



Name: _____ Date: _____ Period: _____

LESSON 8.3

HOW DOES SPEED AFFECT STOPPING DISTANCE?

In this activity, you will see how vehicle speed affects stopping distance by calculating and comparing stopping distances for different speeds. You will use a simple formula to estimate how far a vehicle would need to stop based on speed and then measure that distance using your own steps.

This simplified formula combines reaction time and braking distance for general understanding:

$$\text{ESTIMATED STOPPING DISTANCE IN FEET} = \text{SPEED IN MPH} \times 4$$

STEPS:

1. In the space below, calculate the approximate stopping distance for **15 mph**, **30 mph**, **45 mph** and **60 mph** by multiplying each speed by 4.
2. Convert each distance into paces by dividing the stopping distance by 2.5.
3. Use chalk to mark your starting point.
4. Walk each distance counting paces to measure how far your vehicle would take to stop.
5. Mark and label your stopping point for each speed with chalk.
6. Compare the distances visually, then answer the reflection questions.

CALCULATE YOUR STOPPING DISTANCES

Speed: 15 mph

Stopping distance: _____ ft. (speed x 4)

Approx. paces: _____ (stopping distance / 2.5)

Speed: 30 mph

Stopping distance: _____ ft. (speed x 4)

Approx. paces: _____ (stopping distance / 2.5)

Speed: 45 mph

Stopping distance: _____ ft. (speed x 4)

Approx. paces: _____ (stopping distance / 2.5)

Speed: 60 mph

Stopping distance: _____ ft. (speed x 4)

Approx. paces: _____ (stopping distance / 2.5)

REFLECTION QUESTIONS

1. How does the stopping distance change as the speed changes?
2. Why do you think tailgating is one of the leading causes of crashes?
3. How could this knowledge help you as a future driver?
4. How could this knowledge help you as a pedestrian or cyclist?