

# Velocity and Acceleration

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### Velocity and Speed

Speed only describes how fast something is moving.

Velocity describes both the speed and direction of an object.

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Picture a motorcycle racing down the highway at 100 miles per hour. It meets another motorcycle going 100 miles per hour heading in the opposite direction.

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Finally



Calculating Acceleration



### Acceleration...

Drag racers idle their engines, the starting signal flashes and the cars leap forward, moving faster until the cars cross the finish line. The drivers release their drag chutes and the cars rapidly slow down and come to a stop.

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Speed is not always constant. Like speed, velocity may also change!

Unlike speed, the velocity of an object can change even if the speed of the object remains constant.



# Velocity and Acceleration


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### Velocity and Speed

Speed only describes how fast something is moving.

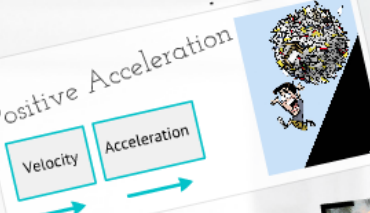
Velocity describes both the speed and direction of an object.



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### Positive Acceleration




Picture a motorcycle racing down the highway at 100 miles per hour. It meets another motorcycle going 100 miles per hour heading in the opposite direction.

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**Finally**

Thank You

A very special thank you to all the students who have taken the time to watch this video.



### Acceleration...

Drag racers idle their engines, the starting signal flashes and the cars leap forward, moving faster and faster until the cars cross the finish line. The drivers release their drag chutes and the cars rapidly slow down and come to a stop.

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Calculating Acceleration



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Section 3.2: Velocity and Acceleration

DATE!

NOTES!!

**BE PROFESSIONAL!**  
Write your notes so that you can read them! If you cannot read them, neither can I... = BAD GRADE! :(



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SECTION REVIEW PROBLEMS!

Professionalism goes a long way but, ANSWER ALL QUESTIONS!! OR I will not grade them. ;P

# Velocity and Speed

Speed only describes how fast something is moving.

Velocity describes both the speed and direction of an object.

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Picture a motorcycle racing down the highway at 100 miles per hour. It meets another motorcycle going 100 miles per hour heading in the opposite direction.

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The SPEED of the motorcycles are the same.

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The VELOCITY of the motorcycles are different because the motorcycles are not moving in the same direction.



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EXAMPLE: TheCaseSolution.com  
if a car goes around a curve in the road, its direction changes. Even if the speed remains constant, the velocity changes because the direction of the car changes.

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# Acceleration...

**What is acceleration?**

Acceleration is the rate of change of velocity.

Because velocity includes both speed and direction, if either one changes, velocity will change.

Acceleration can occur through a change in speed or a change in direction.

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