

# THE BARRINGER METEORITE CRATER

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## Student Handout 4 Are Craters Always Round?

Student Name:

Date:

### Instructions

Your task is to conduct a fair test to answer the question: ***“Does the angle of impact of a projectile affect the shape of a crater?”***

The box of target material has been prepared by your teacher.

The marble will represent the projectile.

You may use the remainder of the materials provided (protractor, meter stick) to set up your experiment.

### CONDITIONS FOR THE TEST

1. The box of target material must be on the floor.
2. You will throw the marble 3 times from each of these angles:  $90^\circ$  (straight down),  $45^\circ$  (approximate), and a very low angle.
3. The marble cannot be thrown from a distance any higher than 1 meter.
4. Remember that the only variable being tested is the angle of impact!
5. Develop a table or chart to record your data: angle of impact and the shape of the crater. (Do not record the size of the crater!)

**Write your prediction here about what you think the results will be:**  
(What changes in the shape of the crater do you expect to see?)

**After the investigation, write your conclusion.** Include all of the information below:

1. Restate the question you were investigating.
2. Describe how you conducted the test ( identify the independent, dependent and control variables)
3. Describe how you measured the results.
4. Explain whether your data proved or disproved your prediction.
5. Explain any experimental error that occurred in your experiment.
6. Conclude whether you successfully answered the question with your experiment. If not, how would you change the experiment?