

MARBLES

Have you ever been struck by how remarkable it is that we know anything at all about atoms, structure that typically are .000000001 meters across? If you haven't, you should.

How did early researchers learn what they did about the atom? One of the techniques was to crash stuff into them and looked to see what came out the other side.

This lab will allow you the same thrill those earlier researchers had, though on a monumentally lesser scale.

The device you will be using is simple. A flat, one-foot wide plank is supported on each side with inch-high strips of wood. At the ends is fringe. The underside of the plank is festooned with glued on obstacles and catches. Your task will be to determine where those obstacles and catches are, and what general shape they have. To do this, you will roll marbles through the fringe and down the length of the plank.

When you get your plank, **DO NOT FLIP IT OVER AND LOOK ON THE UNDERSIDE**. Doing so will completely defeat its purpose. Instead, place the plank on a desk and tilt the desk slightly. Place a piece of paper on the top-side of the plank so you can mark where things appear to be as you roll marbles through the structure.

You grade will be determined by two things:

- 1.) How well you determine where and what shape the obstacles and catches are, and;
- 2.) The answer, given by one of the members of your group, to the questions, "How is this lab similar to anything that was done in the world of scientific discovery during the quest to understand the atom?"