

LESSON 6:

FINGER PRINT ART

SUPPLIES

FOLDER

- Fingerprint worksheets (20)
- Printer Paper (30)

PENCIL BOX

- Pencils
- Clear tape
- Markers

MAIN BIN

- Aluminum Foil
- Washable paint (5)
- Tablecloth (2)



OBJECTIVES

- Understand humans have unique fingerprints
- Identify your own type of print
- Create unique art with your unique print

HOOK



3-4 min

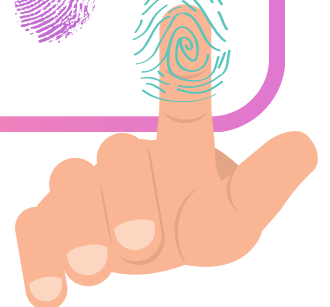
Tell the students that we know that every human is unique: but all of us have some things in common. For example, many other people may have your same eye color or height.

Ask the students if they can think of anything we can see that is completely unique to every human in the world. The answer is fingerprints!


COLOR FACTOR

Every human has a unique fingerprint that matches their unique identity!

- Today we investigated our unique fingerprints
- When combined with color we will use our prints to create fun and wonderful art.
- More impressive is that this art couldn't be replicated by anyone other than the student that created it!



INTRODUCTION

 5-10 min

Even though every single human has unique fingerprints, the prints follow three basic patterns. They are called whorls, loops, and arches. Let's look at how each of these patterns are different.

If you can, draw each pattern on the board while you explain it. Students will also receive copies of the pictures on their worksheets.

Explain that today, students will be analyzing their own fingerprints, then using them to create art!

FINGER PRINT PATTERNS



ARCHES

Arches begin on one side of the finger and arch, then continue to the other side.



LOOPS


Loops begin on one side of the finger then make a loop and back to the same side.



WHORLS

Whorls are sets of circles inside each other.

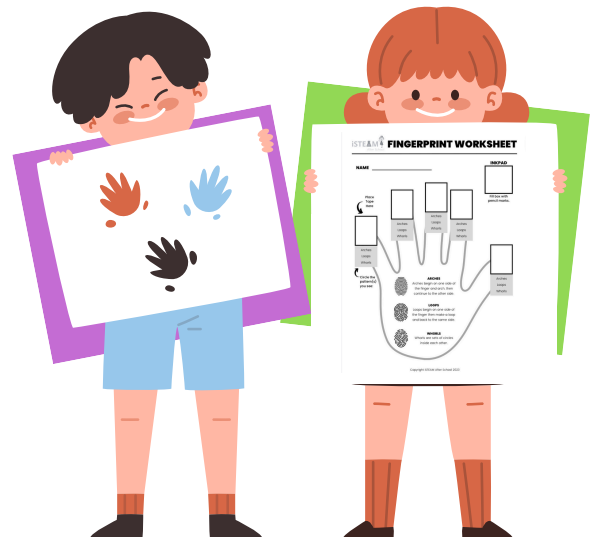
DISCUSSION

 3-5 min


Pass out the Fingerprint Patterns sheet to each student.

Before conducting the experiment, ask them if they think they have more arches, loops, or whorls. Do they think they'll have more than one pattern on the same finger?

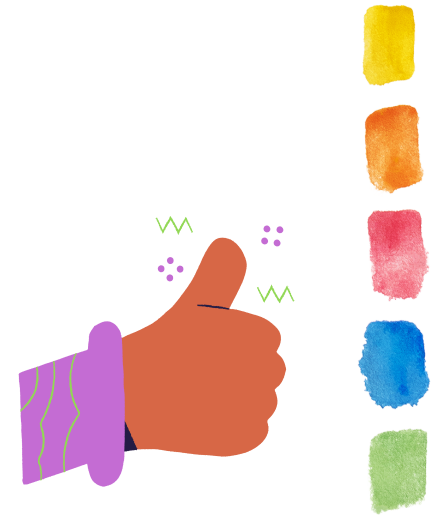
If you like, you can write their predictions on the whiteboard. You can also have them predict how common each pattern is across all people in the world.



EXPERIMENT (pt. 1)

 10-15 min

1. Students should already have their fingerprint worksheet. Pass out a sharpened pencils and five strips of clear tape to each student. **NOTE:** make sure to use tablecloths to protect tables.
2. Tell students to scribble a dark area in the top right of their worksheet in the area labeled "Ink Pad."
 - It should be very dark - the idea is to get a good amount of graphite on the paper in one spot. They may need to add more throughout the experiment.
3. Ask the students to print each of their fingers on the worksheet using the following method:
 - Press each finger firmly and roll slowly on the area of graphite.
 - Apply a piece of clear tape to the finger, then peel it off slowly
 - Apply the tape to the correct spot on the worksheet
4. Tell students to label the patterns in their prints.




This may take practice for some, so extra pieces of tape may be necessary.



HOW COMMON ARE ____?

Arches: 5%
Whorls: 30%
Loops: 65%

OBSERVE & EXPLAIN

 5-7 min


Have students share their findings with a partner. Then, discuss as a class:

- Were there any prints that were difficult for you to characterize?
- Did you need to redo any prints to see the details more clearly?
- What patterns did you discover and how did that compare with your partner's result?
- Based on you and your classmate's results, which prints do you guess are the most and least common for humans to have?
- Why do you think we use fingerprints to solve crimes? Why doesn't it always work?
 - Answer: Fingerprints are unique, so we can match them to specific people. Sometimes, fingerprints don't always come out clearly- just like the ones you have to redo!



FINGERPRINT ART

EXPERIMENT (pt. 2)

 15-20 min

1. Tell the students that they will be using their unique fingerprints to create unique art. The idea is to make designs using their fingerprints– not just to use their fingers as a brush. You can show them some examples.
2. Have students form a line or come up to you one at a time. Tear them a large piece of tin foil and fold it in half.
 - Ask them to pick out a few paint colors, then squirt a small amount of those colors on to their tin foil.
 - Give them one or two blank sheets of paper.
3. Give students 10-15 minutes to create their art. You can let them use markers to add minimal lines– but be careful that they don't get wet paint on the marker tips!




TIP

If students put too much paint on their fingers, their print won't be visible. Encourage them to use a thin layer, not a big glob.

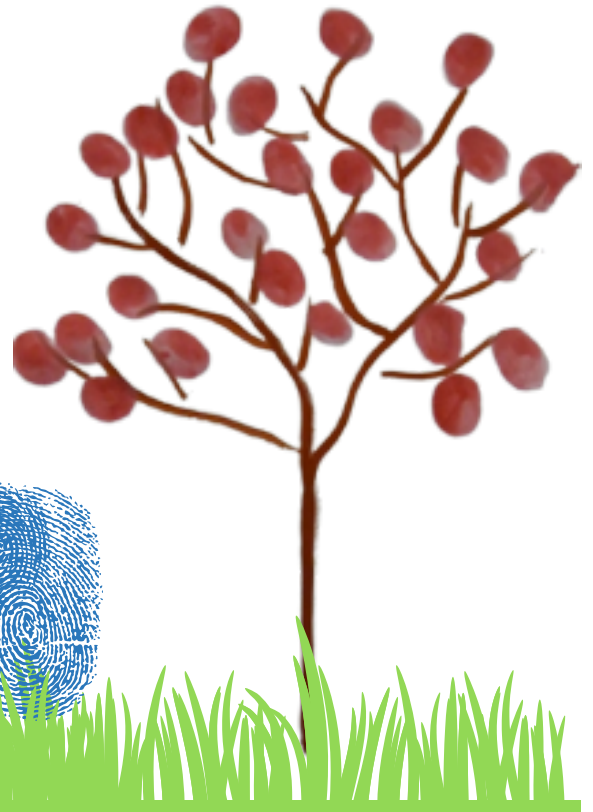
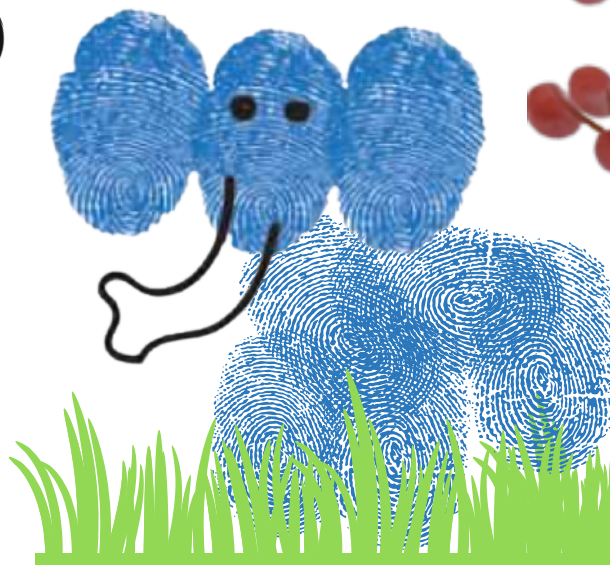


CLEAN UP & DISMISSAL

 5-10 min

Have the students bring their tinfoil to the trash, then wash their hands. If you don't have a sink in the classroom, have them use a damp paper towel to clean their fingers.

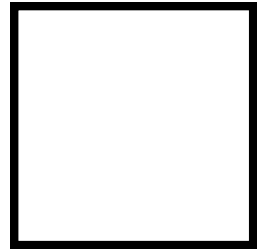
If their pieces are still wet, remind the students to carry them carefully so that they don't get paint on anything.



FINGERPRINT WORKSHEET

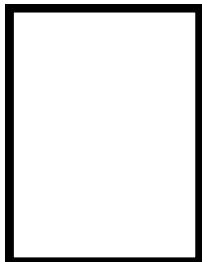
NAME _____

INKPAD

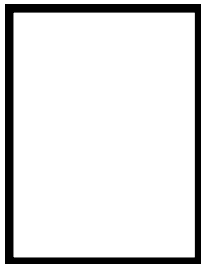


Fill box with pencil marks.

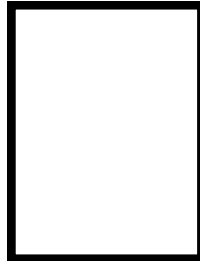
Place Tape Here



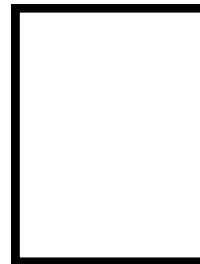
Arches
Loops
Whorls



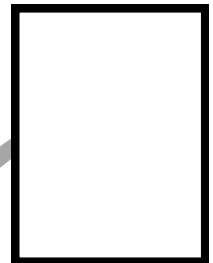
Arches
Loops
Whorls



Arches
Loops
Whorls



Arches
Loops
Whorls



Arches
Loops
Whorls

Circle the pattern(s) you see:



ARCHES

Arches begin on one side of the finger and arch, then continue to the other side.



LOOPS

Loops begin on one side of the finger then make a loop and back to the same side.



WHORLS

Whorls are sets of circles inside each other.