

## Simple Machine Investigation

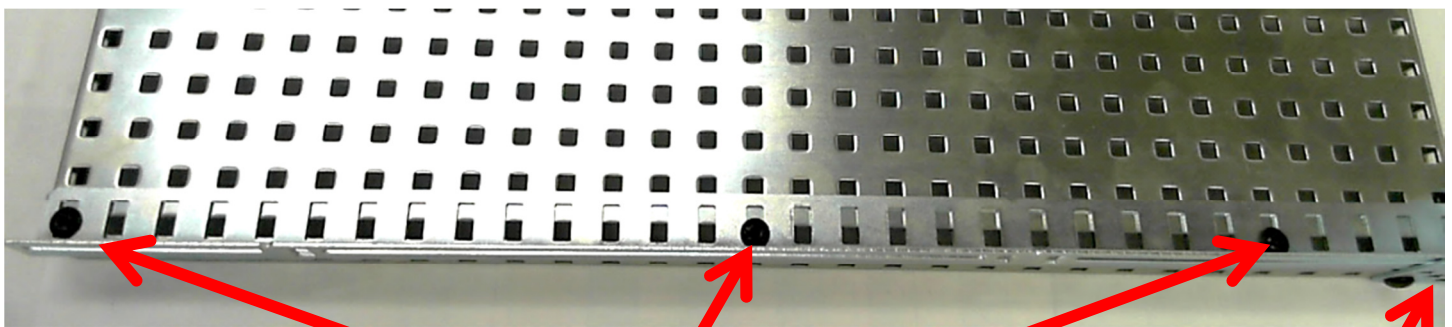
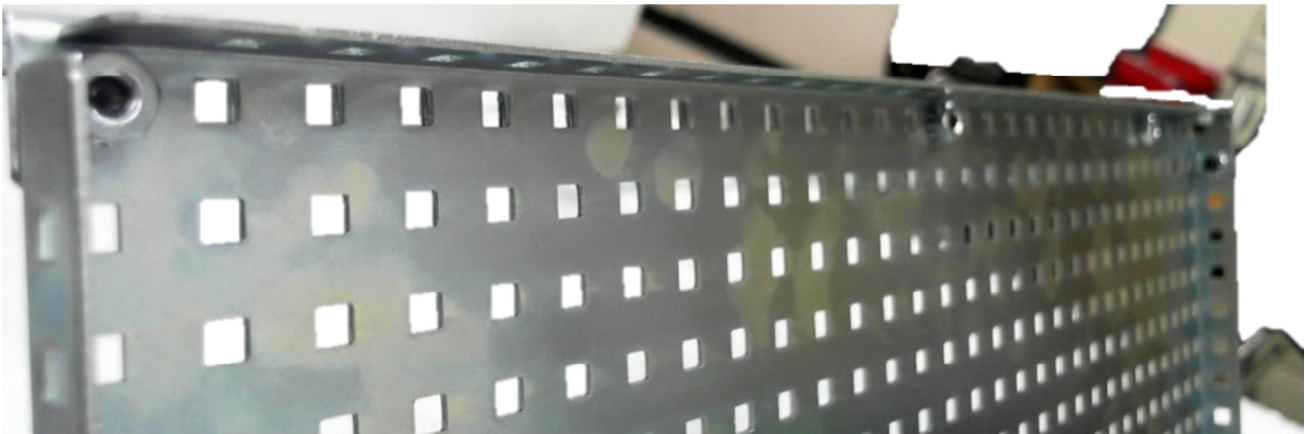
### Build and Measurement Instruction for the Inclined Plane

#### INCLINED PLANE ASSEMBLY

1. Gather parts—inverse slotted angle 1x28, 3 nut 8-32 Keps, 3 screws 8-32 x 0.25 " (length may vary)



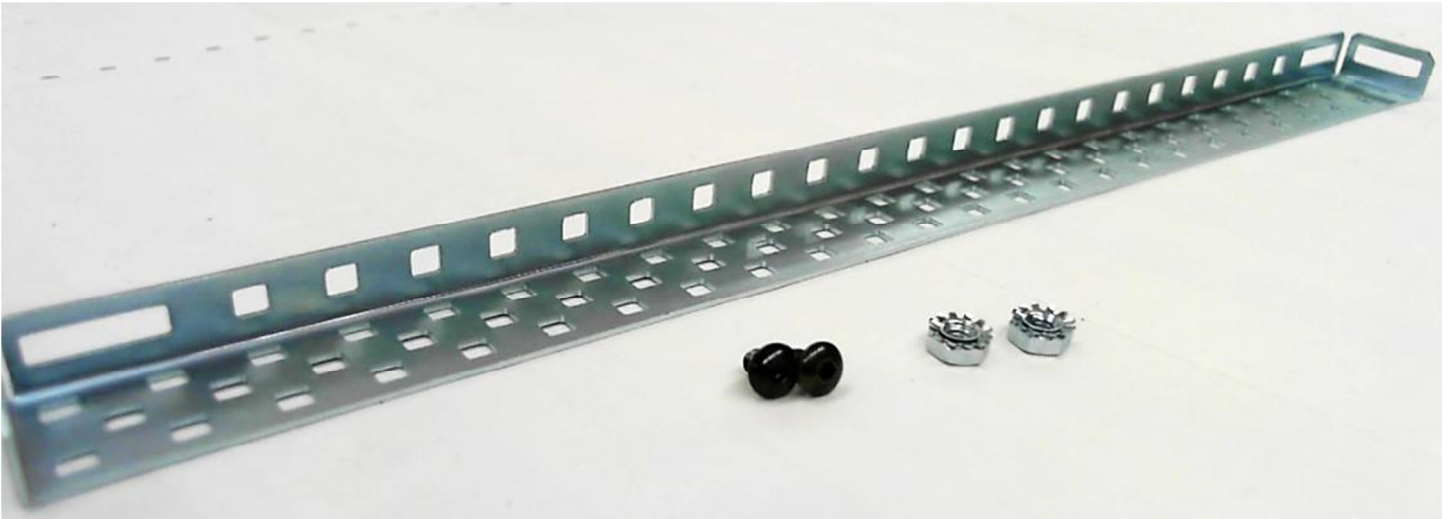
2. Attach the rail to the base plate with the slotted side facing outward.



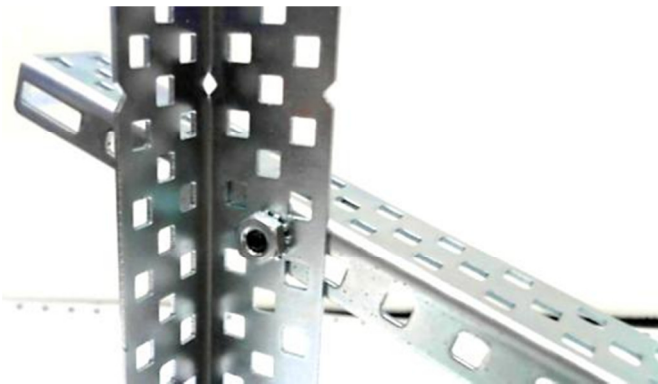
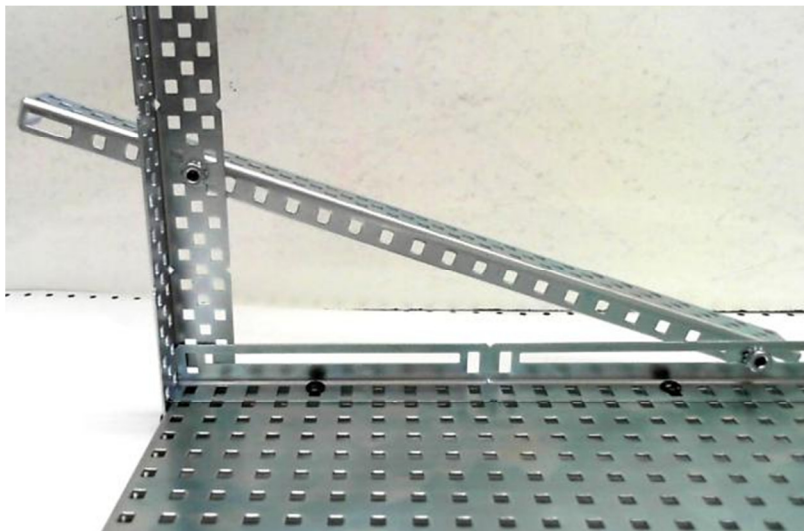
Screws

Corner with  
tower

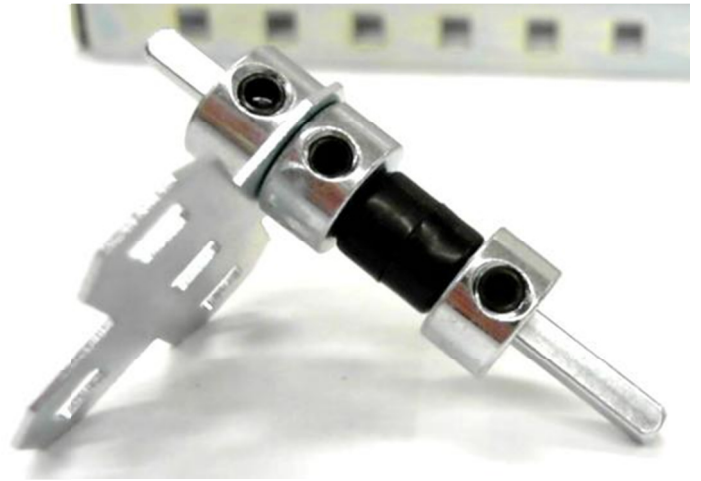
3. Gather Parts—Chassis Rail 1 x 25, 2 nuts 8-32 Keps, 2 screws 8-32 x 0.25"



4. Attach Rail: The rail is your inclined plane. You may choose your angle but you need to have at least 2 inches extending beyond the edge of the tower & base plate.



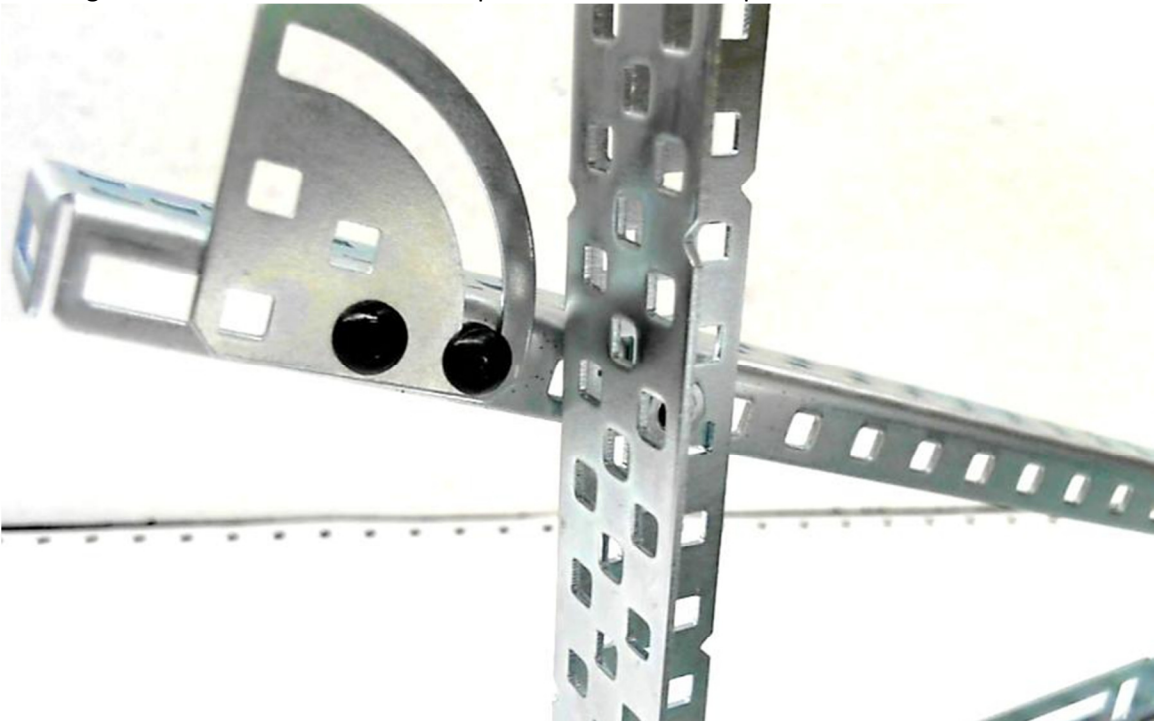
5. Gather parts and assemble pulley that will be attached at the top of the inclined plane.  
Parts—2" drive shaft, 3 shaft collars, 1 plus gusset, 2 thin spacers, 5/64 wrench for adjusting set screws in shaft collar.



6. Gather Parts that will be used to attach pulley assemble to the top of the inclined plane.

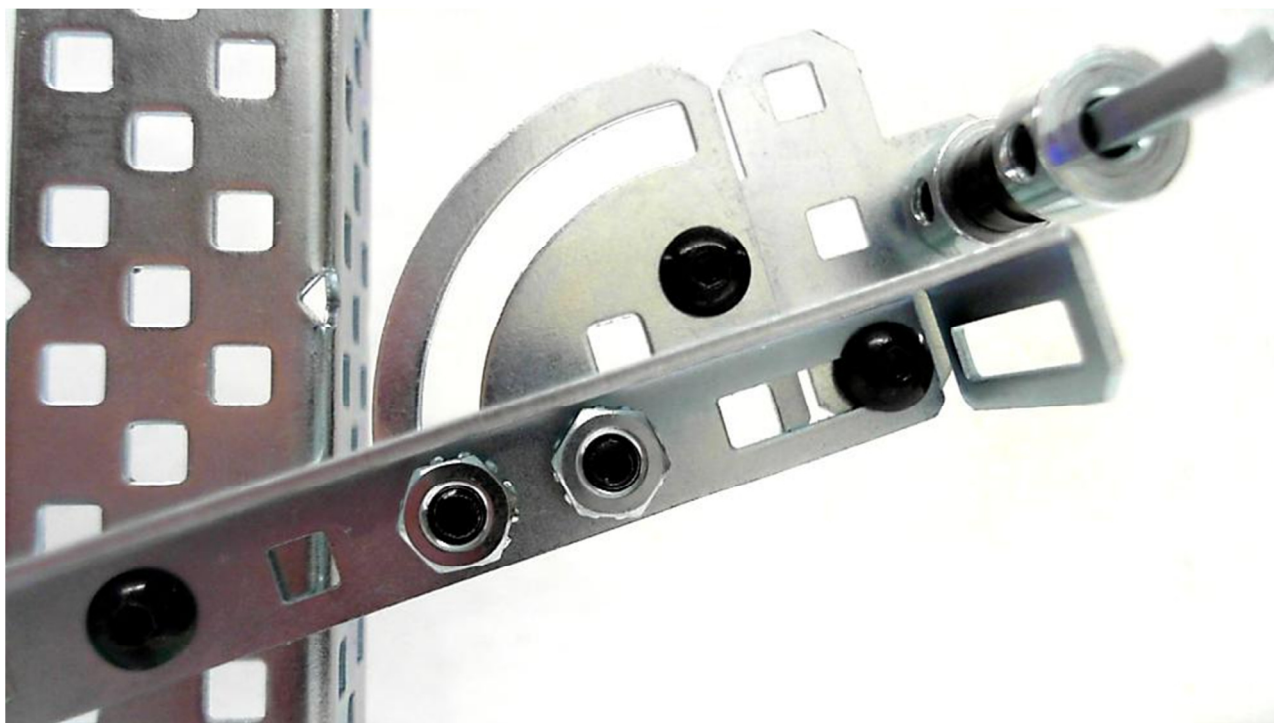
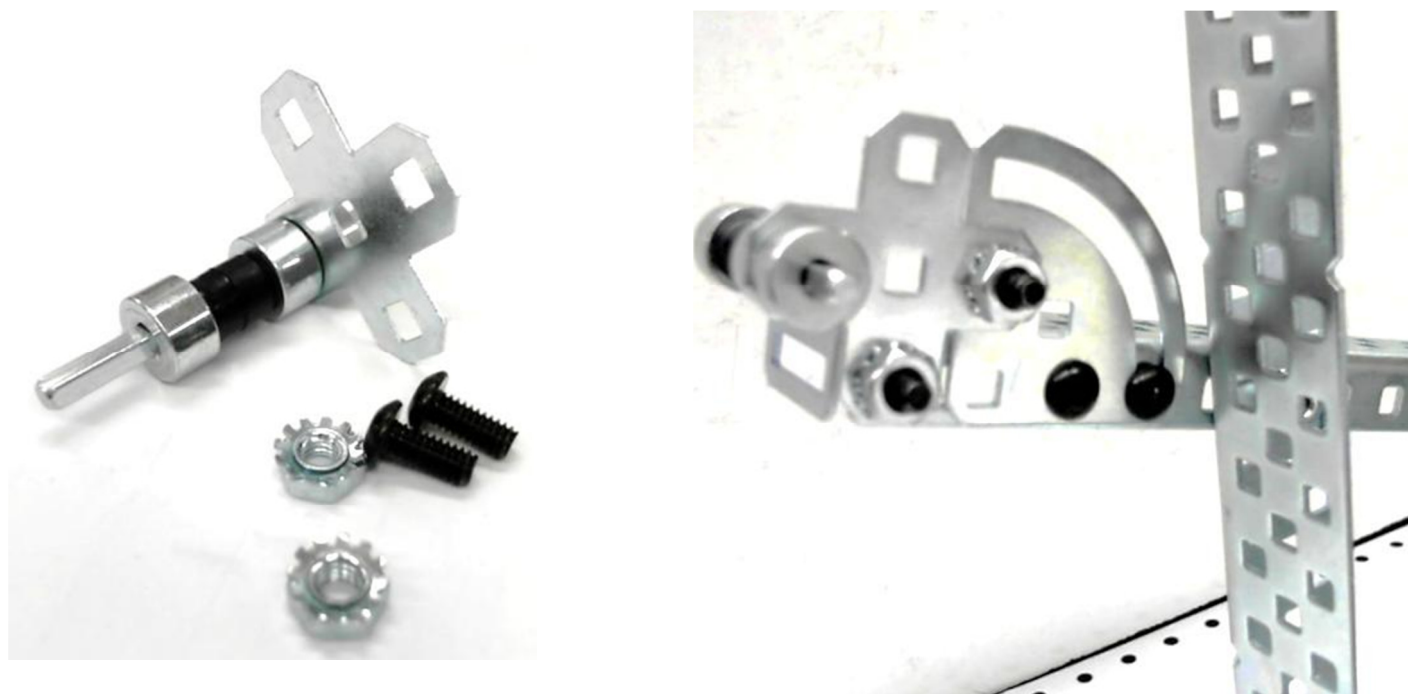


7. Attach the gusset to the end of the inclined plane as shown in the picture.





8. Attach the pulley assembly to the end of the inclined plane.

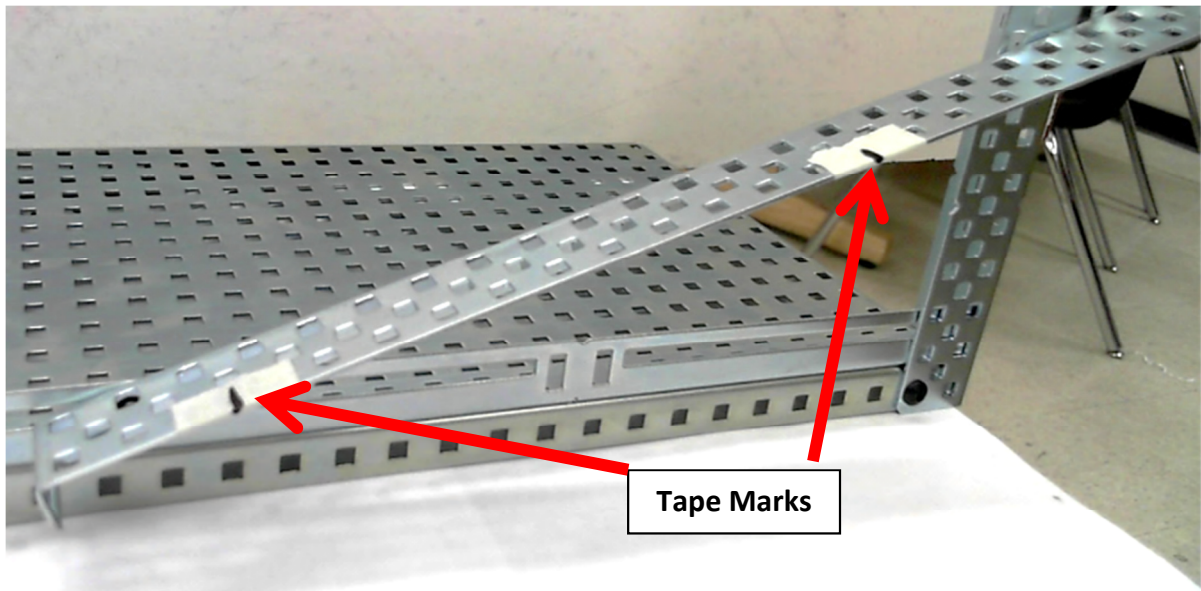


9. Your inclined plane is now complete and you are ready to take your measurements.

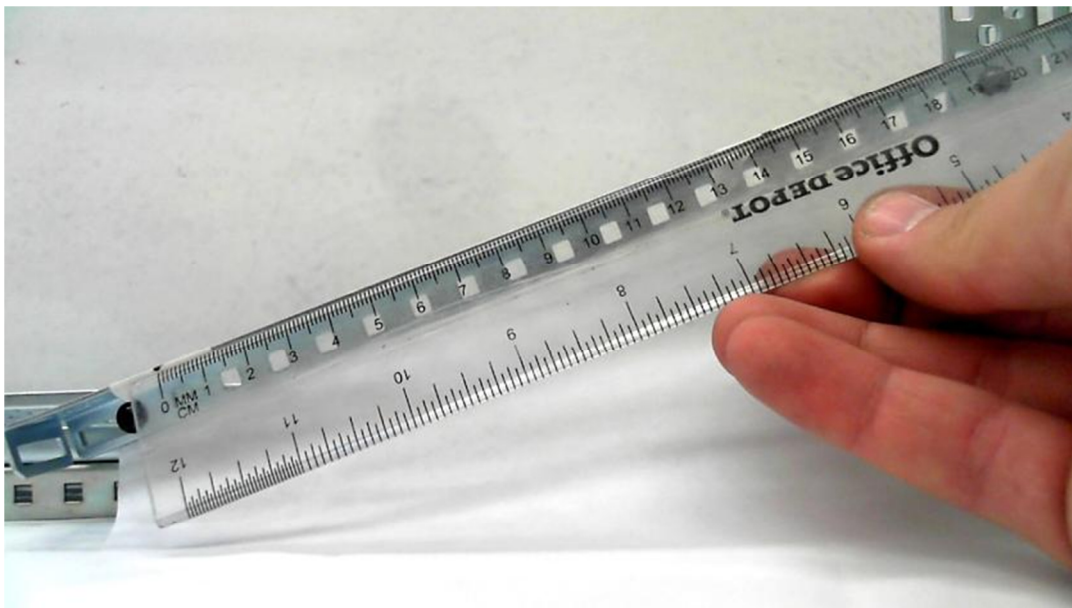
## INCLINED PLANE MEASUREMENTS AND DATA COLLECTION

*Use these instructions along with your Simple Machine Investigation Data Sheet Part 2-Inclined Plane*

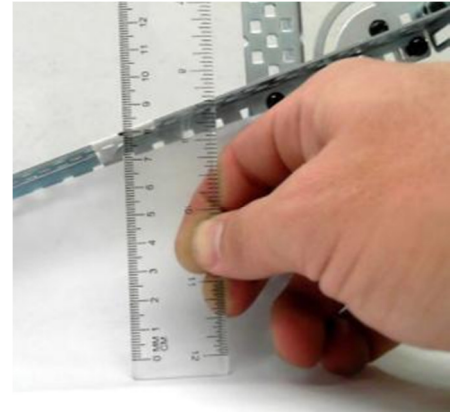
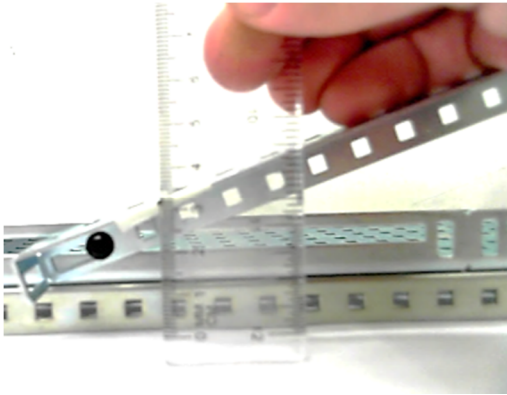
1. Choose two points on the inclined plane and mark them with tape. It does not matter where you choose the points but it is important you do this step so your measurements come out correctly.



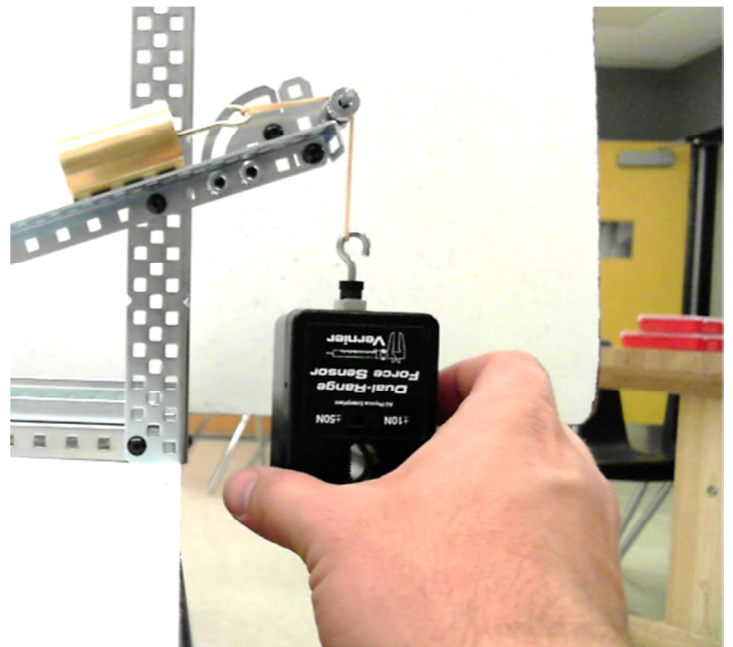
2. Measure the length of the inclined plane (L) between the two points and record it on your data sheet.



3. Measure the height from the table to the lower point and record it. Then measure the height from the table to the upper point and record it. Subtract these two measurements to find the height of the inclined plane between the two points (H) and record it on your data sheet.



4. You can now calculate the IMA of the Inclined Plane.
5. If you do not know your resistance force or you are using a different one than you did with the lever, use the force sensor to measure the value of the resistance force by simply hanging the mass from the sensor.
6. Now use the force sensor to measure the actual effort force and record it.



7. You can now calculate the AMA of the Inclined Plane.