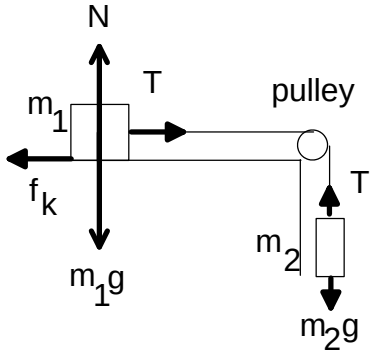
KINETIC FRICTION

In this lab you will determine the coefficient of kinetic friction for a block moving along a track. The coefficient is dependent on the materials of the two surfaces that are moving against each other. In this case the motion is between the felt on the bottom of the block and the aluminum surface of the track.

The apparatus for the experiment is shown in the figure. Mass 1 is accelerated by the fall of mass 2. The acceleration of mass 1 is measured using the motion detector which is mounted on the track. Make sure that the track is level.



Procedure -

Materials and equipment: track, block with flag, weight hanger, weights, distance probe, string, scale, pulley

Step 1 - Using the apparatus shown above, measure the acceleration of the block. Use 100 g for mass 2. *Your group should decide on a procedure and on the number and types of measurements to take.*

Step 2 - Apply Newton's 2nd Law to both masses to find an equation for the acceleration of the masses.

Step 3 - Using the experimental acceleration from Step 1 and the equation from Step 2, determine a value for μ_k. Is your result reasonable? Explain.

Along with what is asked of you above, please carefully describe the procedure that your group devised.