What is Acceleration?
Video Notes

The three questions we wish to answer:
- What does it mean to be accelerating?
- How do you calculate the acceleration of an object?
- How do you determine the direction of an object's acceleration?

What does it mean to be accelerating?
Accelerating object: an object that is changing its velocity.

Velocity = speed with a direction

Accelerating objects are either:
- Speeding up
- Slowing down
- Turning

How do you calculate the acceleration of an object?
Definition of Acceleration:
   The rate at which the velocity changes.

$$\text{Acceleration} = \frac{\text{Velocity Change}}{\text{Time Change}}$$

$$a = \frac{\Delta v}{\Delta t} \quad \overset{V_{final} - V_{initial}}{}$$

$$\text{Units:} \quad \frac{\text{meter/second}}{\text{second}} \qquad \text{meter/second}^2 \ (m/s^2)$$

How do you determine the direction of an object's acceleration?
Acceleration is a vector and it has a direction.

The **direction of acceleration** depends on:
- the direction the object is moving
- whether the object is speeding up or slowing down.

RULE: If an object is slowing down, then ...

   ... the direction of its acceleration is the opposite of the direction that it is moving.