Activity—Moon Phases

Standard I

Students will understand that the shape of Earth and the moon are spherical and the Earth rotates on its axis to produce the appearance of the sun and moon moving through the sky.

Objective 2

Describe the movement of Earth and the moon and the apparent movement of other bodies through the sky.

Intended Learning Outcomes

1. Use a Science Process and Thinking Skills
2. Manifest Scientific Concepts and Principles
3. Understand Science Concepts and Principles
4. Communicate Effectively Using Science Language and Reasoning

Standard I

Objective 2

Connections

Background Information

Every 29 1/2 days, the moon goes through a complete cycle. The moon begins the cycle being apparently invisible. This happens when the moon comes between the sun and Earth, so that sunlight only shines on the back side of the moon where we can't see it. As the moon moves around Earth, we see more of the sunlit part of the moon. Halfway through the cycle, we see a full moon. At that time, the whole face of the moon is lighted by the sun. Then we see less and less of the moon until Finally, it disappears again. Waxing means, "appears to be growing" and waning means "appears to be shrinking".

Materials

- poster of moon phases
- empty Pringles can
- moon phase booklet or worksheet
- black construction paper
- several quarters for students to trace or make moon phase patterns for students to trace
- scissors
- stapler
- *The Moon Seems to Change* by Franklyn M. Branley or
- *Where Does the Moon Go* by Sidney Rosen
- moon journals

Invitation to Learn

Why does the moon seem to change? Have students record their response in their moon journals.

Instructional Procedures

1. Read *The Moon Seems to Change*.
2. Discuss why the moon changes and have students record any new insights they gained into their journals.
3. Pass out black paper on which students can trace the lid of their Pringles can.
4. Give students a quarter or a pattern of a small circle.
5. Have students trace 4 smaller circles inside their larger circle.
6. Students should draw a full, gibbous, first quarter, and crescent moons onto the small circle.

7. Have them carefully cut out their moons.
8. Poke a hole in the bottom of the can.
9. Have students place one of their moon patterns in the lid of the can and replace the lid. As they hold it up to the light and look through the hole, students will be able to observe the phases of the moon (change out patterns).

Possible Extension/Adaptations

Art

1. Give each student a drawing paper.
2. Students fold the paper into fourths.
3. Students sit in a circle around a large object with a handle (mug, pitcher, soup tureen, etc.) and sketch what they see from their angle in the first box on their paper.
4. Students move counterclockwise one quarter of the way around the circle.
5. Students sketch what they see from this angle in the next box on their paper.
6. Repeat steps 4 and 5 two more times.

Language Arts

Share the poem "Moon Over My Cookie" while students eat their own cookies.

Art–Moon Phase Spinner

1. Students draw and color a picture of their home on one plate.
2. Students cut a triangle or circle out of the top of the paper plate that they drew their home on. You may want to provide a pattern for this.
3. Students glue the moon phases onto the second paper plate.
4. Put the two plates together with the brad.

Materials

- two larger paper plates per student.
- one brad fastener per student.
- copy of moon phases for students to look at.

Assessment Suggestions

Students write in their journals how the moon changes shape.

Students make a moon viewer.

Students record the different phases of the moon for a month.

Homework & Family Connections

Students take home moon phase books or paper and record the dates of each phase of the moon.

Students share with their families their moon viewers.

Read books about the moon and Earth.

Send home a list of websites and encourage students to look these up with their families.

Moon Over My Cookie

When the **full moon**'s big and bright and round;
When you look up and it's easily found.
We see the entire sunlit side during this phase of the route;
These are the nights that the werewolves came out.

Waxing gibbous is one of the phases before the new moon;
It's still bright enough to light up my room.
Nibble that cookie till it looks like the man in the moon's belly;
He's been eating too much green cheese and jelly.

Quickly turn your cookie over, but don't take a bite;
For the **waning gibbous** you now have in sight.
I'm the grandmother moon, light yet dark;
I give off enough light for a night stroll in the park.

Flip that cookie over and eat it half gone;
But only to the halfway mark and don't go beyond. This
is the **first quarter** that looks like the big letter D; It's
pulling at the water to make a high tide sea.

Turn your cookie over and take a little gaze;
For this is the **last quarter** in the moon's phase.
I am half gone … but yet half here;
I look like the first quarter's reflection in the mirror.

Turn the cookie over and eat it into a smile;
The moon is away from the earth thousands of miles.
Shhhhh, be quiet and don't make a peep;
I'm the **waxing crescent** that'll cradle you to sleep.

Switch the cookie around until I look like a C;
C is for cookie that's good enough for me.
I'm the **weaning crescent** a sliver in the sky;
I'm almost gone so wave bye-bye.

Now eat your cookie, don't leave a dot;
Don't feel uneasy knowing I'm there … but not.
I'm without moondogs, the **new moon**, the dark moon;
But watch closely—I'll be back soon.

—Lindy Stauffer

new

waxing crescent

first quarter

waxing gibbous

full

waning gibbous

last quarter

waning crescent

PHASES OF THE MOON

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		New moon crescent	Quarter moon	gibbous full moon	gibbous	Quarter moon Crescent

Moon Spinner