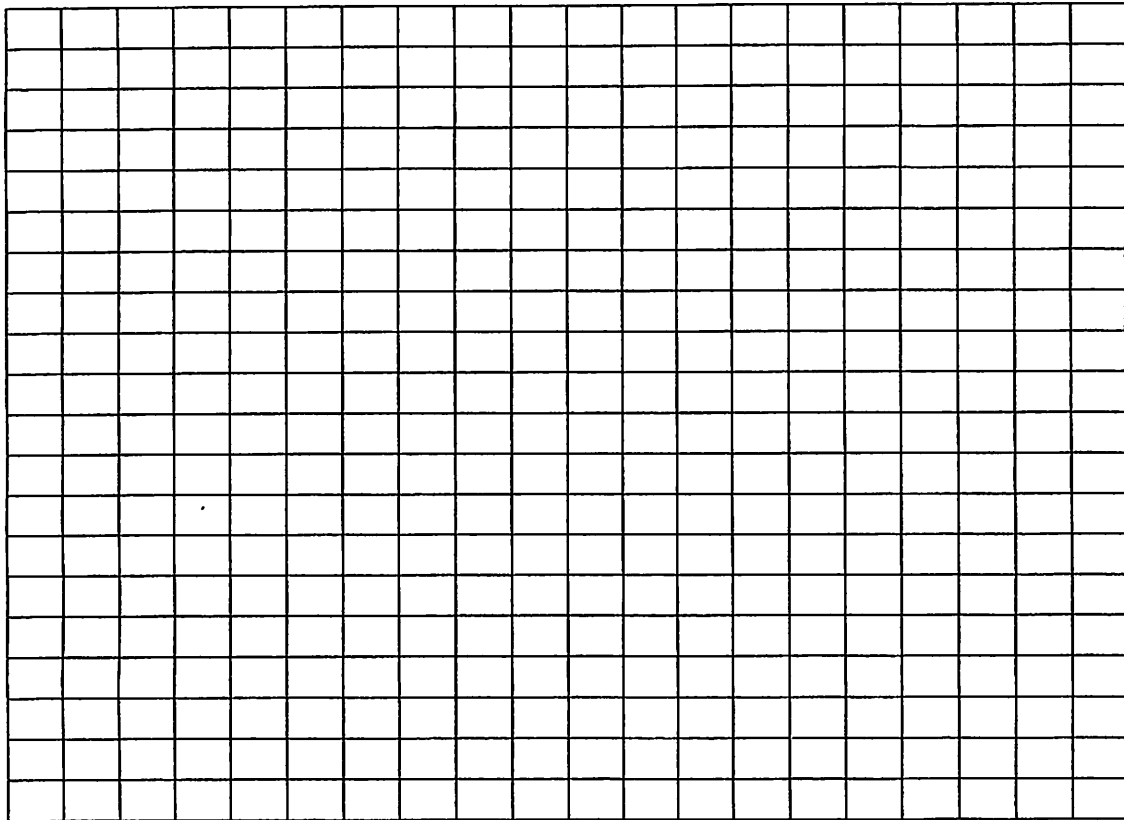
1. Starting at the floor, stretch the tape vertically against the wall or table leg.
2. Draw lines across the tape to mark $\frac{1}{2}$ meter (50cm), $\frac{3}{4}$ meter (75cm), and 1 meter (100 cm) above the floor.
3. Hold the ball at the $\frac{1}{2}$ meter mark and drop it. Observe carefully as the ball bounces.
4. Mark the height of the bounce on the tape.
5. Use the meter stick to measure the height of the bounce and record it in the data table.
6. Repeat steps 3 – 5 for a total of 5 trials.
7. Hold the ball at the $\frac{3}{4}$ meter mark and repeat steps 3 – 6.
8. Hold the ball at the 1 meter mark and repeat steps 3 – 6.

Data:

Starting Height	<i>Bounce Height</i>					Average Bounce Height
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	
50 cm						
75 cm						
100 cm						

Data Analysis:

Make a *bar graph* to *compare* the average bounce height at different starting heights. Remember to title and label your graph.



What patterns or relationships do you see in the data?

Questions: (use your textbooks if necessary)

1. Describe energy:

2. Describe potential energy:

3. Describe kinetic energy:

4. When is work being done in this investigation?

5. When did the ball have the most potential energy in this investigation? Explain your answer.

6. How were you able to increase the amount of potential the ball had?

7. Explain another way to increase the amount of potential energy in an object:

8. How is the potential energy in the ball changed to kinetic energy in this investigation?

9. How is kinetic energy in the ball changed back to potential energy in this investigation?

10. Not all of the ball's potential energy was converted into kinetic energy. Where did this energy go?
