STEM at HOME

SCIENCE ★ TECHNOLOGY ★ ENGINEERING ★ MATH

PRESENTED BY: girlstart

Oreo Moon Phases

Use delicious cookies to explore Moon phases and the interaction between our Earth, Moon, and Sun. Science has never been so sweet!

TEKS:

SCI 2.8 C: The student is expected to observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.
SCI 4/5.8: The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system.
SCI 4.8 C: The student is expected to collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time.

Materials:

- 4 chocolate sandwich cookies (like Oreos)
- Paper plate
- Pen, pencil, or markers
- Popsicle stick or butter knife

How To:

1. Slowly twist apart four chocolate sandwich cookies so that the frosting stays on one side. You should have four cookie halves with no frosting, and four cookie halves covered in frosting.
2. The frosting represents the part of the Moon that you see in the night sky! Use a popsicle stick or butter knife to create each of the lunar phases, shown in the photo below, on your cookies. You'll have to move some frosting around!

EXPLORE the WORLD of STEM from your HOME

3. Place your completed "Oreo Moon Phases" onto a paper plate and label them with a pen, pencil, or marker, using the photo above as a guide. Read the STEM Explanation below and use your cookie model to help you understand all eight phases of the Moon!

STEM Explanation:

When you look outside and see Earth's Moon, it appears to be shining brightly in the night sky. However, the Moon does not give off any light itself. The "moonlight" we see is light from the Sun reflected off the Moon's surface. As the Moon orbits the Earth, the Sun lights up different parts of its surface, making it appear to us that the Moon is changing shape. The Moon itself never actually changes shape; we just see different parts of it.

When no part of the Moon is visible in the sky, this is known as a new moon. After a new moon, a thin crescent appears in the sky. The Moon's increasing visibility is called waxing, so this stage is waxing crescent. The Moon then continues to "grow" and enters the first quarter stage. Even though half of the Moon appears visible to our eyes, we only see a quarter of the entire spherical shape of the Moon. The next phase is known as waxing gibbous, and it lasts from the first quarter phase all the way until a full moon is visible in the night sky.

A full moon happens when the entire lit portion of the Moon can be seen from Earth. This occurs when the Moon is on the opposite side of the Earth from the Sun. After a full moon, the visible part of the Moon begins to decrease in size, and we use the term waning to describe a moon that is getting visibly smaller. The first waning moon phase is called waning gibbous. This phase happens between a full moon and a third quarter moon. As the Moon continues to wane, it will appear as a half-moon once again, only this time it is called the third quarter instead of the first quarter. The final waning stage is called waning crescent. The waning crescent moon phase happens when the Moon once again looks like a crescent, but this time, the crescent gets smaller and smaller from one day to the next. After a waning crescent, the Moon goes back to being a new moon, or no longer visible in the sky, and the cycle repeats itself!

Career Connection:

Astronomers study planets, moons, stars, galaxies, meteors, comets and their interactions with each other. They must have an in-depth knowledge of physics to understand how forces such as gravity change throughout space. Astronomers work together sharing their knowledge in order to better understand how the universe works at microscopic and macroscopic levels.

Resources:

https://sciencebob.com/oreo-cookie-moon-phases/
https://www.ducksters.com/science/phases_of_the_moon.php