

Notes Speed Velocity and Acceleration

Speed

- Speed, velocity, and acceleration describe how an object's position and motion change through time.




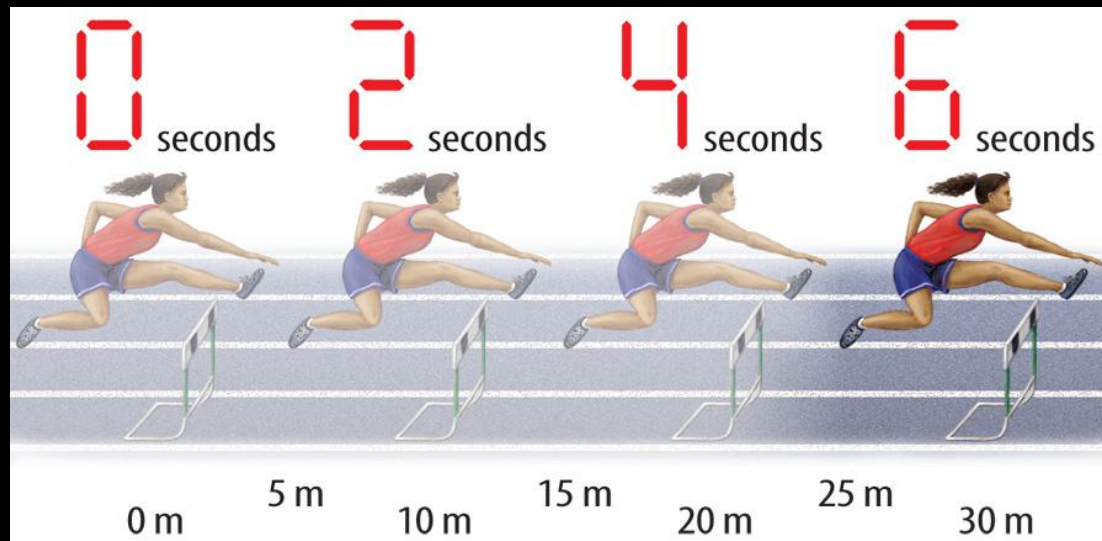
Speed (cont.)

- Rates measure change in something over a length of time.
- **Speed** is the rate of change of distance over time.



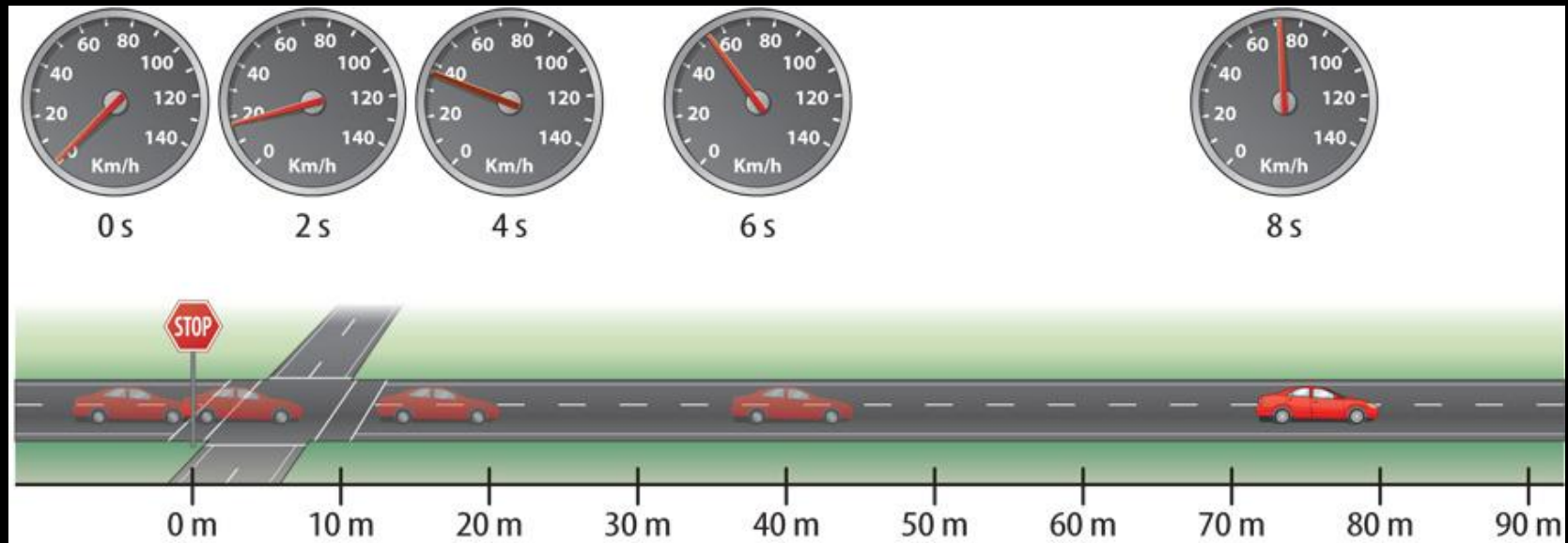
Constant Speed

-  An object moving at **constant speed** travels the same distance each second.
 - This hurdler is moving at a constant speed of 5m/second.



Changing Speed

- A car driving in town must slow down and speed up, therefore its speed is not constant.



Changing Speed (cont.)



- The car's speed at any given time is called its **instantaneous speed**.
- An object moving at a constant speed has the same instantaneous speed at all times.



Welcome To 8th grade Physical Science!

Mrs. Winters

Materials Needed

Today

Please take these materials out of your backpack.

- Pencil & Blue Pen
- Notes
- Lab from yesterday
- Chapter 1 Lesson 3 Packet

Hot Sync

Wednesday 10/16/13

Answer the following questions in **complete sentences** on the hot sync worksheet.

- 1) I was going to Sacramento and it took me 20 min to get to Red Bluff which is 14 miles. What was my **velocity**? (you need two pieces of information!!!)
- 2) Our Willy's Jeep can only go 30 miles per hour. **How many hours** will it take us to get to Chico when Chico is 85 miles?
- 3) I was traveling about 60 miles per hour and arrived at my destination in 15 minutes, **how far** did I travel?

Average Speed

- **Average speed** is the total distance traveled divided by the total time.

Average Speed Equation

$$\text{average speed (in m/s)} = \frac{\text{total distance (in m)}}{\text{total time (in s)}}$$

$$v = \frac{d}{t}$$

- If you know any 2 of the variables, you can calculate the missing variable.

Lets try this outside!

- BRING YOUR NOTES and a pencil!
- How can we organized WHILE collecting data?



Lab Write-Ups

What are the components
of a great lab write-up?

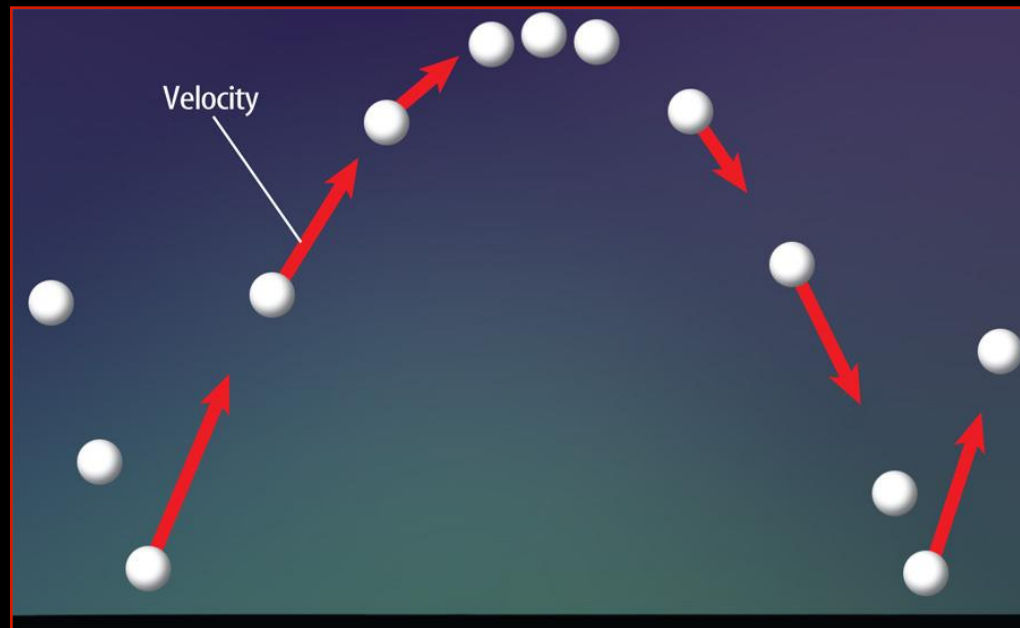
Velocity

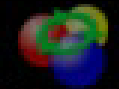
- **Velocity** is the speed and direction of a moving object. (Lets determine the velocity of the bball)
- Speed is the rate of change of distance with time.



Velocity (cont.)

- Velocity is a vector because it has both direction and size.
- The size of a velocity vector is the speed.



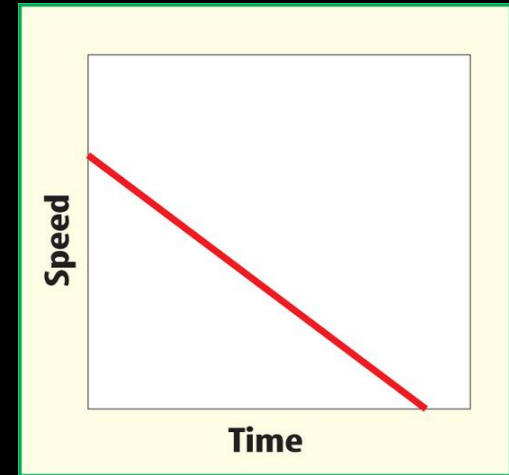
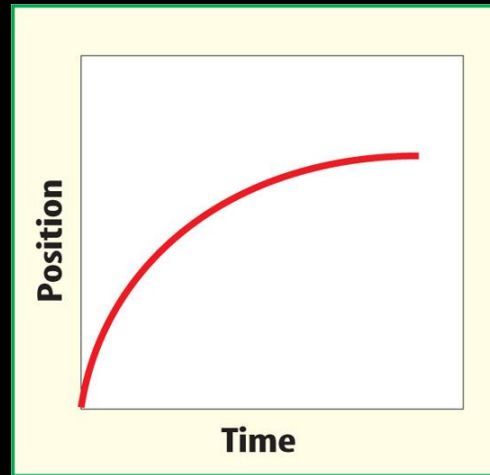
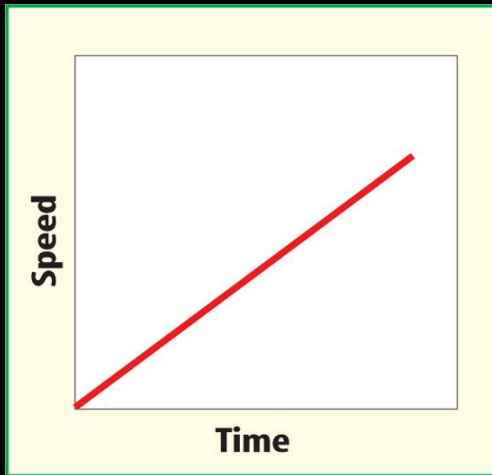


UNREGI
STERED

Acceleration



- **Acceleration** is the rate at which velocity changes with time.



Acceleration (cont.)

- The horses on the carousel are constantly accelerating and changing direction, so they are constantly changing velocity even though their speed remains constant.

