

Big Ideas - Intro (Physics) to  
Circular motion  
Concepts

Joe's - wants  
values beyond school

Name \_\_\_\_\_ Block \_\_\_\_\_ Number \_\_\_\_\_

Investigation  
Dominate?

### Lab on Circular Motion: My Head is Spinning 1 Day

**Background:** Many of the motions you encounter every day are examples of circular motion: a car turning a corner, a roller coaster, a CD playing, etc. To help you discover and understand the various aspects of circular motion, several exploratory exercises have been assembled. \* Daily Life

#### STATION ONE: Circular TRACK

Place a plastic lid on your table. Roll a marble around the radius of the "track" and observe the path when it exits from the lid. Try to predict where it will go by placing a cup there to catch it.

**Draw lid and the exit path of the marble:**

|    |    |
|----|----|
| S1 | 2+ |
| S2 | 2  |
| S3 | 1+ |

#### STATION TWO: STATION TWO: Marble suspended.

Using the lampshade, try to pick up the marble. What did you do to lift the marble?

#### STATION THREE: Penny in Orbit

Using the bent coat hanger, balance a penny on the end of the hook. Try to swing the hanger without the penny falling off. An expert can stop the hanger without the penny falling off.

Why doesn't the coin fall off?

Why is the friction so great?

to leading of O's - self discovery

#### STATION FOUR: The Ol' Bucket 'O Water Trick

Take the container that is 1/3 full of water. Swing it in a vertical circle. What happens to the water?

Can you figure out why?

What would happen if you were to stop the bucket suddenly over your head?

maybe / VBI standard 3

How do these aspects of cir. motion impact what you do / -  
when do you see this<sup>m</sup> daily life?

Not sure  
Dominate task  
Goal? / Purpose?

**STATION FIVE: PING PONG BALL ON A STRING**

Spin around the ping pong ball on the string--Spin it over your head in a horizontal circle. Predict the DIRECTION the ball will go when you let go.

Try it. Draw the circular path and the direction the ball goes when you let go:

**STATION SIX: Conical Pendulum.**

What is the weight of the mass on the scale? \_\_\_\_\_

What happens when you start spinning it in a small circle (below the scale--see diagram)

What is the force needed to keep it going in the circle? \_\_\_\_\_ N

What if you move the mass faster? New force \_\_\_\_\_ N

Summarize why there is more force when it is going in a circle--why do you need more force?

*Support -*

**STATION SEVEN: Bowling Ball**

*Daily life*

Have your group form a circle. Have one person start with the bowling ball on the floor. Make the ball go around the circle. Describe the DIRECTION of the force needed on the ball in order to keep in moving in a circle:

Summing it Up:

1. In what direction is the FORCE that keeps an object going in a circle?
2. If the force were removed, what would happen to the object?

*Also maybe support conclusions*

*maybe Overall conclusions of findings/summary/reflection theory/laws?*