

Name _____
Class _____ Date _____

FRICITION ON AN INCLINE - LAB

Aim:

- to determine the kinetic coefficient of friction for the boards used at school.
- to determine the effect of doubling the weight of the block on the kinetic coefficient of friction.

Equipment:

2 friction blocks; 1 spring balance; 1 board; 1 protractor

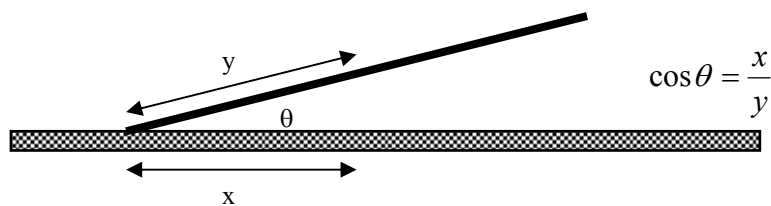
Method:

You will need to measure the frictional force, the weight force and the angle between the board and the horizontal (or the cosine of this angle). This needs to be done for at least **5 different angles** (including zero).

Weight force: suspend the block from the spring balance, and read the force.

Frictional force: Pull the block up the slope with the spring balance. When the block is moving with **constant** velocity the reading on the spring balance is the kinetic frictional force. It is sufficient for you to estimate when the block is travelling with constant velocity.

Angle between the board and the horizontal. You are supplied with a protractor to find the angle. If you wish, it may be easier to use a ruler to determine two lengths, as shown below. From this you can directly find the cosine of the angle, without finding the angle.



Remember to record uncertainties. You need to draw a graph that will allow you to find the kinetic coefficient of friction from the gradient of the graph.

To increase the weight of the block, place the second block on top of the first. This way no other variables should enter into the experiment. Repeat all the readings for the new weight. Add these results to the graph.

Report:

Your report will be assessed as usual. Check the criteria you have been given. You are expected to determine which graph to draw, without our help.