

Teacher: CORE Intro
to Astronomy
Course: Intro to
Astronomy

Year: 2017-18
Month: All Months

S Astronomy - Earth-Moon System ~

In this unit, students will be given the opportunity to explore the Universe beyond our world.

e	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
p	What is the importance of studying our closest celestial neighbor?	Moon Formation	Discuss different theories of moon formation.	Moon, Phases, Tides, Eclipses, Maria, Rays, Rilles, Craters, Giant-Impact Hypothesis				3.1.9.D-Apply scale as a way of relating concepts and ideas to one another by some measure.
t		Composition of the Moon	Explain layers of the moon and evidence that supports our understanding.					3.2.9.C-Apply the elements of scientific inquiry to solve problems.
e		Moon Surface Features	Identify and discuss the formation of the 4 surface features of the moon.					
m		Phases of the Moon	Draw, label, and explain phases of the moon.					
b		Eclipses	Draw, label, and explain the different types of eclipses, solar and lunar					
e		Tides	Explain how the moon pulls on the ocean and causes tides.					
r			Discuss differences between neap tides and spring tides.					

O Astronomy - The Solar System

c	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
t	Why are the contributions of past astronomers important today?	Ancient Astronomers	Relate past astronomers accomplishments and how they factor into today's astronomical society.	Gravity, inertia, Johannes Kepler, Jovian Planets, Terrestrial Planets				
o	What are the 'tools' needed to build a solar system?	Formation of the Solar System	Determine and prove Kepler's Laws of Planetary Motion					

b	Types of Planets	Differentiate between terrestrial planets and jovian planets.
e		Discuss the formation of the Solar System and the importance of the frost line.
r		Discuss the four properties of solar system formation and apply those laws to our solar system to see if it meets the criteria.

N Astronomy - Stellar Evolution

o	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
v	What does it mean to be made of starstuff?	Electromagnetic Radiation	Discuss the three different types of spectra and relate to studying stars.	Electromagnetic Radiation, Protostar, Nebula, Main Sequence, Red Giant, Black Hole, Supernova, Doppler Effect, HR Diagram				3.2.9.A-Apply knowledge and understanding about the nature of scientific and technological knowledge.
e		Types of Spectra	Discuss the properties of electromagnetic radiation and differentiate between the 7 different forms of electromagnetic radiation.					3.3.9.B-Describe and explain the chemical and structural basis of living organisms.
m		Stellar Evolution	Calculate distances to stars using various methods.					3.4.9.A-Explain concepts about the structural properties of matter.
b		Doppler Effect	Use the doppler effect to see if stars are moving towards or away from our galaxy.					3.4.9.B-Analyze energy sources and their transformations.
e		Astronomical Distance in Space	Determine the life cycle of various stars and differentiate between high-mass stars and low-mass stars, and how they end their lives.					3.4.9.C-Identify and explain the principles of force and motion.
r		Stellar Magnitude of Stars						3.7.9.B-Demonstrate the use of appropriate instruments to study processes.
		Hertzsprung-Russell Diagram						3.7.9.C-Apply basic computer operations and concepts.
		Big Bang Theory						3.8.9.B-Compare how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.

D Astronomy - Stellar Evolution

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J Astronomy - Space Exploration

a	Essential Questions	Content	Knowledge and Skills	Vocabulary	Assessments	Lessons	Resources	Standards
n	What is the purpose of space exploration?	Stellar Observation	Locate stars in the night sky based on a few simple nighttime markers.	Longitude, Latitude, Declination, Right Ascension, Zenith, Plane				3.8.9.A-Explain how societal demands affect scientific and technological enterprises.

u	Stellar Location	Discuss past space explorations and of the Ecliptic their importance on future expeditions.	3.8.9.B-Compare how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
a	Space Exploration		3.8.9.C-Predict the consequences and impacts of scientific and technological solutions.
r	Important Space Missions		
y			