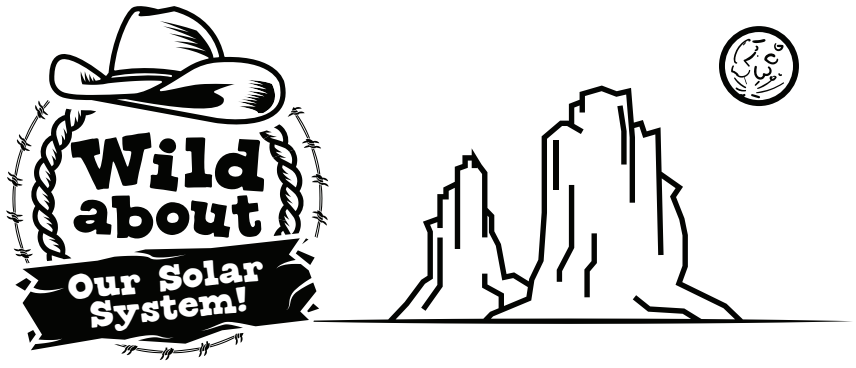


Get ready to blast off as we explore the planets, create some puffy sun paint and make craters with these fun astronomy activities!

What is a solar system?

A solar system is made up of a central star and the objects that orbit, or move, around it. Our star is the sun and there are lots of things that orbit it including Earth, our moon, other planets and asteroids!

Every year, the Earth moves around the sun once—that means you're traveling though our solar system right now! Because Earth is always moving around the sun, we have different seasons and the stars we see in the sky change their position. But Earth isn't the only planet in our solar system. There are seven other planets that orbit the sun. We may not be able to travel to other planets right now, but we can still explore our solar system!

Keep going:

Set up an online reading group with some of your friends or family. You can read the same book, then talk about what you learned, or you can read different books and share cool facts.

Let's Read

Find a comfortable spot and read about the weather! Here are some ideas to get you started:

- *If You Decide to Go to the Moon* by Faith McNulty
- *There's No Place Like Space* by Tish Rabe
- *Sun* by Melanie Mitchell
- *The Magic School Bus: Lost in the Solar System* by Joanna Cole
- *The Planets* by Gail Gibbons
- *Moon* by Lynda Sorensen

You can download digital copies of these books for free from openlibrary.org. Here is how!

1. Go to openlibrary.org.
2. Click the blue "sign up" button on the top right to create a free account. You will be sent a confirmation email.
3. Sign in.
4. Type the book title and author into the search bar.
5. Find your book and click the blue "borrow" button.
6. Don't forget to return your book when you are finished reading it!

Solar System Spinners

What are planets? Planets are large, round objects that orbit a star. Right now you are on our planet, Earth! Earth orbits the sun, which is our closest star. The other planets in our solar system are: Mercury, Venus, Mars, Jupiter, Saturn, Uranus and Neptune. Let's make a solar system with all eight planets! Before you start, you should have:

Before you start, you should have:

- A penny
- Cardboard from a cereal box, or other container
- A large cup or small bowl for tracing a circle
- A pencil
- Scissors
- Markers, crayons or colored pencils

Get started:

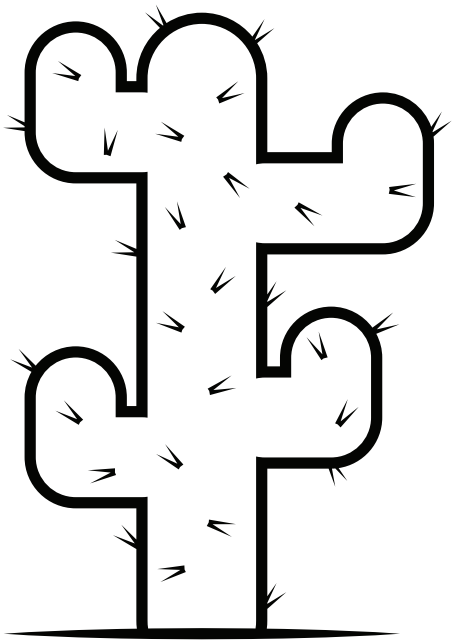
1. Trace a circle around the cup or bowl on the cardboard and cut it out. The circle should be between 4 and 6 inches wide.

2. Make a slit in the center of the cardboard circle that is big enough to hold the penny.

3. Decorate your cardboard circle with the sun (in the center) and the planets around the sun.

4. When you are done decorating the cardboard with your solar system, put the penny in the center of the slit so that it sticks out on both sides.

5. Take one end of the penny and hold it while placing the other on a hard surface like a table or hard floor. Then, give it a spin and watch your solar system in orbit!



You can use this image as a guide to help you make your planets:

https://theplanets.org/solar-system/

Keep going:

Get creative and make another spinner, this time with your own original solar system. Think about what your center star would look like and how many planets might be in your solar system!

More information on the solar system:

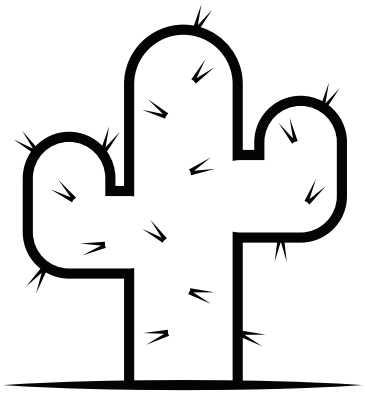
https://kids.nationalgeographic.com/explore/space/what-is-a-planet/
https://spaceplace.nasa.gov/planets/en/
https://stardate.org/nightsky/planets

Cool Craters

What is a crater? A crater is a bowl-shaped hole that was made when a rock from space hit the ground. You can see craters today that were made from meteorites and asteroids that hit the earth long ago! The moon is a great place to look for craters too.

Before you start, you should have:

- **A plate or pie pan**
- **1 cup of flour or other fine powder like cornstarch**
- **1/3 cup of coca powder or sand**
- **5 stones (less than the size of a quarter)**
- **Optional: Paper**
- **Optional: Markers, crayons or colored pencils**



Get started:

1. **Spread 1 cup of flour or cornstarch on the plate or in the pie pan in an even layer. This will be one of the layers of dusty soil on the moon**

2. **Sprinkle the cocoa powder or sand over the flour in an even layer. This will be another layer of moon dust.**

3. **Starting from about one foot above your plate or pie pan, drop a stone (your meteorite) into your moon dust.**

4. **Carefully take the stone out of the pan being careful not to disturb the dust. Can you see the crater you made?**

5. **Try it again with the rest of the stones. Try dropping the stones from different heights or tossing stones from an angle.**

- **What happened when you dropped your stones into the moon dust mixture?**
- **Did dropping your stones at different heights or angles change the size or shape of your craters?**

6. **Now that you have made your own craters, look at some craters on the moon using the following NASA link and see how yours compare! Or, go outside and look at the moon and see if you can see its craters. https://moon.nasa.gov/galleries/images/?page=0&per_page=25&order=created_at+desc&search=&href_query_params=category%3Dimages&condition_1=1%3Ais_in_resource_list&category=51**

Keep going!

Use your paper and art supplies to draw your craters. Use different colors to show the difference between the layers. You can even draw how your rock fell into the pan when it made the crater.

More information on craters

https://www.dkfindout.com/us/earth/meteorite-impacts/what-is-an-impact-crater/
https://www.nationalgeographic.org/encyclopedia/crater/
https://spaceplace.nasa.gov/

Puffy Sun Paint

What is the sun? The sun is a star in the center of our solar system. All the planets in our solar system orbit, or move, around it. The sun is mostly made up of hot, swirling gases. The sun gives us light and heat and can also give us its energy for things we need like electricity. Because the earth is so close to the sun (but not too close!) we have a planet with lots of plant and animal life, including us!

Before you start, you should have:

- **½ cup Elmer's white glue**
- **1 ½ cup shaving cream**
- **Food coloring (red and yellow)**
- **A piece of paper**
- **A paintbrush**
- **A bowl or two**
- **Optional: a bottle cap, sponge, or other materials to add texture**

Note: If you don't have glue and shaving cream, you can use this recipe:

- **¼ cup flour**
- **½ cup acrylic or tempera paint in red and/or yellow**
- **If you don't have paint, you can use water and just mix in a little more flour until it has a consistency like yogurt.**

Get started:

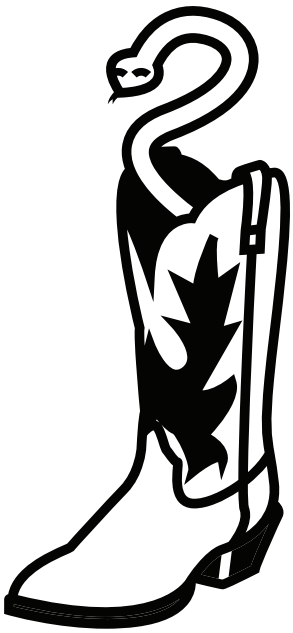
1. **Mix the shaving cream and glue together. It should be thick and puffy.**

2. **Add 3 drops of food coloring of your choice, or divide the mixture into separate bowls and make different colors!**

3. **Use your puffy sun paint just like regular paint to turn your paper into a swirling sun!**

Keep going!

Use objects like bottle caps and sponges to add swirls and texture to your painting!



More information on the sun:

https://solarsystem.nasa.gov/solar-system/sun/overview/
https://kids.nationalgeographic.com/explore/space/sun/
https://stardate.org/astro-guide/ssguide/sun