



# FINGERPRINTS

## Huellas digitales

Grades		
2–8	5–8	45 minutes

### Purpose

Students will observe the unique characteristics of their fingerprints and compare them with other classmates.

### Materials

Black ink pads  
5 x 7 index cards (one per student)  
Pen or pencil  
Scissors  
Hand lens (optional)  
Fingerprint Pattern Diagram

### Concepts

- All humans have some traits that are the same and some that vary from person to person.
- No two people have identical fingerprints.
- Because fingerprints are unique in every person, they can be used to identify an individual.

### Conceptos

- Todos los humanos tienen algunas características similares y otras que varían de persona a persona.
- No hay dos personas que tengan huellas digitales idénticas.
- Debido a que las huellas digitales son únicas para cada persona, éstas se pueden utilizar para identificar a un individuo.

### In Advance

Make a copy of the Fingerprint Pattern Diagram for each student.

## **Procedure**

### *1. Introduce the activity*

Begin by asking students which characteristics most people share. Then ask which characteristics no two humans have in common. Fingerprints are one of the characteristics that vary from person to person. Because no two fingerprints are identical, they can be used to identify different people.

### *2. Set-up*

Divide the class into groups of 5-8 students. Smaller groups will work better for younger students. Larger groups will make the activity more challenging for older students.

Give each student an index card and distribute the ink pads. Have them fold the index card in half, then unfold to form two halves. Have them write their name on one side of each half. (If your index cards have lines on one side, have students write their names on that side.) Tell students they will be making a thumb print in each half, then cutting the index card along the fold.

To make the thumb print, instruct students to press the tip of their right thumb onto the surface of the ink pad and check to make sure the ink is on their thumb. Next, roll the thumb from left to right across one half of the card (the side without their name). Immediately lift the thumb straight from the paper so the fingerprint doesn't smear. Have students repeat the same procedure to make a thumb print in the other half. When they are finished, they should wash and dry their hands.

### *3. Observe fingerprints*

Give each student a copy of the Fingerprint Pattern Diagram and distribute the hand lenses, if available. Have students identify the pattern that best matches their fingerprint.

### *4. Exchange fingerprints and identify*

Instruct each group to make a pile of fingerprints using one thumb print from each group member. The names that identify each thumb print should be face down in the pile. Spread the remaining thumb prints on a table in the center of each group. Tell each group member to take a thumb print from the pile without looking at the name written on the back. Now, see if students can find a "match" among the thumb prints spread out on their table. They can use the Fingerprint Pattern Diagram to narrow

down the choices, but no peeking at the names! When they think they have a match, they should keep the two thumb prints together. When everyone is finished, students can turn over their cards to see if they have a match. Return the fingerprints to the correct person.

5. *Discuss*

As a class, discuss similarities and differences among the students' fingerprints. Were some very similar? How many students had each type of pattern? Which is the most common pattern of fingerprint in the class? Which pattern is the most unusual?

**Questions to Ask During the Activity**

1. Why is a fingerprint a good way to identify a person? (Because everyone's fingerprints are unique.)
2. Where else on your body can you find the kinds of skin patterns seen on your fingertips? (On your toes.)

**Preguntas sobre el tema de la actividad**

1. ¿Por qué una huella digital es una buena manera para identificar a una persona? (Porque las huellas digitales de cada persona son únicas.)
2. ¿En qué otra parte del cuerpo se ve el mismo tipo de configuración que se ve en las huellas digitales? (En los dedos de los pies.)

**Why It Happens/More on the Topic**

Every organism can be identified by its characteristics or traits. All humans have some traits that are the same, but each individual human also has a set of traits that are different from any other human. Among these individual traits are fingerprints, patterns in the iris of the eye, and voice patterns.

**Algo más sobre el tema...**

Cada organismo puede ser identificado por sus características o sus rasgos. Todos los humanos tienen algunas características que son iguales, pero también tienen un conjunto de características que son únicas para cada individuo. Entre estas características individuales se encuentran las huellas digitales, la configuración del iris y de la voz.

### **Modifications**

Have younger students (including K-1) work in smaller groups to identify each other's fingerprints. For very young children, help them make one thumb print on the index card and see if they can identify their fingerprint pattern using the Fingerprint Pattern Diagrams, rather than exchanging fingerprints with other classmates.

### **Extensions**

Have students hypothesize what their other fingerprints might look like. Will they be similar to their thumb prints? Will they be different than other students' fingerprints? What about their toe prints? Have students make prints of their other fingers and their toes to see if their hypothesis is correct.

### **References**

The New Mexico Museum of Natural History and Science. Proyecto Futuro Life Science Curriculum. First Edition. Albuquerque, NM, 1996.

## FINGERPRINT PATTERN DIAGRAM



Short ridge



Dot



Enclosure



Trifurcation



Hook



Bridge



Fork

Plain arch



Plain whorl



Loop



Double loop



Tented arch



Central pocket loop



Loop



Accidental  
(combination type)



## PATRÓN DE HUELLAS DIGITALES

### Crestas papilares



Varilla



Punto



Encerrada



Trifurcación



Gancho o rama



Puente o crestas cruzadas



Bifurcación

### Patrones

Arco común



Espiral o remolino



Curva o lazo



Curva o lazo doble



Arco tendido



Isla encerrada en un lazo



Curva o lazo



No estándar o accidental (mixto)

