SAMPLE MATERIAL

How Fast Can You Go?

Claxton Middle School, Georgia

Topic: National Math Panel: Critical Foundations for Algebra
Practice: Mathematics Preparation for Algebra

This is a lesson used by seventh-grade teachers at Claxton Middle School that students particularly enjoy. The lesson involves collecting data about exercise and recording, analyzing, and plotting the information on a graph.

Name: _____ Date: _____

How Fast Can You Go?

Think about the equation, $d = rt$ (distance = rate x time). Solve the equation for r (rate). Show your work. How will you determine each person's rate? What units should you use for rate?

d = _____ r = _____ t = _____

Conducting the Experiment (Outside)

You will need to take the following items with you to the site of the experiment: a stopwatch, a pencil, a calculator and the table below for recording data. To conduct the experiment, your group will need a walker, a timer and a recorder. Take turns performing these tasks. Make sure that each person in your group travels the 20 yards 4 times using different rates of speed (walking, skipping, jogging, and running) and that each person's data is recorded. Time should be recorded to the nearest second.

	Walking			Skipping			Jogging			Running		
Person	D	T	R	D	T	R	D	T	R	D	T	R

Analyzing the Data

When you return to the classroom copy the data for everyone in your group into your table and use the data to complete the following.

1. What do you notice about the distance?

2. Which two quantities vary in this experiment? How do think these two quantities vary in relation to each other?

3. In the coordinate plane, graph the ordered pair (time, rate) for each trial in your table.

4. What does the graph tell you about the relationship between rate and time?

5. Write the equation that is represented by your graph. How do we describe this type of equation? What is the constant of proportionality in this relationship and what does it represent?