Arkansas Museum of Fine Arts

As our inaugural event, *Art Garden* invites students to be an important part of the Arkansas Museum of Fine Art's grand opening celebrations. Utilizing Downtown Little Rock's MacArthur Park as our canvas, *Art Garden* will be a community-created artwork that transforms the Museum and grounds into active compositions of color, shape, and movement. The *Art Garden* will employ thousands of origami lotuses made from a light-sensitive paper, called cyanotype, to create this dynamic installation.



Cyanotype History and Science

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What is a Cyanotype?

The cyanotype was developed in 1842 by Sir John Herschel, an astronomer and scientist.

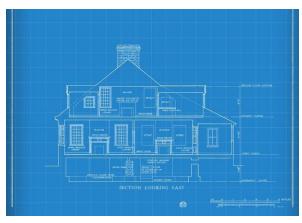
It is a camera-less photography technique using light-sensitive paper to create a blue-colored image.

The "cyan" in cyanotype refers to the blue-green color of the light-sensitive paper used to make the prints.

Because it is an easy way to make copies, cyanotypes were used to make technical drawings or "Blueprints" for architects and engineers. This was the most common use for cyanotypes for the next hundred years.



Sir John Herschel, [Public Domain]



House Blueprint, [Public domain]



Early Cyanotypes

Botanist Anna Atkins used the cyanotype process to create the first book illustrated with photograms in 1843. She documented a wide variety of plant specimens including ferns and algae.

Atkins is recognized as the first female photographer because of her work with cyanotypes.





Anna Atkins, by Anonymous, 1861 [Public domain]

Anna Atkins, Foreign Ferns, [Public domain]



How does a Cyanotype work?

Two iron salts are mixed to create a light-sensitive solution. The solution is painted onto paper or other surfaces and allowed to dry in the dark.

The paper is then exposed to ultraviolet (UV) light, like the sun.

Areas exposed to the sunlight chemically react with the UV light and will turn a bright blue. Covered areas where the light does not touch will remain white.

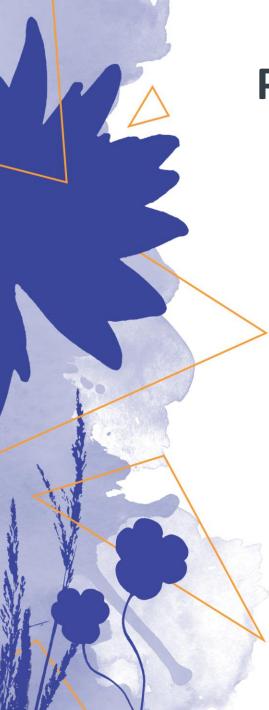
Washing the paper after exposure removes excess iron salts, leaving just the blue dye in the paper.



Paint-On Cyanotype Solution Process

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Project Materials

- Cyanotype Part A and B
- Container for Mixing
- Paper
- Foam Brush
- Contractor Bags
- Objects*
- Towel
- Water Bath
- Water
- Plexiglass
- The Sun

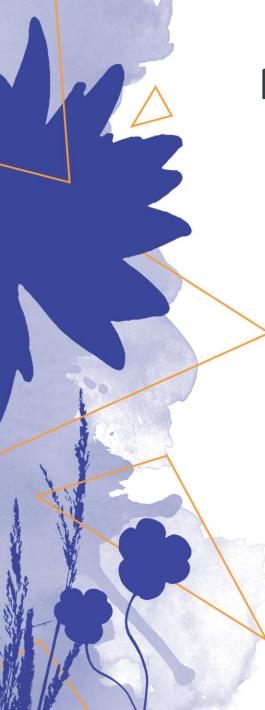
Objects could include:

leaves, flowers, grass, twigs, feathers, yarn, string, buttons, mesh, other loose textiles, transparencies, cutout paper silhouettes, and more!









Mixing the Cyanotype Solution

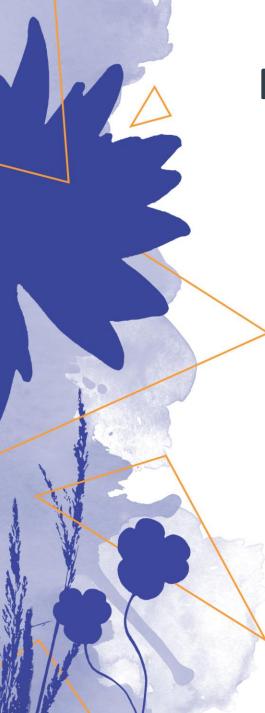
Mix equal parts of Part A and Part B solutions in a small container.

Only mix as much as you need for the amount of paper to be coated.

The combined solution is only good for a few hours but when they are kept separate, the A and B solutions will keep for several months.







Painting the Cyanotype Solution

Use the foam brush to paint the mixed solution onto the paper in one direction.

Then turn the paper and paint the solution again. Make sure you are getting an even coat.

*Lighting note:

Even though the solution is light sensitive you can do this in inside in a room with subdued lighting or indirect lighting sources if you work fast.





Drying and Storing the Coated Paper

After the paper is coated with the solution it needs to dry in a <u>dark</u> <u>place</u>. A cleared cabinet works well for this step.

The paper needs to dry over night before exposure. However, the paper will remain workable for much longer as long as it is kept out of the light.

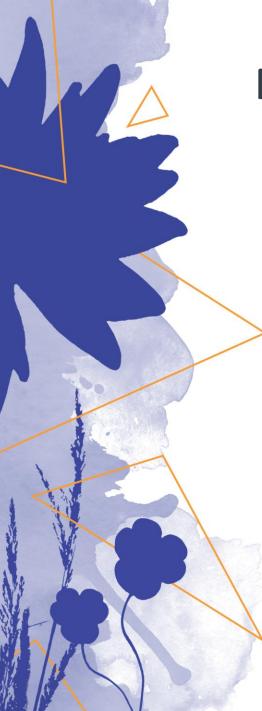
Doubled black contractor bags are a great way to store and transport the dried coated paper as it keeps them out of the light and take up less space.



Cyanotype Exposure Process

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Practicing the Composition

Have students choose objects and practice their compositions for the print before it is their time to expose.

Compositions that fill the space, run off the edges, and have overlapping materials will yield better results. Have fun and experiment!

Students should have their chosen objects handy before removing the paper from the light-safe bags because the paper begins exposing as soon as it is in the light.





Exposure Set Up and Timing

Location: Outside

It is recommended to have two tables for this part of the activity.

One table for students to choose their items and practice their compositions while they wait to make their prints.

The other table will be used to hold the active exposures and the water bath.

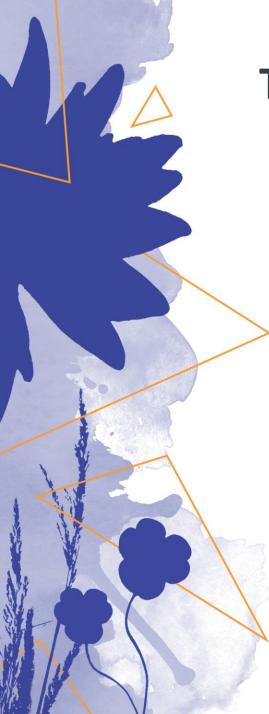
Exposure time varies depending on the time of the year and amount of sunlight.

Estimated Exposure Times

Fall: 3 minutes Spring: 1 – 1.5 minutes Summer: 30 seconds - 1 minute

You will receive extra paper to test prints in order to get your timing down.





The Cyanotype Exposure

It's time to expose the paper in the sun!

After objects are placed, piece of plexiglass should be placed on top of the objects and paper.

This will ensure that objects don't move around with the wind and that they are making good contact with the paper to block out the sun.

Once exposed, the background will be darker than the areas covered by the objects.





After exposure - the background will be darker than the areas covered by the objects.



Water Bath

After the allotted time, remove plexiglass and objects from the paper.

Put the exposed paper into the water bath. You will need to agitate the paper in the water until all objects appear white. About 1 minute.

The objects will begin to appear white as the chemical reaction stops.

After the print is finished in the water bath take it out and gently dry between the towel and set aside to completely dry.





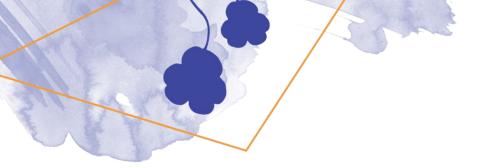
Folding the Lotus Flower

The print will continue to turn a darker shade of blue over the next 24 hours.

After the paper is dry it's now time to fold the print into a lotus flower.

Folding instructions will be shared as a PDF handout and as a slide presentation.





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