Nature-Watch Activity Kit

Moon Phase Memory Game

(Nature Watch Kit #161)

Kit Contents

	Kit Size		
	1	**25**	**100**
Item:	Quantities:		
Black colored game	8	20	800
White colored game	8	20	800
Moon Phase sticker	1	25	100
Moon Phase answer	1	25	100
Baggies	0	25	100
Instructor Manual	1	1	1

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and Science, Technology, Engineering, and Math (STEM) extensions (on back) to use in adapting and extending this activity to other subject areas.

Next Generation Science Standards Alignment

3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

5-PS2-1. Support an argument that the gravitational force exerted by the Earth is directed down.

MS-ES1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the moon, and seasons.

MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

HS-ESS1-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

See Back for STEM Extensions

This Nature Watch Activity Kit contains an Instructor Manual and materials to implement the curriculum. The kit was designed to be used with adult supervision only. Unsupervised use is not recommended.

Nature Watch 5312 Derry Ave. #R, Agoura Hills, CA 91301
800-228-5816 info@nature-watch.com www.nature-watch.com

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STEM Extensions

Science

Make plans to see a lunar eclipse the next time one comes around. You can find out on the news or online when there will be one that is visible from your region. To prepare, research how eclipses happen and discuss it with your classmates.

It takes 29 ½ days for the moon to go through a full cycle. Go outside each evening for the next 30 days and draw what you see of the moon. If you have binoculars, they would be helpful to get a more accurate drawing. Match up your drawings to the phases of the moon.

Simulate how the moon got its craters. With your hands, mix four cups of flour with half a cup of baby oil in a round cake pan. Pat it down. This is your moon. Standing above the "moon", drop small pebbles – these are like meteorites – on its surface. Remove the pebbles to see your craters.

Technology

Visit the NASA's Eyes website (eyes.nasa.gov), where you can observe the moon from a spaceship's view. Get a feel for what astronauts have discovered through the years via this online or mobile app visualization tool.

Create an infographic about the moon. Take a look at some infographics online to get an idea for the style and purpose of an infographic. Then, use the information from the activity kit to create one about the phases of the moon or gather additional information and create one about the moon in general.

Engineering

Create a model of the moon that showcases the moon's interesting surface texture. Try out a few different materials for the surface (such as puffy paint, sand, gravel, etc.) What is the best material for making the surface look realistic? What tools work well to form the craters in the moon model?

NASA has updated space suits for astronauts over the years. Go online to learn how the space suits of today are similar and different from the one Neil Armstrong wore when he set foot on the moon in 1969. The space suits are specially designed to ensure the safety and comfort of astronauts when they are in space. If you were going to the moon, what are some fun features you could design to enhance the space suit?

Math

For each phase of the moon, calculate what percent of the moon is dark versus light.

After you make moon craters as described under Science, measure the diameter and depth of the craters. What is the average size of your craters? What is the difference in size between your biggest and your smallest craters? What is the difference in size between the "meteorites" that made those craters?

An object's weight on the moon is approximately 1/6 of its weight on Earth. Weigh several objects and calculate their weight on the moon. What would your weight be on the moon?