

Are you looking for something to do to keep your brain active and engaged? We're here to help with Science at Home! You can do these fun science activities using commonly found items. You can also visit us at the Museum's [Science at Home](#) page for additional resources.

DIY Invisible Ink Activity



Invisible Ink in History

During the American Revolution, Patriot spies needed a safe way to get vital information to General Washington. They would write messages in invisible ink, let the messages dry and then send the hidden messages to Washington with a courier. Fat containing liquids, such as whole milk or diluted egg yolk, were popular invisible inks. Once the hidden message reached Washington, an intelligence officer would hold the paper close to a candle, and heat it almost to the burning point. The fat in the ink darkened quickly in the heat, causing the hidden words to become visible. The danger of using these types of invisible inks was that it was very easy to set the paper on fire. In addition, British sentries knew about these inks and might check for hidden messages on any papers carried by a courier. Later invisible inks used a chemical reaction to reveal the message instead of heat. These types of inks were safer and harder to detect.

Materials:

White paper (4" x 4" square is fine)
Q-tips
Jar of butter (or duck fat)
Coffee grounds in a Ziploc bag or bowl — 1/4 cup per child
Plastic or regular teaspoon

Instructions:

1. Dip the Q-tip into the butter or duck fat so the swab is saturated with the material
2. Write a word or draw an image on the paper with the Q-tip/butter or fat
3. Wait a few seconds and then note that the grease from the butter or fat starts to show up on the paper.
4. With a teaspoon sprinkle a heavy layer of coffee grounds over the word or picture
5. With the teaspoon, press down on the coffee grounds firmly so they will stick to the fat on the paper
6. Shake off the excess coffee grounds back into the bag or bowl
7. The remaining coffee grounds will stick to the fat and the word or image will be seen clearly

Having fun?

We want to see! Tag [@naturalsciences](#) on social media, so we can see you and your loved ones enjoying our Science at Home experiments.