Name:_____ Date:_____

STICKY FINGERS

Part 1: Are some kinds of fingerprints more common than others?

1. Fill in each of these squares using a #2 pencil. Make sure each square is dark and shiny.

Thumb	1st Finger	2nd Finger	3rd Finger	Pinky

2. Blow up a balloon to about the same size as a baseball and tie it loosely.

3. Press each finger into one of the boxes, then gently press it against the balloon. Use a different part of the balloon for each finger!

4. Blow up the balloon larger. Watch the fingerprints EXPAND.

5. Compare each fingerprint to the provided examples. Determine whether it is a **loop, whorl, or arch**.

LOOP
The most common type of print; some ridges enter and exit on the same side of the finger.

WHORL
The ridges form a circular pattern

ARCH
The least common type of print; ridges run from one side of the finger to the other.

6. Record your data below:

	Thumb	Index	Middle	Ring	Pinky
Right Hand					
Left Hand					

STUDENT WORKSHEET

Name:_____ Date:_____

STICKY FINGERS

Using the data from both your hands, count the total numbers of loops, whorls, and arches.

Total# **Loops**: _____

Total# **Whorls**: _____

Total# **Arches**: _____

As a class, calculate the total number of loop, whorl, and arch fingerprints for the entire class. Record that data here:

Classroom Total# **Loops**: _____

Classroom Total# **Whorls**: _____

Classroom Total# **Arches**: _____

Classroom Total# **All Fingerprints**: _____

Next, calculate the **percentage** of each type of fingerprint in your classroom population.
For example, the Percentage of Loops = (Total# Loops / Total# All Fingerprints) x 100

Percentage **Loops**: _____

Percentage **Whorls**: _____

Percentage **Arches**: _____

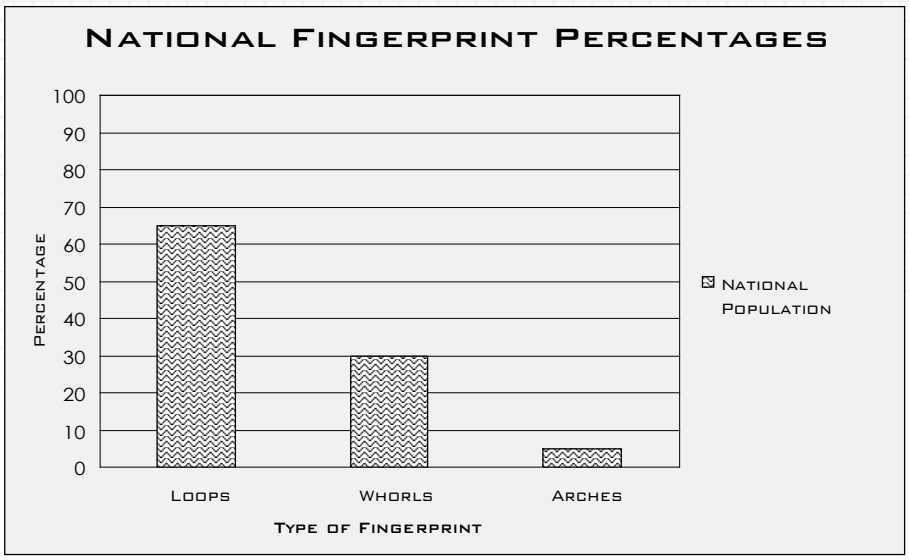
Total Percentages: _____100%_____

STUDENT WORKSHEET

Name:_____ Date:_____

STICKY FINGERS

The chart below shows the how often each of these types of fingerprints occur in the national population. Use this chart to answer the following questions.



1. What percentage of fingerprints in the national population are loops?

2. What percentage of fingerprints in the national populations are whorls?

3. What percentage of fingerprints in the national population are arches?

4. Which is greater: the number of loop fingerprints in the national population, or the number of whorl fingerprints plus the number of arch fingerprint?

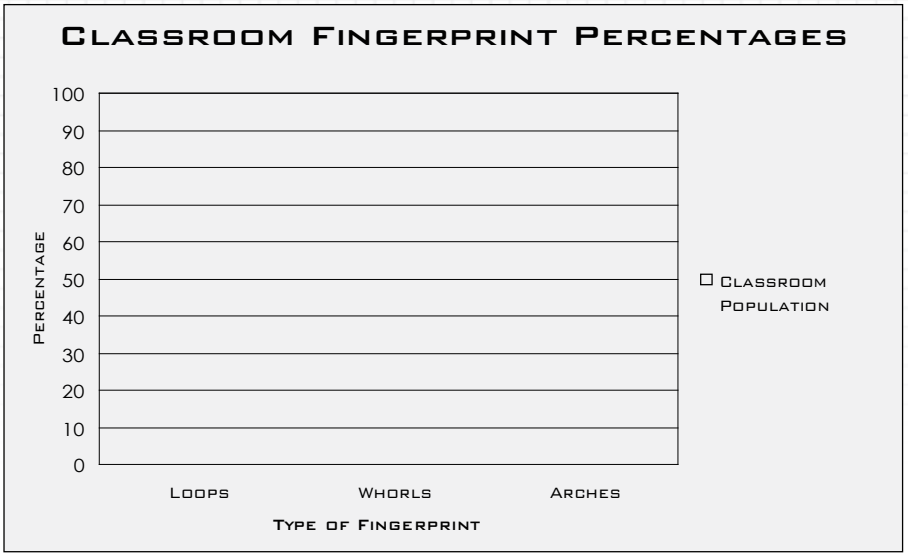
5. In a random sampling of 1000 fingerprints from the national population, approximately how many arch fingerprints can you expect to find?

STUDENT WORKSHEET

Name:_____ Date:_____

STICKY FINGERS

Use the data collected from your class as a whole to fill in the next graph. Use the data from both graphs to answer the following questions.



1. Does the graph of fingerprints in your class look the same as the graph of the national averages? Why or why not?

2. Would you predict that a graph of fingerprint patterns from another class would look the same as your graphs? Why or why not? How could you find out if your prediction is correct?

3. The fingerprints from a recent crime scene are shown on the next page. Using the data from the national population would you say this suspect has common fingerprints? Why or why not?

STUDENT WORKSHEET

Name:_____ Date:_____

STICKY FINGERS

Evidence from Case #4589241-B

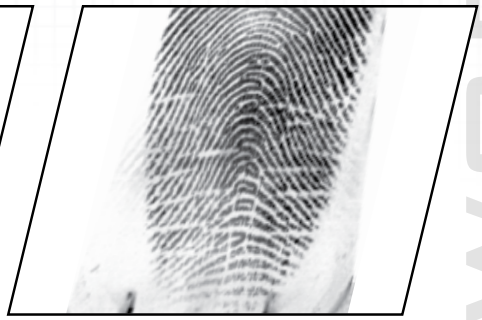
Fingerprints from Crime Scene

From Cash Register

From Display Case

From Cash Register

From Door



From Door

Suspect's Fingerprints

Right Hand

Thumb | Index | Middle | Ring | Pinkie

Left Hand

Thumb | Index | Middle | Ring | Pinkie

STUDENT WORKSHEET

Name:_____ Date:_____

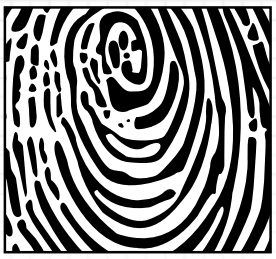
STICKY FINGERS

Part 2: Do the suspect's fingerprints match those at the crime scene?

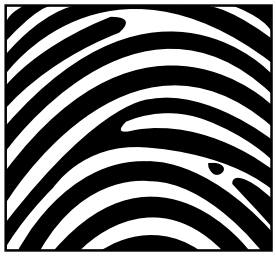
In the previous exercise, you should have noticed that everybody has similar fingerprints. For example, many students in your class may have fingerprints that are all loops, or nine loops and a whorl. If everyone's fingerprints are so similar, how can forensic scientists link certain fingerprints to a specific individual?

Forensic scientists use ridge characteristics to identify an individuals' fingerprints. These include:

Ridge Ending



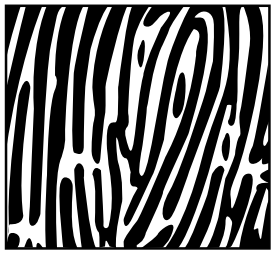
Lake (enclosure)



Bifurcation

Hook (Spur)

Dot



Double Bifurcation

Island (short ridge)

Opposed Bifurcation

STUDENT WORKSHEET

Name:_____ Date:_____

STICKY FINGERS

Three weeks ago a local bakery was robbed at gunpoint. The thief wore a mask, so even when the police found a suspect the bakery owner couldn't make a positive ID. However, as the CSI processing the scene, you collected several fingerprints from various parts of the bakery.

The police have identified a suspect, but he says he's never been to that bakery. It's your job to see if the suspect's fingerprints match any of those recovered at the scene of the crime.

1. Can you identify any ridge characteristics on the suspects prints? on the prints from the crime scene? Circle and label any ridge characteristics you find.

2. Do any of the crime scene fingerprints match the suspect's fingerprints? Label any matching crime scene fingerprints with the hand and finger they come from.

3. Do any of the crime scene prints NOT match the suspect's prints? Who do you think could have contributed these prints?

4. Do you think the suspect committed this crime? Why or why not?

STUDENT WORKSHEET