

CSI Day Camp

Overview:

During this Day Camp, youth will participate in hands-on CSI themed lessons. At the end of the day, they will put their new-found skills to the test as they try to solve the case of who stole the cookies! Do you have what it takes to solve the crime?

Additional files to support this day camp include:

- CSI Day Camp Slides (Microsoft PowerPoint)
- CSI Day Camp Worksheets (Adobe PDF)
- CSI Day Camp Suspect Cards (Adobe PDF)
- CSI Day Camp Evidence(Adobe PDF)

This document includes:

- Sample schedule
- Camp Preparations
- Materials List
- Lesson outlines/instructions

This CSI Day Camp was developed by Oklahoma STEM Innovators (Kate Wardlaw, Kara Wardlaw, Lauren Guthrie) with guidance from Oklahoma 4-H STEM Specialist Kelly Wardlaw. These activities are based on training they received during the Innovate Leadership Summit from Caitlin Porterfield at the University of Central Oklahoma Forensic Science Institute.

Please contact Kelly Wardlaw, k.wardlaw@okstate.edu, with any questions or comments.



OSU EXTENSION
4-H YOUTH DEVELOPMENT

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May 2026

CSI Day Camp Sample Schedule

9am-9:15	Introduction
9:15-10:00	Evidence Collection & Shoeprints
10:00-10:30	Fingerprints
10:35-11:35	DNA
11:40-12:00	Handwriting
12:00-1:00	Lunch & Games
1:00-2:00	Solve the Case
2:00-2:30	Debrief & Closing

Camp Preparations

- Collect and prepare all supplies and equipment
 - Isopropyl alcohol must be COLD (recommend putting in the freezer)
 - Prepare the extraction solution for the DNA extraction lesson
- Assign leadership roles for presenters/staff (who will teach what, etc.)
- Provide presenters with lesson information
- Prep Crime Scenes:
 - Decide on suspects (or use samples provided)
 - Gather “trace evidence” (or use pictures provided)
 - Put together manila envelopes with the Suspect information for each group (profile, handwriting sample, DNA, fingerprint, shoeprint).
 - Each crime scene matches a different suspect (that way they can’t “cheat” off another group)
 - Helpful Tip: Label all pieces of the crime scene with a letter to keep all the evidence at the correct crime scene.
 - Crime Scene A matches Suspect 2
 - Crime Scene B matches Suspect 4
 - Crime Scene C matches Suspect 1
 - Crime Scene D matches Suspect 5
 - Crime Scene E matches Suspect 3
 - Crime Scenes could be set up before the camp starts, if you have a separate space available. Otherwise, recommend setting them up while the participants are at lunch.
- Before you start the day, scatter out the “evidence” you will have participants collect during the Evidence Collection lesson.



CSI Day Camp Materials List:

General:

- Baby Wipes (enough for at least 3-4 for each person)
- Black washable paint
- Ink Pads
- Balloon Pump (optional)
- Ruler (optional)
- Computer & Projector to show PowerPoint

For Each Person:

- Magnifying Glasses
- Nitrile Gloves
- Sandwich size zip-top baggie
- Evidence Label (for baggie, prints on 3½x5-inch label paper)
- Pom poms (or other pieces of evidence to collect)
- Unlined 3x5 Index Card
- White Balloon
- Cookie

For Each Pair/Group:

- Shoe
- 2-inch Wide Foam Paintbrush
- Paper plate
- Blank Cardstock paper
- Plastic zip-top bag (at least 2 per group, just in case of breakage)
- 1 Strawberry
- Coffee filters
- Clear plastic cup
- Rubberband
- Extraction Solution:
 - 4 teaspoons dish detergent
 - 2 teaspoons salt
 - 1 cup water
 - Plastic container with lid
- Teaspoon measure
- COLD 91% isopropyl alcohol
- Toothpick or coffee stirrer
- Pen / pencil



Worksheets:

- My Fingerprint Card
- DNA Analysis & Matching
- Handwriting Analysis Chart (1/2 sheet, prints 2 on one page)
- Crime Scene Investigation Report

For Each Crime Scene:

- Paper plates with DNA Sample strip (left on plate)
- White paper cup with Fingerprints printed on sticker paper (put on cups)
- Shoe print (left on floor under plate)
- Trace Evidence
- Handwritten note left at scene
- 6½" x 9½" manila envelopes (for suspect cards)
- Suspect Cards (printed on cardstock and cut apart, could also be laminated)
- *Helpful Hint:* Put the letter of each crime scene on the different pieces (bottom of cup, back of plate, etc.) so you can keep them all together! For the samples provided:
 - Crime Scene A matches Suspect 2
 - Crime Scene B matches Suspect 4
 - Crime Scene C matches Suspect 1
 - Crime Scene D matches Suspect 5
 - Crime Scene E matches Suspect 3



Welcome & Introduction

Procedure:

1. Introduce presenters
2. Review expectations
3. Overview of the day (but don't "give away" the crime)
4. Other housekeeping items, etc.

Evidence Collection

Supplies:

- Nitrile Gloves
- Sandwich size zip top bags
- "Evidence" to collect: examples might be fun stickers, pom poms, pieces of candy, rubber bracelets, etc.
- 3 ½ x 5-inch Sticker Labels for zip top bags (print using Avery Labels 5168)
- Pens or pencils

Procedure:

1. Before starting, scatter some "trace evidence" around the room.
2. Lead a discussion regarding evidence collection and chain of custody (see PowerPoint).
3. Have students practice evidence collection by carefully collecting one piece of trace evidence and correctly labeling their bag.

Reflection:

1. Why is it important to carefully collect evidence and log the chain of custody?

Shoeprints

Supplies:

- Shoe
- Cardstock Paper
- Washable Black Paint
- Paper Plate
- 2-inch Wide Foam Paintbrush
- Baby wipes



Procedure:

1. Start off by having participants make observations of their own shoe print. What do they notice? What can shoe prints tell us?
2. Use the foam brush to carefully paint the bottom of the shoe with paint – be careful to not use too much paint!
3. Press the shoe onto the paper and lift straight up.
4. Clean off the bottom of the shoe using a baby wipe.
5. What do you notice about your shoe print?
 - What patterns do you see?
 - Is it a small or large shoe?
 - Are there any unique marks?
 - What else do you notice?
 - What could this tell you about the person who made it?
6. Trade your paper with another group and observe the print:
 - What patterns do you see?
 - Is it a small or large shoe?
 - Are there any unique marks?
 - What else do you notice?
 - What could this tell you about the person who made it?
 - How is it similar or different from the shoeprint you made?

Reflection:

1. What are some things we can learn from shoeprints?
2. What can they NOT tell us?
3. Do you think shoeprints are a good piece of evidence? Why or why not?

Extension:

- Scatter the shoes out on the floor. Take the paper shoe prints and mix them up, give each group a shoeprint (different from the one they made). Have students go around and try to match the print they have with the matching shoe!

Fingerprints

Supplies:

- White Balloons
- Ink Pads
- Index Cards
- Magnifying Glasses
- Balloon pump (optional)



Procedure:

1. Go over some general facts about fingerprints and the 3 basic fingerprint patterns: whorl, loop, arch (see PowerPoint).
2. Have participants stretch your balloon several times so it is easier to blow up.
3. Then lay the balloon on the table and flatten an area big enough to fit a fingerprint making sure there are no creases in the balloon.
4. Tell participants, "We are going to make 2 fingerprints: one on the notecard and the second on the balloon." And give them the following instructions:
 - a. Press your finger into the ink.
 - b. First press your finger on the note card.
 - c. Then lightly press your inked finger onto the balloon.
5. Making a fingerprint on the index card first helps get some of the excess ink off their finger and makes a better print on the balloon. Encourage experimentation to get a good print.
6. Have participants blow up the balloon and tie it off. You may want to have a balloon pump on hand to help blow up balloons if needed.
7. Observe the fingerprint.
 - a. What kind of fingerprint do you have?
 - b. Compare it with others, are they the same?

Reflection:

1. What is something you learned about fingerprints?
2. Do you think fingerprints are a good piece of evidence? Why or why not?

Extensions:

- Give participants a chance to make prints of all their fingers. Use the "My Fingerprint Card" worksheet.
- Have students create "fingerprint art" by turning their fingerprint into a fun character. Search "fingerprint art" for ideas! *Bonus* – this could be a print process entry for the fair!

Resources:

McClelland, Sarah. "Giant Thumbprint Experiment: Fingerprint Science Activity." *Little Bins for Little Hands*, 6 Sept. 2025, littlebinsforlittlehands.com/giant-thumbprint-experiment/.



DNA Extraction

Supplies:

- Plastic zip top bag
- 1 medium-size strawberry (without leaves)
- 1 plastic cup
- 1 coffee filter
- Coffee stirrers or toothpicks
- COLD 91% isopropyl alcohol
- Rubber band
- Teaspoon measure
- Extraction Solution:
 - 4 teaspoons dish detergent
 - 2 teaspoons salt
 - 1 cup water
 - Plastic container with lid

Procedure:

1. Before Activity: Prepare the extraction solution (makes enough for 20 youth).
Add the dish detergent, salt, and water in a plastic container with a lid. Mix well, put lid on container, and set aside until ready to use.
2. Go over a few basic facts of DNA (see PowerPoint)
3. Follow the following steps to extract the DNA from the strawberries:
 - a. Remove stems/leaves and place strawberries in plastic zip-top bag. Seal well, trying to remove all air pockets.
 - b. Gently crush strawberries in the sealed zip-top bag.
 - c. Add two teaspoons of extraction liquid into the bag, press out air and reseal.
 - d. Gently squeeze bag until liquid is combined with the strawberries (try to avoid making bubbles).
 - e. Place a coffee filter over a plastic cup and secure it with a rubber band.
 - f. Slowly pour the contents of the bag into the coffee filter – it's ok to leave some of the solution in the bag.
 - g. Allow contents to seep through the filter. This may take several minutes. The coffee stirrer or craft stick can be used to gently stir the contents in the filter, encouraging additional liquid to drip into the cup. Be careful not to rip the filter!
 - h. Note the amount of strawberry liquid in the cup. Carefully pour an equal amount of cold rubbing alcohol down the side of the cup. Do not mix.



- i. Observe DNA forming a layer over the strawberry liquid. DNA will resemble a white stringy substance.
- j. Use a clean coffee stirrer or toothpick to pick up the DNA strands.

Fun Fact: Strawberries are octoploidy, meaning they have 8 copies of each chromosome – so lots of DNA – making them a great choice for this activity.

Reflection:

1. What do you notice?
2. What is DNA?
3. Where can DNA be found?

Resources:

“Stem Experiments | Oklahoma State University.” *Oklahoma State University 4-H Youth Development*, 15 Nov. 2018,
4h.okstate.edu/projects/science-and-technology/stem-experiments/.

DNA Analysis

Supplies:

- DNA Analysis & Matching Worksheets
- Pen/pencil
- Rulers (optional)

Procedure:

1. Once DNA has been extracted, it is further analyzed to create a profile. One example of this is a Gel Electrophoresis.
2. The worksheet has several examples of DNA evidence that can be compared to a group of suspects to find a match.
3. Go through the first one as a group, demonstrate how you can compare the Evidence DNA sample to the different Suspects to find a match.
4. Rulers, or another sheet of paper, may be helpful to compare DNA. For example, slide it along from right to left to compare the lines one by one.
5. Students will circle the correct suspects on their worksheet.
6. Circulate around the room and provide help as needed.
7. Once everyone is finished, review the answers.

Reflection:

1. Do you think DNA is a good source of evidence? Why or why not?



Handwriting

Supplies:

- Pens/pencils
- Handwriting analysis worksheet (½ sheet, prints 2 on a page)
- Magnifying glass (optional)
- Ruler (optional)

Procedure:

1. Ask participants, “Have you ever tried to copy someone’s handwriting?” and “Do you think two people can have exactly the same handwriting?”
2. See PowerPoint for information on handwriting features and examples.
3. Write out the following sentence in cursive or print on your worksheet where it says “Handwriting Sample 1”:
4. *“Meet me at the park at midnight.”*
5. Switch papers with a partner and have your partner write the same sentence where it says “Handwriting Sample 2”
6. Compare each one based on the different features.
7. Can use magnifying glasses or rulers for more in-depth analysis.

Reflection:

1. What did you notice?
2. What surprised you about handwriting analysis?
3. Do you think handwriting is enough to identify a suspect? Why or why not?

Reinforce: Handwriting is unique, but it’s not always perfect science. Forensic handwriting analysis can help rule suspects *in or out*, but it’s most powerful when used with other types of evidence.

Adaptation:

- If participants are younger and/or have limited handwriting skills, simply have two different people provide handwriting samples on the worksheet.



Break for Lunch / Games

During this time, clean up from the morning activities and set up the crime scenes.

Game Suggestions:

Suspect Line Up

Have participants line up by their birthday – without talking!

Cops and Robbers Tag

1. Participants pair up. The pairs interlock arms and put both hands on their hips. These pairs make the “Hideout”, tell participants that only two Robbers can be hiding in the Hideout at a time, i.e. only 2 participants can be hooked together. The Hideouts are stationary – they can’t move.
2. Ask one pair to volunteer. One person will be “it” or the Cop, and the other player will be the Robber. The Robber must run away from the Cop to avoid being captured. If the Cop tags the Robber, the 2 players switch characters, the Cop becomes a Robber, and the Robber becomes the Cop.
3. To avoid being caught, the Robber can hide in a Hideout; to do this, the player simply locks arms with one side of the pair. Once a Robber has locked arms with a Hideout, the Robber on the opposite end must run to avoid being captured. Remember only 2 Robbers can occupy a Hideout.

Partners with interlocking arms (hideout): <O><O>

Current Robber, running to avoid capture: O

Robber runs up and locks arms (hides in hideout): <O><O><O>

Robber on opposite end must run to escape capture: O <O><O>

Review

After lunch, hold a brief discussion on what students learned this morning:

1. What were some things you learned this morning?
2. Can you rely on just one piece of evidence to tell the story of what happened? Why or why not?

You may wish to revisit some of the other reflection questions as well to review/reinforce what was done.



Solve the Case - Who Stole the Cookies?

Supplies:

- Individual tables to set up crime scenes
- Paper plates with DNA Sample strip (left on plate)
- White paper cup with Fingerprints printed on sticker paper (put on cups)
- Shoe print (left on floor under plate)
- Trace Evidence
- Handwritten note left at scene
- Suspect Packets

Procedure:

To set up the crime scenes:

1. Print DNA Sample Strips on sticker paper. Cut out and attach to the plate. Put plate on the table. Add some cookie crumbs to add a touch of realism!
2. Print Fingerprint samples on sticker paper. Cut out and attach to the cups. Place the cups on the table.
3. Print out shoe prints, cut out and place it on the floor under the table.
4. Print out the handwritten notes and leave them on the table next to the plate.
5. Place the trace evidence somewhere at the scene.

Solving the crime:

6. When students come back from lunch/games, tell them "Oh No! While we were at lunch someone came and stole all the cookies I had planned for dessert! Now is the time to put your skills to the test and solve this crime!"
7. If not already done, divide students into groups of four. In each group, decide who will fill the following roles:
 - a. Fingerprint specialist
 - b. DNA Analyst
 - c. Shoe Print Specialist
 - d. Handwriting Analyst
8. Assign each group to a different crime scene to solve.
9. Have groups investigate the scene and solve the crime!
 - a. Before they touch anything, instruct them to draw a picture of the crime scene on the back of their worksheet. Be sure to note the location of any evidence they notice.



10. Each group should have an envelope with information on the suspects. Each suspect has provided a DNA sample, fingerprint, shoe print, alibi, and handwriting sample.

- a. Keep a record of your findings using the worksheet as a guide.
- b. Work with your group to put together a “story” of what happened

11. You will be briefing the rest of the group on your findings at ____!

Reflection:

1. Were you successful in solving the crime?
2. What did your group do well? What were some challenges you had?
3. Was some of the evidence misleading? Explain.
4. What challenges do you think real investigators might have?

Adaptations:

- Have volunteers hand write out the notes and suspect examples instead of using the pre-printed copies.
- Personalize the experience by creating your own suspects and evidence to use at the scenes.

Wrap-Up / Additional Comments

Supplies:

- Cookies

Procedure:

1. Celebrate success by “finding” the cookies and let everyone have a cookie.
2. Review what was learned:
 - What was the most interesting thing you learned today?
 - Can you rely on just one piece of evidence to tell the story of what happened? Why or why not?
 - Which evidence do you think is the most important? Why?
 - Are you interested in a career in Crime Scene Investigation?

