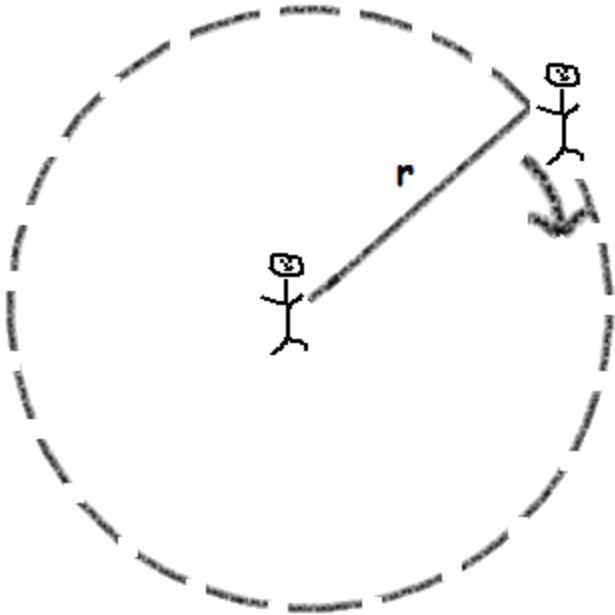


Round and Round We Go!

Purpose: compare and contrast the rotational and linear speed of an object in circular motion

Materials: meterstick, 5 m of rope, stopwatch, 2 people

What To Do?



Walk in a circle as shown in the diagram. You should have 2 meters of rope in between you and the person at the center of the circle. Now slowly walk in a circle while at the end of the rope. Use a stopwatch to determine how many seconds it takes to go around one time. ***Do not round your data.***

Now repeat the step above, but now the rope needs to be 4 meters long. Try to walk around the circle in the same amount of time as the 2 meter walk.

Have your teacher approve

Questions:

1. Was your rotational speed close to the same each time? How do you know?
2. Which length of rope felt like you had a greater linear speed, or did they feel the same?
3. Calculate your linear speed for the 2m and 4m lengths of rope. Use the circumference of the circle as your distance. (Show K-U-E-S on the back of this paper)

Have your teacher approve

4. Based on your calculations, which had a greater linear speed the 2 m or 4 cm radius circle? Did your calculations verify or disprove your answer to #2?
5. Were the forces acting on you balanced? If not, in what direction was the net force acting on you as you walked around in a circle?
6. What type of net force was pulling on you as you walked around in a circle?
7. Identify the actual force(s) acting on you to keep you going in a circle.

Have your teacher approve