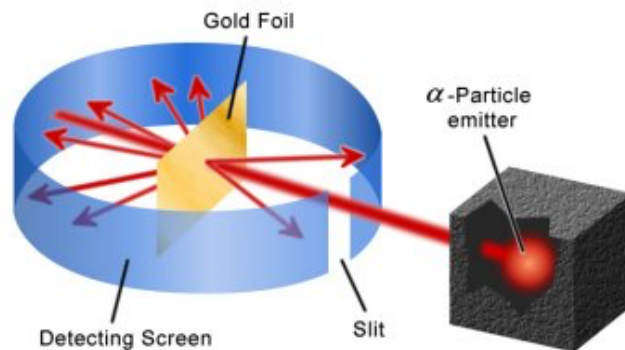


Introduction:

In 1911, a physicist named Ernest Rutherford developed a model of the atom after gathering evidence from a now famous experiment called the Gold Foil experiment. He aimed alpha particles (positively charged) at a thin piece of gold foil (gold atoms). Most of the particles went through the foil, but some bounced back. He described the phenomena "as shooting a cannon ball at a piece of tissue and having the cannon ball bounce back." This strong, indirect evidence caused Rutherford to conclude that atoms contained a very small, positively charged nucleus. (Recall: two positively charged objects repel one another)



Purpose:

The purpose of this lab is to simulate the methods of Ernest Rutherford's Gold Foil experiment that helped us to understand atomic structure. This will be accomplished by collecting indirect data to determine several shapes hidden from view.

Problem: What is the design on the inside of the closed container?

Known Data: The containers are circles and hold a steel ball within them. This ball will move or behave as a result of the shapes or designs it encounters.

Procedure:

1. Carefully shake or tilt the black disc.
2. From the sound and path of the steel ball, try to determine the shape and location of the wall on the inside of the black disc.
3. Draw the shape of your initial hypothesis.
4. Test this hypothesis by moving the ball according to how you think it looks on the inside.
5. Write down any changes you want to make to your hypothesis in the Retest circle.
6. When you are finished with all 12 of the ob-scertainers, you may check with me to look at the actual model. Please DO NOT remove the tape until you have checked with me.