



Acceleration

STEM Sims

Lesson 1: What is Speed?

Slow down! Have you ever heard someone yell that as a student was running down a hall at school? In that case, the student was moving at too fast of a speed. Speed tells how fast or slow something is moving. In this investigation, you will study the speed of a car. Get your motor running to find out about speed.

Here are some definitions to help you in your investigation.

Distance - how far something moves

Time - how long something takes

Speed - how fast something is moving

Constant speed - not speeding up or slowing down

Average speed - how far something moves divided by the time it took to move

Doing the Science

1. Select the Sim tab to open the Acceleration simulation.
2. Select the red car on the right side of the screen by clicking on the car.
3. Select a speed of 10 m/s.
4. Allow a couple of seconds for the car to reach a constant speed. A box appears when the car reaches a constant speed.
5. Select an acceleration of zero ("0"). This means that your car will be moving at a steady speed. As soon as you select a "0" acceleration, the simulation will begin running. Immediately begin counting the number of yellow road lines that the car passes. Record this number in Table 1. The car will move for a total of 10 seconds.
6. Calculate the speed of the car by dividing the number of road lines you counted by the total time (10 seconds). Record this value in Table 1. The car's speed should be reported in road lines per seconds.

7. Select the "Restart" option. Select the same car as before. Select a speed of 20 m/s.
8. Complete steps 4-6 above.

Table 1.

Speed	Number Road Lines Passed	Time	Speed (road lines/second)
10 m/s		10 seconds	
20 m/s		10 seconds	

Do You Understand?

1. How did the speed in road lines per second compare for the two trials?
2. Create a graph of your data. Use your graph to determine the speed of the car in lines passed per second for the following speeds:
 - a. 15 m/s _____
 - b. 18 m/s _____
 - c. 25 m/s _____