



Spy Badge

(idea submitted by Kristine Cordy - Dolphin)

All throughout history, as long as there has been war there have been spies and many of them have been women.

Otter: Do 4 requirements including the 2 starred

_____ 1.* Learn about a woman spy from history. Examples might include:

Revolutionary Spies: Sarah Bradlee Fulton, Ann Trotter Bailey, Lydia Barrington Darragh, Agent "355" of the Culper Ring,

Civil War: Union spies: Pauline Cushman, Sarah Emma Edmonds, Harriet Tubman, Elizabeth Van Lew, Mary Edwards Walker,

Confederate Spies: Belle Boyd, Antonia Forc, Rose O'Neal Greenhow, Nancy Hart, Laura Ratcliffe, Loreta Janeta Velazquez

WWI Spies: Virginia Hall, Mati Hari, Edith Cavell

WWII Spies: Princess Noor-un-nisa Inayat Khan, "Code Name Cynthia" - Amy Elizabeth Thorpe, Nancy Wake

_____ 2.* Create your own secret code and write a message to friend.

_____ 3. Check out at least 2 of the following government websites for kids:

CIA website for kids at <https://www.cia.gov/kids-page/index.html>

National Security Agency's website for kids at <http://www.nsa.gov/kids/>

National Reconnaissance Office's website for kids at <http://www.nrojr.gov/>

Defense Intelligence Agency's kid website at <http://www.dia.mil/kids/interfacemx.html>

National Geospatial Intelligence Agency's website for kids at

<http://www.nga.mil/ngakids/>

_____ 4. **With the help of a parent**, make one of the following types invisible inks and try writing a message with it.

Corn Starch Ink:

What You Need:

- Corn Starch
- Iodine
- Water
- Toothpick or Cotton Swab
- Hot Plate or Stove
- Paper

1. Essentially you want to make a thin corn starch gravy. You will write using the gravy, allow the writing to dry, then reveal the message using an iodine solution.
2. If you don't have a pre-made iodine solution, you can make some by adding a teaspoon of iodine to about 10 teaspoons of water. Set the iodine aside for later.
3. Mix about 2 T cornstarch with 4 tsp water in a pan. Heat, while stirring, until smooth. You can boil

- the mixture to make a gravy - just be careful not to burn it!
4. Remove the cornstarch gravy from the heat. Dip a toothpick, small paintbrush, or cotton swab into it and use it to write your message on paper.
 5. Let the paper air-dry.
 6. Brush a small sponge, swab, or paintbrush dipped in the iodine solution over the paper to reveal the hidden message. The message should appear purple.

Tips:

You can use simple corn starch in water to write the message, but the writing won't be as invisible as it is using corn starch gravy.

If the heat source is a problem, try using very hot tap water to hydrate the corn starch rather than using a stove or hot plate.

Iodine binds to the starch molecules to reveal the message.

Try using other starches instead of corn starch, such as diluted mashed potatoes or mashed cooked rice with water.

Baking Soda Ink

What You Need:

- Baking Soda
- Paper
- Water
- Light Bulb (heat source)
- Paintbrush or Swab
- Measuring Cup
- Purple Grape Juice (opt.)

1. There are at least two methods to use baking soda as an invisible ink. Mix equal parts water and baking soda.
2. Use a cotton swab, toothpick, or paintbrush to write a message onto white paper, using the baking soda solution as 'ink'.
3. Allow the ink to dry.
4. One way to read the message is to hold the paper up to a heat source, such as a light bulb. The baking soda will cause the writing in the paper to turn brown.
5. A second method to read the message is to paint over the paper with purple grape juice. The message will appear in a different color.

Tips:

If you are using the heating method, avoid igniting the paper - don't use a halogen bulb.

Baking soda and grape juice react with each other in an acid-base reaction, producing a color change in the paper.

The baking soda mixture can also be used more diluted, with one part baking soda to two parts water. Grape juice concentrate results in a more visible color change than regular grape juice.

Lemon Juice Ink

What You Need:

- Lemon or Lemon Juice
- Sunlight or Heat Source
- Paper
- Paintbrush or Stick

How:

Squeeze lemons to obtain their juice or obtain bottled lemon juice.

Use the juice as 'ink' by applying it to a stick or paintbrush and writing on paper.
Allow the paper to dry.

When you are ready to read your invisible message, hold the paper up to sunlight, a light bulb (recommended), or other heat source.

The heat will cause the writing to darken to a pale brown, so your message can now be read.

Another way to read the message is to put salt on the drying 'ink'. After a minute, wipe the salt off and color over the paper with a wax crayon to reveal the message.

Tips:

Experiment with other juices. White wine, orange juice, vinegar, and apple juice all work well, too.

A cotton swab makes an excellent disposable 'paintbrush'.

The writing turns brown because the weakened paper burns before the rest of the paper. Be careful not to overdo your heating and ignite the paper!

_____ 5. Learn to dust for fingerprints

Things You'll Need:

- Powder
- Paper
- Soft bristle brush
- Cellophane tape

Step 1. Identify the surface area that you want to dust for fingerprints. Fingers are coated with perspiration and oil. When fingers touch any relatively smooth surface, the friction releases the oil from between the ridges and a print is left.

Step 2. Pour a small amount of powder on a piece of paper. Use a powder whose color contrasts with the surface color. You can try a white powder on a dark surface and a black powder on a light surface.

Step 3. Shake the brush so the bristles spread apart.

Step 4. Dip the tip of the brush in the powder, and then gently tap the brush's handle to remove excess powder.

Step 5. Run the brush's bristles lightly over the powdered surface in short and quick strokes.

Step 6. Unroll the cellophane tape and gently press it on top of the print.

Step 7. Pull the tape away from the print in one quick and fluid motion, and apply the tape with the print attached to a piece of paper.

_____ 6. With the help of an adult, build a mirrored telescope. Instructions can be found at the following websites as well as many others: http://www.exploratorium.edu/science_explorer/periscope.html , <http://www.lightwave.soton.ac.uk/experiments/periscope/periscope.html> , <http://www.wikihow.com/Make-a-Periscope>

_____ 7. Design your own spy ID card. A sample can be found at <http://www.topspysecrets.com/spy-id-card.html> .

Dolphin: Do 5 requirements including the 2 starred

_____ 1.* Complete Otter requirement; 1 &2, but learn about at least 3 women spies.

_____ 2.* Learn the what the following spy terms mean: *Black Bag Job, Brush Contact, L-Pill, Window Dressing, and Sheep Dipping*. Understand the meaning of the following spy related words: *espionage, cryptography, cipher, agent, CIA, FBI, analysis*,

_____ 3. Read a book about women spies such as: **"In the Line of Fire" - Eight Women War Spies**" by George Sullivan, **"Sisterhood of Spies"** by Elizabeth P. McIntosh, **"The Scarlet Stockings Spy Edition 1."** (Tales of Young Americans) by Trinka Hakes Noble

_____ 4. With a parent's permission, check out at least 2 of the following government websites for kids:

CIA website for kids at <https://www.cia.gov/kids-page/index.html>
National Security Agency's website for kids at <http://www.nsa.gov/kids/>
National Reconnaissance Office's website for kids at <http://www.nrojr.gov/>
Defense Intelligence Agency's kid website at <http://www.dia.mil/kids/interfacemx.html>
National Geospatial Intelligence Agency's website for kids at <http://www.nga.mil/ngakids/>

_____ 5. Learn to make invisible ink using one of the recipes in the Otter section. Use it to write a secret message to a friend. Make sure an adult is present if using a heat source to read the message. If you have done this requirement at an earlier level, try a new recipe.

_____ 6. Learn to dust for fingerprints using the directions in the Otter section.

_____ 7. With the help of an adult, build a mirrored telescope. Instructions can be found at the following websites as well as many others: http://www.exploratorium.edu/science_explorer/periscope.html , <http://www.lightwave.soton.ac.uk/experiments/periscope/periscope.html> , <http://www.wikihow.com/Make-a-Periscope>

_____ 8. Design your own spy ID card. A sample can be found at <http://www.topsysecrets.com/spy-id-card.html> .

Butterfly: Do 6 requirements including the 2 starred

_____ 1.* Complete Dolphin requirement 1 & 2, but learn about at least 5 different women spies and add the terms *Canary Trap, Dangle, Honey pot, Camp Swampy, Uncle, and Starburst Maneuver*. Also add the words, *propaganda, BATF, compromised, covert, courier, decoy, diversion, and counter intelligence*.

_____ 2.* Find out what Intelink is and how it is used to gather and share information within the government..

_____ 3. . Read a book about women spies such as: **"In the Line of Fire" - Eight Women War Spies**" by George Sullivan, **"Sisterhood of Spies"** by Elizabeth P. McIntosh, **"The Scarlet Stockings Spy Edition 1."** (Tales of Young Americans) by Trinka Hakes Noble

_____ 4. With a parent's permissio, check out at least 2 of the following government websites for kids:

CIA website for kids at <https://www.cia.gov/kids-page/index.html>
National Security Agency's website for kids at <http://www.nsa.gov/kids/>
National Reconnaissance Office's website for kids at <http://www.nrojr.gov/>
Defense Intelligence Agency's kid website at <http://www.dia.mil/kids/interfacemx.html>
National Geospatial Intelligence Agency's website for kids at

<http://www.nga.mil/ngakids/>

- _____ 5. Learn to make invisible ink using one of the recipes in the Otter section. Use it to write a secret message to a friend. Make sure an adult is present if using a heat source to read the message. . If you have done this requirement at an earlier level, try a new recipe.
- _____ 6. Learn to dust for fingerprints using the directions in the Otter section.
- _____ 7. Watch a spy movie.
- _____ 8. With the permission of a parent, search the internet to discover what types of real spy gadgets are available for sale.

Eagle: Do 7 requirements including the 2 starred

_____ 1.* Complete Butterfly level requirements 1&2 but learn about at least 8 different women spies and add the following terms and words: Deep Cover Agent, Double Agent, defector, Eyes Only, Ears Only, hostile, infiltration, Interpol,

_____ 2.* Women are very much a part of space age information gathering and have earned high level positions in both the military and the many intelligence agencies in the government. It's a career path with vast possibilities and one that any woman who chooses to follow can certainly do so. Learn about at least 3 different careers related to "spying" and the education needed to enter that field.

_____ 3. Read a book about a famous spy.

_____ 4. Watch a spy movie.

_____ 5. Learn to make invisible ink using one of the recipes in the Otter section. Use it to write a secret message to a friend. Make sure an adult is present if using a heat source to read the message. . If you have done this requirement at an earlier level, try a new recipe.

_____ 6. Learn to dust for fingerprints using the directions in the Otter section.

_____ 7. With supervision of an adult, make a book safe. Instructions can be found at the following websites as well as others:

<http://www.topspysecrets.com/book-safe.html>

<http://www.allfreecrafts.com/homemade-gifts/book-safe.shtml>

<http://www.instructables.com/id/Building-a-Book-Safe/>

_____ 8. With the permission of a parent, search the internet to discover what types of real spy gadgets are available for sale.

_____ 9. With a parent's permission, surf at least 2 of the following websites:

CIA website at <https://www.cia.gov/>

NSA website at <http://www.nsa.gov/>

NRO website at <http://nro.gov/>

DIA website at <http://www.dia.mil/>

NGA website at <http://www1.nga.mil/Pages/Default.aspx>