Solar Prints
Investigation #6

Description
Use the sun to create art!

Materials
• Nature Print Paper
• Small objects like lace, leaves, jacks, and a flyswatter
• Acetate paper
• Cardboard folder
• Sunny day
• Tub of water
• Timer
• Towel

Procedure
1) Open the cardboard folder and place a sheet of print paper (blue side up) inside. Cover with the acetate film to prevent wind from shifting the paper.
2) Arrange the small objects on the paper so that plenty of the paper is empty.
3) Cover the flap as much as possible and take the materials outdoors.
4) Open the cardboard flap and leave the folder undisturbed until the paper fades. Usually after 1-3 minutes, the paper will change to a pale blue.
5) Carefully cover the flap and carry the folder inside.
6) Take the paper out of the folder and submerge in a tub of warm water for one minute.
7) Lay the paper flat on a towel to dry.
8) What do you notice?

Results
Explanation
The paper has different chemicals on the surface that react to light. The area that is blocked with objects doesn't get the light energy, so this part of the paper remains the original color, while the rest changes. The surface chemical is Berlin Green, which is water soluble. In the presence of ultraviolet light, Berlin Green experiences a chemical reaction and changes into Prussian Blue. Prussian Blue is not water soluble. So, when the paper is submerged, the remaining Berlin Green that had not been exposed to light washes away, while the Prussian Blue chemical remains. The brighter the light or the longer the exposure to the light, the more intense color the Prussian Blue will become.

Be smart about light! Some of the energy that comes from the sun is in a form of light that we can't see, called ultraviolet light. Even though we can't see this form of light, too much ultraviolet light can hurt our skin and our eyes. One way to protect your eyes is to wear UV protected sunglasses when you are outside on a bright sunny day. And to protect your skin, you can apply sunscreen. The higher the SPF number, the better the protection against ultraviolet light. Some animals protect themselves from the sun, too, like when elephants throw mud on their skin to protect themselves from the sun. Pretty clever!

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