

Special Agent Badge Program

Grade Levels: 6-8 (Cadettes)

Educational Outcomes:

1. Girl Scouts will learn to sketch a potential “suspect” based off of an “eye-witness” description.
2. Girl Scouts will learn how to identify an ink type using ink chromatography.
3. Girl Scouts will learn how to identify and detect eight different fingerprint patterns.

Estimated Time: 2 hours

- Introduction: 5 minutes
- Activity 1- “Practice the Art of Detection”: Sketch a “suspect”: 40 minutes
- Activity 2-“Try the Science”: Forensic Chemistry, Ink Chromatography:35 minutes
- Activity 3-“Investigate Investigation”: “Identify Crisis,” Fingerprint analysis: 40 minutes

Girl Scout Badge Connections:

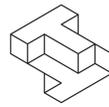
Special Agent Badge, *It's Your Planet-Love It! Cadette Journey*

- Step 5: Practice the Art of Detection (Sketch a “suspect”)
- Step 3: Try the Science (Forensic Chemistry)
- Step 1: Investigate Investigation (Host an “Identify Crisis” party)

Pre Visit Vocabulary

These are words and concepts that we will discuss in the lab. Your students’ experience will be enhanced if they are familiar with these terms prior to your visit.

- Chromatography: process that filters the separate parts of a mixture so that individual parts can be seen.
- Fingerprint: impression left by the ridges of one’s fingers
- Plain arch: an even flow of ridges from one side of a finger to the other with a small rise or wave in the middle.
- Tented arch: an even flow of ridges from one side of a finger to the other with a prominent rise or pinched wave in the middle.
- Ulnar loop: ridges that flow in a loop pattern beginning on the thumb side of the finger looping towards the pinky side of the finger
- Radial loop: ridges that flow in a loop pattern beginning on the pinky side of the finger looping towards the thumb side of the finger.
- Plain whorl: ridges that flow in a concentric circular pattern forming a target like shape.
- Central pocket loop: ridges that form a spiral like pattern with a central “pocket” or circle at the center of the print.
- Double loop whorl: ridges that form an “s” shape of two distinct loop shapes.
- Accidental whorl: ridges that form two separate fingerprint patterns on one finger.



Post-Lab Activities

This lab only covers Steps 1, 3, and 5 of the Special Agent Badge. To complete this badge, Steps 2 and 4 must be completed separately. Below are some resources to help troop leaders complete the Special Agent Badge with their Scouts. You may also find additional resources and activities in the Cadette Badge booklet: Special Agent.

Step 2: Reveal Reality

- ♦ *Try the eyewitness challenge:* Arrange to have someone run through your troop meeting, grab something, and run out. The person should not have too many distinguishing characteristics; he or she should look like they are trying to blend in. After the person has run through the meeting, wait about 10 minutes and then ask the girls to write down everything they remember about the person. They should then compare notes and see how accurate their "eyewitness" account was and how it compared to someone else's. Here are some other links and videos for more information on accuracy of eyewitness reports, forensic science, and the importance of observation skills.
- ♦ The following webpage offers a great deal of information on the many branches of forensic science. There is also a section with an activity that focuses on how to be a good eyewitness.
<http://sciencespot.net/Pages/classforsci.html#crimescene>
- ♦ The following article gives some additional information on why eyewitness accounts are not very reliable.
<http://www.howstuffworks.com/eyewitnesses-unreliable.htm>
- ♦ The following videos offer some tests to see how well the viewer pays attention and makes observations.
http://www.youtube.com/watch?v=lGQmdoK_ZfY
<http://www.youtube.com/watch?v=YcTgjR5iV1Y>

Step 4: Key into Body Language

- *Check out voice analysis:* A person's voice is just as unique as their fingerprint. Forensic analysts can use computer programs to identify and confirm a person's voice, detect if they are lying, determine their mood or circumstances, and much more. Here are some links to learn more about forensic voice analysis and how it has been used to solve important crimes. After reading up about forensic voice analysis, try recording a conversation between several friends and see if you can recognize their voices and tell what their mood was at the time of the conversation.
 - ♦ This website offers a more in-depth look at forensic voice and audio analysis. There is also a look at the importance of audio analysis in major crimes such as the Watergate scandal.
<http://www.soundonsound.com/sos/jan10/articles/forensics.htm>
 - ♦ This website is dedicated specifically to voice identification analysis and includes a video of a voice identification expert describing his specialty. <http://www.audioforensicexpert.com/audio-forensics/voice-identification/>
 - ♦ "Moodies Emotions Analytics" is a free mobile app available on iTunes and Google Play that can read a person's emotions based on their tone of voice. The developer's website has interesting information on how a person's tone of voice can be used to understand their emotions:
(<http://www.beyondverbal.com/>).
 - ♦ This website gives information on Layer Voice Analysis (the technology behind the Moodies Emotions Analytics app) and how the technology is used in various security-related activities:
www.nemesysco.com/technology-lvvoiceanalysis.html