

HUMAN SUNDIAL



Have you ever wondered how people told time before we invented clocks? We see the sun moving across the sky every single day, but did you know that we're the ones that are actually moving? That's right! It all comes down to the earth's rotation.

WHAT YOU'LL NEED:

- Sunshine
- Pavement (Sidewalk or Driveway)
- Sidewalk Chalk
- A Partner

WHAT YOU'LL DO:

1. **Start your experiment in the morning**, ideally between 7am-10am when it's not too hot outside.
2. With a parent or other grownup, go outside and **find a large paved surface**. You can use your driveway or the sidewalk in front of your house.
3. **Mark an X on the ground** for you and your partner several feet apart.
4. **Stand on the X** and notice the long shadow on the ground beside you.
5. Taking turns, **trace each other's shadows** on the pavement using the sidewalk chalk.
6. **Write the time** next to the shadows.



7. **After an hour or two, go back and stand on your X.** Again, take turns tracing each other's shadows, and write the time next to the shadows. (Tip: Try using a different color of chalk for the different times.)
8. **Repeat this process several times** throughout the day, waiting a few hours in between each recording. You'll see how the shadow changes throughout the day. This shows how the earth spins on its axis in a day and makes its way around the sun in a year to produce the changes we see in our shadows!

Time to review what we learned. Ask yourself the following:

- What happened to your shadow throughout the day?
- When was your shadow the longest?
- When was your shadow the shortest?
- Why did your shadow move?

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