

SCIENCE
FUSION Physical Science
HOLT McDUGAL

PowerNotes

Unit 1 Lesson 2 Acceleration

Getting up to Speed

How do we measure changing velocity?

- **Acceleration** is the rate at which velocity changes.
- An object accelerates if its speed, direction, or both change.
- Acceleration depends on how much velocity changes and how much time that change takes.



How do we measure changing velocity?

- What is the change in velocity for each second of time that passes?



How is average acceleration calculated?

- Average acceleration = (final velocity – starting velocity)/time
- $a = (v_2 - v_1)/t$
- Acceleration is measured in meters per second squared (m/s^2).



What a Drag!

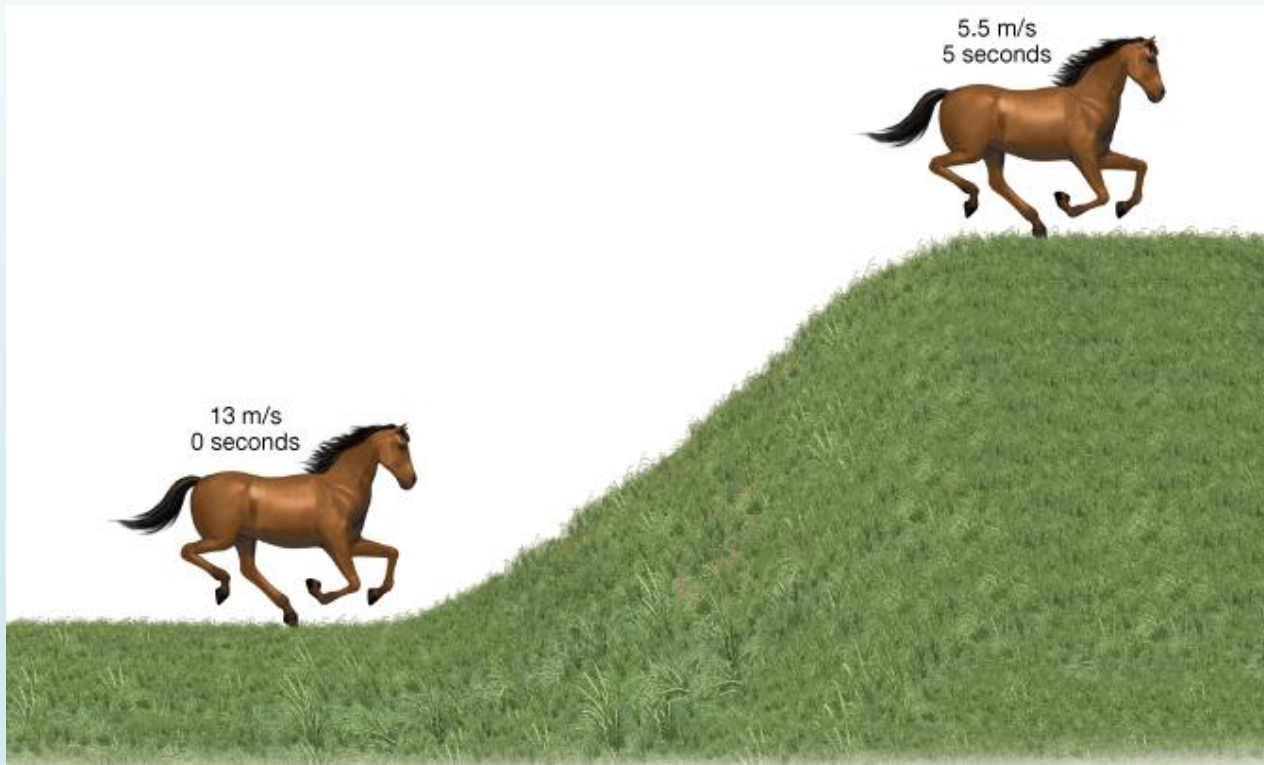
How can accelerating objects change velocity?

- Acceleration refers to both increases and decreases in speed. A change in direction is also acceleration.
- An increase in velocity is called *positive acceleration*.
- A decrease in velocity is called *negative acceleration*.



How can accelerating objects change velocity?

- Is the horse showing negative acceleration or positive acceleration? Explain.



How can accelerating objects change velocity?

- An object traveling in a circular motion is always changing its direction, and so it always experiences acceleration.
- **Centripetal acceleration** is acceleration in a circular motion.

