

Name: _____
Mr. Willis
Conceptual Physics: _____
Date: _____

Unit V
Energy
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Exploring Energy Conversion

Materials: small steel ball, box lined with soft modeling clay, meter stick, graph paper

Procedure:

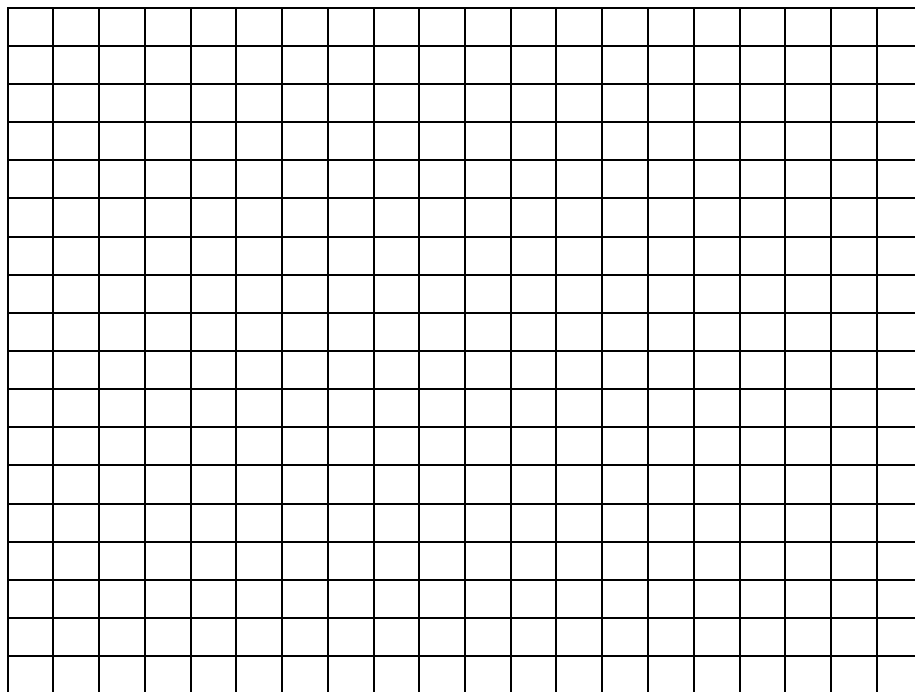
Construct a data table with 3 blank rows and 5 columns labeled Mass, Height, Diameter, Potential Energy, and Kinetic Energy.

Mass the ball and record that on the table.

Drop the ball into the box of clay from a height of 30 cm. Record this height on the data table. Carefully measure and record the diameter of the crater that the ball formed.

Repeat Steps 2 and 3, dropping the ball from 60 cm and 90 cm.

Graph your data: Plot the crater diameter on the vertical axis and height of the drop on the horizontal axis.



Analyze and Conclude:

Using Graphs- According to your graph, how are crater diameter and the height of the drop related?

Calculating: For each height, calculate and record the initial potential energy of the ball.

Drawing Conclusions:

How are kinetic energy and crater diameter related? (*Hint:* The ball's kinetic energy when it hits the clay equals the potential energy it started with, mgh .)

Can you tell how long it took for the ball to drop from each height without using a stopwatch to time it?