

# STRETCHING SHADOWS

## Materials

- Tape Measure
- Clock

## Instructions

- 1)** In the morning on a sunny day, go outside with your tape measure. It also helps if you pick a time that will be easy to remember like at the top of the hour, 9:00 or 10:00 AM.
- 2)** Figure out your shadow's length, and write down your measurement so you don't forget. Make sure to write down the units! Did you use inches? Centimeters?
- 3)** When two hours have gone by, go back outside and measure your shadow's length again. Write down your measurement next to your first measurement. Don't forget to write down your units, and keep it the same units from your first measurements.
- 4)** Repeat when two hours pass again (4 hours from your original time), and measure your shadow. Use the same units and write them down!
- 5)** One more time! Measure your shadow's length after another 2 hours, with the same units as before.
- 6)** Compare your measurement. What do you notice? What direction was your shadow facing? Did they change directions? Are they getting longer? Shorter?

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## Chart

Time				
Length				

## The Science Behind It

The sun shines down onto the Earth and hits every object on its surface, including us! Those objects block the sun's light, creating a shadow. But depending on the time of day, shadows can be different sizes. The lower the sun is, the less sunlight can reach Earth. The higher the sun is in the sky, the more the sunlight can reach objects.

The reason why the shadows end up changing direction is because the sun changes its position in the sky as the Earth spins. The sun rises in the East, casting the shadow to the West. The sun sets in the West, casting the shadows to the East.

