

Indiana
Middle School

Starry Night Lesson Plans
In order of relevance

Grade 5
Standard 3 - The Physical Setting

The Universe

5.3.1 Explain that telescopes are used to magnify distant objects in the sky, including the moon and the planets.	C1	C3	C4		
5.3.2 Observe and describe that stars are like the sun, some being smaller and some being larger, but they are so far away that they look like points of light.	F3	G2	G1	B1	
5.3.3 Observe the stars and identify stars that are unusually bright and those that have unusual colors, such as reddish or bluish.	G2	G1	E1	E2	

Earth and the Processes That Shape It

5.3.6 Demonstrate that things on or near Earth are pulled toward it by Earth's gravity.	C2	C3	I1		
5.3.7 Describe that, like all planets and stars, Earth is approximately spherical in shape.	C1	A1	A2	I2	

Forces of Nature

5.3.13 Demonstrate that Earth's gravity pulls any object toward it without touching it.	C2	A3	A5	G3	
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Grade 6
Standard 3 - The Physical Setting

The Universe

6.3.1 Compare and contrast the size, composition, and surface features of the planets that comprise the solar system, as well as the objects orbiting them. Explain that the planets, except Pluto, move around the sun in nearly circular orbits.	B1-B2	C1-C4	D1-D3	F3	I2
6.3.2 Observe and describe that planets change their position relative to the background of stars.	B1	C2	E3	E4	
6.3.3 Explain that Earth is one of several planets that orbit the sun, and that the moon, as well as many artificial satellites and debris, orbit around Earth.	B1	C1-C4	D1-D3	A5	I1

Earth and the Processes That Shape It

6.3.4 Explain that we live on a planet which appears at present to be the only body in the solar system capable of supporting life.	C1-C4	F1	F2	I2	
6.3.5 Use models or drawings to explain that Earth has different seasons and weather patterns because it turns daily on an axis that is tilted relative to the plane of Earth's yearly orbit around the sun. Know that because of this, sunlight falls more intensely on different parts of Earth during the year (the accompanying greater length of days also has an effect) and the difference in heating produces seasons and weather patterns.	A2	F1			
6.3.6 Use models or drawings to explain that the phases of the moon are caused by the moon's orbit around Earth, once in about 28 days, changing what part of the moon is lighted by the sun and how much of that part can be seen from Earth, both during the day and night.	A4	A5			
6.3.10 Describe the motions of ocean waters, such as tides, and identify their causes.	A3				

Indiana

Middle School (cont'd)

Starry Night Lesson Plans

In order of relevance

Grade 7

Standard 3 - The Physical Setting

The Universe

7.3.1 Recognize and describe that the sun is a medium-sized star located near the edge of a disk-shaped galaxy of stars and that the universe contains many billions of galaxies and each galaxy contains many billions of stars.

G1-G3 F1 H1-H2

7.3.2 Recognize and describe that the sun is many thousands of times closer to Earth than any other star, allowing light from the sun to reach Earth in a few minutes. Note that this may be compared to time spans of longer than a year for all other stars.

G1 G2 B2 F2 F1

Matter and Energy

7.3.11 Explain that the sun loses energy by emitting light. Note that only a tiny fraction of that light reaches Earth. Understand that the sun's energy arrives as light with a wide range of wavelengths, consisting of visible light and infrared and ultraviolet radiation.

F1 G2

Forces of Nature

7.3.17 Investigate that an unbalanced force, acting on an object, changes its speed or path of motion or both, and know that if the force always acts toward the same center as the object moves, the object's path may curve into an orbit around the center.

C2 I2

Grade 8

Standard 3 - The Physical Setting

The Universe

8.3.1 Explain that large numbers of chunks of rock orbit the sun and some of this rock interacts with Earth.

D1-D3

Forces of Nature

8.3.16 Explain that every object exerts gravitational force on every other object and that the force depends on how much mass the objects have and how far apart they are.

F3 C2 B1-B2 D3 A3 G3 I2

8.3.17 Explain that the sun's gravitational pull holds Earth and the other planets in their orbits, just as the planets' gravitational pull keeps their moons in orbit around them.

F3 C2 B1 G3 I2