

**New Mexico**  
Middle School

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

**Grades 5-8**

**Standard III (Earth and Space Science):** Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

All Starry Night Lesson Plans

**Grade 5**

**Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.**

Know that many objects in the universe are huge and are separated from one another by vast distances (e.g., many stars are larger than the Sun but so distant that they look like points of light).

G1-G3 H1-H2 B2

Understand that Earth is part of a larger solar system, which is part of an even larger galaxy (Milky Way), which is one of many galaxies.

B1-B2 C1-C4 D1-D3 H1-H2 F3

Know that there have been manned and unmanned journeys to space and to the moon.

I1-I2 A3

**Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.**

Recognize that the seasons are caused by Earth's motion around the Sun and the tilt of Earth's axis of rotation.

A2 E3 E4

**Grade 6**

**Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.**

**Universe**

1. Describe the objects in the universe, including:

- billions of galaxies, each containing billions of stars
- different sizes, temperatures, and colors of stars in the Milky Way galaxy.

H1-H2

G1-G3

**Solar System**

2. Locate the solar system in the Milky Way galaxy.

B1 F3 H1

3. Identify the components of the solar system, and describe their defining characteristics and motions in space, including:

B1-B2 C1-C4 D1-D3 I2

• Sun as a medium sized star

F1-F3

• Sun's composition (i.e., hydrogen, helium) and energy production

F1

• nine planets, their moons, asteroids.

C1-C4 D1-D3 I2

4. Know that the regular and predictable motions of the Earth-moon-Sun system explain phenomena on Earth, including:

A1-A5

• Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides, and shadows

A1-A5 E1-E4

• moon's orbit around Earth once in 28 days in relation to the phases of the

A4

**Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.**

Understand the history of Earth, including evidence of asteroid impact

D3

**New Mexico**  
Middle School (cont'd)

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**Grade 7**

**Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.**

Explain why Earth is unique in our solar system in its ability to support life.	F3	B1-B2	C1	I2
Explain how energy from the Sun supports life on Earth.	F1			

**Grade 8**

**Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.**

1. Understand how energy from the Sun and other stars, in the form of light, travels long distances to reach Earth.	G1			
2. Explain how the properties of light (e.g., emission, reflection, refraction) emitted from the Sun and stars are used to learn about the universe, including:	G2	H1		
• distances in the solar system and the universe	B2	G1	H1-H2	I2
• temperatures of different stars.	G2			
3. Understand how gravitational force acts on objects in the solar system and the universe, including:	C2	C2		
Similar action on masses on Earth and on other objects in the solar system	C2			
Explanation of the orbits of the planets around the Sun.	C2			