

Moon Phases

Companion Text: If You See the Moon, by Zia Wells

Subject Area & Grade Level: Science, 5th Grade

Materials: Flashlight, Styrofoam ball on a stick or pencil

Objectives

After this lesson, students will be able to:

- Conduct scientific observations, and analyze scientific data
- Explain why the moon has phases
- Identify and evaluate scientific implications in literature

Staging Activity

Have students keep a log of the moon for one month. Each day they should record whether or not they see the moon, and if so, what time they see it, and what the moon looks like. After a month, have students bring their logs to class, and continue the lesson. For best results, have student logs begin during the new moon.

Core Activity

Have students take out their logs, and study them independently for a minute. Then, have them write a summary of their log, identifying any trends or patterns they see. Arrange students in groups of 4-5 students each. Have them present their data to each other, with each student having 1-2 minutes to share his or her log summary. Explain that students should have noticed that the moon looks different on different days, and that there is a pattern to the way that the moon changes. Tell students that you don't expect them to be able to complete the worksheet you are about to give them, but that they should do their best to fill in as much as they can, and that you will correct it together afterward. Then, give each student a copy of the attached worksheet, and ask each group to attempt to complete the chart together, drawing on the insights of everyone in their groups.

Lastly, have students correct their own worksheets as you go over the answers using the attached Answer Key. Explain that, from earth, we only see the part of the moon illuminated by the sun. Since the moon is constantly moving around the earth, the amount of sun that hits the moon is constantly changing, which changes what we see of the moon, and what time of day we can see it. (Note that moonrise and moonset times vary depending on geographical location and time of year, but transit time across the sky is always 12 hours.) Be sure students understand that the moon itself is a sphere, and does not change shape. Have a student hold a flashlight stationary, while you model being the earth with the moon (a ball) revolving around you. Highlight the new moon (ball between earth and sun), and full moon (earth between sun and ball) phases, and be sure the moon is revolving counterclockwise.

Extension



Read the story. Then, ask, “In what phase was the moon in the story? Which phase is next?”

Moon Phases

What the moon looks like	What it's called	When you can see it


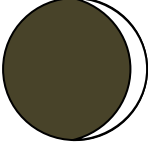

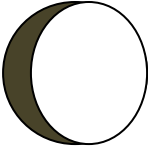
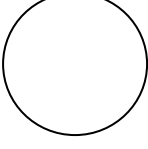
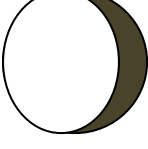
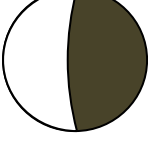
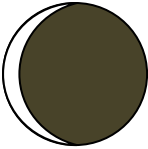


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Moon Phases—Answer Key

What the moon looks like	What it's called	When you can see it
	New Moon	6am-6pm
	Waxing Crescent	9am-9pm
	1 st Quarter	Noon-midnight
	Waxing Gibbous	3pm-3am
	Full Moon	6pm-6am
	Waning Gibbous	9pm-9am
	3 rd Quarter	Midnight-noon
	Waning Crescent	3am-3pm





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