

New Hampshire
High School

Starry Night Lesson Plans
In order of relevance

Grades 9-11

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|--|-------|-------|-------|-------|-------|----|
| ESS2 - The Earth is part of a solar system, made up of distinct parts, which have temporal and spatial interrelationships. | A1-A5 | B1-B2 | C1-C4 | D1-D3 | F1-F3 | I2 |
| S:ESS2:11:1.1 Explain how the Earth, Moon and Sun were formed. | F3 | C1 | | | | |
| S:ESS2:11:2.1 Identify the Earth's major external source of energy as solar energy. | F1 | | | | | |
| S:ESS2:11:2.2 Explain how the inclination of incoming solar radiation can impact the amount of energy Earth receives on any given surface area. | A2 | | | | | |
| S:ESS2:11:3.1 Explain how gravitational force influenced the formations of the planets and their moons, and describe how these objects move in patterns under its continued influence. | F3 | C2 | B1-B2 | I2 | | |
| S:ESS2:11:3.2 Explain how the Solar System formed from a giant cloud of gas and debris about 5 billion years ago | F3 | B1-B2 | | | | |
| ESS3 - The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time. | F1-F3 | G1-G3 | H1-H3 | I1-I3 | | |
| S:ESS3:11:1.1 Recognize electromagnetic waves can be used to locate objects in the universe, and track their movement. | G2 | F2 | I1-I3 | H1-H3 | | |
| S:ESS3:11: 1.2 Define a light year. | G1 | | | | | |
| S:ESS3:11:2.1 Identify and describe the characteristics common to most stars in the universe. | G2 | | | | | |
| S:ESS3:11:2.2 Describe the ongoing processes involved in star formation, their life cycles and their destruction. | F1-F3 | G2 | G3 | | | |
| S:ESS3:11:2.3 Explain the relationships between or among the energy produced from nuclear reactions, the origin of elements, and the life cycles of stars. | F1 | G2 | | | | |
| S:ESS3:11:3.1 Explain that current scientific evidence supports the Big Bang Theory as a probable explanation of the origin of the universe, and describe the theory. | H3 | H2 | | | | |
| S:ESS3: 11:3.2 Explain the evidence that suggests the universe is expanding. | I3 | H2 | H3 | | | |
| S:ESS3:11: 3.3 Provide scientific evidence that supports or refutes the "Big Bang" theory of how the universe was formed. | I3 | H2 | H3 | | | |
| S:ESS3:11:3.4 Based on the nature of electromagnetic waves, explain the movement and location of objects in the universe or their composition (e.g., red shift, blue shift, line spectra). | I3 | | | | | |
| S:ESS3:11:3.5 Explain how scientific theories about the structure of the universe have been advanced through the use of sophisticated technology (e.g., space probes; visual, radio and x-ray telescopes). | I1-I3 | H1-H3 | G1-G3 | F1-F3 | | |

New Hampshire
High School (cont'd)

Starry Night Lesson Plans
In order of relevance

Grades 9-11 (continued)

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|--|-------|-------|-------|-------|----|--|
| ESS4 - The growth of scientific knowledge in Earth Space Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues. | I1-I3 | F1-F3 | G1-G3 | H1-H3 | | |
| S:ESS4:11:1.1 Describe ways in which technology has increased our understanding of the universe. | I1-I3 | F1-F3 | G1-G3 | H1-H3 | | |
| S:ESS4:11:2.1 Describe the use and benefits of Land based Light Telescopes, radio telescopes, spectrophotometers, satellites, manned exploration, probes, and robots to the study of Earth Space Science. | I1-I3 | F1-F3 | G1-G3 | H1-H3 | | |
| ESS2 - The Earth is part of a solar system, made up of distinct parts, which have temporal and spatial interrelationships. 11-12 (advanced) | F3 | G1-G3 | H1-H3 | B1 | C1 | |
| S:ESS2:12:1.1 Understand how the Nebular Hypothesis, fusion, and the process of differentiation contributes to the structure and organization of the universe. | F3 | G1-G3 | H1-H3 | B1 | C1 | |