

**Massachusetts**  
High School

**Starry Night Lesson Plans**  
*In order of relevance*

**Strand 1: Earth and Space Science**

**1. Matter and Energy in the Earth System**

1.1 Identify Earth's principal sources of internal and external energy, such as, radioactive decay, gravity, and solar energy.

F1 F3

1.5 Explain how the revolution of Earth around the Sun and the inclination of Earth on its axis cause Earth's seasonal variations (equinoxes and solstices).

A2

1.8 Read, interpret, and analyze a combination of ground-based observations, satellite data, and computer models to demonstrate Earth systems and their interconnections.

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

**4. The Origin and Evolution of the Universe**

*Central Concepts:* The origin of the universe, between 14 and 15 billion years ago, still remains one of the greatest questions in science. Gravity influences the formation and life cycles of galaxies, including our own Milky Way Galaxy; stars; planetary systems; and residual material left from the creation of the solar system.

B1-B2 C2 I2 F3 G1-G3 H1-H3 I1-I3

4.1 Explain the Big Bang theory and discuss the evidence that supports it, such as, background radiation, and relativistic Doppler effect ~ "red shift".

H1-H3 I1-I3

4.2 Describe the influence of gravity and inertia on the rotation and revolution of orbiting bodies. Explain the sun-Earth-moon relationships, such as, day, year, solar/lunar eclipses and tides.

C2 F3 G3 A1-A5

4.3 Explain how the sun, Earth, and solar system formed from a nebula of dust and gas in a spiral arm of the Milky Way Galaxy about 4.6 billion years ago.

F3 G1-G3 H1-H3 I1-I3