

Invisible Ink



Spy Science Series



Lab objectives:

- Learn how pH of different substances interact.
- Measure and create solutions

Safety measures:

- Substances should not be consumed.
- If the substances get on hands, wash off with plenty of water.
- If substances get on clothes, first rinse with water to remove any acids that would react with the base in soaps.

Tie into other subjects:

- Create a spy sketch and act it out.
- Deliver a secret message to a friend at a birthday party.
- Create invites to a secret party.

Seeing Blue

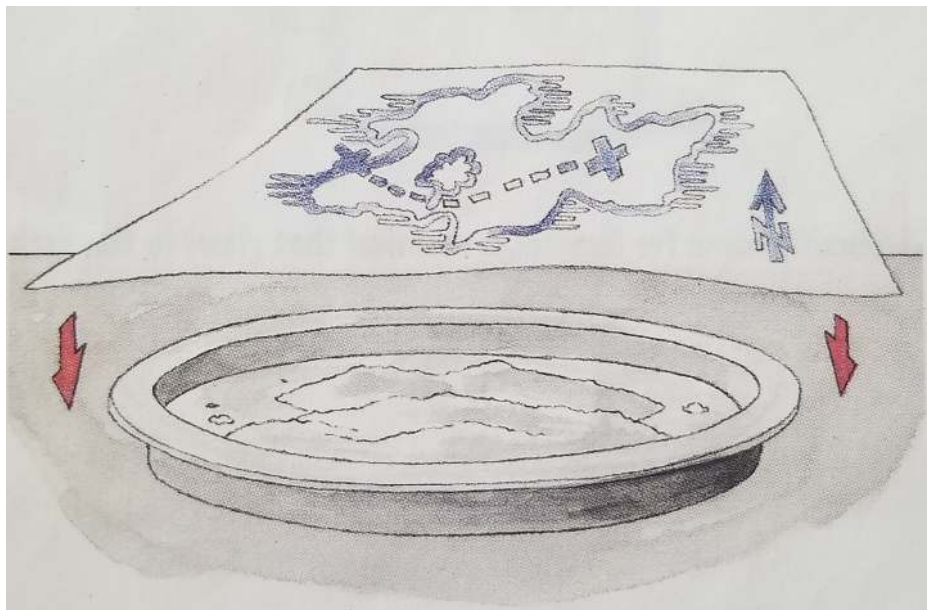
Supplies:

Copper sulfate solution
Ammonium chloride
Calcium hydroxide
Pie tin
Light blue or white paper
Blotter paper
Paint brush

Process:

1. Fill your test tube with about an inch of water. Dissolve about a small scoop of copper sulfate into the water. Shake vigorously to dissolve.
2. Using a paint brush, create your image or message on light blue or white paper. Set it aside to dry.
3. In a DRY test tube, combine ammonium chloride and calcium hydroxide in a 1:1 ratio. Shake to mix, then spread it out into the pie tin.
4. Lay the secret message over the tin and watch the message reveal.

Notes



Jeeing Brown

Supplies:

Vinegar
Onion
Lemon

Garlic press (if using onion)
Juicer (if using lemon)

White paper
Oven, electric hot plate, or stove and frying pan.

Process:

1. Prepare your ink by either juicing a lemon or squeezing small chunks of onion in a garlic press.

Vinegar is used as is.

2. Using a paint brush, create your image or message on white paper. Set it aside to dry.

3. Using LOW heat, heat the message so the juice carbonises.

This can be done in the oven on warming, a hot plate, or very low heat in a frying pan. Temperatures will vary based appliance.

Notes



Can I get your feedback, please?

I'm always looking to make our workshops better. Everything from the teaching explanations, the delivery, the content... everything!

The goal is to make science fun and accessible while still informing about the wonderful world we live in.

I'll be working hard on the labs for next year to share with the Homeschool Explorers.

If at any time you want to reach out for questions, comments and/or requests, please don't hesitate to contact me at:

gconyers@insanitek.net or via phone at 317.759.1284.

FYI: Since it's just me (for now), I rarely have a chance to pick up the phone. Please leave a message and I'll get back to you as soon as I can.

PS: You can find this lab, as well as all the others we've done and more, online in our Resource Library.

<https://insanitek.net/knowledge-conduit/library-of-resources/>

The password is "Knowledge" without the quotes. :)