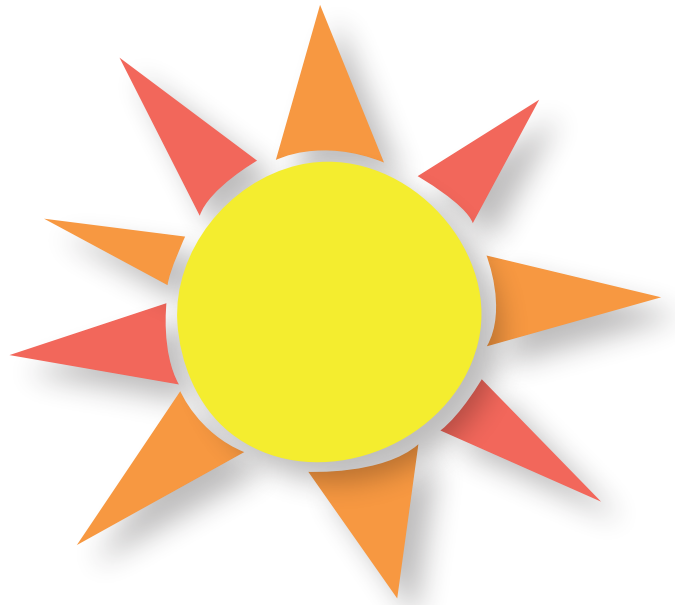


Human Sundial

What You Need

- Sidewalk chalk
- Compass
- Watch
- A sunny day



Create a sundial.

1. Grab a friend and head outdoors to a spot with full sun throughout the day—like a driveway or basketball court.
2. Mark an “X” on the ground with the sidewalk chalk.
3. Have one person stand on the “X” and face north.
4. Have the other person trace the shadow of the standing person with chalk, and mark the time of day inside the outline.
5. Repeat these steps throughout the day, always standing in the same spot and facing north.
How did your shadow change?

How does it work?

A shadow forms when an object blocks light from a given light source. When you step outside, your body blocks some of the Sun’s light from hitting the ground; this is why you can see your shadow. In the morning, the sun appears in the east and your shadow extends westward. As the Earth rotates throughout the day, your shadow will change position. The size of your shadow will also change! In the morning and evening, your shadow is longer because sunlight hits the Earth at an oblique angle. At noontime, sunlight hits Earth closer to a right angle, making your shadow appear smaller.

Take it further!

Try this experiment at different times of the year. How does your shadow on the summer solstice, when the sun follows its highest path across the sky, compare to the winter solstice, when it follows its lowest path? What about the spring and fall equinoxes? Does your shadow look the same on these days?