



TRY THIS OUT!



SHADOW TRACKING

Time: 5+ hours
Difficulty: Easy

On a sunny day, your shadow follows you everywhere! Have you ever noticed that it slowly changes position throughout the day? In this activity, track your shadow all day to see where it goes.

WHAT YOU NEED:

- Pavement
- Chalk
- A friend
- A clock
- A sunny day

MAKE IT:

1. Early in the day, go stand out on the pavement. Make sure that you are in a big open space, without any tall objects around you.
2. Take the chalk and trace around your feet.
3. Give the chalk to a friend, and have them trace the outline of your shadow. Write the time above the outline.
4. Every hour, repeat step 3 for at least five hours. Make sure you're standing inside the foot outline you drew in step 2!

TEST IT:

Take a look at all of the shadow outlines you've made – they moved quite a bit, didn't they? You will also notice that the shadows have changed shape just a bit. Can you figure out why that is?

EXPLAIN IT:

The Earth is a planet, which rotates around its axis (an imaginary line down the centre) once a day. During the day, as the Earth rotates from west to east, your position relative to the sun will become more and more westward, and the sun will appear to move higher in the sky. This phenomenon means that the sun hits your location at different angles all day.

OBSERVE IT:

One of the challenges with solar panels is they are not always in the direct path of the sun's rays, since the sun moves during the day. In response to this problem, engineers have developed solar panels that can track the changing position of the sun and move accordingly, to get the most sunlight to its surface as possible.

GO FURTHER:

Look at where your shadow fell at the beginning of the day, and look where it fell at the end of the day. From there, you can figure out which way is north, east, south, and west. If you're having trouble, think about the spin of the planet. From there, determine which direction the sun rises and sets in, and use that information to help you figure it out.

