# Tennessee

**High School**

**Grades 9-12**
**EARTH SCIENCE**

| | **Starry Night Lesson Plans**<br>*In order of relevance* | | | | |
|---|---|---|---|---|---|
| **Standard Number: 1.0 Earth System** | | | | | |
| **Standard:** The student will investigate the origin, composition, and structure of the universe. | All Starry Night Lesson Plans | | | | |
| **Learning Expectations:** | | | | | |
| 1.1 explore the theories of the origin of the universe and its vastness. | H1-H3 | I3 | | | |
| 1.2 examine the components of the solar system. | C1-C4 | D1-D3 | B1-B2 | F1-F3 | |
| 1.3 examine the sun, earth, moon relationships and their gravitational effects. | A1-A5 | | | | |
| 1.4 investigate the exploration of space. | I1-I3 | H1-H3 | F2 | C1-C4 | D1-D3 |
| **Performance Indicators Level 1:** | | | | | |
| Identify the components of the universe: galaxies, solar systems, stars, planets, meteors, comets, and asteroids. | B1-B2<br>G1-G3 | C1-C4<br>H1-H3 | D1-D3<br>I2 | E1-E4 | F1-F3 |
| Understand the seasons and the phases of the moon. | A2 | A4 | E3 | E4 | |
| Draw the position of the sun, earth, and moon during eclipses and lunar phases. | A4 | A5 | | | |
| Predict tidal conditions based on the position of the earth and moon. | A3 | A4 | | | |
| Investigate the history of space exploration. | I1-I3 | C1 | C3 | | |
| **Performance Indicators Level 2:** | | | | | |
| Discuss the theories of the origin of the universe: Big Bang and Oscillating/Pulsating. | H2 | H3 | I3 | | |
| Construct a model of our solar system with emphasis on ratio and proportions of both distance and size of planets. | B1-B2 | C1-C4 | | | |
| Explain the evolution of a star through all stages of its potential development. | F3 | G2 | G3 | | |
| Classify galaxies according to their shapes. | H1 | H2 | | | |
| Explore the role of astronomical events in Earth history (e. g., asteroid/meteor impacts, solar flares, and comets). | D1-D3 | F2 | E1-E4 | | |
| Investigate the relationship between the length of the day and the inclination and relative position of the sun to the earth (seasons). | A2 | E3 | | | |
| Describe the relationship between mass and gravity. | C2 | | | | |
| Explore recent developments in space exploration. | F2 | I1-I3 | H1-H3 | G3 | |
| Explore the benefits of space technology in our everyday lives | I1-I3 | | | | |
| **Performance Indicators Level 3:** | | | | | |
| Compare and contrast earth to other planets in our solar system. | C1-C4 | I2 | | | |