

Paper Plate Sun

You and your child will investigate the size and distance of our Sun and create artistic representations of its features.

What You Need:

- 1 paper plate
- 1 peppercorn
- Glue
- Scissors
- A pencil
- Various craft items (crayons, markers, pipe cleaners, glitter, tissue paper, etc.)



What to Do:

Version 1: No Layers - for Younger Children

- Add different features of the Sun to your plate like Sunspots or solar flares using the craft items
- Glue a peppercorn on the plate to represent the size of the Earth

Version 2: Layers- for Older Children

- Help your child draw the different layers of the Sun on the plate
 1. Put a dot in the center of the plate.
 2. Core – Draw a circle about two inches in diameter around the dot. Label this circle the 'core'. In the Sun, the core is 27 million degrees F – this is so hot and has such high pressure that hydrogen gas is fused into helium - releasing lots of energy!
 3. Radiative Zone – Draw another circle about two inches away from the core. This circle will be about where the smooth part of the plate ends and fluting begins. Label this zone. In the Radiative zone energy from the core is slowly transported outward. It takes 170,000 years to go from the core to the next layer, the Convective Zone!
 4. Convective Zone – Draw a third circle about 1 inch away from the exterior of the radiative zone. Label this zone. Within the convective zone churning, turbulent motions carry energy toward the surface.
 5. Photosphere – Draw a fourth circle about 1/4 inch away from the convective zone. Label this "photosphere." The photosphere is the 'surface' of the Sun. It is the layer from which the light we see is emitted and where most of the Sun's energy escapes into space. The temperature in the photosphere averages 10,000 degrees F!

6. Chromosphere – Draw one last circle about 1/8th inch away from the photosphere. Although transparent like the Earth's atmosphere, the chromosphere becomes visible from Earth a few seconds before and after a total solar eclipse as a narrow, pink band around the edge of the Sun.

7. Corona – Color or shade the area that is left on the edge of the plate. This is the Corona, which means 'crown' in Latin. The average temperature in the Corona is about 2 million degrees F.

Parent Prompts:

How big is the Sun compared to Earth?
(At the plate scale, the Earth is the size of a tiny peppercorn!

How far away is the Sun from the Earth?
The Earth is 93 million miles away from the Sun! At our paper plate / peppercorn scale, you would need to hold the plate (Sun) and peppercorn (Earth) about 75 feet (23 meters) apart!

What can we see on the Sun?
(We can see dark sunspots and solar flares disrupt the surface. Sunspots are as large as or larger than the Earth (peppercorn) and they are violent storms that release heat and particles from the Sun. The Sun also produces big explosions of energy – solar flares - that may reach Earth and disrupt communications and electricity.)

What is our nearest star? (The Sun!)