

APPLIED MATH LAB - UNIT 15

Using Formulas to Solve Problems

School Zone - 20mph

Objective – By the end of this lab, students will demonstrate competency in reading a formula, substituting values into the formula and finding an answer.

Materials list – Paper, pencil, tape measure, stopwatch, calculator.

EALRS Assessed – Math EALRS 1.2.6: understand and apply strategies to obtain reasonable measurements; 1.4.3: apply appropriate methods and technology to collect data; 1.5.6: apply procedures to solve equations; 5.1.1 apply mathematical concepts are assessed during this lesson. These concepts are also assessed on the WASL.

Statement of Problem -

The speed limit around schools is 20 mph but do drivers obey the limit? In this activity, you will calculate the speed of cars traveling past a measured distance in front of our school.

Instructions –

1. Place a piece of tape on the sidewalk as a starting point. Measure 100 feet away and place a piece of tape for the ending point.
2. Working with a partner, have one person stand at the starting point and start the stopwatch when a car passes that point.
3. The other person stands on the ending point and indicates when the car reaches that point. Record the time.
4. Using an appropriate formula, calculate the speed of the car. Record the speed. (Hint: the cars should be traveling at 20 *miles per hour*.)
5. Repeat the lab for a minimum of five cars.
6. Calculate the mean and median speed of your results..

Assessment – This lab will be assessed using a 50 point rubric. Fifteen points can be earned for a neat, clear data table. Five points are earned for each correctly calculated speed. The correct mean and median speed is also worth five points each. Students will work with a lab buddy on this project, but must turn in their own paper for the calculations.

Optional Activity – If the police ticket cars in school zones going more than five miles over the speed limit, what percentage of cars should receive a ticket.

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