

AROUND THE CLOCK

Early clocks were called shadow clocks or sundials. A stick or pillar, called a **gnomon**, would cast a shadow of different lengths and directions depending on the sun's position in the sky. This information was then used to determine an estimated time. Today, we'll look at a basic sundial design. This activity will work best if you can be at home from sunrise to sunset.

Skills

NOTICING

REASONING

SURVIVAL

TINKERING

Materials

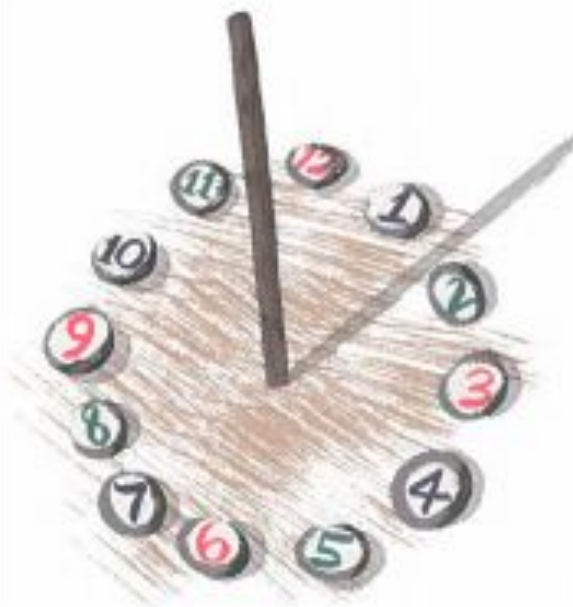
STICK (ABOUT
12 INCHES LONG
AND ABOUT AS
THICK AS A PENCIL)

12 SMALL ROCKS

PERMANENT MARKER

CLOCK

- 1 Go outside and find a 12-inch-long stick and 12 small rocks.
- 2 Use a marker to write the numbers 1 through 12 on your rocks.
- 3 Choose a place outside that receives full sun all day.



4 Push your stick into the ground so it stands securely (the stick will be our gnomon). If you live in the Northern Hemisphere, angle your stick north at about a 45-degree angle; if you live in the Southern Hemisphere, slant it south. This is necessary due to the tilt of the earth. If you need help angling the stick, ask an adult for help.

5 During daylight hours, check your sundial every hour on the hour. Using a clock as your guide, place the rock that corresponds with the time on the shadow line each hour. If you begin at sunrise, you will likely be starting with the number 6 or 7. Over 12 hours, the rocks will create a full or partial circle. While outside, also pay attention to the sun's position in the sky (without looking directly at it).

6 At the end of the day, you should have a fun new way of telling time while you are playing outside! Your sundial will need to be adjusted if you honor daylight saving time, as well as when the days begin to get shorter or longer.

DID YOU KNOW?

Certain flowers can help you tell time. In 1752 a taxonomist (a biologist that groups living things, or **organisms**, into categories) named Carl Linnaeus created the first flower clock. He based his clock on his observations of flowers that opened and closed every day at certain hours, like the marigold, Canadian hawkweed, and white water lily.