Impact Crater Simulation Instructions:

Start by dropping a marble from 20 cm, and do a drop for each additional 20 cm for as high as you care to go. For each marble drop you should measure different properties for each crater. Remember that 10 millimeters is one centimeter, and 100 centimeters is one meter. After doing the experiment you can calculate the depth/diameter ratio which is often measured for planetary craters. You can also calculate the kinetic energy from the formula K.E. = M x g x h, where M = mass in grams, g = the force of gravity on the earth (980 cm/sec^2), and h = height above surface in cm. A typical marble weighs 5.5 grams.

You can also graph the data. The most interesting charts are depth, diameter, diameter of ejecta, depth/diameter, versus the height or versus the kinetic energy. Remember to label all axes with the name and units.

You can now look at pictures of the Moon and planets and explain some of the features!

Data table for impact cratering (H. Newsom, 2002)

Height above surface, cm	Depth of crater, cm	Diameter of crater, cm	Radius of primary ejecta deposits, cm	Distance from center to furthest ejecta, cm	*Calculate*: depth/diam.	*Calculate*: kinetic energy in ergs

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