

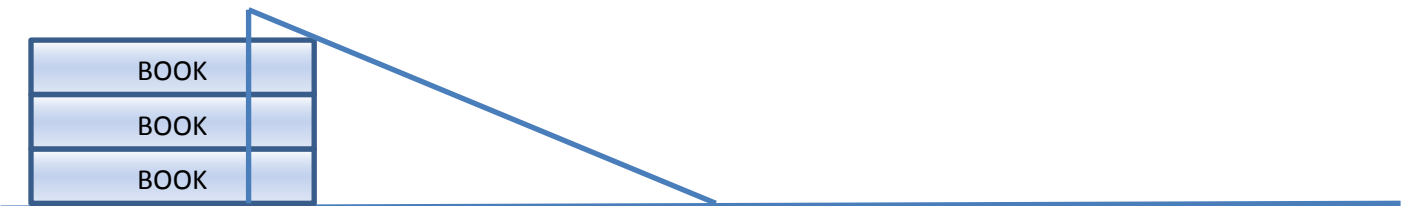
# PLANNING

Identify Variables

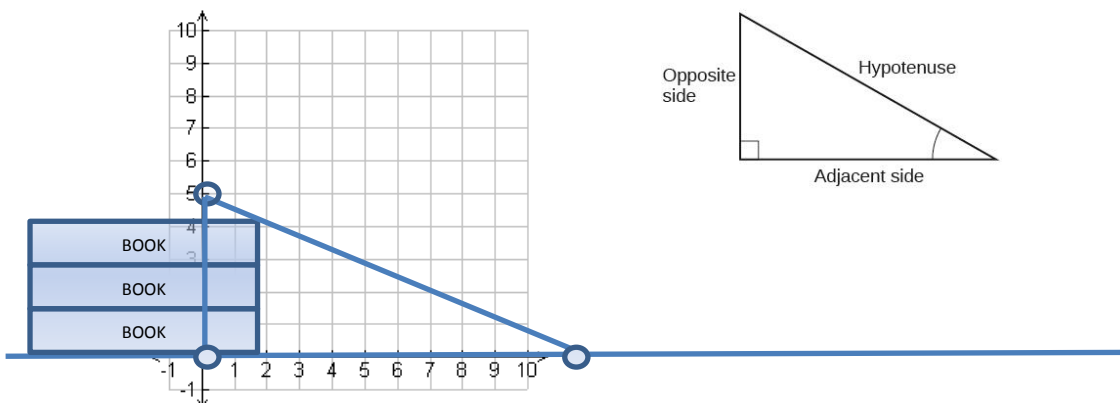
Independent/ Manipulated Variables	Dependent/ Responding Variables	Control Variables

# PROCEDURE

1. Set up inclined plane according to diagram, taking into account the number of books your group was assigned.



2. Record the "rise" and "run" of the ramp in the data table. Remember, the diagram below is an EXAMPLE, your ramp may have different measurements.



3. Mark where you will start the ball (and let it go, but not push it) down the ramp. Measure 200 centimeters from this reference point. Mark this new reference point with tape.
4. Use a timer to measure the how long it takes the ball to travel 200 centimeters.
  - a. Make sure the ball goes in mostly a straight line and does not fall off the inclined plan.
  - b. **Start** the timer as soon as you let go (do not push) of the ball and **stop** it once it crosses the 200 cm mark on the floor.
  - c. Practice this a few times before you record your three trials.
5. Run three trials and record the second to the nearest tenth (0.0) of a second.
6. Calculate the average. See the note in the data table on how to do this.
7. Clean up your area and help other groups if needed.

**DATA:**

Trial Number	Inclined Plane Height (cm) *RISE*	Length "Under" Inclined Plant (cm) *RUN*	Inclined Plane Slope $m = \frac{y_2 - y_1}{x_2 - x_1}$	Total Distance Traveled	Time to Travel 200 cm
1				d = 200 cm	t <sub>1</sub> =
2				d = 200 cm	t <sub>2</sub> =
3				d = 200 cm	t <sub>3</sub> =
Average Time to Travel 200 cm: Steps: 1) t <sub>1</sub> + t <sub>2</sub> + t <sub>3</sub> = <b>x</b> 2) <b>x</b> ÷ 3 = t <sub>avg</sub>					t <sub>avg</sub> =

## CLASS DATA

Group Number	Inclined Plane/ Ramp Height (h =?)	Inclined Plane/ Ramp Slope (m =?)	Average Time to Travel 200 cm ( $t_{avg}$ )	Rank (1 = fastest time)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				