"Scientists Are Thinkers"

Question/Problem: What do we want to find out?

How were the caters created on the moon's surface?

Hypothesis: What do we think we will find out? Make a prediction.

Materials: List what you will need to test the hypothesis

- Different size and weight marbles or round objects (at least 4)
- Sand
- Baking pan
- Chart
- Meter stick
- Chart (refer to end of lab)

Procedures/Steps: State step by step what you are going to do……specifically

1. Cover your work area with newspapers
2. Place a 2 cm thick layer of sand in a baking pan
3. Label the chart with 4 round objects
4. Drop a small marble straight down onto the sand from a height of 25 cm.
5. Observe what happens.
6. Measure the width of the crater you produced
7. Record the height of the drop and the width of the crater in chart
8. Carefully remove the marble.
9. Repeat steps 4, 5, 6, 7, 8 for 50cm, 75 cm, 1m for item 2.
10. Discuss results
11. Predict what will happen with items 3 and 4.

Observe and Record Data: List, picture, chart, graph

Item	Height Drop	Width of Crater	Observation
Small Marble	**25cm**		
	50cm		
	75 cm		
	100 cm		
Large Marble	**25cm**		
	50cm		
	75cm		
	100cm		
Small Hollow Marble	**25cm**		
	50cm		
	75cm		
	100cm		
Large Hollow Marble	**25cm**		
	50cm		
	75cm		
	100cm		

Analysis/Results: What does the data tell us?

1. Compare the width of the craters when the marbles of the same size were dropped from the same height. Were the craters always about the same.
2. What can you infer about the relationship between the height from which which a marble (item) is dropped and the width of the crater it produces?
3. Which marble moves faster – the one dropped from a short distance or the one dropped from a greater distance? What can you infer about how the speed of a marble affects the crater size.
4. Look at the pictures of the Moon. What can you infer about the size and Speed of the objects that have struck the Moon in the past?
5. Why does the Earth not have as many craters as the Moon?

Conclusion: What did I learn? What does it make me want to learn next?