



Acceleration

STEM Sims

Lesson 1: What is Speed?

Speed is a measure of how fast an object is moving. Average speed is defined as the distance traveled divided by the time the object took to travel that given distance. Does the speed of a moving object affect the distance the object travels in a certain amount of time?

Doing the Science

1. Start the Vehicle Simulation.
2. Select one of the three vehicles on the left side of the screen by clicking on the vehicle.
3. Select a speed of 10 m/s.
4. Allow a couple of seconds for the vehicle to reach a constant speed. The Acceleration dialogue box appears when the vehicle reaches a constant speed.
5. Select an acceleration of zero. This means that your vehicle will be moving at a constant speed. As soon as you select a “0” acceleration, the simulation will begin running. Immediately begin counting the number of road lines that the vehicle passes. Record this number in Table 1. The vehicle will move for a total of 10 seconds.
6. Calculate and record the speed of the vehicle by using the number of road marks in Table 1. The vehicle’s speed should be reported in road marks per seconds.
7. Select the “Restart” option. Select the same vehicle as before. Select a speed of 20 m/s.
8. Complete steps 4 to 6 above.

Table 1.

Speed	Number Road Marks	Time	Speed (Road Marks/second)
10 m/s		10 seconds	
20 m/s		10 seconds	

Do You Understand?

1. How did the speed in road marks per second compare for the two trials?
2. Create a graph of your data. Use your graph to determine the speed of the vehicle in marks passed per second for the following speeds:

a. 15 m/s _____ b. 18 m/s _____ c. 25 m/s _____

