PRAIRIE STEM

45 - 60 Minutes

Virtual STEAM Night

Science

Sundial Challenge

Goal: I can make a sundial to observe the movement of light throughout the day.

Indicator: SC.1.11.3.A Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Materials:

- 4 - Yellow Cardstock
- 1 - Sundial Template
- 1 - Glue
- Scissors (not included)
- 1 - Black marker
- 2 - Large Wiggle Eyes
- 1 - Paper Plate
- Pencil (not included)
- 1 - Unsharpened pencil

Book Extension:

Light, Shadows, Mirrors and Rainbows by Natalie Myra Rosinsky

The Astronaut With a Song for the Stars: The Story of Dr. Ellen Ochoa

Instructions:

1. Watch YouTube Video for background knowledge: https://www.youtube.com/watch?v=Gxo8orZ1X7g&feature=youtu.be
2. On a sheet of paper, design your sundial.
3. Use the included template to trace and cut 12 sun rays on the yellow cardstock.
4. Trace a large circle on yellow cardstock. You can use a bowl as a template if needed.
5. Evenly arrange the 12 sun rays around the yellow circle and glue.
6. Write the numbers 1 - 12 on the sun rays around the clock.

7. Add the wiggle eyes and a mouth as the sun's face.
8. Poke a whole in the center of the circle with the sharpened pencil. Then stick the unsharpened pencil in the center.
9. Place the paper plate under the sun to help stabilize the pencil.
10. Place the sundial outside on a sunday day to with the 12 facing north..
11. If unsuccessful, try adjusting the location of the pencil, sun rays, or location of the sundial.
12. Document the challenge using video, photos, drawings, etc.
13. Have fun!

Extension Activities:

- Why does the shadow move around the sundial you made?
- What is casting the light?
- What is blocking the light?
- What are other sources of natural light? See if you can find some outside (at night) with the help of a parent.

Ignite our Future Connection:

- **Planet Earth** Taking care of and respecting the wondrous planet we live on – Earth! Lessons illustrate ways to live and act responsibly when it comes to the Earth's climate, land and water.