

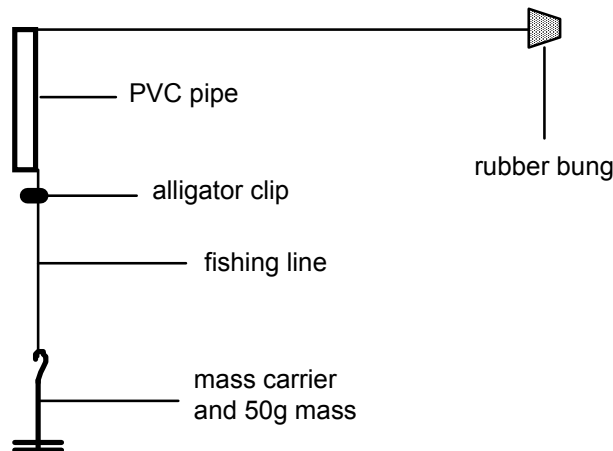
Circular Motion

Aim

to experimentally determine the relationship between the period of motion and the centripetal force acting on an object undergoing circular motion.

Method

1. Set up the equipment as shown below.



2. The alligator clip is a marker, so that the radius of the circle can be kept a constant as the bung is spun. It should be placed so that the bung to pipe distance is about 1 metre.
3. Determine the time for 10 periods of the rubber bung using a stopwatch, and repeat at least twice more.
4. Add 100g more to the mass carrier. Repeat the period measurements.
5. Continue until you have readings for suspended masses from 100g to 500g.
6. Graph the results. [hint: graphing F against T will not give you a linear graph. You need to determine what graph you should draw, and what the gradient will represent. Remember uncertainties.]

Interpretation

This needs a full discussion, based on the IB criteria. The most significant part of your results is the shape of the graph or graphs, and what this tells you of the relationship between force and period for an object undergoing circular motion. Determine the expected results, using the equations you have seen in class.