Physics 03-01 Circular Motion Lab *Name: _____*

Adapted from Take-Home Physics by Michael Horton

Objectives

- Determine the path an object takes after centripetal force is removed.

Materials

- Small Styrofoam plate with rim and wedge cut out
- Marble

Procedure

To keep an object traveling in a circular path requires a force towards the center of the circle. This force is called the *centripetal* force. Examples of centripetal force include gravity to keep a satellite moving around the earth or tension to keep you swinging in a circular arc on a swing set. What happens when the centripetal force is removed?

Make a hypothesis about what will happen. Which path will an object most closely follow when the centripetal force is removed?

Hypothesis: I think that the object will follow path _____ because _____

_____

1. Put the plate on a flat surface and put a marble in the ridge.
2. Push the marble in the ridge so that it travels around the plate and then out of the removed section.
3. What is providing the centripetal force? i.e. what is keeping the marble traveling in a circle? _____
4. Perform the test several times and record your results. The marble followed path _____
5. Which of Newton's Laws explains the results? _____
6. This would have been more complicated if the object moved in a vertical circle. Why? _____