

3. With the coated side up, tack your wet paper to a piece of corrugated cardboard, and cover the paper with another piece of cardboard. **Wash your hands before proceeding to step 4.**
4. Take your paper and cardboard assembly outside into the direct sunlight. Remove the top piece of cardboard so that the paper is exposed. Quickly place an object such as a fern, a leaf, or a key on the paper. If it is windy, you may need to put small weights, such as coins, on the object to keep it in place, as shown in **Figure A**.
5. After about 20 min, remove the object and again cover the paper with the cardboard. Return to the lab, remove the tacks, and *thoroughly* rinse the blueprint paper under cold running water. Allow the paper to dry. In your notebook, record the amount of time that the paper was exposed to sunlight.

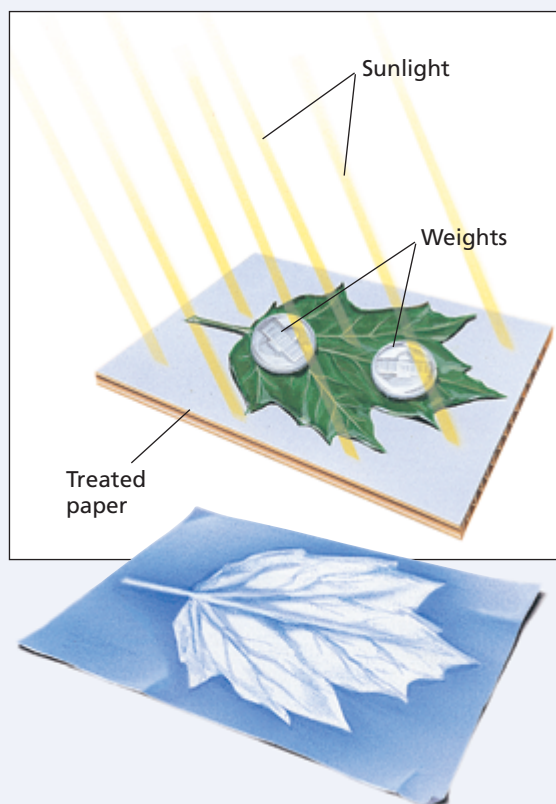


FIGURE A To produce a sharp image, the object must be flat, with its edges on the blueprint paper, and it must not move.

CLEANUP AND DISPOSAL

6. Clean all equipment and your lab station. Return equipment to its proper place. Dispose of chemicals and solutions in the containers designated by your teacher. Do not pour any chemicals down the drain or in the trash unless your teacher directs you to do so. Wash your hands thoroughly before you leave the lab and after all work is finished.



ANALYSIS AND INTERPRETATION

1. **Relating Ideas:** Why is the iron(III) ammonium citrate solution stored in a brown bottle?
2. **Organizing Ideas:** When iron(III) ammonium citrate is exposed to light, the oxidation state of the iron changes. What is the new oxidation state of the iron?
3. **Analyzing Methods:** What substances were washed away when you rinsed the blueprint in water after it had been exposed to sunlight? (Hint: Compare the solubilities of the two ammonium salts that you used to coat the paper and of the blue product that formed.)

CONCLUSIONS

1. **Applying Ideas:** Insufficient washing of the exposed blueprints results in a slow deterioration of images. Suggest a reason for this deterioration.
2. **Relating Ideas:** Photographic paper can be safely exposed to red light in a darkroom. Do you think the same would be true of blueprint paper? Explain your answer.

EXTENSIONS

1. **Applying Ideas:** How could you use this blueprint paper to test the effectiveness of a brand of sunscreen lotion?
2. **Designing Experiments:** Can you think of ways to improve this procedure? If so, ask your teacher to approve your plan, and create a new blueprint. Evaluate both the efficiency of the procedure and the quality of blueprint.