Walking Student Lab Set-Up

Adapted from Texas Instruments, Inc.

1. Be sure your calculator has the EasyData App. Click on the APPS key to check. The APPS (Applications) are listed in alphabetical order. If EasyData is not there, let your instructor know.

2. Connect the Calculator to the CBR2 with the Standard-B to Mini-A cable (unit-to-CBR2). Be sure to push firmly at both ends to make a secure connection.

3. This connection provides for an automatic launching of the EasyData App. As soon as you turn your calculator on, this App will run (as long as the cable is connected to the CBR2 and the TI*84).

4. Press Setup (the WINDOW key), then 1: Dist. Be sure your units are in "feet." If not, press Units and change to (ft). Click OK.

5. Press Setup (the WINDOW key), then 2: Time Graph…The readings should be as follows:

Time Graph Settings
Sample Interval (s): .05 Number of Samples: 200 Experiment Length (s): 10

Make any changes necessary by pressing Edit (the ZOOM key).
Press OK (the GRAPH key) when finished.

6. Your equipment is now ready for our experiment. Be sure to open the CBR2 so that the receiver is facing the wall. To begin data collection, press Start (the zoom key). When 10 seconds are up, the CBR will automatically stop collecting data and transfer it to the calculator, which will then show a plot of the data. You might want to experiment with the equipment before beginning Trial 1.

7. Be sure to press Quit (the GRAPH key), then OK (the GRAPH key) to exit the EasyData App.

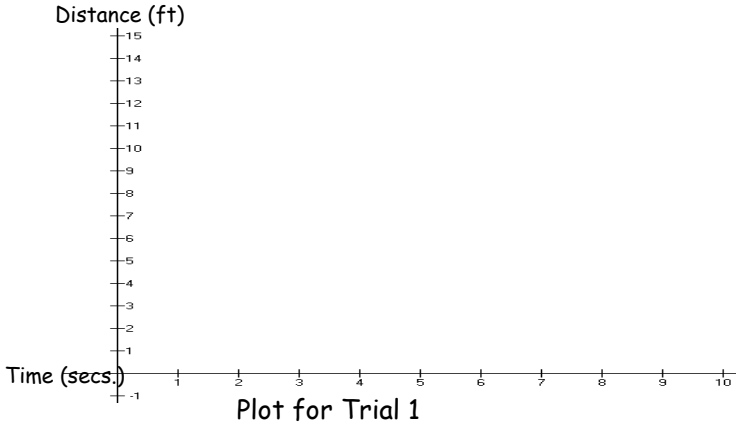
Walking Student Lab CBR Activity

Trial 1

1. Stand about 15 feet from a wall. You will walk toward the wall, holding the CBR in one hand the calculator in the other. Prepare to walk toward the wall at a **very slow but steady** speed. Taking small baby steps should produce the desired results. Once data collection begins, move in this manner for approximately 10 seconds.

2. When you are ready, press START and begin. The plot should look like a straight line.

3. If you are satisfied with the results, sketch your below. Be sure to make note of the values at which your graph starts and stops. (You can obtain these values by pressing the right (or left) arrow key. If you are not satisfied with your graph, press Main (the TRACE key), then Start to repeat the experiment.



Plot for Trial 1

4. Using the arrow keys to find coordinates, complete the chart below. The middle two points can be any points on the graph.

Time (Seconds)	Distance (Feet)
0	
	0 (or close to 0)

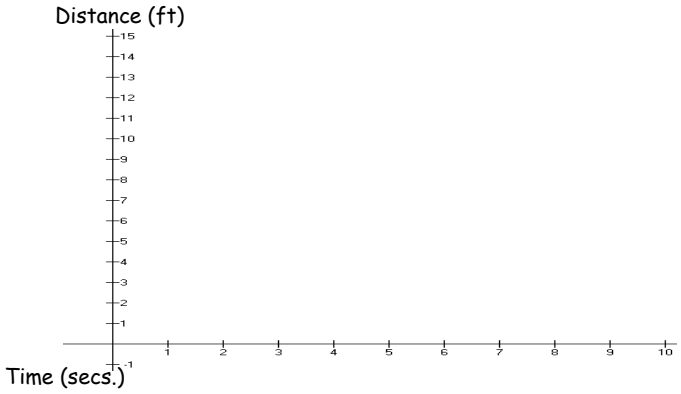
Trial 2

1. Stand about 15 feet from a wall. Walk toward the wall, holding the CBR in one hand the calculator in the other. Prepare to walk toward the wall at a **medium but steady** speed. Taking regular steps should produce the desired results. Once data collection begins, move in this manner for approximately 5 seconds.

2. When you are ready, press START and begin. The plot should look like a straight line.

3. If you are satisfied with the results, sketch your below, being careful to add in the tick marks. Be sure to make note of the values at which your graph crosses the axes. (You can obtain these

values by pressing the right (or left) arrow key. If you are not satisfied with your graph, press Main (the TRACE key), then Start to repeat the experiment.



Plot for Trial 2

4. Using the arrow keys to find coordinates, complete the chart below. The middle two points can be any points on the graph.

Time (Seconds)	Distance (Feet)
0	
	0 (or close to 0)

Looking at the Results

1. Which trial resulted in a steeper line? (Be sure to use the words "time" and "distance" in your answer.

2. In general, what effect does speed (or rate) have on the shape of a distance-time plot?

Name: _____

Walking Student Lab Write-Up

(Hand THIS WORK in)

Please answer the following on a ***separate sheet of paper*** for EACH trial. Organize you work by answering ALL QUESTIONS for TRIAL 1 FIRST, then all questions for Trial 2.

1. Find a formula (straight line) for ***D*** in terms of ***T.*** (2 points)

2. Name the slope of your model. What does it mean in terms of the walking student? (2 point)

3. Find the ***D***-intercept and the ***T***-intercept of your model. Interpret these in terms of the walking student. (2 points)

4. Use your formula to estimate how far the student was from the wall at 2 seconds. (1 point)

5. Use your formula to estimate how far the student was from the wall after 20 seconds. Has model breakdown occurred? Explain. (2 points)

6. Use your formula to estimate when the student was 1 foot from the wall. (1 points)