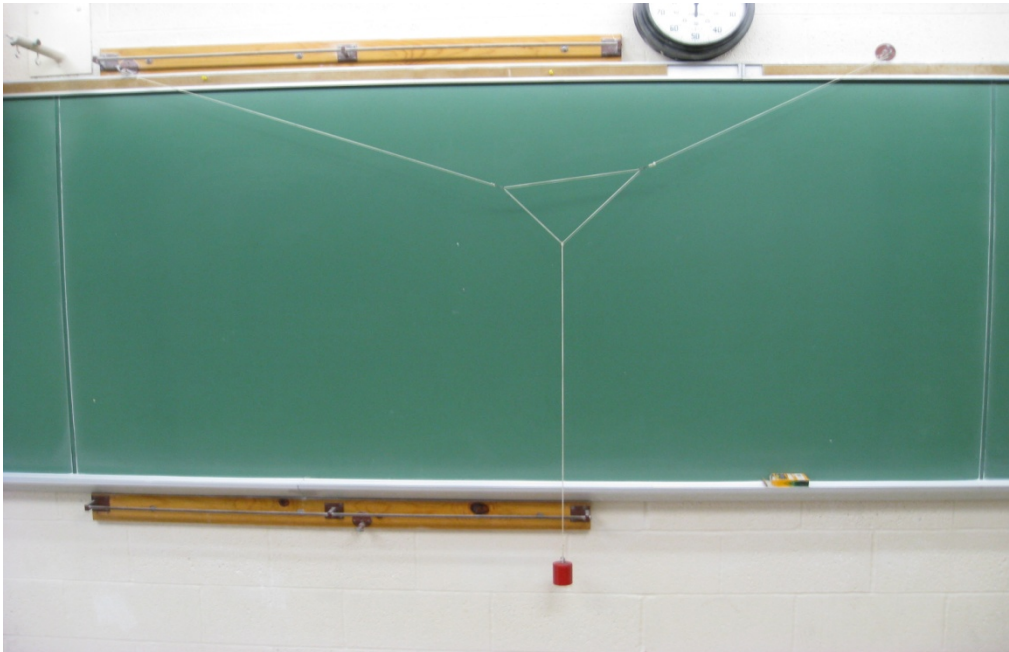


MB-1

Equilibrium of
Three Forces
Intersect at Point
M-2 S-3



Use a loop of heavy nylon cord serving as a non-rigid body, which has attached to it three nylon cords to which forces can be applied. To one of these cords, permanently tied to the loop, is attached a 1-kg mass. The other two cords are connected to the loop with rings which are free to move along the loop.

Three permanently mounted hooks are provided, two just above and one just below the chalkboard. Connect two of the cords to the hooks above the board, and let the weight hang freely. (See [Note](#).) In order to minimize the effect of friction between the rings and the loop, grasp the loop at one of the rings, pull it out several inches from its normal position, and allow it to snap back into position. Using a straightedge, draw lines under each of the three cords, projecting the lines until they intersect. Note that the three forces intersect at a common point.

Two other configurations of forces can be used if desired. One of these is by leaving the two upper cords as they were above but changing the angle of the lower force by passing the cord over the hook below the chalkboard. The other possible configuration is obtained by leaving the lower cord over the hook and interchanging the two upper cords.

Note: It makes no difference whatever that the lower cord rubs against the chalk tray, as long as it does not move during the experiment.