Lesson Plan

Lesson: <u>39</u>

Grade 9 Academic

Unit/Chapter: <u>Investigating Relationships</u>

Topic: Distance vs Time Graphs

1 homework check: <u>A Design Problem</u>

1 note: <u>Distance vs Time Graphs</u>

Situations that involve time are perhaps the most applicable tool for mathematicians. These graphs describe several situations like filling a tub with water, charges on your cell phone, biking to the store, walking to school, or filling a container with sand.

Today, we are exploring distance vs time graphs with the use of a CBR – calculator based ranger. The CBR is a distance detection system that attaches and reports to the graphing calculator.

t handout: <u>CBR activity Walk This Way</u>

CBR Activity: Walk This Way

For each of the following situations, draw the graph described in the scenarios given. For each situation, sketch your hypothesis on the left and draw the actual graph on the right that was walked and recorded by the graphing calculator. Be very careful with your scales and be as accurate as possible.

1. Begin 4 m from the CBR. Walk toward the CBR. When you are 0.5 m from the CBR, run backward to the starting point.



2. Begin 4 m from the CBR. Walk toward the CBR for 4 s. Stop for 5 s. Run backward to your starting point. Stop.



3. Begin at 0.5 m from the CBR. Walk slowly backward until you are 5 m from the CBR. Then walk slowly toward the CBR.



4. Begin 4 m from the CBR. Walk toward the CBR for 3 s. Stop for 4 s. Walk slowly until you are 0.5 m from the CBR. Run backwards to the starting point.





5. Begin 0.5 m from the CBR. Run backwards for 3 s. Stop for 5 s. Walk forward to the starting point.

6. Begin 5 m from the CBR. Walk toward the CBR. When you are 0.5 m fro the CBR, walk backward to the starting point.



7. Begin 5 m from the CBR. Walk toward the CBR. When you are 0.5 m from the CBR, stop for 2 s. Run backward to you starting point. Stop.



CONCLUSIONS:

When walking away from the CBR, the slope of the line is
When walking toward the CBR, the slope of the line is
When walking fast, the value of the slope is
When walking slowly, the value of the slope is
When calculating the speed a person walks, use
In this application, speed is measured in
A high positive slope means
A high negative slope means
A low positive slope means
A low negative slope means
A slope of zero means