

FINGERPRINT ANALYSIS

QUICK PEEK

In this lesson, students learn and observe the different types of fingerprints.

SUGGESTED GRADE

LEVELS: 3-6

ILLINOIS STATE LEARNING GOALS

SCIENCE

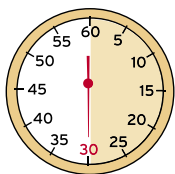
11.A, 13.B

LANGUAGE ARTS

4.A, B

OBJECTIVES

- ★ Students will make careful observations to compare and contrast fingerprints.



PACE YOURSELF:

30 MINUTES



PREPARE YOURSELF

1. (Optional) Make copies of the fingerprint types for each student.
2. Purchase balloons.



MATERIALS

Per Group:

- Ink pads
- Cleanup wipes

Per Student:

- Balloon (preferably a lighter color balloon)
- Magnifying glass



WHAT YOU NEED TO KNOW...

When humans touch objects with their hands they often leave behind evidence in the form of fingerprints—small lines, called friction ridges, on the tips of our fingers. Sweat and oil collect on these ridges and are transferred to objects, leaving behind a copy of the friction ridge pattern. Everybody's friction ridge pattern is unique, which is why forensic scientists use them to identify individuals. Although each person's fingerprints are distinct, they do follow four general types; loop, whorl, arch, and mixed.



WARM UP!

1. Ask students: "What is one thing about each of you that is unique?"
2. Tell students that today they are going to learn more about types of fingerprints and that they will be able to identify what type of fingerprints they have.
3. Fingerprints are unique to each individual. Even identical twins have different fingerprints!
4. Forensic scientists use fingerprints to identify individuals and to determine who was present at a crime scene.

Scientists look at small details, called minutia, in fingerprints to differentiate between prints.



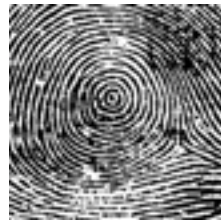
THE HOW TO

1. Roll your finger completely in the ink pad.
2. Place finger, flatly and firmly on the deflated balloon. Once a fingerprint is on the balloon, remove finger without smudging the ink.
3. Blow up the balloon.
4. Examine the ridges of your fingerprint once it has expanded with the balloon. Using the magnifying glass determine if it is a loop, whorl, or arch.

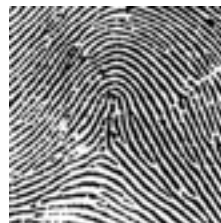
Forensic scientists find fingerprint evidence in one of three forms: Plastic fingerprints, visible prints and latent prints.



LOOP—most common type of fingerprint in which the ridges form elongated loops



WHORL FINGERPRINT—type in which the ridges form a circular pattern



ARCH—fingerprint type in which the ridges form a hill or tent shape

* Adapted from *Holt, Rinehart & Winston Workshop Series*

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WHAT'S GOING ON HERE?

Students are using observational skills and learning more about one aspect of forensic science, fingerprint analysis. Fingerprint analysis can be very useful in solving crimes, however a match doesn't automatically mean that the person is guilty. It just means they were at the crime scene.



DID THEY GET IT?

1. Have students compare their fingerprint to at least one other student. Have students share with the class at least one difference between their fingerprint and that of their classmate. How were they the same?



ET CETERA

As a class, construct a bar graph of students and the type of fingerprints they have.