



San Francisco
Public Library

STEM CHALLENGE

SUNPRINTS

WHAT MAKES THIS STEM?

Some of the Sun's energy travels to Earth as light waves. Certain light waves, called **ultraviolet waves**, have enough **energy** to break the **bonds of chemicals**, like the dyes in sun paper. This changes the color of the paper.

In this experiment, you'll see that the sun paper shaded by leaves, flowers and other items won't change color. That's because the ultraviolet light waves are blocked out and can't damage the paper.

The sun's ultraviolet (UV) light can damage skin too. That's why it's smart to wear UV-blocking sunscreen, or stay in the shade when the sun is strong.

MATERIALS



- 1 sheet of sun art paper
- 1 clear plastic sheet protector
- Scavenged leaves, sticks, and flowers or craft materials like beads and fabrics to make shapes and patterns on the sun paper*
- Tub of water or access to water faucet*
- Rocks or books for weighing down plastic sheet protector *
- Lemon juice (OPTIONAL)*

*These materials are not provided in the kit

HOW TO DO IT

1. Explore your yard or a nearby park and search for objects or you can also use craft supplies. Find objects with unique shapes or sharp edges to create silhouettes on the photo paper.

2. Place sun paper, dark side up, in the direct sunlight on a driveway, sidewalk or table.
3. Create designs on the paper using the natural items you found.
4. Cover the items with clear plastic sheet protector and weigh the edges down with rocks or books so that the plastic lays flat and won't blow away.
5. Leave the paper in direct sun for 5-15 minutes, or until it turns a lighter color.
6. Put the paper into a tub of water or under faucet for one minute. To turn the images a deeper shade, add a few drops of lemon juice (optional) to the tub of water.
7. After the prints have soaked for one minute OR 30 seconds under the faucet, let them dry on a towel or hang them up with clothespins. Once completely dry, you can press them in a book for a day or two to make sure they stay flat.

CHALLENGES

Try making pieces of sun art using pieces of colored construction paper and compare:

- How long does it take to make a print using the sun?
- Which took longer to make, the sunprint paper, construction paper with sun, or construction paper with lamp?



For easy video instructions and other challenges, visit on.sfpl.org/stem-challenge.

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