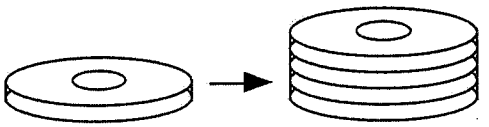
Name_____

# Newton's First Law of Motion

What is Newton's First Law of Motion?

**Part A: Wacky Washers**

To prepare for this experiment, stack 4 washers one on top of the other so that you form a tower of washers. Place the stack of washers on top of your textbook or on the floor so that you have a smooth, slick surface.



Aim one washer at the bottom of the stack of four washers and give it a good hard flick with your finger or hand. What happens?

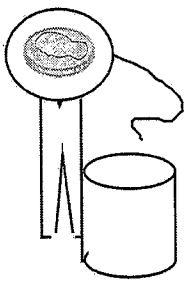
Flick a stack of two washers into a stack of four washers. What happens?

Flick a stack of four washers into a stack of four washers. What happens?

Explain your observations in terms of Newton's 1st Law.

**Part B: Tricky Tricks**

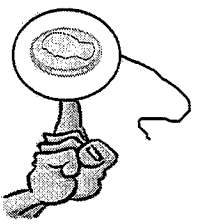
Now that you are an expert at Newton's First Law of Motion, try these tricks. Without inertia, they would not be possible!



Set up the situation shown in the top diagram. The goal is to remove the circle by pulling on the string, but the penny must remain in place on top of the clothespin. Can you do it? Keep trying until you are able to do it!

Try the experiment again using the plain circle (no string). Can you flick the circle out from under the penny and keep the penny on the end of the clothespin? Keep trying until you are able to do it!

Balance the penny on a circle (string or no string) on the tip of you finger as shown in the second diagram. Try to remove the paper circle to leave the penny balanced on your finger. Can you do it?



How does this activity relate to the "pull the tablecloth" trick used by magicians?