

## Sun Prints

### What You Need

Construction paper

Leaves and flowers (or any other item to "print")

Sunny afternoon



### What You Do

1. Explore the yard or park together to collect leaves, flowers and other natural items.
2. Find a dry and sunny space outside to set up your sun prints.
3. Arrange the items you collected on top of a piece of construction paper. Leave in place for a few hours.
  - For leaves or flowers that might blow away, use a pebble or other weight to hold them in place.
4. Remove the items from your construction paper to reveal your sun print! Display your sun print as it is, decorate it using markers, paint or crayons, or fold and trim it to create a card to share!

### Questions to ask

- What do you think would happen if you left your sun print in the sunlight longer? What if you put it in the shade?
- Why do you think the color of your paper faded in some areas, but not others?
- What are some ways that we protect ourselves from the sun?

### What's the Science?

The Sun radiates more than just the **visible light** we see, it also emits light that we cannot see including **ultraviolet (UV)** and infrared. The color of your construction paper is a result of dyes that absorb some colors of visible light and reflect others. The colors of visible light that are reflected are the colors that you see. These colors are faded by sunlight because high-energy UV light breaks down the dye, changing the way it reflects visible light. This process is called **photodegradation**.

We used **photodegradation** to create our sun prints by exposing parts of the construction paper to UV light, but protecting others by covering them. The areas of the construction paper that were covered retained their original color because the items on top absorbed or reflected the UV light. The areas of the paper that were exposed to the UV light now appear faded in color.

### Try This

**Use science vocabulary:** Use related science words such as sunlight, visible light, ultraviolet light, and photodegradation as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.

**Extend your experiments:** Experiment with materials with different opacity to see how they can protect the construction paper from UV light. Create shapes using construction paper, tissue paper, coffee filters, plastic bags, fabric scraps and other household materials. *Which materials do you think will block the UV light and why?* Try this project on a cloudy or overcast day. *Is there enough sunlight to fade the paper? Did it take the same amount of time or longer to fade the paper?*

### Additional Resources

*What the Sun Sees, What the Moon Sees* by Nancy Tafuri

*Sun Up, Sun Down* by Gail Gibbons

*The Sun Shines Everywhere* by Mary Ann Hoberman

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<http://studyjams.scholastic.com/studyjams/jams/science/energy-light-sound/light.htm>