Using the CBR 2™ for Kinematics

Texas Instruments

What is the CBR 2?

- The Calculator-Based Ranger is an e[illegible]se data [illegible]
- [illegible]TI Ca[illegible]n collecting [illegible]ed in[illegible] with TI
- It us[illegible]ct distance, velocity and a[illegible]riment.

An excellent Guidebook [illegible]bit.ly/cbr2guide.

Setup

Setup

Setup

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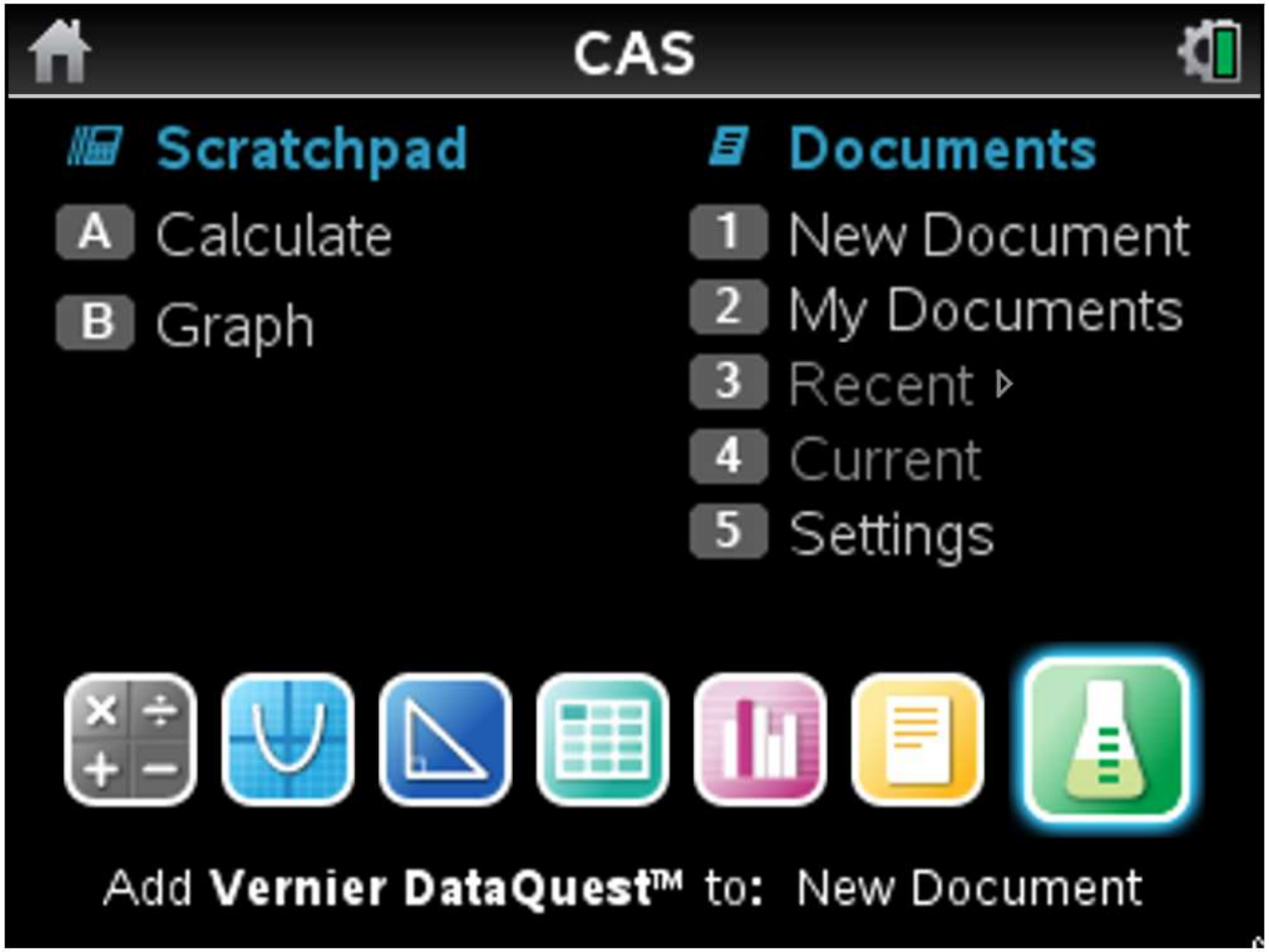
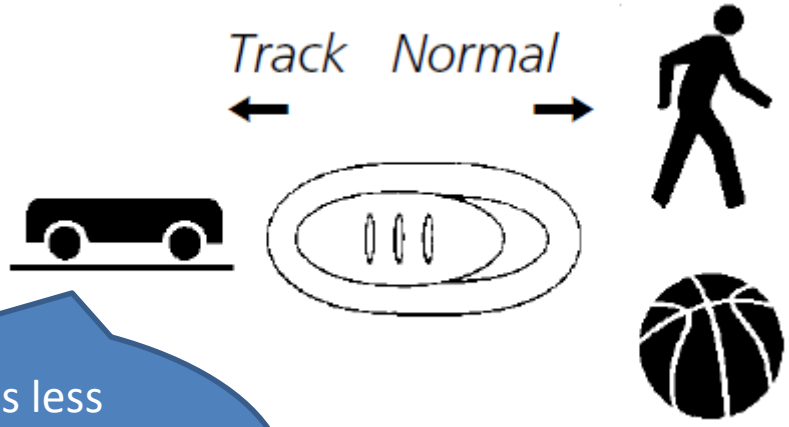

CAS
Scratchpad
A Calculate
B Graph
Documents
1 New Document
2 My Documents
3 Recent
4 Current
5 Settings
Add Vernier DataQuest™ to: New Document

Setup

Considerations to be taken care of

Sensitivity Switch



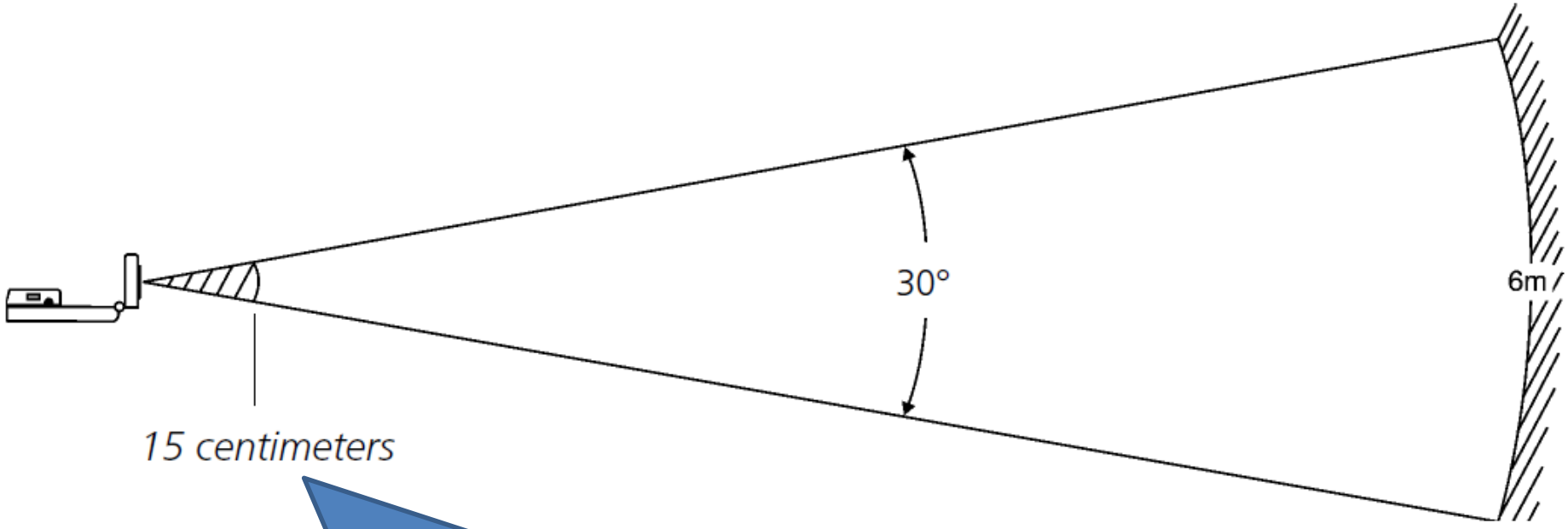
- Sensor is less sensitive
- Used for dynamics tracks and carts

This mode can be used if there's a lot of 'noise' in the data

- Sensor is more sensitive
- Used for all other scenarios (walking, bouncing balls, ball tosses, pendulum, etc)

Considerations to be taken care of

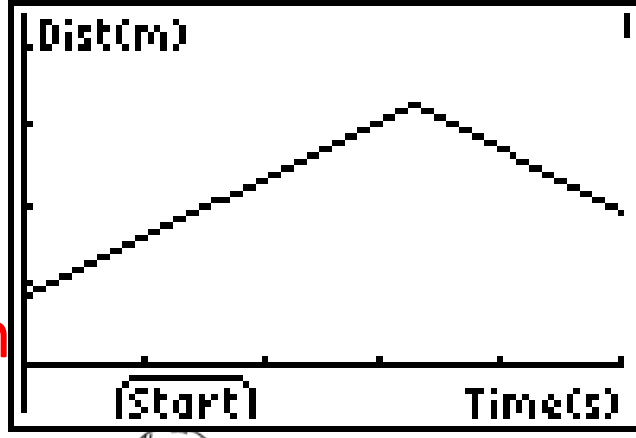
The “Clear Zone”

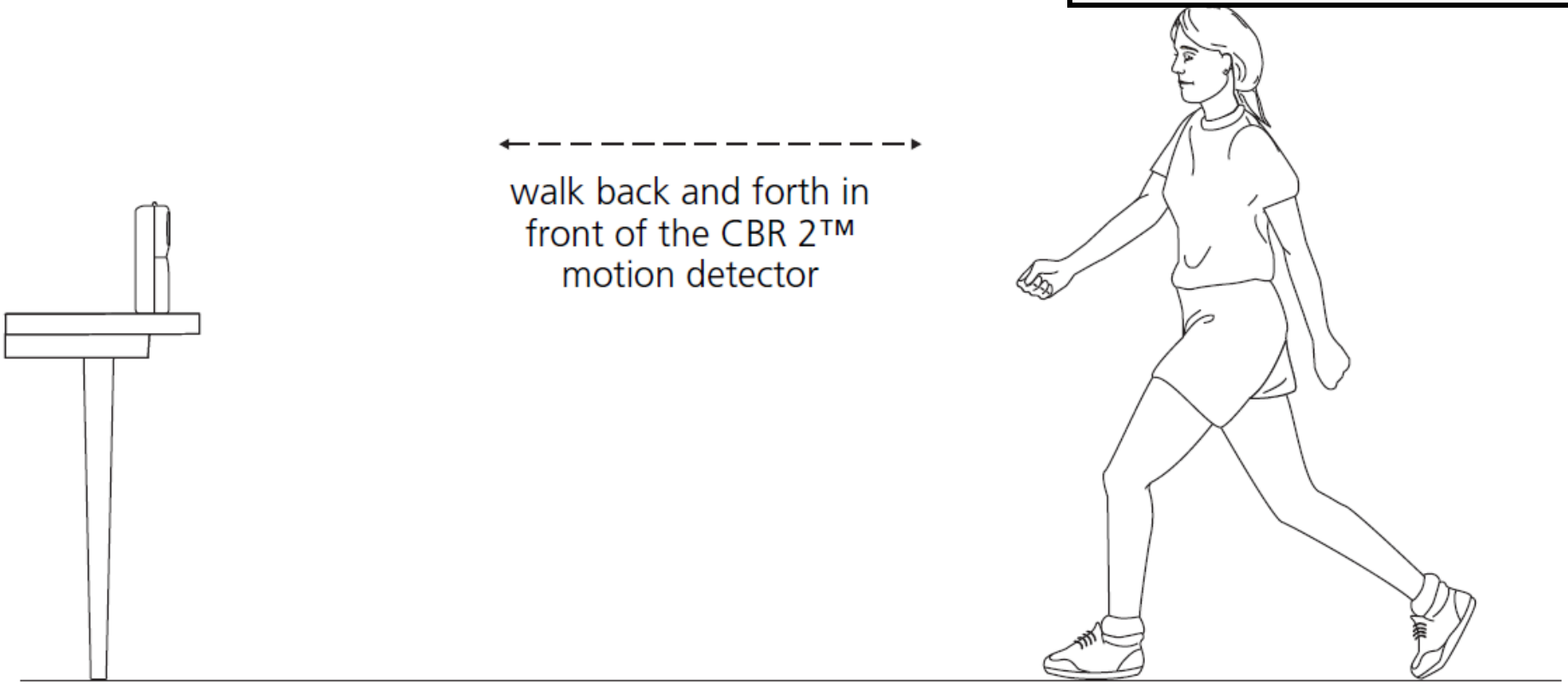


Don’t measure any objects within 15cm from the sensor

CBR 2 Activity Ideas

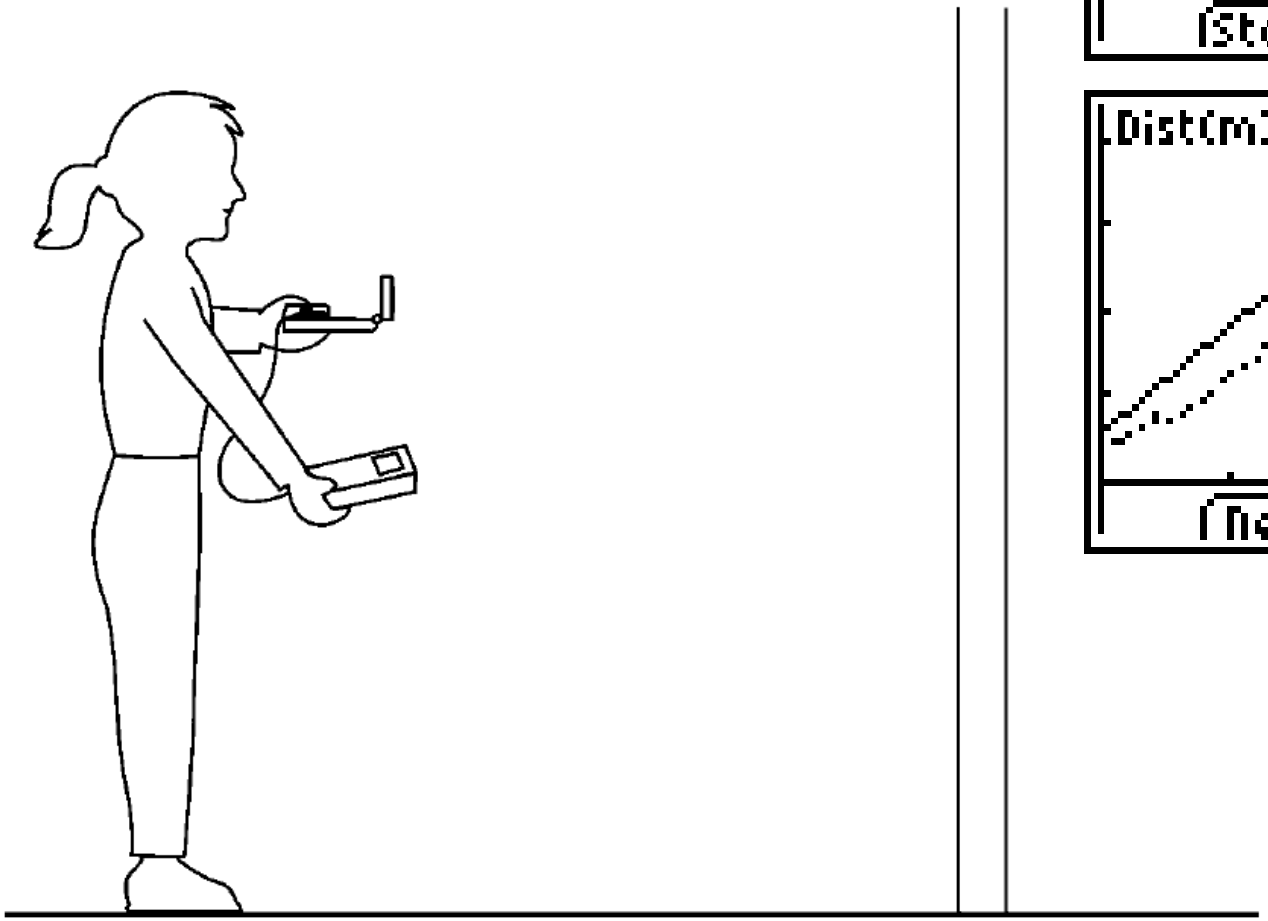
Graphing your Motion

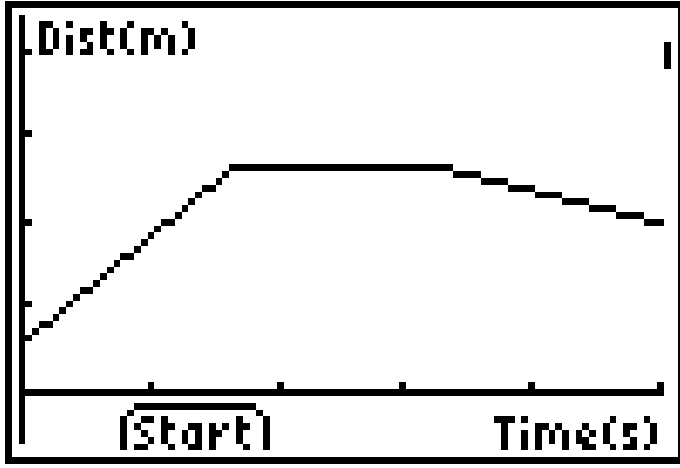


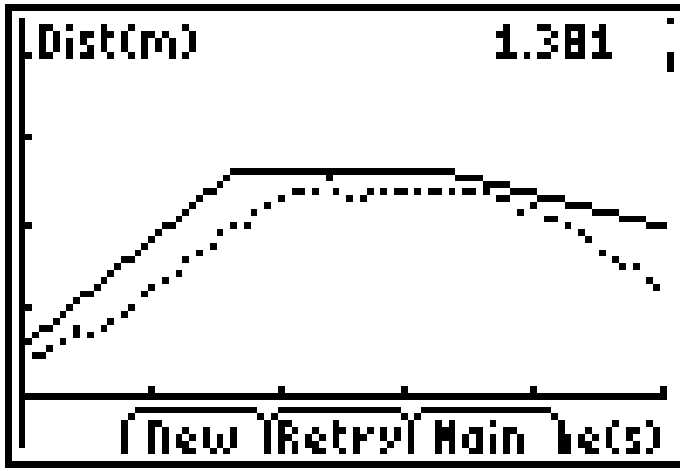


CBR 2 Activity Ideas

Match the Graph

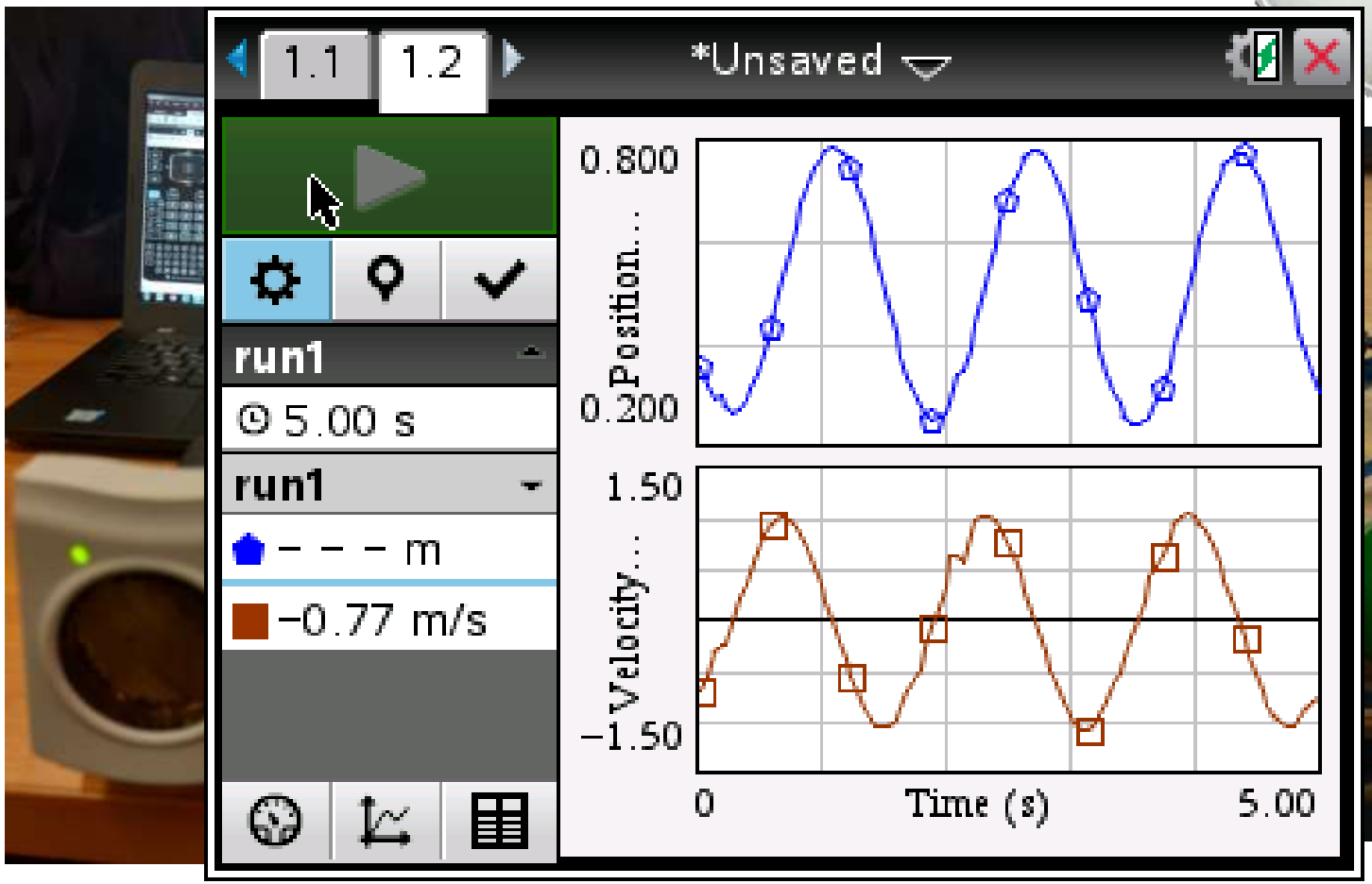




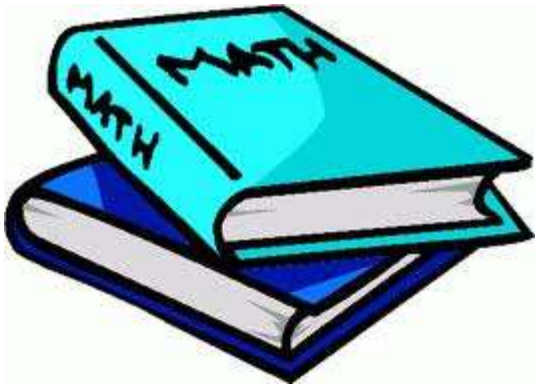


CBR 2 Activity Ideas

Swinging Pendulum



CBR 2 Demos



1. Get position-time data
2. Determine line of best fit
3. Attempt a "Position Match"