

Human Sundial Experiment

Purpose -

You'll get to see how the earth rotates throughout the day and learn how shadows are created by simply tracing your shadow.



Materials -

- Chalk (Don't have any chalk at home? Follow this recipe to make your own! <https://livingwellmom.com/diy-sidewalk-chalk-paint-kids/>)
- Tape measure (optional)
- Partner to help you



Instructions -



1. Start this experiment off just like any other... by making a hypothesis! A hypothesis is your best guess of what you think the results will be from tracing your shadow at different times of the day, using the information you already know. Make sure to write this down or share it with someone, so that you can check it after the experiment is over!

2. Start in the morning. Pick a spot outside with plenty of room, and mark your starting point with chalk. This will be the spot you return to throughout the day.



3. Stand on your starting point and have your partner trace your shadow. Measure how tall your shadow is, if you can. Make sure to mark what time the tracing was done, and any measurements you made!

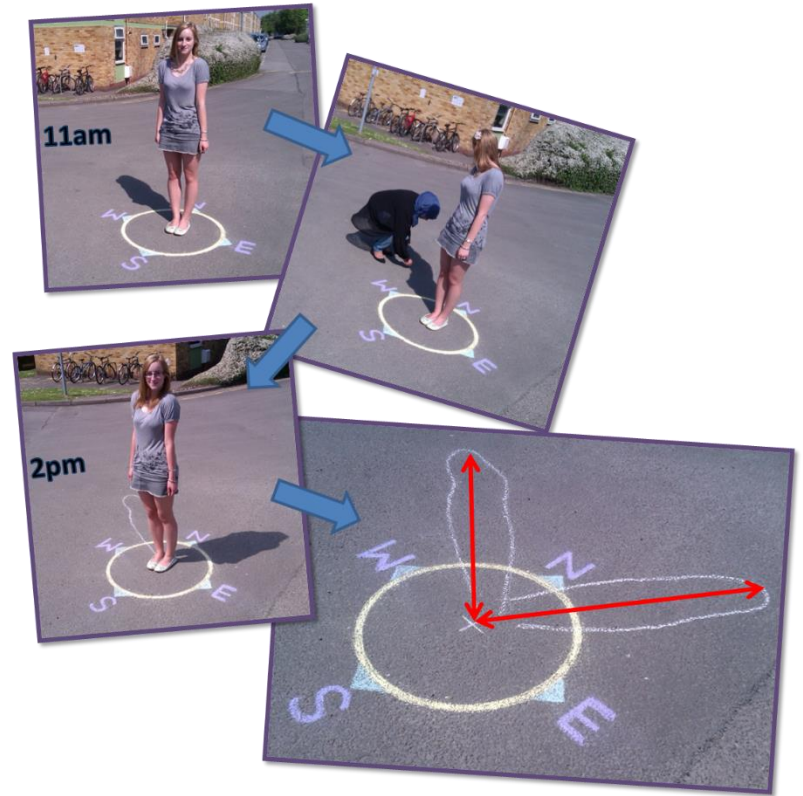
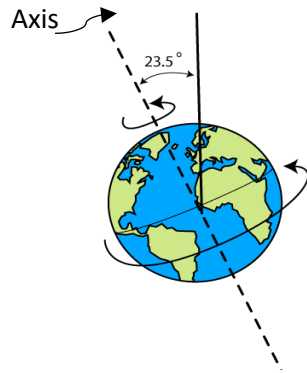
4. Repeat step 3 five different times during the day, or more if you'd like.



5. Check your hypothesis! Now that you have the results, did the experiment go as you thought it would? If it didn't, what did you learn?

How it Works -

The sun doesn't move **ACROSS** our sky during the day. Instead, the earth rotates on an axis (an imaginary line through the north and south poles that the Earth spins on) every day, so our position to the sky changes each minute the earth rotates.



Shadows are made from objects that are blocking light, and in this experiment, that was your body! As the source of the light (the sun) changed throughout the day, the amount of light that is blocked by your body also changed, which explains the different sized shadows.