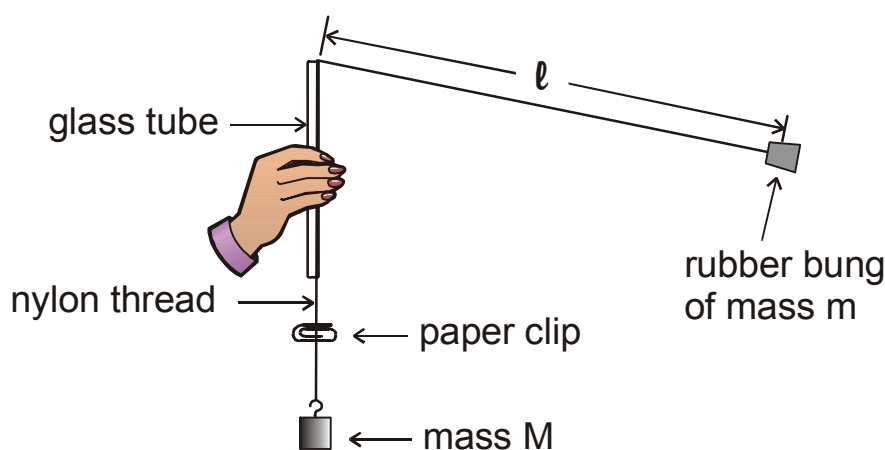


Circular Motion

1. **Preparation:**
 - a) Look at the derivation of the equation to calculate the magnitude of the centripetal acceleration acting on a mass moving in a circular path at constant speed.
 - b) Revise “components of forces”.
2. The aim of the experiment is to verify the relation between the *centripetal force* acting on a body (moving in a circular path at constant speed) and the *angular speed* of the body.

The apparatus is shown below. Stop-watches and boxes of known masses, M , are also available. The rubber bung will be made to follow a horizontal, circular path at approximately constant speed.



During the experiment, m and l will remain constant.

Give a clear title for the experiment. (The title must state the aim of the experiment.)

From the diagram, it is clear that the actual radius of the path followed by the bung, r , is *not* equal to l . You will notice during the experiment that the radius of the path is *not constant*. As part of your “conclusion/evaluation” you should show that (perhaps surprisingly) this is not a problem. Hint: the force causing the acceleration is the horizontal component of the tension in the string...