

Course Title:	Astronomy
Grade(s):	11-12

Course Description
The Astronomy curriculum is designed to provide students with the basics behind astronomy. This student-centered course is a blend of physics, chemistry, and mathematics, that utilize laboratory investigations and activities, scientific technology, mathematical computations, collaboration, argumentation, and models and simulations.
Approved Curricular Materials/Textbook(s)
<i>Investigating Astronomy</i> by Jodi Asbell-Clark

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Sky & Motion, Constellations & History of Astronomy	This unit introduces students to the fundamental concepts of astronomy, focusing on the observation and understanding of the night sky. Students will explore sky and motion, including the apparent movement of celestial bodies, the cycles of the Sun, Moon, and planets, and how Earth's rotation and orbit influence what we observe from Earth. The unit also covers constellations, teaching students to identify major patterns in the night sky and understand their significance in navigation, culture, and scientific observation. Additionally, learners will examine the history of astronomy, tracing humanity's efforts to study the cosmos from ancient civilizations to modern scientific breakthroughs. By the end of the unit, students will have a foundational understanding of celestial motion, be able to recognize key constellations, and appreciate how historical discoveries have shaped our current knowledge of the universe.	August - September

Unit 2: Sun-Earth-Moon System & Space Exploration	This unit explores the dynamic relationships within the Sun-Earth-Moon system and the ways humans have investigated space. Students will study the motions and interactions of the Sun, Earth, and Moon, including phenomena such as seasons, eclipses, tides, and phases of the Moon. Understanding these patterns helps explain the natural rhythms and cycles observed on Earth. The unit also examines space exploration, tracing the history of human efforts to study and travel beyond Earth. Students will learn about key missions, technologies, and discoveries that have expanded our knowledge of the solar system and the universe. Emphasis is placed on how scientific inquiry and technological innovation work together to explore and understand space. By the end of the unit, students will be able to describe the interactions within the Sun-Earth-Moon system, explain the causes of observable celestial phenomena, and understand the impact of space exploration on science and society.	September - October
Unit 3: Investigating Planets/Galaxy, Tools of Astronomy & Investigating Stars	This unit introduces students to the study of celestial objects and the tools astronomers use to investigate the universe. Students will explore planets and galaxies, learning about their characteristics, formation, and the methods used to observe and classify them. The unit emphasizes the scale and structure of the cosmos, from our solar system to distant galaxies. Students will also examine the tools of astronomy, including telescopes, spectrometers, and space-based observatories, gaining an understanding of how technology enables the collection of data about stars, planets, and galaxies. Finally, the unit focuses on investigating stars, exploring their life cycles, classifications, and the physical processes that govern their behavior. By combining observation and technology, students will learn how astronomers gather information to understand the universe and make scientific predictions. By the end of the unit, students will be able to describe the properties of planets, stars, and galaxies, explain the tools used to study them, and analyze how observations of celestial objects contribute to our knowledge of the universe.	November - January