Foil Structure Shadow Drawings

Let's have fun with shadows!

Materials

- Foil
- Paper
- Flashlight
- Black markers
- Sidewalk chalk

Instructions

- Grab enough foil so that you can construct a person doing some sort of movement and get to sculpting!
- Take square pieces of colored paper and decide where to place your foil person on the paper.
- Go outside in the sun and trace the shadow of the foil person. If it is not sunny out, you can use a flashlight.
- If it is a nice sunny day, grab some sidewalk chalk and, after sketching the shadows from the foil sculptures, have a sibling or parent pose while you trace their shadows with chalk.
- Go back inside and fill in the outline you traced of the foil person with black marker.
- Ta-Da! You created the foil person's shadow!

What's the science behind it?

Astronomers understand that the cycle of day and night is caused by the earth rotating on its axis with different sides facing toward or away from the sun. Biologists know that certain plants grow better in the sunlight or in the shade. Engineers continue to develop technologies that involve light energy -- such as projectors, photovoltaic tape for solar energy panels as well as technologies such as window films designed to reduce the effects of sunlight and save on energy costs. Light travels in straight lines. When light reaches an object, it can travel through the object if the object is transparent. It can be reflected from a shiny object, or light can be absorbed if the object is opaque. Shadows are produced when light hits an opaque object which prevents the light beams from passing through. When an object blocks the light's path, then darkness appears on the other side. This darkness is called a shadow.

The sun is a source of light that can cause shadows. As the earth rotates each day, the sun appears to change position in the sky, and changing angles of sunlight affect the appearance of shadows. For instance, on a sunny day, you can stand a stick in the ground and watch its shadow move and change shape. When the sun gets low in the sky, the stick's shadow gets longer.