

Resistance is Useful

Procedure

1. Always wear safety goggles.
2. Get a piece of paper and a white crayon.
3. Using the crayon, draw a picture on your paper.

Can you see your crayon marks?

What do the marks feel like?

4. Take a foam brush from the water beaker, rub it in one of the watercolors, then paint over your entire paper with it.

Can you see the crayon marks now?

What happened to the paint in the areas where you drew?

5. Put your foam brush back into the water beaker, swishing it around a few times to rinse it off.
6. Try repeating the experiment, but use different colors of crayons and paint.
7. Place your paper(s) in the waste container if you do not want to keep them.

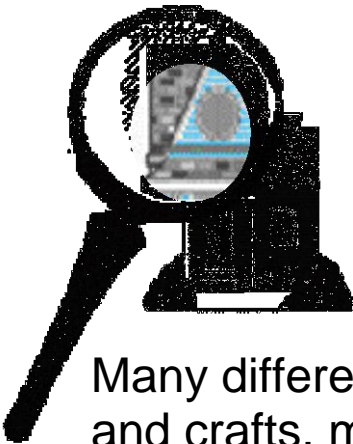


Can you make a picture by NOT coloring?

A Closer Look:

In this experiment, the wax **resisted** the colored inks. The marks you made with the wax stayed the same while the rest of the paper changed color. A resistant material protects the material underneath from the effects of dyes, chemicals, or other processes. It's like a stencil you can create right on the paper.

Wax is a good resist material because it can make a smooth waterproof layer on a surface. Wax resistance works with inks, dyes, and acids that are made with water. Other materials that can resist water include oil, rubber cement, and plastics.



Many different resistance techniques are used in arts and crafts, manufacturing, printing, microelectronics, and other industries. Chemical resistance can be used to etch huge signs or tiny circuits. Resistant materials can also be used to protect important documents (like paper money) because resistant ink would be invisible until the right test was used.