

**Goal:** To determine the component forces to see if any trends arise.

**Question:** What trends do you believe will happen to the components of a vector as the angle is increased?

**Hypothesis:**

---



---

**Materials:** Make a list of all materials used. (No pictures are needed)

**Procedure:**

1. Begin by collecting materials needed for the activity
2. Using the materials provided, tie a string to the board and attach the force scale.
3. Using the protractor, measure the angle of the incline and record on the data table
4. Begin walking at a constant speed to get an accurate measurement of the force scale. Record this value in the data table.
5. Repeat steps 3 and 4 for all subsequent measurements of angle and force.
6. Using vector principles, calculate the horizontal ( $A_x$ ) and vertical ( $A_y$ ) components of each trial.

\*\*\*\* Reminder \*\*\*\* When recording numbers, make sure to record to one place value further than your instrument will allow. For example, if using a protractor go to the tenths place.

**Data Table:**

Trial	Force (N)	Angle of Incline ( $\theta$ )	$\vec{A}_x$ (N)	$\vec{A}_y$ (N)
1				
2				
3				
4				
5				
6				
7				
8				

**Analysis:** What actually happened? Was your hypothesis correct? Were there any sources of error?