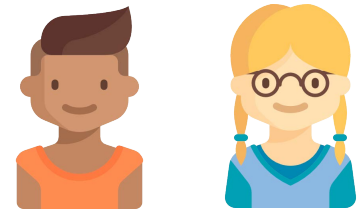


NASA Spotlite Interactive Lesson

Moon Phases and Shadows Grades 4-8



Student Packet



NASA Spotlite Interactive Lesson Guide



What are NASA Spotlites?

NASA Spotlites are 90-120 second student-produced video segments that address common science misconceptions.

NASA Spotlites are designed to increase scientific literacy in a standards-based classroom. By producing Spotlite videos, students gain production experience, as well as deepen their understanding of science content. Approved NASA Spotlites can be found at the NASA eClips website. <https://nasaclips.arc.nasa.gov>



A misconception is a view or opinion that is incorrect because it is based on faulty thinking or understanding.

This is an Interactive PDF. Features in this packet may include:

- fillable boxes
- quick checks
- multiple choice questions
- interactive GIFs (graphics interchange format)
- links to videos and online interactives

The hyperlinks included in this document open PDFs or webpages and may perform differently based on the device being used. Links may have to be cut and pasted into a web browser to open. PDFs and other documents may need to be downloaded to view.

Try using Adobe Acrobat Reader and Flash Player for optimal performance of all interactive features included in this guide.

Save



Remember to save your responses.

Under "file" choose "save as."

Type your name in front of the document name.

Choose "save."

Pretest

Moon Phases and Shadows Grades 4-8 Pretest NASA Spotlite Interactive Lesson

Read each question and select the best choice.

1. Which of the following does NOT play a part in creating moon phases?



Image credit: SVS.GSFC.NASA.gov

2. A new moon occurs when

4. The eight distinct stages in the Moon's cycle are called

3. When the illuminated portion of the Moon seen from Earth is getting larger, the Moon is said to be

5. Which of the following is a correct statement describing moon phases?

Engage

In today's lesson you will learn about the phases of Earth's Moon. Using interactive Frayer Models, you will learn key vocabulary that will help you form a clearer understanding of what causes the Moon's phases.

What do you already know about the phases of Earth's Moon?

True or False: The phases of the Moon are caused by shadows cast on its surface by other objects in the solar system.

Spotlite Video

Next, you will watch a short video on what causes the phases of the Moon. As you watch the video, pay close attention to any new vocabulary.

NASA Spotlite: Moon Phases and Shadows



Video Links - NASA Spotlite: Moon Phases and Shadows
NASA eClips™ Website - <https://nasaclips.arc.nasa.gov>
NASA eClips™ YouTube - https://youtu.be/_5AG2dFxe4s

Explore

Explore Activity

Visit the moon interactive at Moon.NASA.gov.
From the tools menu, select phases.

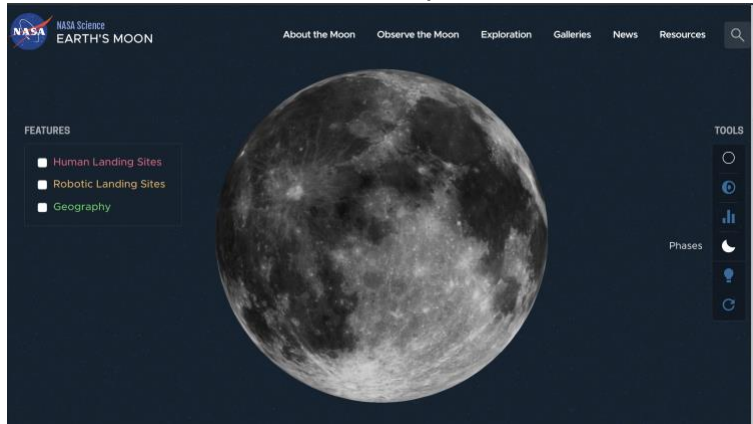
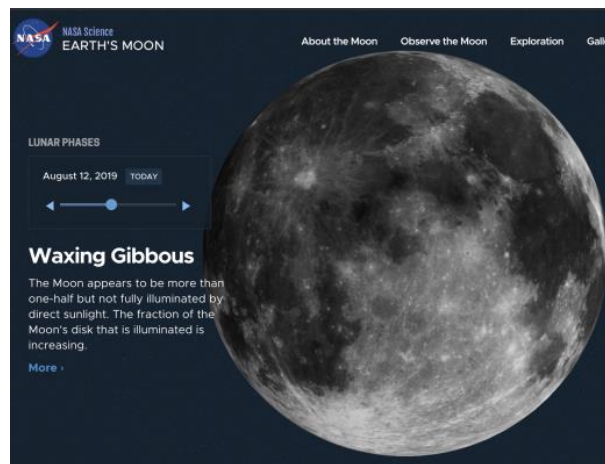


Image credit: Moon,NASA.gov

A slider bar will appear.



Select today's date.What phase is it today?

What phase was it 2 days ago?

What phase will it be a week from today?

How would you describe the pattern you see in the changing moon phases?

As you move the slider to the new moon, is the Moon still visible?

Explore

Think-Pair-Share

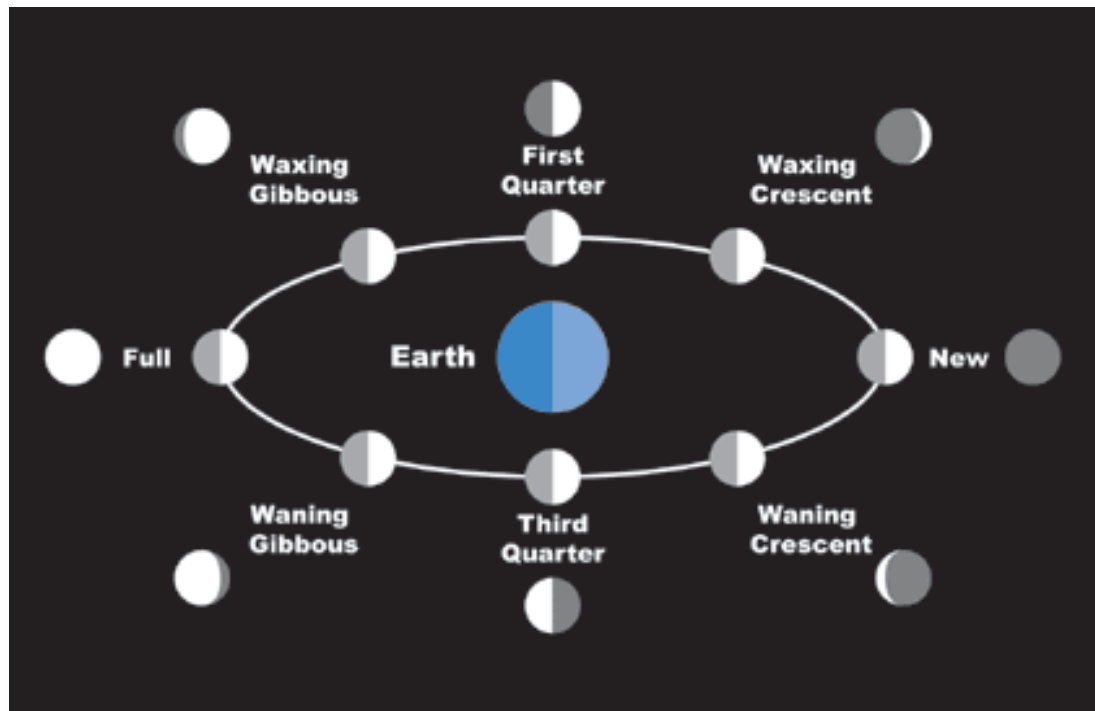


Image credit: spaceplace.nasa.gov

In this image of the phases of the Moon, where is the Sun?

Resources

Fruyer Model for Vocabulary Development

Use the graphic organizer to write definitions, characteristics, examples and non-examples for a vocabulary word. You can include drawings, graphics, and diagrams.

The graphic organizer is a central diamond shape with four rectangular boxes attached to its sides. The top-left box is labeled 'Definitions' and has a green border. The top-right box is labeled 'Characteristics' and has a yellow border. The bottom-left box is labeled 'Examples' and has a blue border. The bottom-right box is labeled 'Non-examples' and has a red border. The central diamond is outlined with a black border.

Definitions

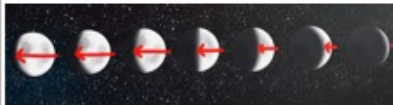
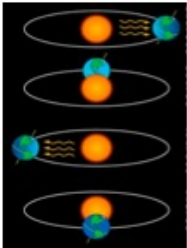
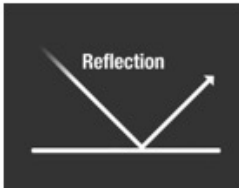
Characteristics

Examples

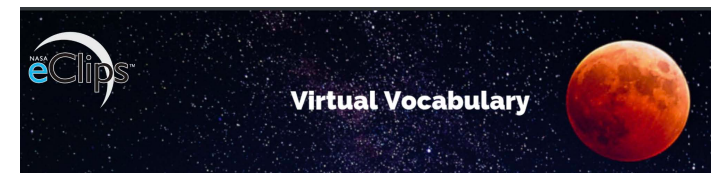
Non-examples

Explain

Vocabulary Words

Word	Definition	Word	Definition
MOON PHASE 	The phase of the Moon is how much of the sunlit side of the Moon that we see from our perspective on Earth.	PATTERN 	A pattern is a repeated design or recurring sequence.
WANING 	Waning is an adjective that means "decreasing," as in a "waning crescent moon."	WAXING 	Waxing is an adjective that means "increasing," as in a "waxing crescent moon."
REVOLVE 	To revolve is to circle around something or move in an orbit.	REFLECTION 	Reflection is the bouncing of light waves (or sound -- echo) off a surface.

Visit the NASA eClips™ Virtual Vocabulary for more definitions.



Elaborate/Extend

Elaborate/Extend Activity

This picture shows the Moon rising over a ridge in the Wasatch Mountains, Utah.



Image credit: Solarsystem.NASA.gov

What is causing the moon phase shown in this picture?

Evaluate

Identify Misconception

What is a common misconception people have about moon phases and how can you correct this misconception?

Carefully re-watch the NASA Spotlight video about the Moon to assess your understanding of moon phases.

NASA Spotlight: Moon Phases



Video Links - NASA Spotlight: Moon Phases and Shadows
NASA eClips™ Website - <https://nasaclips.arc.nasa.gov>
NASA eClips™ YouTube - https://youtu.be/_5AG2dFxe4s

Vocabulary Review

Look at each picture. Name each moon phase.

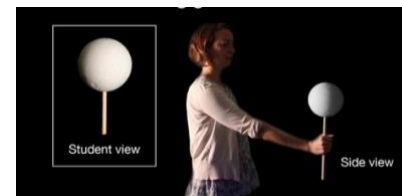
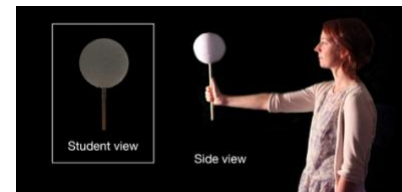
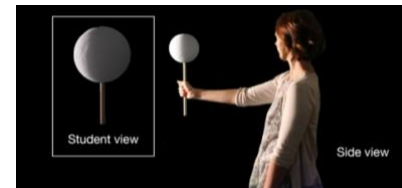
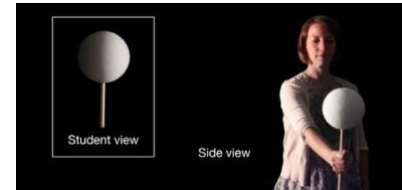


Image credit: JPL.NASA.gov

Posttest

Moon Phases and Shadows Grades 4-8 Posttest NASA Spotlite Interactive Lesson

Read each question and select the best choice.

1. Which of the following does NOT play a part in creating moon phases?

2. A new moon occurs when

3. When the illuminated portion of the Moon seen from Earth is getting larger, the moon is said to be



Image credit: SVS.GSFC.NASA.gov

4. The eight distinct stages in the Moon's cycle are called.

5. Which of the following is a correct statement describing moon phases?

Product Information

Image Credit:

female teacher - <https://www.careerindia.com/img/2018/06/education-3420037-1920-1528192194.png>

male teacher - <https://i.graphicmama.com/blog/wp-content/uploads/2017/01/27100054/afro-american-teacher.jpg>

moon phase - NASA SVS <https://svs.gsfc.nasa.gov/4118>

waning - NASA SVS <https://svs.gsfc.nasa.gov/4118>

revolve - NASA Space Place <https://spaceplace.nasa.gov/seasons/en/> pattern - NASA Space Place <https://spaceplace.nasa.gov/seasons/en/> waxing - www.wikihow.com

reflection - NASA https://science.nasa.gov/ems/03_behaviors

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