



Cadette Special Agent Badge Workshop

An At-Home Program

Cadette Special Agent Badge Workshop (At-Home)



Detectives use a wide variety of methods when trying to catch a criminal. Everything from eyewitness testimonies to evidence they find on the scene is very important in identifying a suspect. In this badge you will learn about a number of ways that law enforcement can identify a person and you will get to try them out!

Program Outline

Materials:

- See each step for a complete list of items needed.

Step 1: Investigate investigation

Fingerprints are a great way to identify people because no two people's fingerprints are the same. You are going to be looking at your and your family's fingerprints to identify what types they are as well as how common those types are

What you'll need:

- Your Family
- Pencils
- Paper
- Tape

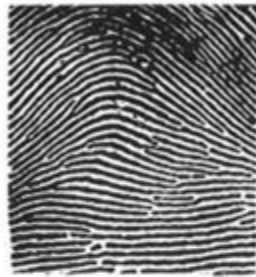
How to take fingerprints:

- Using the pencils, scribble on a piece of paper to create a spot of solid graphite large enough for your finger
- Rub one of your fingers over the area until you cover your fingertip in graphite
- Place a small piece of tape on your fingertip and carefully press down
- Carefully peel it off of your finger and stick it to a clean piece of paper.
- Label it with which finger it was (e.g. right index finger)
- Repeat with each finger

- Do the same for each of your family members

Compare:

Compare the fingerprints you took to the image below. Which types of fingerprints do you have? Which types do your family members have? Are some of the types of fingerprints more common than others?



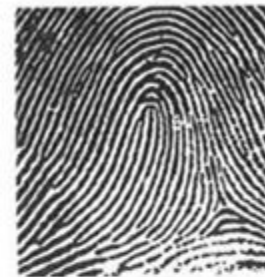
Plain Arch



Tented Arch



Ulnar Loop



Radial Loop



Double Loop Whorl



Plain Whorl



Central Pocket Loop Whorl



Accidental Whorl

Loops are the most common type of fingerprint. They make up 60% - 70% of all fingerprints. The two different subcategories are ulnar and radial. These refer to the bone in the forearm that they point towards. An easy way to find out which you have is to look at your actual finger. A radial loop will open towards the thumb. This type is fairly uncommon and is usually only found on index fingers. The ulnar loop will open toward the pinky.

Whorls are the next most common consisting of 25% - 35% of all fingerprints. Whorls have a few variations as shown above.

Arches are the least common. They consist of only about 5% of all fingerprints. There are 2 main varieties of arches – plain and tented.

When you are done examining the fingerprints you took, create a catalog of your family's fingerprints

Step 2: Reveal reality

Another way to identify suspects is to look at the types of tracks they leave behind. If they wear gloves they may not leave behind fingerprints but looking at the terrain outside may yield a number of clues that the suspect may not have thought of. Even dust on the floor can give a number of clues that can help law enforcement identify someone.

What you'll need:

- Your family
- An open area of sand, dirt/mud, gravel, or any other soft ground

What to do:

- Gather your family
- Have each person choose how they want to traverse through the area you picked. Remember to make sure they keep this a secret from you. They can bike, walk, hop, or any other way of moving through the area
- Give them some time to move through the area. Make sure you aren't watching them.
- When they are all finished, go to the area to investigate
- Can you tell who made what tracks? Look at identifying marks such as shoe pattern, shoe size, indent depth, spacing between footprints, and anything else that you can see to help you identify who made which tracks.

Step 3: Try the science

Another way of finding evidence is using chromatography. Chromatography is the process of separating parts of a mixture so their individual parts can be analyzed. This can be used to find poisons or drugs present in a body or to identify ink in stains or ransom notes.

What you'll need:

- Coffee filter
- Black markers
- Water
- Rubbing alcohol
- Popsicle stick or pencil
- Cups

What to do:

- Cut the coffee filter into 1" wide strips.
- Use a few different types of black markers (sharpie, washable marker, etc.) to make marks about 1" from the bottom of the coffee filter strip. Make sure you only have one mark per coffee filter and you label the filter with the type of marker you used on the opposite end with a pencil.
- Put one part water and one part rubbing alcohol into each cup
- Place the coffee filter strips into the cups so that just the end of the filter is in the liquid. Fold the other end of the filter over a Popsicle stick to keep the filter in place. Make sure you don't submerge the black mark that you made.
- Wait about 15-20 min and then observe results.
- How many colors do you see? What are the differences between the different types of markers?

Step 4: Key in to body language

During investigations, detectives will interrogate suspects to find out information that can help them determine if someone is innocent or guilty. This is not always a perfect method because people can lie

about anything during these interrogations however, there are some ways to find out if people are lying. These methods are not foolproof but they can give you an idea of whether or not the person is telling the truth.

What you'll need:

- Your family
- Information about tells (find below)

What to do:

- Read about "tells." What are they? Do you use any of them when you lie? Do you know anyone who has specific tells when they lie?
- Gather your family to play the game "2 Truths and a Lie"
- Ask each family member to come up with two facts about themselves and have them make up something about themselves. Don't make it too obvious as to which statement is the lie.
- Go around and have each person say their three statements.
- Guess which one is the lie by watching what they do when they are speaking. Did any of them have any tells that they were lying? Were you able to trick them into thinking one of your truths was a lie by using common tells when telling the truth?

Common tells: (remember these are not guaranteed ways to see if someone is lying but they are some of the most common)

Body cues:

- Hands: People who are lying often use hand gestures after they speak instead of before they talk or while they are talking. This is because the mind is doing too many things at once – making up the story, gauging if they are being believed, and adjusting the story to be more believable. This means that hand gestures that would normally occur just before the statement actually happen after.
- Itching and fidgeting: Moving around too much while talking can be a sign of lying. This usually occurs because people tend to get nervous while lying. Moving around too much is a very common sign of nervousness.

Facial Cues:

- Eyes: If someone keeps looking away from you while talking, this may be a sign they are lying. This could be because they are looking around as they try to come up with what to say next. On the other hand, if a person stares too much and too intently, this could be another tell that they are lying.
- Mouth: Biting lips can be a sign that someone is lying by omission. This is usually a reflex that occurs when someone doesn't want to speak and could be a sign that someone is hiding something.

Voice:

- High pitched: Nervousness can cause the tightening of the vocal cords resulting in the person's voice getting higher. Clearing the throat too much is a sign that they are nervous and trying to relieve the tension in their throats.
- Volume: A sudden change in volume can indicate that someone is lying and getting defensive.
- Speech: If someone uses phrases like "I'm going to be honest with you" or "Let me tell you the truth," that may be a sign that they are lying and trying too hard to come across as truthful.
- Slip-ups: While speaking, someone who is lying may accidentally say the truth then quickly backtrack and say their lie.

Step 5: Practice the art of detection

Using the information you learned during steps 1 through 4, you are going to create a story for your own forensic-science drama. Think of some sort of mystery that can be solved using the above methods. Write a script or short story involving a character solving the mystery. Maybe there was a crime and to find out who committed it, your main characters have to identify fingerprints or footprints. Maybe someone left a threatening note and they need to figure out what kind of marker was used. Be creative and come up with your own unique mystery!

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