

## CADETTE SPECIAL AGENT BADGE – MEETING 1

**Badge Purpose:** When you’ve earned this badge, you’ll know secrets from the worlds of forensic science and criminal psychology.

**Activity Plan Length:** 1.5 hours

Time	Activity	Materials Needed
15 minutes	Getting Started <ul style="list-style-type: none"> <li>Begin the meeting by reciting the Girl Scout Promise + Law.</li> </ul>	<input type="checkbox"/> (Optional) Girl Scout Promise and Law poster
20 minutes	Read the Fine Print <ul style="list-style-type: none"> <li>Learn about fingerprints and how they can help forensic detectives solve mysteries.</li> </ul>	<input type="checkbox"/> Clear tape <input type="checkbox"/> Number 2 pencils <input type="checkbox"/> Hand lotion <input type="checkbox"/> Cocoa powder <input type="checkbox"/> Small makeup brush or paintbrush <input type="checkbox"/> Paper <input type="checkbox"/> Magnifying glass <input type="checkbox"/> Fingerprint Classes chart (at the end of this activity plan)
15 minutes	Did You See That? <ul style="list-style-type: none"> <li>Explore whether eyewitness reports are helpful tools in solving mysteries.</li> </ul>	<input type="checkbox"/> Cookie tray <input type="checkbox"/> Towel <input type="checkbox"/> 20 small, random items (nail polish bottle, key, rubber duck, postage stamp, etc.) <input type="checkbox"/> Paper <input type="checkbox"/> Pencils
15 minutes	Truth from Fiction Snack Chat <ul style="list-style-type: none"> <li>Share some ways to determine if someone is lying or telling the truth, and try out a few whoppers on each other while having a healthy snack.</li> </ul>	<input type="checkbox"/> Healthy snack
15 minutes	Drawing It Out <ul style="list-style-type: none"> <li>Practice drawing a composite sketch from a verbal description.</li> </ul>	<input type="checkbox"/> Paper <input type="checkbox"/> Pencils <input type="checkbox"/> Crayons or colored pencils in the following colors: pink, black, white, brown, tan, orange <input type="checkbox"/> Drawing It Out “Wanted” sheet (at the end of this activity plan)
10 minutes	Wrapping Up	<input type="checkbox"/> (Optional) Make New Friends lyrics poster



## Getting Started

Time: 15 minutes

Materials Needed: (Optional) Girl Scout Promise and Law poster

Welcome everyone to the meeting, recite the Girl Scout Promise and Law.

## Activity #1: Read the Fine Print

Time: 20 minutes

Badge Connection: Step 1 – Investigate investigation

Materials Needed: Clear tape; number 2 pencils; hand lotion; cocoa powder; small makeup brush or paintbrush; paper; magnifying glass, Fingerprint Classes chart (at the end of this activity plan)

Prep Needed:

- Two extra sets of fingerprints for each girl should be collected for an activity at the next meeting for this badge (one or two fingers are needed, not the entire hand). Be sure to label which fingers were used and record names on the paper.
- Forensic scientists who investigate crimes rely on many types of evidence to help them solve mysteries. Since everyone's fingerprints are unique, fingerprints are a reliable way to find out who's been at the scene of a crime. Investigators collect fingerprints and then compare them against the Integrated Automated Fingerprint Identification System—a national database of fingerprints. Getting a “match” in the national database tells the investigators more information about the person, which can help them put the pieces of the puzzle together when solving mysteries.
  - You may hear “dust the place for fingerprints” when watching crime shows and mysteries on TV, but what does that actually mean? In this activity, you will learn how to do your own detective work by learning how to collect your own fingerprints, and then analyzing them. Here are two ways to collect fingerprints:
    - Option 1:** Rub a No. 2 pencil on a piece of paper until a dark smudge appears. Rub one finger on the smudge until the fingertip is covered in graphite. Place a piece of tape over the fingertip and press gently. Carefully remove the tape and press it on a white piece of paper. Record which finger the print came from, and repeat the process for the other fingers.
    - Option 2:** Rub a small amount of lotion on your hands and then press your finger onto a counter or tabletop surface (creating a fingerprint on the surface). Sprinkle some cocoa powder on the fingerprint and then gently brush excess away with a makeup brush or paintbrush. Place a piece of tape over the fingerprint (on the surface you touched) and press gently. Carefully remove the tape and press it on a white piece of paper. Record which finger the print came from, and repeat the process for the other fingers. (*Note: You could use cornstarch or baby powder for your dusting powder, but then be sure to use a dark colored piece of paper, instead of white paper, so you have color contrast and can see the fingerprint.*)
  - So how do you “read” a fingerprint and identify a match? Fingerprints have three distinctive patterns that investigators examine: arches, loops, and whorls. Compare your fingerprints to the Fingerprint Classes chart at the end of this activity plan to learn more about your fingerprint.

## Activity #2: Did You See That?

Time: 15 minutes

Badge Connection: Step 2 – Reveal reality

Materials Needed: Cookie tray; towel; 20 small, random items (nail polish bottle, key, rubber duck, postage stamp, etc.); paper; pencils

Prep Needed:

- Arrange to have someone run through your meeting space during this activity, taking something from a table filled with various miscellaneous everyday items (like a hat, a notebook, a water bottle, etc.). Ideally, this person is not part of the troop—the less well-known to the girls, the better.



1. Eyewitness testimony can be a key piece of evidence in solving mysteries. But it also has major drawbacks since our memories are often not as good as we think they are. It's easy to mix up the details in our minds, or have our emotional response confuse the details (if you are scared by the event, that fear can alter the memory in your brain, creating details that maybe were not there at all). Other factors that can affect the accuracy of eyewitness testimony include weather, stress, health, and personal bias.
2. Play Kim's Game\* to test your memory. Arrange about 20 small items on a cookie tray. Include things like a nail polish bottle, a key, a rubber duck, a postage stamp, or other small, random things. Cover the items with a towel. Pass out a piece of paper and a pencil to everyone and tell them they will have 60 seconds to view the items. Make sure that everyone can see all the items from where they are positioned. Set the timer, and remove the towel (don't write on your paper yet!). Once the 60 seconds have passed, cover the tray again. Next, quickly write down as many items as you can remember.
3. Review the items on the tray together and have each person record their score of how many items they remembered. Talk about how it felt to try to remember the items once the towel covered them up again. Did anyone remember them all? Was anyone surprised that they didn't remember more items?
4. (At this time, have your appointed "suspect" run through the meeting space and grab something off the tray.)  
***Wait a minute, did you see that? Did someone just run through your meeting space??***
5. Luckily, that person who just ran through your troop meeting was *not* a criminal! It was all part of the plan to see how eyewitness testimony works. Flip your Kim's Game papers over and quietly write down everything you remember about that person.
  - Was it a man or a woman? Young or old?
  - How were they dressed?
  - Were they carrying anything?
  - Did they leave anything?
  - Did they take anything?
6. Discuss each girl's individual reports about the person. Did something that another girl shared jog your memory too? Does that make your memory of the detail more accurate? Or does it muddy the waters even more?
7. Have the person come back into the room. How accurate was your "eyewitness testimony"?

*\*Note: Kim's Game is named for the 1901 novel by Rudyard Kipling called "Kim." The main character (Kim) used the game in his training as a spy!*

## Activity #3: Truth from Fiction Snack Chat

Time: 15 minutes

Badge Connection: Step 4 – Key in to body language

Materials Needed: Healthy snack

1. In addition to other evidence, forensic investigators and criminal psychologists study body language and speech patterns to determine if a suspect is telling the truth. It can be difficult to tell when someone is lying, but there are a few important tell-tale signs to watch for. While having a healthy snack, discuss the following signs of lying:
  - **Duping delight:** tiny micro-expressions when the person feels like they got away with the lie
  - **Gaze aversion:** reduces the guilt experienced from lying directly to a person's face
  - **Non-congruent gestures:** pairing strong words with a shrug of the shoulders or a "no" headshake
  - **Story that follows a strict memorized order:** if asked to tell it backwards, the liar may be busted
  - **Overcompensation:** using too many "big" words to make the story sound more true
  - **Distancing:** using impersonal phrases instead of personal pronouns
  - **Used car salesman vibe:** if a story sounds contrived and fake, it probably is
2. What other body language signals can point to dishonesty? Spend some time sharing your ideas about body language and what certain signals can mean, even if the person's words say otherwise.



3. Take turns playing “Two Truths and a Lie” to see if you can separate truth from fiction—be sure to pay attention to body language!

## Activity #4: Drawing It Out

minutes

Time: 15

Badge Connection: Step 5 – Practice the Art of Detection

Materials Needed: Paper; pencils; crayons or colored pencils in the following colors: pink, black, white, brown, tan, orange; Drawing It Out “Wanted” sheet (at the end of this activity plan)

Prep Needed:

- One person should print the Drawing It Out “Wanted” sheet (at the end of this activity plan) before the meeting and keep it hidden from the girls.
1. Forensic investigators rely on artists to help them identify and locate suspects when eyewitness testimony is available. Facial composite sketches are often drawn from eyewitness accounts of the suspect. The witnesses describe what they saw and how they remember the suspect’s appearance, and the artist draws from that verbal account.
  2. For this activity, you are going to be the composite sketch artist. Here are the details of the situation:
    - A crime has been committed! Your neighborhood pet supply store has a guinea pig on the loose. This suspect (the guinea pig) is accused of escaping from its cage and destroying property. There was a witness who saw the suspect flee the scene of the crime. Your help in locating and apprehending the suspect is needed! The witness describes the suspect as follows:
      - “The guinea pig has a pink nose and black eyes. There is a white patch of fur between the eyes and around the nose. The right ear is black, but the left ear couldn’t be seen (the suspect was moving too fast). There is an eye patch of black fur around the right eye with an orange strip underneath the eye patch. The right front paw is black. The other paws are pink. The middle of the suspect’s body is black/brown fur. The rump has orange/tan fur. There is a white patch of fur near the right back leg. The suspect has white whiskers.”
  3. After completing your composite sketch from the description of the suspect, compare your drawing with the picture of the guinea pig on the Drawing It Out “Wanted” sheet (at the end of this activity plan). How did you do? Do you think that this suspect could be located based on your drawing alone?

## Wrapping Up

Time: 10 minutes

Materials Needed: (Optional) Make New Friends song lyrics poster

Close the meeting by singing Make New Friends and doing a friendship circle.

## More to Explore

- Field Trip Ideas:
  - Visit a police station to find out more about fingerprinting suspects and collecting evidence.
  - Go to your library to learn about the different branches of forensic science: criminology, digital and multimedia science, engineering science, forensic dentistry, forensic pathology, forensic anthropology, and toxicology.
- Speaker Ideas:
  - Ask a law-enforcement officer, judge, lawyer, or other expert to speak to your troop about stories of people who were wrongly convicted based on inaccurate eyewitness accounts.



- Learn more about The Innocence Project, a group that uses DNA evidence to free prisoners who were wrongly convicted before DNA technology was available. <https://www.innocenceproject.org/>

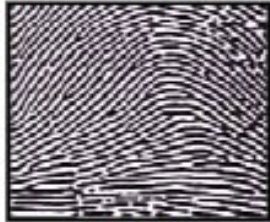


# Fingerprint Classes

Fingerprints can be classified into three different groups based on the pattern of the ridges.

## Arches

Ridges enter on one side & exit on the other side.



Plain Arch



Tented Arch

## Loops

Ridges enter on one side & exit on the same side



L - Radial Loop  
R - Ulnar Loop

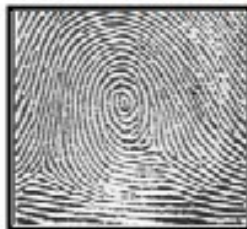


L - Ulnar Loop  
R - Radial Loop

## Whorls

Consists of circles, more than one loop, or a mixture of pattern types

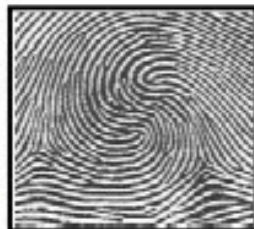
Plain Whorl



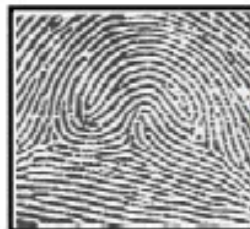
Central Pocket Whorl



Double Loop Whorl



Accidental Whorl





## Drawing It Out

### WANTED!

#### *Have you seen this suspect?*

A crime has been committed! Your neighborhood pet supply store has a guinea pig on the loose. This suspect (the guinea pig) is accused of escaping from its cage and destroying property. There was a witness who saw the suspect flee the scene of the crime. Your help in locating and apprehending the suspect is needed!

*"The guinea pig has a pink nose and black eyes. There is a white patch of fur between the eyes and around the nose. The right ear is black, but the left ear couldn't be seen (the suspect was moving too fast). There is an eye patch of black fur around the right eye with an orange strip underneath the eye patch. The right front paw is black. The other paws are pink. The middle of the suspect's body is black/brown fur. The rump has orange/tan fur. There is a white patch of fur near the right back leg."*

