

U. S. Curriculum Correlations by State

Maryland

Goal 2: Concepts of Earth/Space Science

1. Expectation: The student will identify and describe techniques used to investigate the Universe and Earth.

Indicators of Learning:

- (1) The student will describe the purpose and advantage of current tools, delivery systems and techniques used to study the Universe.
- Tools (optical and radio telescopes, spectrometers)
 - Delivery Systems (satellite-based, ground-based, space probe)
 - Techniques (imaging, spectroscopy)

2. Expectation: The student will describe natural forces and apply them to the study of Earth/Space Science.

Indicators of Learning:

- (1) The student will explain the role of forces in the formation and operation of the Universe.
- Newton's Universal Law of Gravitation
 - Structure and evolution of galaxies and the Universe (Big Bang Theory)
 - Stellar Structure and evolution (life cycle of stars, stellar systems, H-R Diagram)
 - Formation and evolution of the Solar System (Nebular Theory, small bodies)
 - Kepler's 3 Laws of Planetary Motion
 - Sun-Earth connection (thermonuclear process, sunspot cycle, coronal mass ejection, flares, solar wind, auroras)
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- (2) The student will explain the role and interaction of revolution, rotation and gravity on the Sun-Earth-Moon System.
- Seasons (change in solar angle, yearly variation in the length of day/night, absorption/reflection/scattering of insolation, solstices and equinoxes, rotation/revolution/precession, yearly variation of the Sun's altitude and azimuth)
 - Eclipses (lunar, solar, total, annular, partial, umbra, penumbra, 2 eclipse "seasons" per Earth year, yearly/monthly variations in lunar position and length of visibility of the Moon)
 - Earth-Moon interactions (relationship between lunar phase and tide, tidal bulge and rate of lunar revolution, tides and Earth-Moon distance, sidereal and synodic lunar months)

Starry Night Lesson Plans

In order of relevance

G1-G2 H1-H3 I1-I2 F2

H1 H2 H3 I1 I2 G1 G2

I1 F2

I2 F2

I1 F2

C1-C3 D1-D3 F1-F3 H1-H3

C2

H1 H2 H3

G2 G1

F3 C1 C2 C3 D1 D2 D3

C2

F1 F2

A1 A2 A3 C2 D3 F3

A2 E1 E2 E3

A4 A5

A3 A4 A5