FINGERPRINTING

Collecting Your Own Fingerprints – 3 Ways

Fingerprinting is a widely used method of identification because no two fingerprints are exactly the same. Even twins have different fingerprints. Fingers have slightly raised lines that form patterns and every finger has its own unique pattern. Natural oils from the skin are left behind when a person touches something, leaving a fingerprint pattern. Forensic scientists study fingerprints to match them to a particular person. This is used in solving crimes - forensic scientists can identify the person who committed a crime by the fingerprints left at the scene. Today, we'll determine what type of fingerprints you have.

Materials List

Dark colored Ink pad

My Prints Worksheet

Transparent Tape

Pencil

Scrap paper

5 light colored balloons for each person

Wet Wipes

Fingerprinting – Method 1

1. Using an ink pad, press your left thumb onto the ink pad. Roll to the left and to the right.
2. Press your finger firmly on the correct location on the My Prints worksheet. When you lift your finger, your fingerprint will remain.
3. Continue with each finger on your left hand.
4. Wipe your fingers with wet wipes or wash your hands.

Fingerprinting – Method 2

1. Find a partner. One person will serve as the suspect and one will serve as the detective.
2. Suspects - use a pencil to shade a piece of scrap paper about the size of a 2" x 2" square. Press hard and make sure most of the square is covered.
3. Detectives – tear off a piece of tape being careful not to touch the sticky part.
4. Suspects - press your right thumb firmly on the pencil markings and roll your finger to the

right and to the left. Be sure to put your whole finger - not just the tip.
5. Detectives - place the piece of tape on the suspect's thumb and press down on their finger. Slowly take the piece of tape off and put on the correct location on the My Prints worksheet.
6. Repeat with each finger on your right hand.
7. Switch roles – the detective becomes the suspect and the suspect becomes the detective. Complete this method on the suspect's right hand.
8. Wipe your fingers with wet wipes or wash your hands.

Fingerprinting – Method 3

1. Inflate a balloon so that the balloon has just begun to fill up. It should be barely inflated. Pinch the balloon closed with your left hand.
2. Using an ink pad, press your right thumb onto the ink pad. Roll to the left and to the right.
3. Slowly, press your finger firmly on the middle of the widest part of the balloon. Do not roll around. A small print will remain.
4. Continue blowing up the balloon to a normal inflated size. As you inflate the balloon, the fingerprint will enlarge allowing you to easily see your fingerprint.
5. Repeat with each finger using a separate balloon for each finger.
6. Let the ink to dry.
7. Wipe your fingers with wet wipes or wash your hands.
8. Blow up balloons slightly to see your fingerprint magnified.

Analyze your Fingerprints

1. Using the Fingerprint Ridge Patterns worksheet, decide what type of fingerprints you have. List the number of arches, loops, and whorls on the Fingerprint Analysis sheet.
2. Complete the chart listing the number and percentages of arches, loops, and whorls of the group. How does this compare to the average population?
3. Complete the chart listing the number and percentages of arches, loops, and whorls of the group by gender. What is the most popular fingerprint for each gender?

Follow-up Questions

Which method of collecting fingerprints was most effective? Why?
How do your fingerprints compare to the rest of the group?
What did you learn about your fingerprints?
What was difficult about this activity? Why?
How can you use what you learned?

Additional Step (optional): Collect toe prints in a similar manner using the My Toe Prints worksheet.

My Prints

Name _____

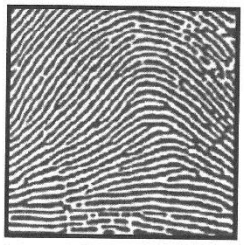
Left

Right

Make fingerprints for each hand and then classify them according to the types presented in class.

Fingerprint Ridge Patterns

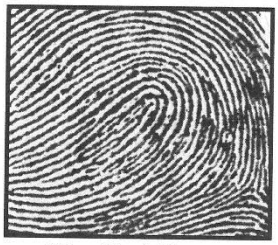
Arches



Plain Arch

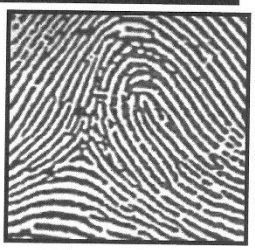
Tented Arch

Loops



Right Hand

Radial Loop



Ulnar Loop

Whorls

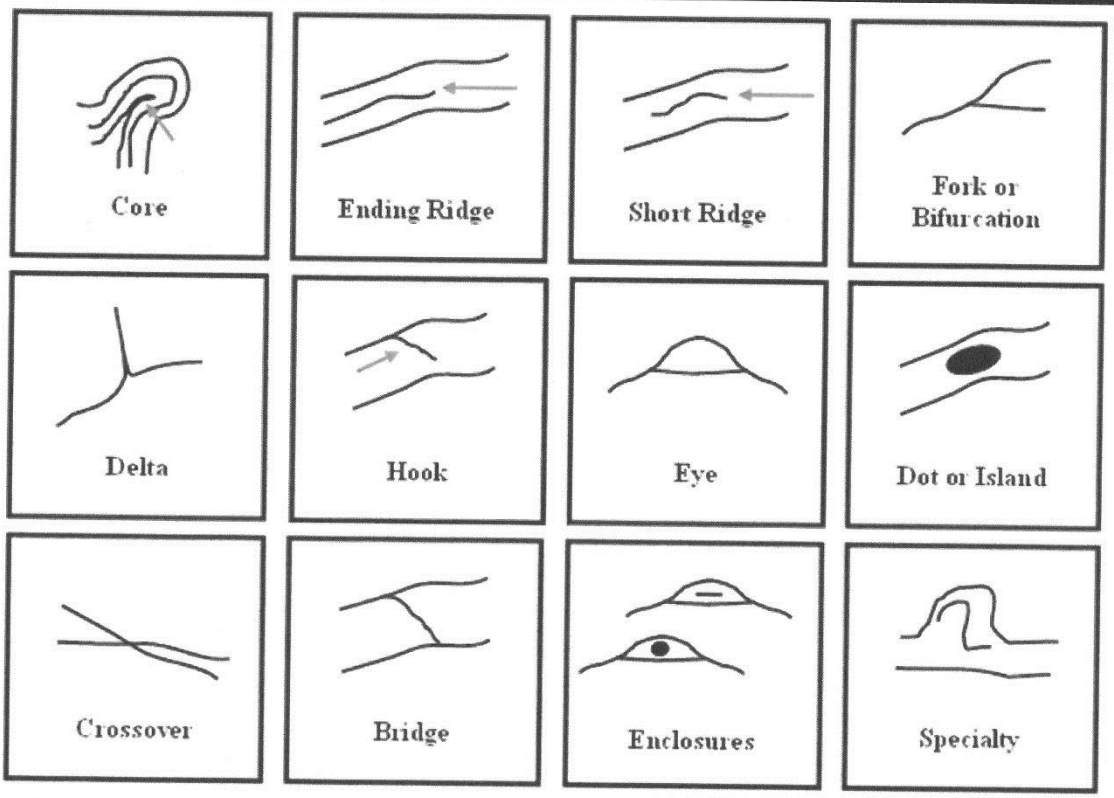
Plain Whorl

Central Pocket Whorl

Double Loop Whorl

Accidental Whorl

Fingerprint Ridge Characteristics



Fingerprint Analysis

Name _____

Step 1: Classify your fingerprints and record the number of each pattern below. Your total should equal 10!

Arches = _____ Loops = _____ Whorls = _____

Step 2: Complete the chart below by recording the total number of each pattern for the class. The expected averages are 60% for loops, 35% for whorls, and 5% for arches.

Pattern	#	Total Prints	%
Arches			
Loops			
Whorls			

How do our prints compare to the expected averages?

Step 3: Complete the chart below by recording the total number of each pattern for the males and females in the class.

Pattern	# Males	# Females	Total Prints	%
Arches				
Loops				
Whorls				

Which pattern is most common pattern among the males in this class?

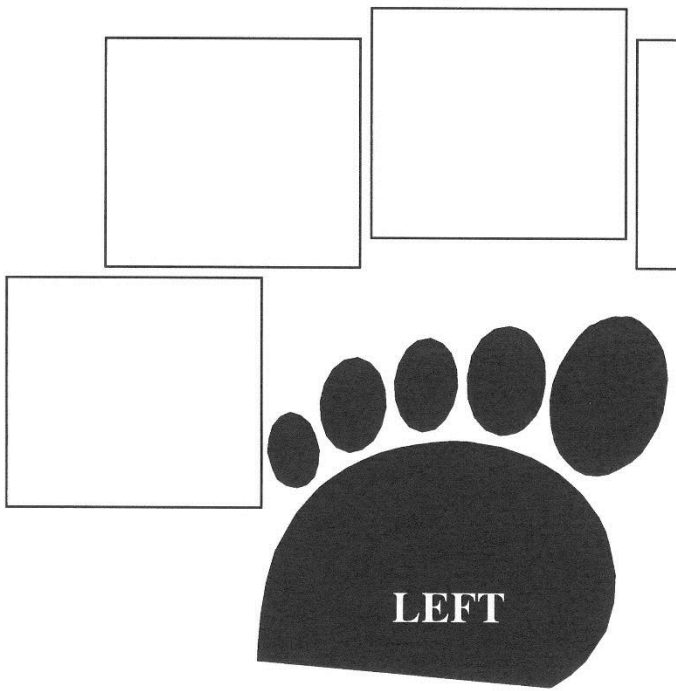
Which is most common pattern among the females?

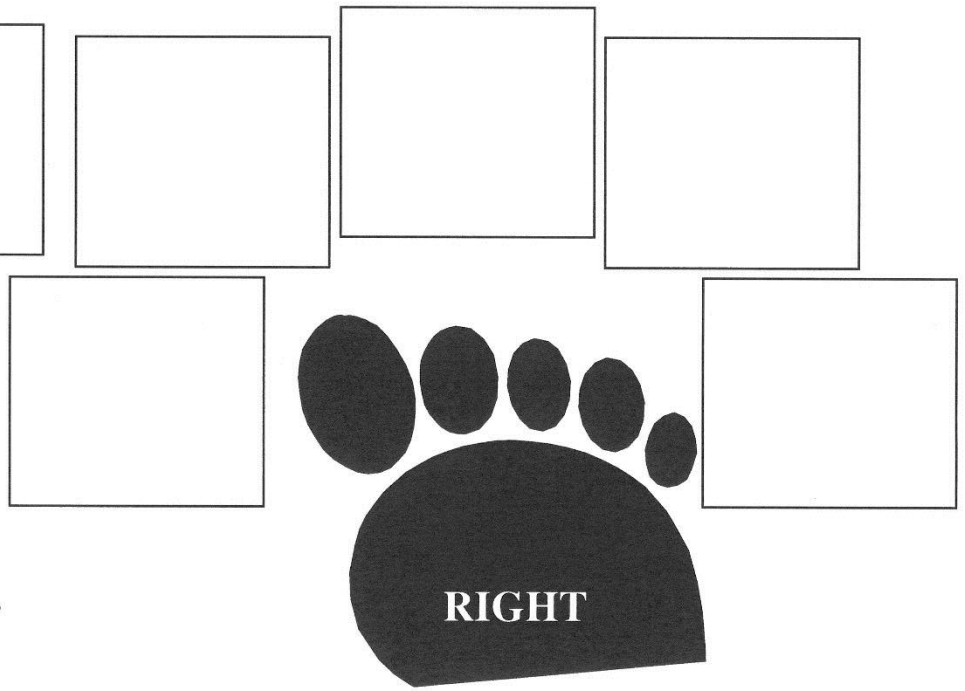
How do the averages for each sex compare to the expected averages?

My Toe Prints

Name _____

Make toe prints for each foot and then classify them according to the types presented in class.





How do your toe prints compare to your fingerprints?