

Ohio
High School

Starry Night Lesson Plans

In order of relevance

Grade 9

Earth and Space Sciences: The Universe

Explain how evidence from stars and other celestial objects provide information about the processes that cause changes in the composition and scale of the physical universe.

F1-F3 G1-G3 H1-H3 I1-I3

Describe that stars produce energy from nuclear reactions and that processes in stars have led to the formation of all elements beyond hydrogen and helium.

F1 G2 F2 G3

Describe the current scientific evidence that supports the theory of the explosive expansion of the universe, the Big Bang, over 10 billion years ago.

H1-H3 I3

Explain that gravitational forces govern the characteristics and movement patterns of the planets, comets and asteroids in the solar system.

B1-B2 C1-C4 D1-D3 F3 I2

Grade 11

Earth and Space Sciences: The Universe

Describe how the early Earth was different from the planet we live on today, and explain the formation of the sun, Earth and the rest of the solar system from a nebular cloud of dust and gas approximately 4.5 billion years ago.

F1-F3 B1-B2 C1-C4 D1-D3 I2

Earth and Space Sciences: Earth Systems

Analyze how the regular and predictable motions of Earth, sun and moon explain phenomena on Earth (e.g., seasons, tides, eclipses and phases of the moon).

A1-A5 E1-E4 C2

Grade 12

Earth and Space Sciences: The Universe

Explain how scientists obtain information about the universe by using technology to detect electromagnetic radiation that is emitted, reflected or absorbed by stars and other objects.

I1-I3 H1-H3 G1-G3 F1-F3

Explain how the large-scale motion of objects in the universe is governed by gravitational forces and detected by observing electromagnetic radiation.

I3 H1-H3 G1-G3

Explain how information about the universe is inferred by understanding that stars and other objects in space emit, reflect or absorb electromagnetic radiation, which we then detect.

I3 H1-H3 G1-G3 F1 F2

Explain how astronomers infer that the whole universe is expanding by understanding how light seen from distant galaxies has longer apparent wavelengths than comparable light sources close to Earth.

I3 H2 H3