

Name: _____ Per: _____ Date: _____

Mission Impossible: End Game

Lab # _____

Minutes: 40

Aim (5 points):

Lab Participation (25 points) [includes submission of your group's marble tracking with all names!!!]

Data: (10 points)

		Experimental	Actual
Shape			
Dimension(s)	Side 1 or diameter if circle		
	Side 2		
	Side 3 (if needed)		

Analysis: (10 points)

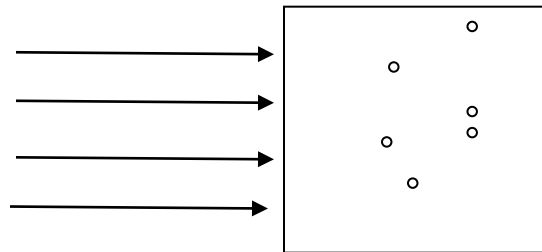
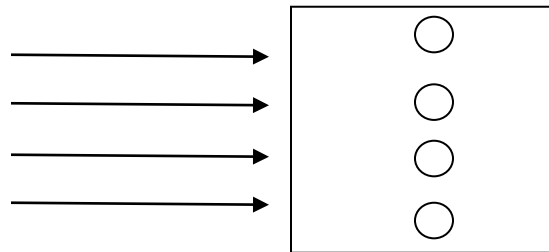
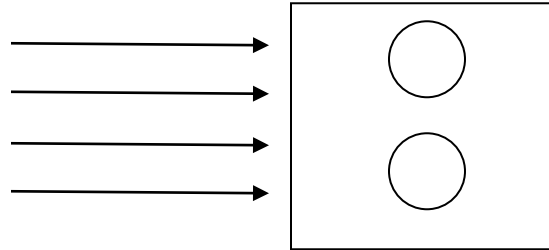
1. Did the shape determined experimentally match the actual shape?
2. Did the dimension(s) determined experimentally match the actual measurement(s)?

Materials Matching (10 points): Match the equipment used in your experiment to that of Rutherford's Gold Foil experiment.

- | | |
|------------------------|--|
| 1) ___Mystery Board | a) Alpha particle |
| 2) ___Pencil and Paper | b) Gold Foil |
| 3) ___Ruler | c) Particle accelerator (radiation source) |
| 4) ___Marble | d) Detection Screen |

Questions (10 points)

1. The mystery board had a single object. How would your observations look if you did a similar experiment with each of the following boards (**USING A RULER**, extend the lines showing the projectile path and any deflections):



2. Subatomic particles can usually pass undeflected through an atom because the volume of an atom is composed of
- an uncharged nucleus.
 - largely empty space.
 - neutrons.
 - protons.
3. Name one way in which Rutherford's Gold Foil experiment conclusions differ from Dalton's cannonball model.
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Dueling CER (30 points):

For each experiment (Rutherford's and Mission Impossible), write a CER that addresses the following points. Keep these in mind when completing the CER

- What did Rutherford claim (regarding the model of the atom)?
- Your evidence has to do with the paths you drew with your pencil and paper?
- For the Rutherford CER, how did the results of the Gold Foil Experiment change the model of the atom.

Rutherford	Mission Impossible
Claim:	Claim:
Evidence:	Evidence:
Reasoning:	Reasoning: