



Sun Blueprint Paper

Let the sun do the chemistry!

Simply place any object on the UV sensitive sheets. Expose them to the sun for a few minutes, immerse the sheets in water and watch as permanent images appear.

Components

- ★ Twelve sheets of 10 x 10 cm UV sensitive paper
- ★ Small objects such as paper clips, leaves, flowers, etc.
- ★ The sun at noon, so you do not get shadows. You may substitute the sun with an indoor UV lamp (black light).



Making the Sunprints

Do not do any printing when it is windy (objects will move) or overcast and try to catch the sun at the peak of its trajectory around noon. This will avoid shadows forming on the paper.

Select any small three-dimensional object, such as:

- * leaves, insects, flowers, keys, knives, forks, jewellery;
- * sketches in dark ink on transparent sheets;
- * a photographic negative (especially one with sharp contrasts)

Place the light-sensitive paper, BLUE SIDE UP, on a flat surface. Place the object to be "printed" on top of it and leave out in the sun for 2 to 5 minutes UNTIL THE PAPER TURNS ALMOST WHITE.

Do not overexpose. The optimal exposure time will depend on the sun's intensity.

Have a few wash basins with water ready and wash the paper **immediately** after the sun exposure for 1 minute by dipping it under and withdrawing it from the water continuously. The images will now appear.

Dry the paper on a flat surface.

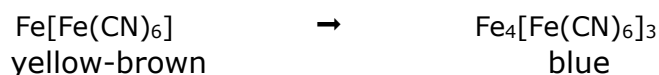
The Science of the Paper

This reaction is a typical example of a **photochemical reaction** where two chemical substances only react in the presence of light of a specific frequency (energy).

Some of the most complex photochemical reactions take place in nature - photosynthesis, sight, the glow of the firefly and tanning on the beach!

The UV sensitive compound on the paper is **iron(III) hexacyanoferrate(III)**.

Sunlight reduces this to iron(III) hexacyanoferrate(II) also known as Prussian Blue:



The blue compound only forms where sunlight falls.



Extensions

Let students research the light induced chemical processes of

- human sight
- and photographic film where light-sensitive silver salts are used.