TI – 73 EXPLORER™
7TH GRADE ACTIVITY 14:
CAN YOU WALK 3 MILES PER HOUR?

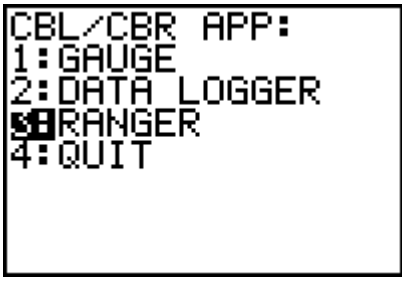
ACTIVITY OVERVIEW:
In this activity we will

- Attempt to walk at a specific rate of speed
- Calculate the rate of speed by sampling a walker with a CBR (motion detector)

Note: You will use the CBL/CBR App in this activity.

How fast is 3 miles per hour? Do you think you can walk that fast at a steady rate? This activity will take a sample of a walker using a motion detector to see how close they can get to this speed.

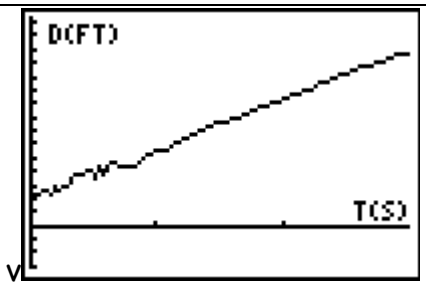
Connect a CBR to your TI-73 using a link cord. Your calculator needs the CBL/CBR application. Press the 9 key and select **CBL/CBR** and press β twice. Select 3: Ranger and press β twice again.



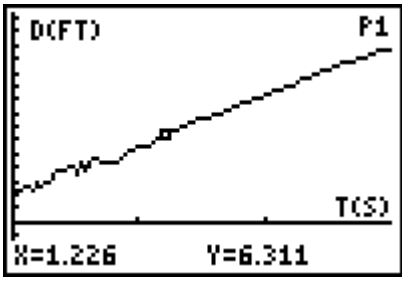
Select 1: Setup Sample and press β. You will collect data for 3 seconds. Change Real-time to NO by pressing β. Change the time to 3 by pressing the down arrow key (#) and pressing the number [. Arrow down and change the units to feet by pressing β. Arrow up to Start Now as seen on the right.

Press β and have the walker prepare to walk. Point the CBR so that the round cone will send out the pulse where the walker will be. They could start walking behind you, so you could start reading them as they pass you. The walker should walk away from you.

From the screen that says POINT CBR AT TARGET, be ready to press β as the walker passes you. The CBR will collect data for 3 seconds. You will see a graph that might like the one on the right. IF you are unhappy with your sample, press β and select **5: Repeat Sample**



To calculate the approximate speed, you will need to select two data points from your graph. Press the) key and use the left/right arrow keys to move through the data and choose two points representative of the walk. Write the data in two columns, Time, Distance



Once you have your data, you can press the ⊥ key. This will end the CBL/CBR app. Calculate the speed by finding the difference in the distances and the times and dividing the distance change by the time change. Remember to record your units as part of the rate.s

Once you have calculated your speed in ft/sec. use this number to convert your rate to miles per hour

If you are unsure how to convert the rate, you can use the CONVERT menu on the calculator to do this. If you walked 8.8 feet per/second, you would type in 8.8 on your Calculator. Then press – □. Choose **7: SPEED.** Since you are converting ft/sec to miles/hr, press the ft/sec and then mi/hr. Then press β.

You would find this speed too fast. You would then do additional walks as your teacher allows to submit your graph and date to back up your attempt. You will need to go back to the CBL/CBR app and follow the steps from the beginning.