

# Make Your Own Sun Clock

Before modern-day clocks, watches, and smart phones, people perceived the passage of time based on the apparent motion of the Sun across the sky. In this activity, patrons will construct their own Sun Clock – small enough to keep in their pocket – and explore how to orient their clocks correctly for them to function accurately.

This activity can be done as a passive station or facilitated as outlined below.

## Ages

- 6 and up and families

## Activity Time

- 20-40 minutes

## Materials

- Sun Clock Table Sign
- Sun Clock template
- White cardstock
- String
- Scissors
- Scotch tape
- Compass (optional)
- Flashlight (optional)



## Preparation

### Prior to your Program

1. Determine the Sun Clock template that works for your location.
2. Print the templates on white cardstock (*enough for one template per participant*). If you anticipate younger patrons participating, consider cutting out some templates ahead of time.
3. Cut pieces of string, one for each Sun Clock, at lengths of approximately 7 inches (20 centimeters).
4. Set up a table with the Sun Clock templates, Sun Clock Table Sign, string, scotch tape, and scissors for patrons to construct their own Sun Clock to take home. (*Optional: include a flashlight and a compass on the table to showcase how the Sun Clocks work as the sun moves across the sky*). Be sure to have a recycling bin nearby for the cardstock scraps.

# Procedure

## 1. Activity Introduction

- ★ As visitors arrive, invite them to come build their own Sun Clock to take home! Before they construct their clocks, ask them to share what they use to tell the time (*answers include watches, phones, clocks, etc.*).
- ★ Next, ask visitors to think about how people told the time before those things were invented. Explain that our measurement of time is based in large part upon the apparent motion of the Sun. We can tell the time by tracking the Sun's shadow throughout the day!

## 2. Construct the Sun Clocks

- ★ Distribute materials to each visitor and have them follow the instructions on the Sun Clock Table Sign.

## 3. Check the Time

- ★ Explain that the Sun Clocks need to be properly orientated in order to work correctly.
  - If the weather is poor and you set up the station indoors, demonstrate how the Sun Clocks work by shining the flashlight on it, casting the string's shadow across the clock's face.
  - If your station is outside, challenge visitors to find the time by holding the clock level on their hands and rotate the clock until the shadow of the string reads the current time. Be sure to check with a watch, clock, or smart phone to know that the time is accurate.

## 4. Orientation

- ★ What direction is it facing in order to work? Invite them to use the compass and write their answers on their Sun Clocks (*the answer is south, with the strings running in a north-south direction*).

# Make a Sun Clock!

## Table Sign



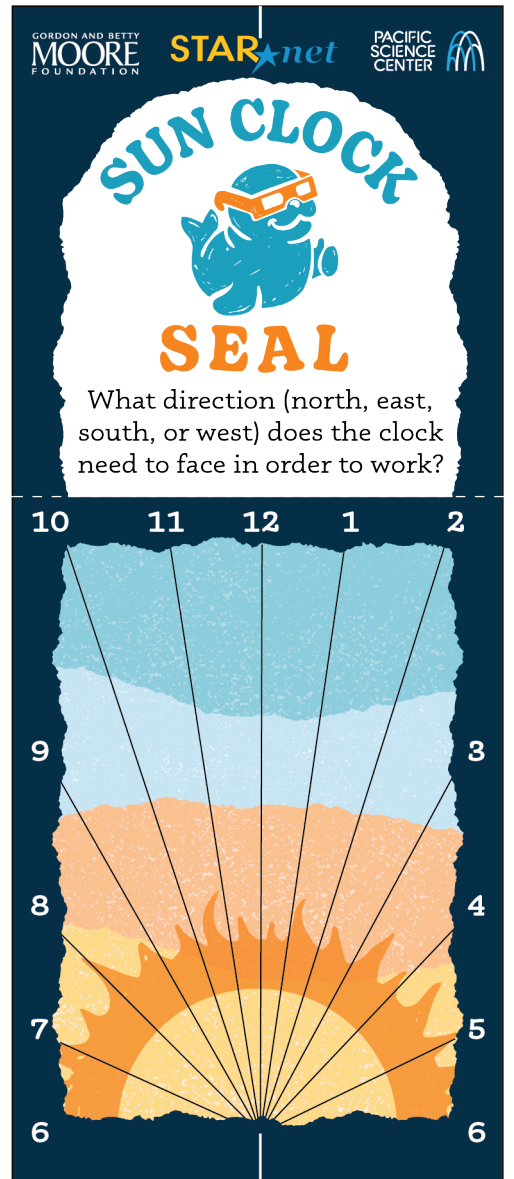
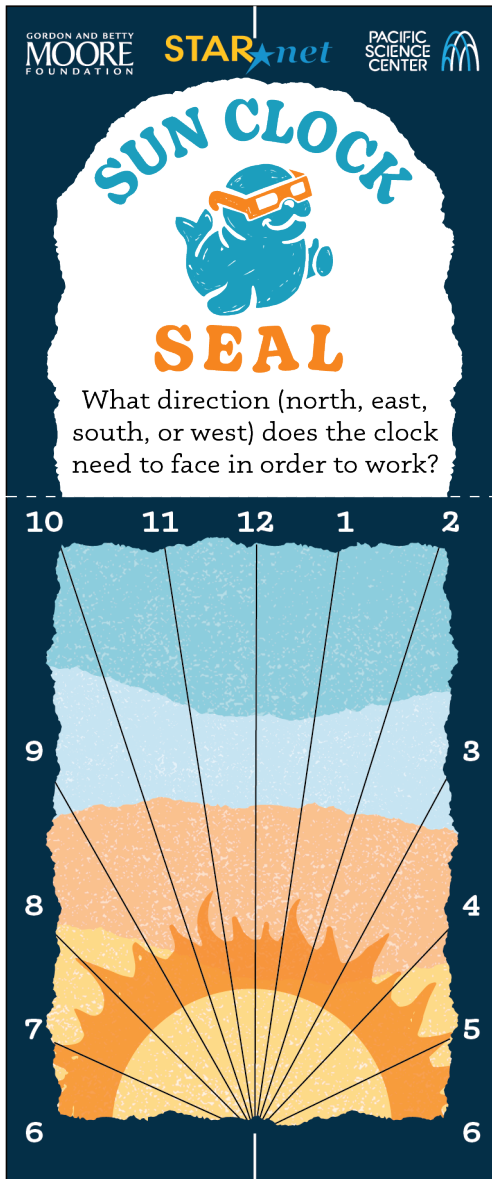
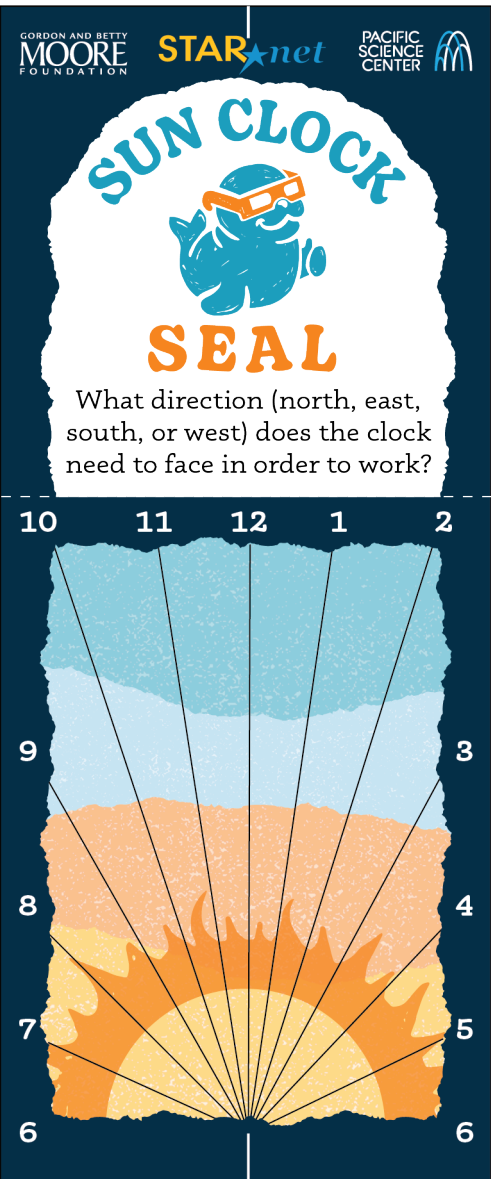
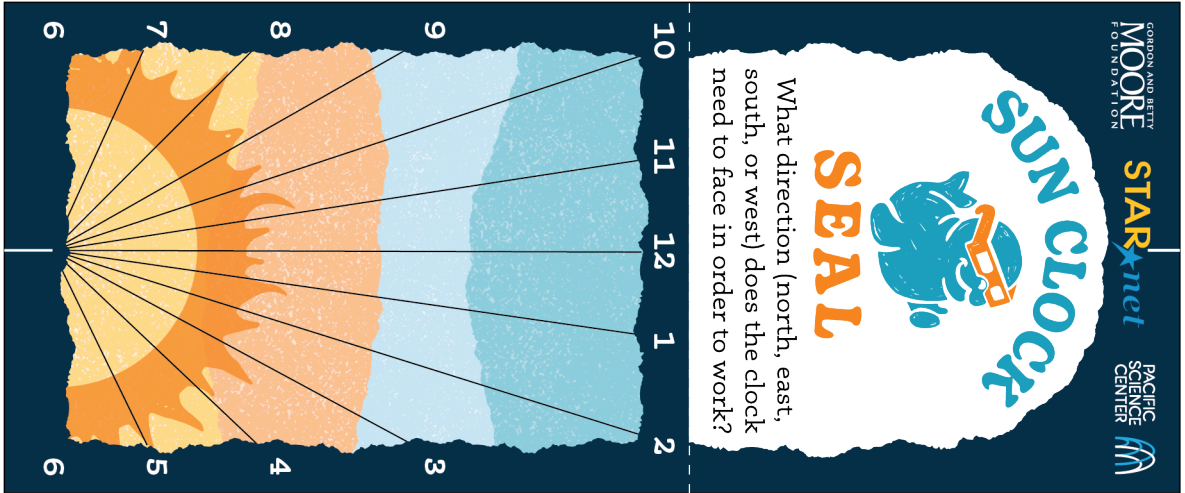
- 1.** Fold along the dotted line, making sure the print is on the inside.
- 2.** Take 7 inches of string and place the ends through both notches on the Sun Clock. Adjust the string so that the two panels of the Sun Clock make a 90-degree angle, then tape the string's end to the back of the Sun Clock.
- 3.** Use your Sun Clock to tell the time! Go outside, hold the clock level on your hand and rotate it until the shadow of the string on the clock face reads the correct time.

What direction (north, east, south, or west) does the clock need to face for the shadow to tell the time?

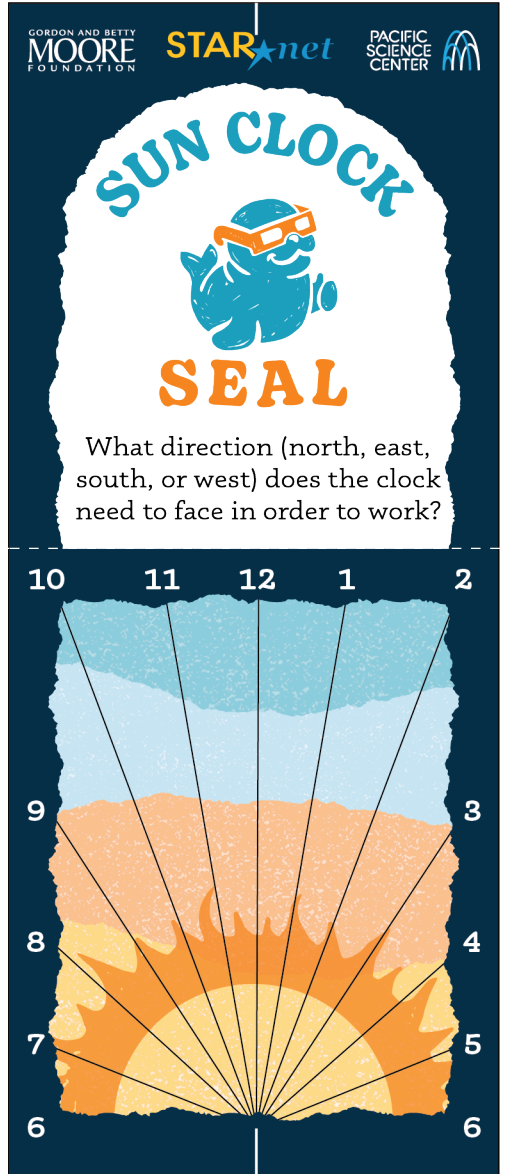
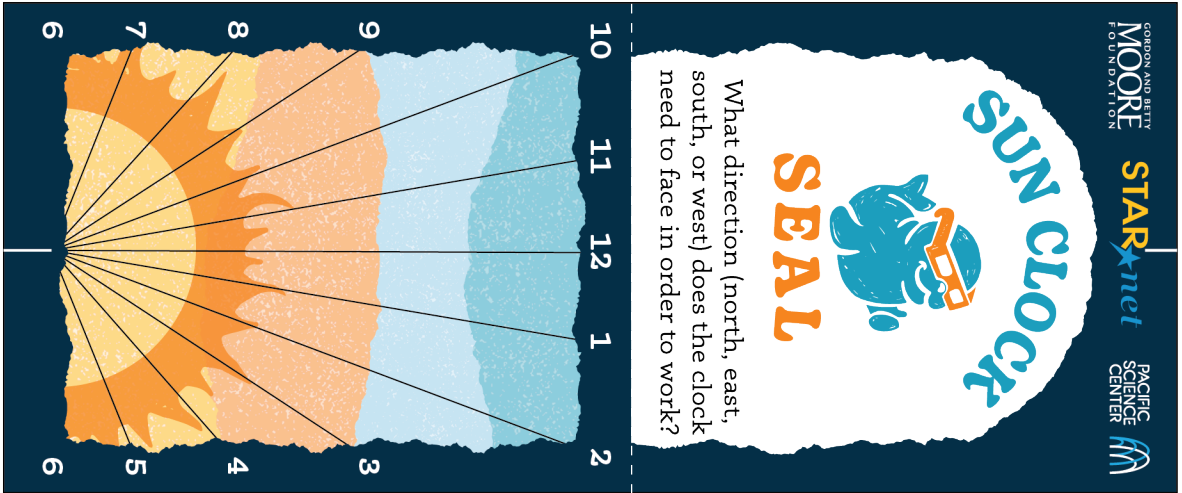
**Note: If it is Daylight Savings Time (Sunday, March 13, 2023 – Sunday, November 6, 2023), subtract one hour from what your Sun Clock is showing you to get an accurate time.**



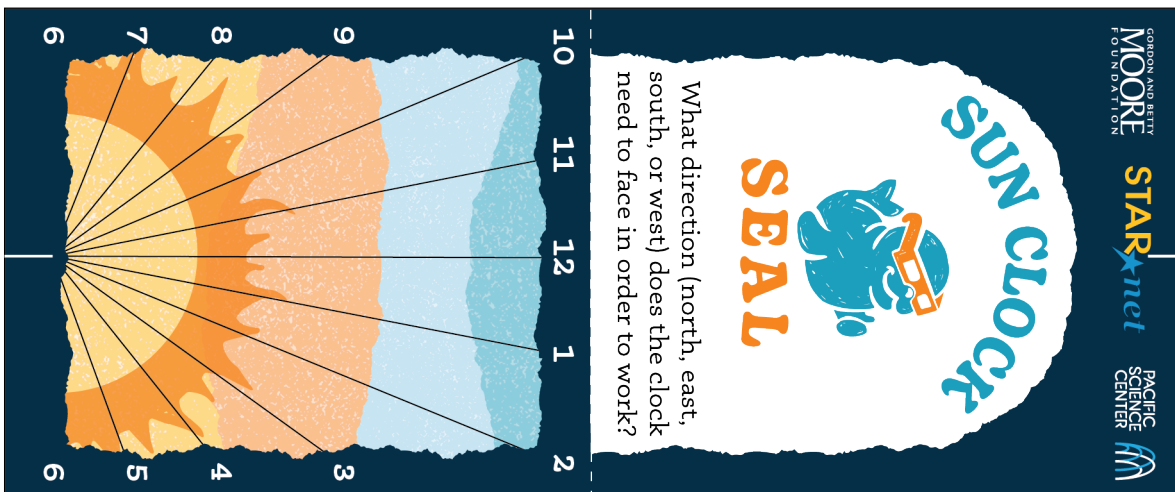
Use this Sun Clock if you live in: Southern California, Southern Nevada, Arizona, New Mexico, Oklahoma, Texas, Arkansas, Louisiana, Tennessee, Mississippi, Alabama, Georgia, Florida, North Carolina, and South Carolina.



Use this Sun Clock if you live in: Northern California, Northern Nevada, Utah, Colorado, Southern Wyoming, Nebraska, Kansas, Iowa, Missouri, Illinois, Indiana, Ohio, Kentucky, Virginia, West Virginia, Maryland, Delaware, New Jersey, Pennsylvania, Lower New York, Massachusetts, Connecticut, and Rhode Island.



# Pocket Sun Clock 3



Use this Sun Clock if you live in: Washington, Oregon, Idaho, Montana, North Dakota, South Dakota, Northern Wyoming, Minnesota, Wisconsin, Michigan, Upper New York, Vermont, New Hampshire, Maine, and Southern Canada.

