



Science

Grade 8

1st Nine Weeks

This academic overview can be used to monitor and support your child's at-home learning progress.

Unit 1: Introduction & Force and Motion

Student Learning Targets

- I can demonstrate balanced and unbalanced forces.
- I can calculate net force acting on an object and explain how it affects the object's motion.
- I can identify and describe applications of the Law of Inertia
- I can identify and describe applications of the Law of Force and Acceleration
- I can identify and describe applications of the Law of Action-Reaction

Questions to Check for Unit Understanding

- How does the net force acting on an object affect its motion?
- What is Newton's first law of motion and provide an everyday example?
- What is Newton's second law of motion and provide an everyday example?
- What is Newton's third law of motion and provide an everyday example?
- What is the relationship between the mass and the force of an object?

Key Academic Vocabulary

- Inertia: the tendency of an object to remain still or continue moving unless a force is applied
- Acceleration: a change in motion caused by unbalanced forces
- Action: the way that something causes a change
- Reaction: the resistance or force acting in the opposite direction to an action force
- Unbalanced Forces: when forces on an object cause a change in the motion of the object

Unit 2: Components of the Universe

Student Learning Targets

- I can describe that the universe is all of space, time, matter and energy that exists.
- I can describe what a star is and acknowledge that the Sun is our closest star to Earth.
- I can describe the different components of the universe such as a star, galaxy, nebula, etc.
- I can use an HR diagram to classify stars.

Questions to Check for Unit Understanding

- What is included in the universe?
- What are the characteristics of a star?
- What are the characteristics of a nebula?
- What are the characteristics of a galaxy?
- What are the relationships between the universe, galaxies, stars, and solar systems?
- What are the characteristics of the Sun?
- How is the Hertzsprung-Russell diagram used to classify stars?
- How is the Electromagnetic Spectrum used to gather information about the Universe?

Key Academic Vocabulary

- Galaxy: a large grouping of stars
- Hertzsprung-Russell diagram: a plot of the surface temperature of stars vs. their luminosity
- Nebula: a large cloud of gas and dust in space
- Star: a celestial body of gases held together by its own gravity that produces energy through nuclear reactions in its interior
- Universe: all of space and matter