

Yukon
High School

Starry Night Lesson Plans

In order of relevance

GRADE 9
Earth and Space Science: Space Exploration

D1 Explain how a variety of technologies have advanced understanding of the universe and solar system.	I1-I3	H1-H3	G2-G3	F1	F3		
Identify and describe a range of instruments that are used in astronomy (e.g., telescopes, spectroscopes, satellites, probes, robotic devices)	I1-I3	H1-H3	G2-G3	F1	F3		
Give examples of how astronomers use astronomical and space exploration technologies to advance understanding of the universe and solar system (e.g., using red shift to support the idea of an expanding universe, using parallax to measure distance)	I1-I3	H1-H3	G2-G3	F1	F3		
D2 Describe the major components and characteristics of the universe and solar system.	C1-C4	D1-D3	E1-E4	F1-F3	G1-G3	H1-H3	I1-I3
Identify galaxies, star clusters/types, planets, constellations, and nebulae according to their distinguishing characteristics	G1-G3	H1-H3	F1	C1-C4	D1-D3	E1-E4	
Relate mass to different stages in the life cycle of stars.	G2	G3					
Describe theories on the nature of the solar system (e.g., Ptolemy, Copernicus, Kepler).	B1-B2	C1-C4	E3	E4			
Describe the formation of the solar system (e.g., condensing nebula) and its components (e.g., planets, moons, comets, asteroids, the Sun) and the formation of the universe (e.g., Big Bang)	B1-B2	F3	C1-C4	D1-D3	H1-H3		
Describe the processes that generate, and events that distribute, the energy of the Sun and other stars (e.g., nuclear fusion, solar flares and prominences, sun spots, solar wind)	F1-F3	G2	G3				
D4 Explain astronomical phenomena with reference to the Earth/moon system.	A1-A5	E1-E4	C2	D1-D3			
Describe the formation of the Earth's moon, with reference to supporting evidence	A3						
Describe the significance of Earth's rotation, revolution, and axis tilt (e.g., seasons, day/night)	A1-A5	E3	E4				
Describe the celestial sphere in relation to constellations and their locations	E1-E4						
Explain the apparent motion of constellations, planets, the Sun, the moon, asteroids, and comets	A1-A5	E1-E4	C2	D1-D3			
Explain and illustrate solar and lunar eclipses	A5						

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D5 Analyse the implications of space travel.	I1	I2	G1	G2	C1-C3	F2
Identify various possibilities and limitations associated with space travel (e.g., with reference to factors such as time, essential human needs, robots, budget choices, militarization of space)	I1	I2	G1	C1-C3	F2	
Debate a range of ethical issues related to space travel (e.g., appropriateness of terraforming another planet, exposing humans to risks)	I1	I2	C1	C3	F2	
Research current ideas or initiatives for further space exploration (e.g., space elevator, colonization of other planets, search for extraterrestrial life)	I1	I2	G1	G2		