

Space Science Explorer

Step 1: Explore the sun

It may seem the sun is moving across the sky (think sunrise and sunset), but in fact, we're the ones moving! Here's an activity to help prove it.

Make a shadow poster

Materials you'll need:

- A sunny day
- Paper
- Something to write with
- At least one toy

Steps:

1. Place the paper on the ground. Be sure it doesn't blow away by placing some small rocks on each corner.
2. Have a parent or sibling help by holding the toy up to create a shadow. Place a piece of tape where the toy is (you will need this later).
3. Find the "perfect" shadow and trace the outline on the paper.

Questions to consider:

- *Will the shadow change throughout the day? How will it change?*
- *If you think it will change, why is that?*

Steps:

4. Come back at least an hour later and place the same toy in the same position.
5. Create the new sketch to see how the shadow has changed.
6. Talk about the predictions from earlier. Feel free to come back again later and look to see if it changes more.



Space Science Explorer

Sun fun facts:

- The sun is a star made of hot, glowing gases. Because of this, there are no hard surfaces on the sun.
- If the sun were as tall as a typical door, the Earth would be the size of a U.S. nickel.

Step 2: Observe the moon

Have you ever noticed the moon during the day? Sometimes it seems to be hiding within the clouds.

Learn the Phases of the Moon

Materials you'll need:

- Access to YouTube
- Printed paper (optional)
- Materials to make phases of moon (Play-Doh or Oreos is suggested - but you can be creative)

Steps:

1. Check out [this video](#) to learn more about the phases of the moon and why it seems to change.
2. Try to create the different phases of the moon using household objects. Oreos and playdoh are some great options! You can print off the attached sheet and use that as you guide!

Moon fun facts:

- The moon is visible in the sky for about 12 hours a day. This allows us to see it during the daytime and nighttime!
- We can see the moon because the light from the sun is bouncing off of it and coming back down to Earth.
- The moon rises and sets in different places along the horizon every day.

Additional Resources:

“The Moon Book” by Gail Gibbons

Space Science Explorer

Step 3: Meet the stars

The sun is our closest star. The rest of them are SO far away, and this makes them look like tiny dots. In reality, many of them are much bigger than our own sun.

Make a pretend telescope

Materials you'll need:

- Paper towel roll
- Materials to decorate (stickers, markers, etc.)

Steps:

1. Find some things around the house to make a telescope. Paper towel rolls are great or use rolled up construction paper.
2. Spend some time decorating your telescope.
3. After the sun sets, take your telescope outside to view the stars.
4. See if you can find the north star (it's usually the biggest one at night).

Star Fun Facts:

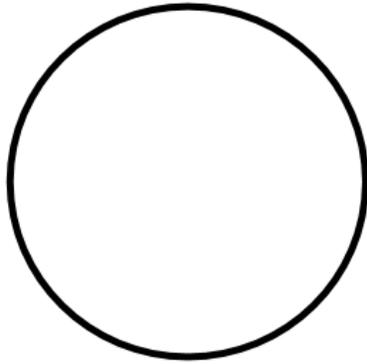
- Light from the sun takes 8 minutes to get to Earth, and 5 hours to reach Pluto!
- Huge stars are hot and blue!
- The brightest star that we see at night, Sirius, is more than 8 light years away.

Additional Resources:

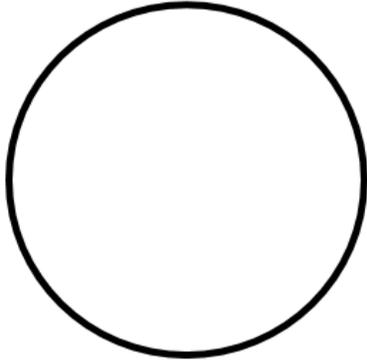
<https://spaceplace.nasa.gov/starfinder/en/> - Create a STAR finder

Space Science Explorer

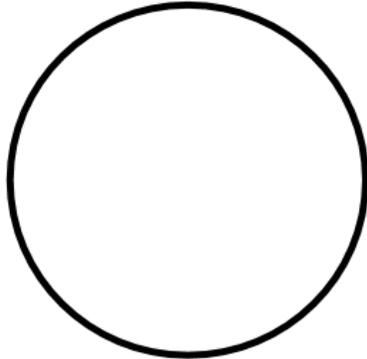
MOON PHASES



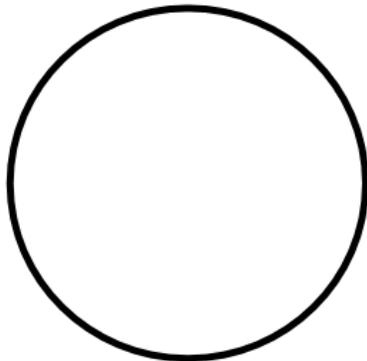
new moon



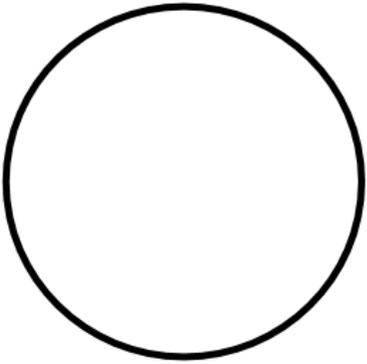
waxing crescent



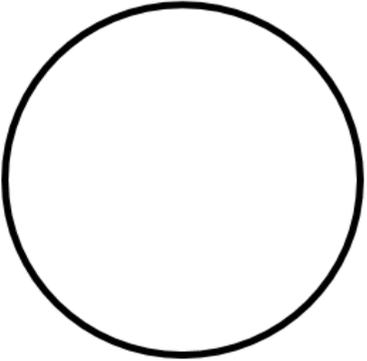
first quarter



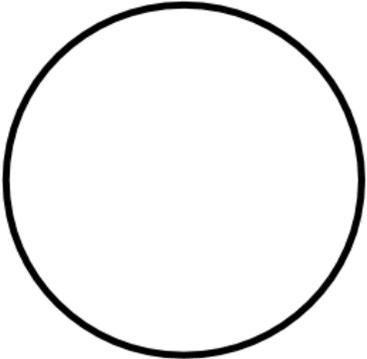
waxing gibbous



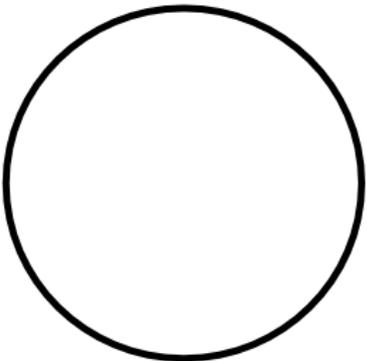
full moon



waning gibbous



last quarter



waning crescent