

Lesson 7: How Do I Measure This?

Engagement Questions:

Why is it important to have a standardized unit of measure? _____

How can you ensure that you are making accurate measurements? _____

Exploration Activity:

The question that you and your team will answer during this experiment is:

How does the height of the item dropped affect the diameter of the crater?

During this experiment you will learn how craters form. To start, we will need three objects that we will pretend are meteors. With your team, decide which three objects you will use:

marble ping pong ball dried peas golf ball gumball cinnamon imperial

Then choose two heights that you will drop your objects from:

30 centimeters

50 centimeters

70 centimeters

Now, fill in the table so that you can record your results:

Exploration Activity Cont.:

Teacher Checkpoint: Once you and your team have completed created your table, ask your teacher to check it over. Teacher's Initials: _____

Now that you have correctly created your table, begin the experiment by **dropping** the first item from your first drop height. Then, carefully remove the object from the pan using the tongs.

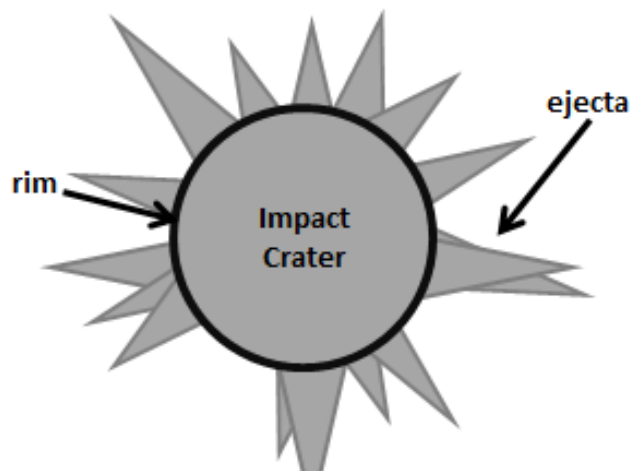
With your team, examine the crater. Use your ruler to measure the diameter of the crater (in cm).

Repeat these steps with your two other objects. When you are finished, complete the remainder of the chart by dropping your objects from your second drop height.

Now that your chart is complete, we need to draw conclusions from the information we gathered.

Which item created the biggest crater? Why? _____

Using the diagram below, choose one of your objects and describe the crater it produced in detail.



Exploration Activity Cont.:

How is the crater an item produces related to the height it is dropped from? What are other factors that may affect the crater size? _____

Explanation:

What scientific or technological question will your team answer? (Go back through your Science Notebook and copy it from Lesson 6.)

Team Question: _____

What things will you measure when conducting your own rover experiment?

1. _____
2. _____
3. _____

List three ways you and your team will take these measurements in your own experiment:

1. _____
2. _____
3. _____

Evaluation:

Why are taking accurate measurements critical to your Mars rover mission? _____
