



# C.S.I.: Critter Scene Investigation

Wildlife Identification, Predator/Prey

Time Frame: 45 minutes

Grade: 7

## Overview

Animals leave behind signs. So, even when we can't see them, we can learn about them. These signs, including tracks, are used by wildlife biologists to understand animals' movement and behaviors. In this activity, students will become Critter Scene Investigators by looking at a collection of wildlife tracks and trying to determine what happened.

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### Essential Questions

- How do Arizona wildlife interact within a shared habitat?
- Why are good observation skills important?
- How do biologists study wildlife populations and movements?

### Objectives

- Identify the tracks of Arizona animals with the help of field guides.
- Write an informative essay citing evidence to support their conclusions.

### Arizona and National Academic Standards

#### Science

- S2.C2.PO3
- S4.C3.PO2
- S4.C3.PO3
- S4.C3.PO6

#### Arizona College and Career Ready – ELA

- 6-8.WHST.2
- 6-8.WHST.9

#### Next Generation Science

- MS-LS2-2

#### Association of Fish and Wildlife Agencies

- 1.5.2

### Materials and Resources

- Wildlife tracking sheets from the Arizona Game and Fish Department Bone Box or Wildlife Tracking Trunk
- Variety of field guides to identify wildlife tracks
- Large open space like a gymnasium or hallway



### Teacher Preparation

- Acquire pre-made tracking sheets from the Arizona Game and Fish Department. If you wish to make your own, follow the directions on the *How to Make Tracking Sheets* document provided at the end of this lesson.
- Review the field guides to make sure that all the animals represented on the tracking sheets can be found in at least one book. You should also familiarize yourself with the structure and organization of the different field guides so you can provide help to students, as necessary.
- Set out the tracking sheets in the open space. Leave enough room for students to move around the sheets without walking on them.

### Background Information

Even though wildlife can be found in all habitats, we don't often see the animals. So

how do we know they are there? The answer: signs.

Animals often leave behind signs that they have been active. These can include chewed leaves, burrows, and scat. An important sign is tracks or footprints. People have always used these tracks and other signs to locate prey and to study animal movement and behavior. Even as technology advances, traditional tracking still plays an important role in wildlife management. For example, how can you place a radiotelemetry collar on an elk if you can't find the elk in the first place? Tracks help you locate the animal. Biologists, photographers, and hunters all look for sign to find and study wildlife.

In this lesson, students will have the opportunity to analyze various wildlife scenes to determine what happened. They will not have the luxury of seeing any animals. They must review the signs, primarily tracks, that are left behind to determine what happened. They will become Critter Scene Investigators.

### Procedures

1. Ask the students: How do you know an animal is near if you can't see it? Have them provide answers and discuss animal signs. Be sure to focus on tracks.
2. Inform students that tracks and other sign are extremely useful. They can tell us so much more than simply that the animal is present. What information can we gain from wildlife sign? Discuss.
3. Inform the students that they are going to become wildlife detectives or Critter Scene Investigators!
4. Move the students to the area where the tracking sheets are set up. Gather them around one of the sheets.
5. Explain that a number of animals have recently been in the area and they left these tracks behind. It is their job to figure out what happened.

6. Show the various field guides and inform them that they can use these to help identify the animals. If necessary, explain how to use the field guides.
7. Divide the class into small groups. Ask each group to spread out among the different sheets, if available. More than one group can be at one sheet.
8. Instruct them to look closely at the sheet and look for clues. They must try to answer four questions:
  - How many total animals are in the scene?
  - What species of animals are they?
  - Were all the animals there at the same time?
  - What were the animals doing?
9. Provide time for the students to observe the sheets and answer the questions.
10. When all groups are finished, begin at one of the sheets and ask the group or groups to share their responses. Compare and contrast the different ideas. Ask groups to support their responses.
11. Share the actual story and explain the clues that would have helped lead to the correct result. Compare the real story with those of the students. Ask students whether there is "one" correct answer.
12. Discuss how this simulation compares to a real-world investigation:
  - What other clues would be available in the field that are not present in this simulation?
  - What other things could scientists do in the field to make their understanding of the scene more complete?
  - Why is the ability to track important to wildlife biologists and managers?
13. Return to the classroom.
14. Instruct students to write a short essay explaining one of the scenes. They must

clearly describe what happened and what evidence they used to help

determine that.

### Differentiated Instruction

#### *Extensions:*

- Have students plan and create their own critter scene investigation sheets.

#### *Modifications:*

- Provide pictures of potential animals that the students can use to help identify the wildlife tracks.

### Reflection

Use the space below to reflect on the success of the lesson. What worked? What didn't? What changes would you make? These notes can be used to help the next time you teach the lesson. In addition, the Department would appreciate any feedback. Please send your comments to [focuswild@azgfd.gov](mailto:focuswild@azgfd.gov). If you or the students create your own scenes, we'd love to see them as well!





# How to Make Tracking Sheets

Pre-made tracking sheets for use in the *C.S.I.: Critter Scene Investigation* lesson are available in two of the Arizona Game and Fish Department's resource trunks, the Bone Box and the Wildlife Tracking Trunk. However, this document will provide some general guidelines for producing your own for classroom use.

## Materials

- Flat bedsheets (white or light in color)
- Newspapers or tarps
- Rubber, latex, or vinyl tracks
- Black acrylic paint
- Water
- Paintbrushes (both foam and regular)
- Sharpie marker
- Ruler
- Scrap paper
- Bowl or other container for paint
- Field guides or websites with information about local animal tracks and their strides
- Optional: miscellaneous natural materials such as logs and feathers

## Procedures

1. Cover the work area with newspaper or tarps to prevent the paint from bleeding through the sheet onto the table or floor.
2. Spread out the sheet.
3. Determine what the wildlife scene will be. Some examples include
  - a. A mountain lion walks across the sheet. Later, a coyote walks, smells the lion, and follows the tracks for a while. Then, the coyote spots a jackrabbit and chases after it.
  - b. A black bear walks along and finds a log. It rolls the log over looking for grubs. The log rolls away and a mouse, who was hiding underneath, runs away.
  - c. Two jackrabbits are hopping along and feeding on grasses. Suddenly, a raptor flies in a captures one. The other rabbit runs away.
4. Pick out the tracks that you will need for your scene.
5. Use field guides to determine the stride and gait for the chosen animals.
6. Mark the general location of the tracks and other features on the sheet. Use the ruler to measure distances between tracks and the Sharpie to mark the approximate location of each track. It is not necessary to draw in the track. Just make a simple dot or "X."
7. Pour some paint into the bowl. Dilute with water.
8. Use the foam brush to apply the paint directly to the latex track.
9. Practice marking the tracks on scrap paper. This will also remove excess paint from the track.
10. Mark the tracks on the sheet. You will likely need to reapply paint after every couple of tracks. Do not worry about making each track "perfect." Very rarely are complete tracks found in nature, so they do not need to appear on your sheet.
11. Use the Sharpie to add in additional track features (like toenails) or to create tracks that you do not have. You can also paint various natural materials for different effects.
12. Allow time for the sheet to dry.