

****2.2 - Kickball Challenge Directions****

Materials:

Ball



Ramp



Laptop



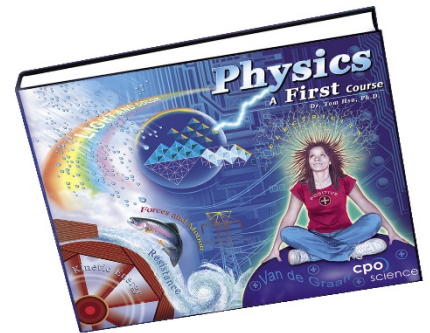
Motion Sensor
with cables



Interface Box

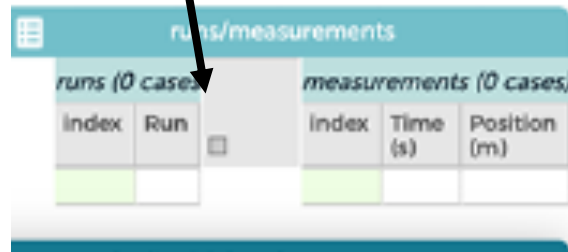


Textbooks



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- ☐ Step 1: Connect your sensor and interface to the laptop.
 - ☐ Step 2: With your group, build a ramp using textbooks
 - ☐ Step 3: Place your ball on the ramp
 - ☐ Step 4: One group member will clear the sensor and hit start
 - ☐ Step 5: Roll the ball down the ramp (Once you get a good run, go to the next step.)

- ☐ Step 6: Add a column to the left side of the table for you to enter the **Velocity** using slope from your **Position vs. Time** graph.



runs/measurements					
runs (0 cases)			measurements (0 cases)		
Index	Run		Index	Time (s)	Position (m)

- ☐ Step 7: Make a **Position vs. Time** graph.



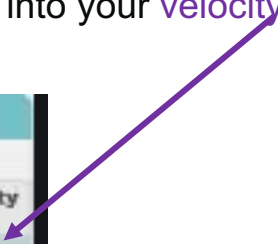
(HINT: If you need to make room to see your graph, click the (-) sign in the header bar of the Sensor Interactive.)



- ☐ Step 8: Choose the ruler option, click on moveable line.
Adjust your moveable line to find your slope in the yellow box.



- ☐ Step 9: In your table, type your slope into your **velocity** column.



index	Time (s)	Distance to surface (m)	Velocity (m/s)
52	2.12	5.51	1.45
53	2.16	5.45	1.45
54	2.2	5.39	1.45
1	0	8.33	0
2	0.04	8.32	0.31
3	0.08	8.3	0.58

- ☐ Step 10: Write your group's **Velocity (slope)** value on the class white board.