



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Learn more about the moon, find out why it looks different at different times of the month and make a model of the moon phases.



Supplies Required:

- 2 clear plastic cups, 1 black plastic cup
- Black stickers or black construction paper
- Scissors
- Ruler
- Glue
- White construction paper, Yellow paper
- Black permanent marker pen/Sharpie
- Clear tape

Video

Follow along as you listen to the passage about moon phases read aloud: <https://tinyurl.com/ycmx126y>

Learn how to make your cup moon phases: <https://tinyurl.com/yae48vm7>

Overview

The scientific term for moon is *lunar*. Many nights you may have looked up at the sky and wondered about the moon. In the read aloud, you learned the moon does not give off its own light. The moon reflects the light of the sun. On the moon there is no air, no water, and therefore no life. The moon orbits around the Earth every 29.5 days. An orbit is the curved path a planet takes as it revolves around another body. The moon appears to look differently each night because the angle between the moon, the earth, and the sun changes as the moon revolves around earth. The amount of light reflected off of the moon changes, and this is what we see as the phases. When the moon is in waxing phases that means the amount of reflected light is increasing. When the moon is in waning phases that means the amount of reflected light is decreasing.



Instructions

1. Using the clear cup and black marker, mark 8 points as shown in the video making sure the lines are evenly spaced
2. If you don't have a dark cup, use a another clear cup , measure, cut and place a piece of black paper inside the cup, make sure the black paper fits the inside of the entire cup
3. Use a yellow sticker(represents the sun) and place 4 lines down on the black cup or cut a circle from a yellow piece of paper and glue it to the cup, still 4 lines down
4. Place the black cup inside of the clear cup for quick viewing
5. Write the 8 moon phases on the labels - **new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, third quarter, waning crescent**
6. Remove the black cup for now. If you don't have any pre made labels, make your own with a white piece of paper and tape or glue them to the clear cup
7. Start with the new moon label and follow the order as shown in video
8. Use the black paper and cut 4 circles , all equal to the size of your sun, follow next steps in the video
9. If you don't want to use construction paper , draw the moon phases directly on the cup
10. For help with drawing refer back to the images in the overview section
11. After you're done making your moon phases place the black cup back inside the clear cup
12. Test your model!

Additional Resources

Think About It! Why does the moon appear to change every night? How would the phases be affected if the moon did not revolve around the earth? What would we see if the moon was in the direct path of the sun's light?

1. To learn more about phases of the moon watch this video: <https://tinyurl.com/y8uf96l7>
2. Why does the moon change? <https://tinyurl.com/ycho34>
3. Fun moon facts: <https://tinyurl.com/y846pjhh>
4. To find out more about the new moon, watch and listen to this: <https://tinyurl.com/yd2dbrr3>

Share It Out

What could you tell someone you know now that you didn't know before about phases of the moon? What fun fact could you share with others? Share a photo of your model and video on social media using the hashtags:

#MoonPhasesReadAlong
#ProjectExploration
#StemAtHome

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 117. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at: www.projectexploration.org/character-contest.



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