Nature-Watch Activity Kit

Solar System

(Nature Watch Kit #132)

Kit Contents

	Kit Size	
	25	**100**
Item:	Qty.	
Solar System Cards	25	100
Model Magic Clay packages	2	8
Glue	1	2
Instructor Manual	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

5-PS1-2. Support an argument that the gravitational force exerted by Earth on objects is directed down.

5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth.

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

MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in 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 solar or 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.

Imagine that you are a space traveler and you visit your favorite planet. Write and decorate a postcard that you send home to your family to describe the planet and your experience there.

Make hats that look like the Sun, the moon, and each of the planets, with the correct coloration and features (such as rings, gaseous surface, or mountains). Get creative with your materials! Then, have one student take on the role of each planet and, wearing the hats, act out the movement of the planets in the solar system.

Technology

Visit the NASA's Eyes website (eyes.nasa.gov), where you can observe Earth and other parts of the solar system 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 planets. 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 either one of the planets or the whole solar system. You may want to look up additional information to make your infographic even more interesting.

Engineering

Think about what you have learned about the conditions on other planets, such as the temperatures and the availability of resources. What kinds of tools or adaptations would a human being need to have to be able to exist in those kinds of environments? Does it seem possible to you?

On the International Space Station, astronauts use an exercise bike without handle bars or a seat, because in zero gravity they don't need them. They type on laptops that float through the air. It's a very different environment that takes some getting used to. Find out more about how the space station is designed to make life comfortable for the astronauts on board. Based on what you learn, present a "day in the life" story about an astronaut at the ISS.

Math

Use the data chart on page 2 to figure out how many of each planet you could fit lined up inside the Sun, based just on diameter.

How many days on Earth go by before Mercury has a full year? Venus?

If it were even possible, how long would it take you to fly a jet at 600 mph to visit all of the planets and get back to Earth? What if you drove at 70 mph? (Use the data chart on page 4 to answer these questions.)