



Day & Night

Grades 1-2

In this educational and fun program, the students are given a tour of the day and night sky. Facts about the Sun, life on Earth, the Earth's motions, the planets of the solar system, and the stars of the night sky are presented. We will get close up views of the planets from spacecraft, search out a few constellations (like the Big Dipper), tell a few constellation stories and see the Earth rotate through an entire day and night.

Concepts Covered During Visit

Earth's rotation causes day and night

- During our day, people on the other side of the world are inside the Earth's shadow, and experiencing night.
- As the day progresses, we are rotating in the direction toward our shadow for nighttime.
- We do not feel the Earth rotating.

The Sun sets

- The Sun's motion across the sky is due to rotation.
- Once we rotate away from the Sun, we can see the stars and planets.
- We do not see stars during the day because the Sun is bright.

Night

- Dark enough to see the stars (especially if far from city lights).

Tour of night sky

- Stars are constellations, or groups of stars that make a picture and have a story.
- Moon is Earth's closest neighbor and appears to change phases over the course of a month.
- Planets can be visible in the evening sky, they have their own orbit and can change location, and we can see them closely with telescopes.
- Our solar system is not in the center of our galaxy, but $\frac{1}{2}$ to $\frac{2}{3}$ of the way out from the center.
- The Milkyway is our own galaxy and is made up of stars that are very far away.

Sunrise

- Lights up

Pre-visit activities

1. Discuss what takes place during the day, and then what activities occur at night.
2. Ask what they can see during the day and nighttime.
3. Demonstrate rotation of the Earth with a globe and use a flashlight to simulate the Sun. Point out that the Sun does not light up the entire Earth, but only one half (daytime), and point to Florida as it goes by.
4. Learn the order of the planets from the Sun outward.

Post-Visit Activities

1. Review rotation and ask the students if there are other ways that we know the Earth rotates (ie, motion of the Sun and stars, not wind).
2. Keep track of the time the Sun rises and sets each day – are the days becoming longer or shorter? This is due to the Earth's tilt, which is why we have seasons, and not why we have day and night.
3. Have students make their own constellation stories or star maps.
4. Make a mobile of the planets in our solar system.

Sunshine State Standards Standards

SC.1.E.5.1	Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky.
SC.1.E.5.2	Explore the Law of Gravity by demonstrating that Earth's gravity pulls any object on or near Earth toward it even though nothing is touching the object.
SC.1.E.5.3	Investigate how magnifiers make things appear bigger and help people see things they could not see without them.
SC.1.E.5.4	Identify the beneficial and harmful properties of the Sun.
SC.1.P.12.1	Demonstrate and describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow.
SC.2.N.1.1	Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.
SC.3.N.1.6	Infer based on observation.

Vocabulary

Astronomy: The study of stars, planets, comets, asteroids, galaxies, and other phenomena that occur outside the Earth's atmosphere.

Constellation: A formation of stars perceived as a figure or design, especially one of 88 recognized groups named after characters from classical mythology and various common animals and objects.

Dark: Lacking or having very little light.

Day: The time between sunrise and sunset.

Earth: Third planet from the Sun and made out of rocks. It's our home planet.

Galaxy: A very large group of stars orbiting a central point.

Jupiter: Fifth planet from the Sun and made out of gases. It's the largest planet in our Solar System

Light: Electromagnetic radiation in a band of frequencies that can be received by the human eye.

Mars: Fourth planet from the Sun and made out of rocks. Also known as the "Red Planet".

Mercury: Closest planet to the Sun and made out of rocks. It's the smallest planet.

Milky Way: The galaxy that contains our Solar System and every star you can see.

Moon: A natural satellite orbiting a planet.

Neptune: Eighth planet from the Sun and made of gases.

Night: The time between sunset and sunrise.

Orbit: The path of one object as it moves around another.

Phases: The way planets and moons look different from time to time. Full Moon, Half Moon, or New Moon.

Planet: A body that is in orbit around the Sun, is round in shape, and has cleared its orbit of debris.

Rotation: Turning around a central point.

Saturn: Sixth planet from the Sun and made of gases. Also known as the "Ringed Planet".

Sky: The expanse of air over any given point on the earth.

Star: A ball of gases that glows and makes heat.

Sun: The "Star" of our Solar System. Where most of our light and heat comes from.

Sunrise: The event or time of the daily first appearance of the sun above the eastern horizon.

Sunset: The event or time of the daily disappearance of the sun below the western horizon.

Venus: Second planet from the Sun and made of rocks.

Uranus: Seventh planet from the Sun and made of gases.

