



THE SIXTH FLOOR MUSEUM  
AT DEALEY PLAZA

## SUMMER FUN

### Forensic Science

Have you ever wondered how evidence is collected at crime scenes? Investigators in 1963 used many different methods to gather information after the assassination of President Kennedy. Complete the activities below to learn different techniques for collecting and analyzing evidence.

#### Fingerprinting

Did you know that no two people have the same fingerprints? Because of this, crime scene investigators collect and analyze fingerprints to identify the person they belong to. A policeman in Argentina first invented a method for collecting fingerprints in 1892. They were first used by the United States military in 1905 followed by the nation's police agencies. In 1911 the U.S. Courts recognized fingerprints as a reliable way to identify people after the method was used to convict suspect Thomas Jennings of murder. Complete the activity below to see what your fingerprints looks like.



**Materials:** glue stick, cocoa powder (non-dairy coffee creamer works as a substitute), printer paper, clear tape, clear cup or jar, a soft bristle brush

#### Directions:

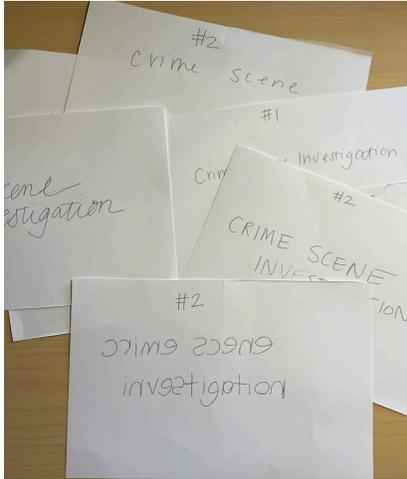
1. Coat one finger tip with glue stick.
2. Press coated finger onto the side of a clear cup, allowing glue to stick to cup.
3. Sprinkle cocoa powder over the glue stick fingerprint.
4. Use the soft bristle brush to gently dust off excess cocoa powder, leaving a thin layer of cocoa powder.
5. Take a piece of clear tape and apply the sticky side to the fingerprint.
6. Lift the tape off and stick it to a piece of blank paper. (Note: If using non-dairy coffee creamer, use a dark colored piece of paper to show contrast.)
7. Observe the fingerprint.

What do you notice about your fingerprints? What shapes or designs do you see? Complete this activity with a partner to compare and contrast your fingerprints.

## Handwriting Analysis

Investigators use handwriting analysis to help determine a match between the handwriting of a suspect and handwritten evidence. Analysis can also determine forgeries and alterations in a person's handwriting. Some of the characteristics of handwriting that investigators look for are letter form, line form, and formatting. Complete the activity below to compare your handwriting to others.

**Materials:** Three pieces of paper per person (index card size or larger), One pen or pencil per person



### Directions:

1. In a group, give out three pieces of paper and a pen or pencil to each person.
2. At the top of each piece of paper, have each person label the page "1", "2", or "3"
3. Have each person write the phrase "Crime Scene Investigation" on paper #1, #2, and #3.
4. Place all handwriting samples in the middle of the group and mix them together.
5. Separate the pieces and group them in piles based on their label number.
6. Have each person pick out a piece of paper from the #1 pile.
7. Observe the handwriting on the paper you have chosen and see if you can match the handwriting to find the pieces of paper from piles #2 and #3 that were written by the same person.

Were you able to match all three samples to the same person? Repeat this activity using different words and phrases. This activity works great for groups of three or more.

## Chromatography

Invented by a botanist in 1903 to study plants, chromatography is one of the tools used in criminal investigations. Chromatography is a technique used by forensic scientists to separate mixtures like ink, gasoline, and lipstick. Once mixtures are broken down, each component can be analyzed individually. Although not used in the 1963 investigation of President Kennedy's death, this process is used by investigators today to identify different liquids especially when they have been mixed together. Try this paper towel chromatography project at home to see how the dyes in markers are affected by water.

**Materials:** paper towels, scissors, water, three different colored washable markers, three clear cups or jars



**Directions:**

1. Use scissors to cut a paper towel into three strips.
2. Pour  $\frac{1}{4}$  cup of water into each cup.
3. Use one of your markers to draw a circle three inches from the bottom of one of the paper towel strips. Repeat step for the remaining two markers and paper towel strips.
4. Place the bottom inch of each paper towel strip into an individual cup. Let the top of the strip hang over the cup to keep it in place. Make sure that the colored in circles do not touch the water.
5. Observe how the water moves up the paper towel strip and into the circle.

What happened as the water touched the marker? What new colors did you observe? Repeat this activity using different colored markers and pens to compare how they react. For a bigger challenge, repeat the activity using markers and pens of the same color, but different type (example: washable marker, dry erase marker, felt tip pen, and permanent marker). How do the different types of ink react to the water?