

The Science of Racing Hitting the Mark

Additional Assessment:



Assessment:

- What is the difference in instantaneous velocity, constant velocity and average velocity?
- If you graph distance on the Y Axis and time on the X Axis the line connecting the points represents _____.
- If you graph speed on the Y Axis and time on the X Axis the area under the speed line or curve represents _____.
- How would you describe the relationship between speed, distance and time?.
- What is your understanding of a math model and how might it help you to be able to create these models?
- What is the math formula for calculating speed?
- What is the math formula for calculating distance if you know speed and time?

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Assessment:

- What is the difference in instantaneous velocity, constant velocity and average velocity?
 - *See vocabulary*
- If you graph distance on the Y Axis and time on the X Axis the “best fit” line connecting the plotted points represents
 - *Speed : the units of the slope are distance divided by time.*
- If you graph speed on the Y Axis and time on the X Axis the area under the speed line or curve represents
 - *Distance: the units are distance per second x seconds which cancels out to leave only distance.*
- How would you describe the relationship between speed, distance and time?.
 - *Speed equals distance multiplied by time.*
- What is your understanding of a math model and how might it help you to be able to create these models?
 - *Math models allow you to predict things you have not directly measured.*
- What is the math formula for calculating speed?
 - *See Vocabulary*
- What is the math formula for calculating distance if you know speed and time?
 - *Speed times time equals distance which is again why the distance is the area under the speed-time graph.*

Vocabulary:

Average speed
describes speed of motion when speed is changing.

Instantaneous speed is speed at a given point of time.

Speed
Distance traveled in some amount of time or
 $\text{speed} = d / t$

Velocity
Speed in some direction.

Constant Velocity
describes motion in which neither speed or direction are changing.

Distance describes how far an object moves.

Displacement
describes a change in an object relative to its starting point.