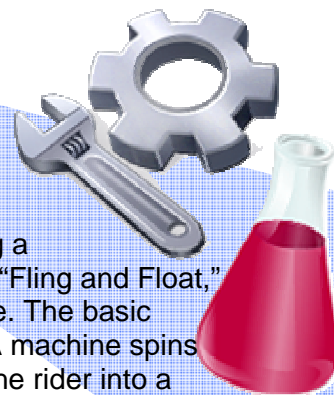


# Design a Ride



In this activity your design team has been assigned the task of engineering a new ride for the WAYCOOL AMUSEMENT PARK. The ride will be named “Fling and Float,” combining the thrill of amusement park rides with the splash of a water ride. The basic design, illustrated below, involves riders sitting in rafts attached to cords. A machine spins the rafts around a platform. At a certain point, each cord “snaps,” flinging the rider into a lagoon. Use the spinner diagram (A-D) to determine when the cords should detach so that the riders and their rafts land safely in the lagoon.

## MATERIALS:

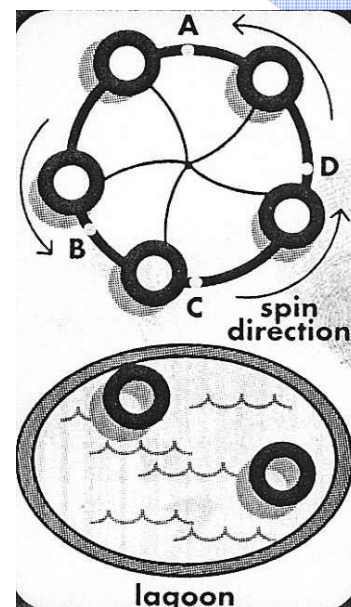
- |                   |             |
|-------------------|-------------|
| ball              | meter stick |
| marker            | data table  |
| kite string - 1 m |             |

## PROCEDURE:

1. Tie string securely around the ball.
2. In an open area, hold the end of the string and swing the ball over your head in a counter clockwise direction, lasso style.
3. Predict where the ball will fall if you release the string when your arm is directly in front of you, position A in the figure at the right. Record your prediction on the diagram in the data section.
4. Stop swinging and release the string simultaneously.

**CAUTION: MAKE SURE EVERYONE IS STANDING**

- CLEAR.** Mark where the ball hit the ground and measure its distance (m) from the release point
5. Repeat steps 2-4 two more times.
  6. Repeat steps 2-5 three times for each release position indicated on figure above



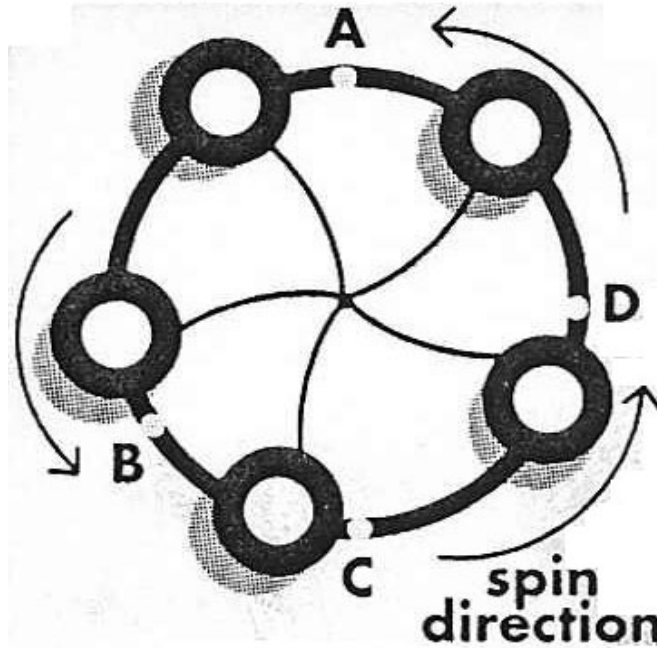
**DATA:** Record all data on the table.

## QUESTIONS:

1. How close were your predictions to the actual landings?
2. What was the average distance the ball landed away for the release point?
3. Explain how each of these forces acted on the ball and string:
  - a. centripetal force
  - b. centrifugal force
  - c. inertia
  - d. gravity
  - e. friction

# PS - Activity

## Data Table



TRIAL	DISTANCE (m)
Position A #1	
Position A #2	
Position A #3	
Position B #1	
Position B #2	
Position B #3	
Position C #1	
Position C #2	
Position C #3	
Position D #1	
Position D #2	
Position D #3	