

## HONORS PHYSICS

### Group Members:

### Materials

Paper plate with section cut out  
Marble

Paper plate  
Scissors

### Procedure

#### Part 1: Pre-Sized Wedge

##### Record one trial with your smartphone (overhead shot).

1. Predict the maximum number of complete revolutions the marble will be able to make when you try to spin it around the rim of the plate.
2. Roll the marble along the side of the paper plate in such a fashion that it leaps over the gap and continues in its circular path.
3. Record your observations.
4. Repeat for two additional trials.

#### Part 2: No Wedge

1. Predict the maximum number of complete revolutions the marble will be able to make when you try to spin it around the rim of the plate.
2. Roll the marble along the side of the paper plate in such a fashion that it leaps over the gap and continues in its circular path.
3. Record your observations.
4. Repeat for two additional trials

#### Part 3: Different wedge size

1. Cut any size wedge into a paper plate. It needs to be a different size than the wedge in part 2.
2. Predict the maximum number of complete revolutions the marble will be able to make when you try to spin it around the rim of the plate.
3. Roll the marble along the side of the paper plate in such a fashion that it leaps over the gap and continues in its circular path.
4. Record your observations.
5. Repeat for two additional trials

## Observations

### Part 1

Trial	Marble's Action
1	
2	
3	

### Part 2

Trial	Marble's Action
1	
2	
3	

### Part 3

Trial	Marble's Action
1	
2	
3	

## Analysis

1. What variables determined whether you able to get the marble to leap over the gap?
2. Did the size of the wedge influence your results? Did the lack of a wedge influence your results?
3. If the marble did not make a revolution around the rim of the paper plate, which way did it go?
3. What physics concept(s) do you think help explain your results?
4. Can you think of any real-life instances where this phenomenon happens?