

Let's Lasso the Moon

Phases of the Moon

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Grade Level	1st Grade	**Time Frame**	30 Days
Subject	Science	**Duration**	120 minutes

Essential Question

What predictions can we make about objects we see in the sky?

Summary

During this interactive science lesson, students will learn about the patterns of the moon and lunar phases. Over the course of one month, students will observe the moon, look for patterns, and make predictions about the changes in the moon each night.

Snapshot

Engage

Students watch a time-lapsed video that shows all of the phases of the moon. Afterwards, students will discuss their observations and questions from the video.

Explore

Students use the Moon Giant website to discover what the moon looked like on the day they were born. Once students know their birth date moon, the class will create a bar graph to see how many different moon phases are represented.

Explain

Students watch an interactive video that uses hand and body movements to teach the phases of the moon. Students will then create a class Anchor Chart with descriptions of each of the moon phases.

Extend

Over the course of one month, students keep a moon journal. To make their journal, students will go outside each night and observe the moon. After their nightly observations, students will record their predictions about how the moon will change.

Evaluate

Students choose one hands-on activity from a Choice Board to show they can recognize the phases of the moon. They will also answer a final question that asks them to predict what the moon will look like 1 month from that day.

Standards

Next Generation Science Standards (Grade 1)

1-ESS1: Earth's Place in the Universe
1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Attachments

- Lesson-Slides-Lets-Lasso-the-Moon.pptx
- Moon-Journal-Lets-Lasso-the-Moon.docx
- Moon-Templates-Lets-Lasso-the-Moon.docx
- Phase-Viewer-Lets-Lasso-the-Moon.docx

Materials

- Computers or student tablets with internet access
- Chart paper
- Markers or crayons
- Circle cut-outs or paper plates
- Lesson slides (attached)
- Moon journal (attached; one per student)
- Moon templates (attached)
- Phase Viewer instructions (attached)
- Materials for Choice Board (amount will depend on student interest)
    - white paper (9 pieces per student choosing “Moon Book”)
    - black construction paper (1 per student choosing “Phase Viewer”)
    - clear plastic cups (2 per student choosing “Phase Viewer”)
    - yellow paint or yellow dot sticker (1 per student choosing “Phaser Viewer”)
    - Sharpie marker (for students choosing “Phase Viewer”)
    - Round rocks (8 per students choosing “Moon Rocks”)
    - Black paint (for students choosing “Moon Rocks”)
    - Oreo cookies (8 per student choosing “Oreo Moons”)

Engage

Begin the lesson with the title on **slide 1**. Inform the students that the class is going on an adventure together to discover new things about the moon!

Display **slide 2.** Explain that the first thing the students will do is observe lunar phenomena. Let them know that as they are watching the video, they should take note of things they notice or wonder about. At the end of the video, they will participate in an instructional strategy called I Notice, I Wonder.

Display **slide 3.** Show the time-lapse video of the moon to the class.

Embedded video
https://youtube.com/watch?v=LC5rEhxGqT4

Once the time-lapse video is over, create a T-Chart on chart paper that has “I Notice” on the left side and “I Wonder” on the right side. Bring the students back together and ask them to share some things with the class that they noticed. Write their ideas under the “I Noticed” column.

When you have sufficiently captured what students have “noticed,” have them share some questions they still have about the moon or some things they may "wonder” about. Write them under the “I Wonder” column. Explain that the goal of the lesson is to answer as many of these questions as possible.

Display **slides 4-5.** Share the lesson’s essential question and learning objectives with the class.

Explore

Teacher's Note: Setting up Ahead of Time

Prior to this lesson, make sure you have a list of all of your students' birthdays, including the month, day, and year. If you do not have a class set of tablets or have only a small number of class computers for the students to share, be sure to load and pin the Moon Giant website ahead of time. Create the outline of a bar graph in advance to be labeled later in the lesson.

Transition to **slide 6.** Have students scan the QR code, or take turns on the class computer to find out what the moon looked like on the day they were born.

Display **slide 7.** Pass out one paper plate or circle cut-out to each student, or use the **Moon Templates** handout to cut out circles. Pass out one marker or crayon to each student and have them recreate the moon as it was on their birthday.

Display **slide 8.** Have students share their birth date moon with an Elbow Partner or their table groups. Use the following guiding questions to keep conversations going:

- What do your moons have in common?
- How are your moons different?
- What are some things you notice about your group's moons?

Take a few minutes to have students share out some of the things they talked about with their classmates.

Display **slide 9.** Walk the class through the steps to create a bar graph. One way to do this is to hold up a full moon example and invite students who have full moon birth dates to place their moon on the graph. As you work through the different phases, invite students to place their moons on the graph.

Teacher's Note

It is not important for students to know the names of the moon phases right now. They need only to recognize that one looks similar to the one they drew.

Once all of your students' birthday moons are placed on the bar graph, ask a few guiding questions such as:

- Which type of moon were most of you born on?
- Which type of moon were the least of you born on?
- Are there any moon types that have the same number?

Explain

Transition to **slide 10.** Announce to the class that you are going to play the Moon Phase Song a couple of times. The first time, play the video so they can just listen and watch. The next couple of times, have the students try out some of the hand and arm movements that go along with the song.

Embedded video
https://youtube.com/watch?v=cFm4ZdM9C7s

After you have watched and interacted with the song, use **slides 10-17** to show images of the eight phases of the moon. As you display one phase of the moon, ask students to match the slide example to a lunar phase in the bar graph the class created during the **Explore** step.

Label the bar graph with their answer to create an Anchor Chart. Encourage the students to describe the phases of the moon in their own words as well.

- New Moon **(slide 10)**
- Waning Crescent **(slide 11)**
- Third Quarter **(slide 12)**
- Waning Gibbous **(slide 13)**
- Full Moon **(slide 14)**
- Waxing Gibbous **(slide 15)**
- First Quarter **(slide 16)**
- Waxing Crescent **(slide 17)**

Extend

Transition to **slide 18.** Inform the class that they will be making important scientific observations and predictions over the next thirty (30) days. Pass out one page of the **Moon Journal** handout. Share with students that each night (with a parent or guardian), they will go outside to look at the moon. In their moon journals, they should draw what they see and label the moon phase.

Optional Tech Integration

If possible, instead of having students draw their observations, consider having them take a photo of the moon and upload it to the class LMS such as Seesaw with a short audio description of what they see.

Teacher's Note: Moon Journal Check-Ins

Each day (consider doing this during the morning meeting or calendar time), take a few minutes to discuss what the moon looked like the night before. Use **slide 19** to guide a brief 5-minute discussion each day. On *Friday* before the students leave for the weekend, review **slides 20-21** with them. Discuss the slight change from the rest of the week's observations. On Friday evening, in addition to observing and describing what they see, ask them to predict what the moon will look like on the coming Monday evening. Explain they will make the prediction based on the observations they have made throughout the week.

Teacher's Note: Supporting Your Students

If students are unable to complete their journals or make their observations at home in the evenings, instruct them come to the small group table and visit the Moon Giant website to see what the moon looked like the day before.

Evaluate

Provided students with a Choice Board to share their understanding and predictions of moon phases.

Teacher's Note

If you are working as a team with other teachers on this lesson, consider grouping students based on their activity choice. Each teacher could facilitate a different choice.

Optional Tech Integration

For the Moon Book, students could also use Book Creator to make digital books.

Display **slides 22-26,** which have kid friendly language describing the choices. Students have the following choices that cover a variety of learning styles and preferences:

- **Breaking News**:
  Students can use computers or tablets to record a news broadcast. Their news broadcast should discuss the phases of the moon and how knowing the patterns can help make accurate predictions on lunar phases.
- **Moon Book**: Make copies of pages 2 and 3 of the **Moon Template** handout, or c
  ut 9 large circles of paper and staple them together into a book. On the right side of the pages, have students color what the moon looks like for each phase. On the left side of the pages, have students write about the phase. Ask students how their book helps them make predictions about the moon.
- **Oreo Moon Craft**:
  Twist open Oreos and use a spoon to carve out the cream filling, creating a crescent shape. The shadowed part of the moon is represented by the cookie. The cream filling represents the light side of the moon. How can the cookie moons help us make predictions about the moon?
- **Phase Viewer Cup Craft**:
  Craft an interactive phase viewer using black paper, two clear plastic cups, a yellow dot, and black markers. You may want to color the cups ahead of time if using a permanent marker. Step by step directions are in the **Phase Viewer Handout**. How can the craft help us make predictions?
- **Moon Rocks**: Have students paint round stones with black paint to match the phases of the moon. Ask students put the phases in order and talk about how the rocks can help make predictions.

Show the choice board on **slide 27.** Give students time to decide how they want to show their learning.

Students will show mastery by being able to identify the phases and explain how they can use the moon phase patterns to make predictions.

Once projects have been completed and shared, assess student understanding of using patterns to make predictions by showing what today's moon looks like. Access an example of today's moon by visiting https://www.moongiant.com/phase/today/. After students have reviewed the current lunar phase, ask them what they think the moon will look like one month from today. Have students draw what they think the moon will look like a month from now as an Exit Ticket. (Students should respond that the moon will look like it does today.)

Resources

- Como Planetarium. (2015, October 23). *The Moon Phase Song* [Video]. YouTube. https://www.youtube.com/watch?v=cFm4ZdM9C7s&feature=youtu.be
- Happy Tot Shelf. (2020). *Moon Phases Learning Toy*. https://happytotshelf.com/moon-phases-learning-toy/
- K20 Center. (n.d.). Anchor Chart. Strategies. https://learn.k20center.ou.edu/strategy/58
- K20 Center. (n.d.). Book Creator. Tech Tools. https://learn.k20center.ou.edu/tech-tool/610
- K20 Center. (n.d.). Choice Board. Strategies. https://learn.k20center.ou.edu/strategy/73
- K20 Center. (n.d.). Elbow Partners. Strategies. https://learn.k20center.ou.edu/strategy/116
- K20 Center. (n.d.). Exit Ticket. Strategies. https://learn.k20center.ou.edu/strategy/125
- K20 Center. (n.d.). I Notice, I Wonder. Strategies. https://learn.k20center.ou.edu/strategy/180
- K20 Center. (n.d.). Seesaw. Tech Tools. https://learn.k20center.ou.edu/tech-tool/671
- K20 Center. (n.d.). T-Chart. Strategies. https://learn.k20center.ou.edu/strategy/86
- NASA Goddard. (2014, December 9). *NASA | Moon Phases 2015, Northern Hemisphere (Moon Only)* [Video]. YouTube. https://www.youtube.com/watch?v=LC5rEhxGqT4&feature=youtu.be