



Moon Phases Lesson Plan

Overview: In this hands-on lesson, students learn about and discuss the phases of the moon through a variety of hands-on activities, including making their own moon flipbooks and cookie moons.

Grades: Preschool and K-2

Length of Lesson: 30-45 minutes

Related Video: “Starling Discovers the Moon” episode

Learning Goals:

After completing this lesson, students will be able to:

- Describe the fact that the moon has different phases.
- Explain that the moon looks different to us on different days throughout the month.
- Discuss the different ways the moon looks throughout the month.
- Explain that phases of the moon make it look a little different every day, but it looks the same again about every four weeks.

Related Goals from the Space Racers™ Curriculum:

Scientific Inquiry/Observation:

Looking carefully is one way to learn about things around us.

- Monitor objects to detect changes over time or to observe patterns.
- Communicate findings verbally or by using pictures, graphs, charts, and/or representations.

Key Facts about Space and Space Exploration/The Moon:

- There are different phases of the Moon that make it appear a little different every day, but it looks the same again about every four weeks.
- The Moon can sometimes be seen at night and sometimes during the day.

Materials:

- “Moon Phases Cards”
- “Moon Phases Flipbook”
- scissors (for “Moon Phases Cards” and “Moon Phases Flipbook”)
- Oreo cookies (or similar cookies with black cookie and white filling) and popsicle sticks, spoons or other tool that students can use to scrape the Oreo filling into moon shapes.
- plates or trays to place cookies on.
- stapler (for “Moon Phases Flipbook”)
- pencil or crayons (for “Moon Phases Chart”)
- “Moon Phases Chart”

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Prep:

- Print out one “Moon Phases Chart” per student.
- Print out one “Moon Phases Flipbook” per student. If possible, print the flipbook onto firm paper to make it easier for students to flip the pages.
- Print out one copy of the “Moon Phases Cards” handout for every 3-5 students.
- Gather enough cookies so that there is about 1 for each student in your class. (Each group of 3-5 students will need 4 cookies each.) Place the cookies on plates, placing 4 cookies on each plate.

Lesson Activities:

Activity 1: Moon Discussion

1. Explain that today you will begin a discussion about the moon.
2. Ask students to describe when the best time is to see the moon (at night). Ask students if the moon can also be seen during the day (Yes, it can be seen during the day too. At different times of the month it is easier to see).
3. Ask them if the moon looks the same every time they look at it. Ask them to explain how it changes. (Sometimes you can only see a little white sliver and sometimes you can see the whole moon.)
4. Explain that it takes the moon 29 days (about 1 month) to travel around the earth and the different phases that we see are when the moon is at different points in that orbit.
5. Hold up the “Moon Phases Cards” and point out the different phases that the moon goes through.

Fun facts to share:

- We can only see half of the moon from earth, since the other side is always turned away from us.
- As the moon travels around the earth, we see different fractions of the moon, as it is lit by the sun.
- “Waxing” means growing and is used to describe the moon as it grows from new moon to full moon.
- “Waning” means shrinking and is used to describe the moon as it gets smaller from full moon to new moon.
- The “first quarter” is when the moon has completed $\frac{1}{4}$ of its orbit around the earth. This is when the moon looks like a “half moon.”
- The “last quarter” is when the moon has completed $\frac{3}{4}$ of its orbit around the earth and also looks like a “half moon” to us.

Activity 2: Cookie Moons

1. Divide students into groups of 3-5 students each. Give each group four cookies and a copy of the “Moon Phases Cards” handout.
2. Ask students to twist open their cookies and put both sides down on the table, with the cream side facing up.
3. Ask each group to recreate the eight phases of the moon, using the eight cookie halves and by scraping the cream onto or off their cookies with a popsicle stick, spoon or other tool, to make them look like the shapes featured on the “Moon Phases Cards.” (Students may need to scrape some of the cream off of one cookie and add more to another to create their phases.)
4. Each group should place their eight moon phases in the order shown in the cards.
5. After each group has placed its cookie moons in order, ask them to check their moon cookies with the phases in the “Moon Phases Cards” to make sure they have their phases in the right order.
6. Have students observe the creations of the other groups.

Tip: For an example of what the moon phase cookies could look like check out the following website:

<http://www.sciencebob.com/blog/?p=828>

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Activity 3: Moon Phase Flipbook

1. Give each student the “Moon Phases Flipbook.” Have students cut out each of the 8 pages in the book.
2. Have students put the pages in order from 1 to 8, with 1 on top and 8 on the bottom.
3. For easier flipping, paste each one onto a separate index card.
4. Staple the pages on the left hand side.
5. Have students place their left hand on the left hand side of the book, their right hand along the right side of the book, and use the thumb on their right hand to flip the pages, starting with the top page and going to the bottom.
6. Ask students to flip the pages and observe how the moon changes phases.

Activity 4: Month-long Moon Observation

1. Give each student a copy of the “Moon Phases Chart” to take home.
2. Ask students to look at the moon at night with their family and draw what they see in the “Night 1” box on the chart.
3. Hang a copy of the Space Racers™ “Moon Phases Chart” in the classroom and have a volunteer draw what they saw in the classroom chart.
4. Wait a few days. Ask students to look at the moon again and draw what they see in the “Night 2” box in their chart at home. The next day in class, have another volunteer record what they saw at night.
5. Continue having students look at and draw the moon about 2 times a week for four weeks, until you have completed the chart.
6. Lead a discussion about how the appearance of the moon changed throughout the month.

Optional Activity:

1. Cut up and scramble the “Moon Phases Cards.” Challenge students to put them back in the correct order starting with the new moon and ending with the waning crescent.
2. Watch and discuss the Space Racers™ “Starling Discovers the Moon” episode.

Wrap-up:

1. Lead a discussion about the moon.
2. Ask students to share their observations about the moon and its phases.

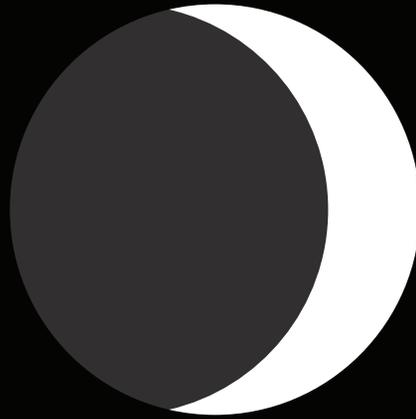


Moon Phases Cards

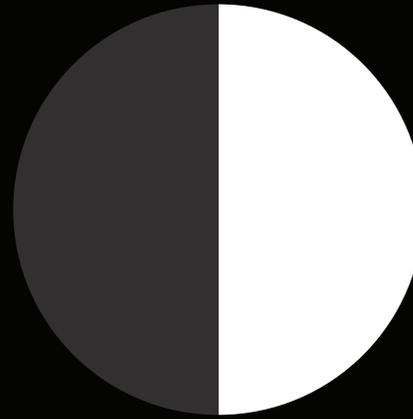
These cards show the different phases of the moon. Print, cut out, and jumble all the cards. Try to put them back in the correct order, from the new moon to the waning crescent.



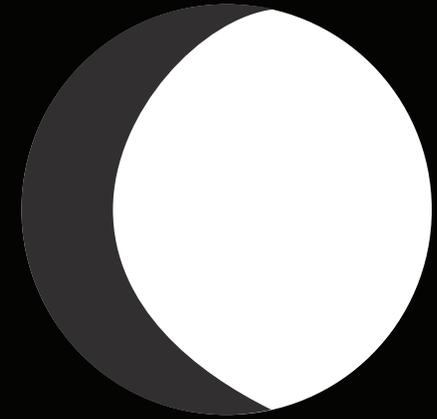
New Moon



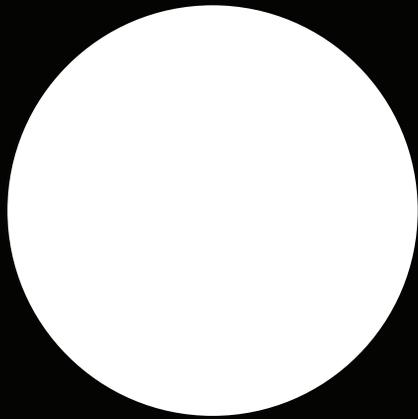
Waxing Crescent



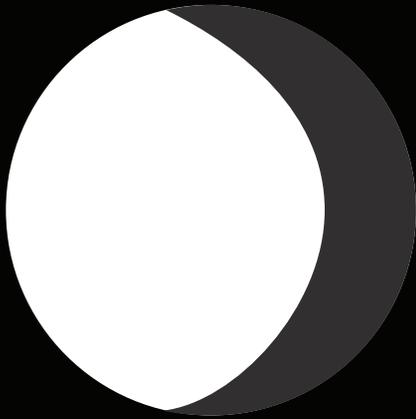
First Quarter



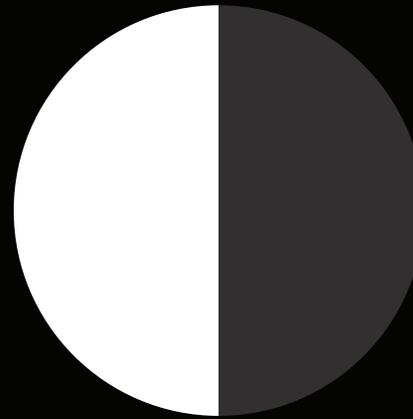
Waxing Gibbous



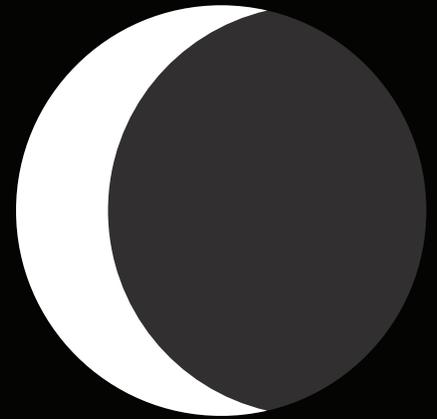
Full Moon



Waning Gibbous



Last Quarter



Waning Crescent



Moon Phases Flipbook

Cut out the cards below and staple them together on the left side. Flip the pages quickly to see the moon change phases. For easier flipping, print the cards on firm paper or paste each one onto a separate index card and staple the index cards on the left side.

<p>1</p> <p>New Moon</p> 	<p>5</p> <p>Full Moon</p> 
<p>2</p> <p>Waxing Crescent</p> 	<p>6</p> <p>Waning Gibbous</p> 
<p>3</p> <p>First Quarter</p> 	<p>7</p> <p>Last Quarter</p> 
<p>4</p> <p>Waxing Gibbous</p> 	<p>8</p> <p>Waning Crescent</p> 



Moon Phases Chart

Look at the night sky and draw the moon in the "Night 1" box below. Wait a few nights, look at the moon again, and draw the moon in the "Night 2" box. Draw pictures of the moon on other nights until you finish your chart. Hang your chart for family and friends to see.

NIGHT 1

Date: _____

NIGHT 2

Date: _____

NIGHT 3

Date: _____

NIGHT 4

Date: _____

NIGHT 5

Date: _____

NIGHT 6

Date: _____

NIGHT 7

Date: _____

NIGHT 8

Date: _____