

# 4. *Wildlife Detectives*



**Description:** Students look for signs of wildlife living in the area.

- Objectives:** Students will:
- find out what wildlife is living in the bosque or other natural area;
  - examine habitat needs of different wildlife species; and
  - use observation skills.

**Materials:** Field journals / paper and pencils, pens  
Student handout pages (below); natural history guides (tracks, scat), see *Appendix B: Annotated References*

**Phenomenon:** Many animals live in the bosque (or other natural area), but I don't see them very often.

- Lesson Questions:**
- *What signs of animals can I find, and what do they tell me about the animals that made them?*

<p><b>4. <i>Wildlife Detectives</i></b></p> <p><b>Grades:</b> 3–8</p> <p><b>Time:</b> 30 to 60 minutes, depending on student interest levels</p> <p><b>Subject:</b> science</p> <p><b>Terms:</b> <i>habitat, invertebrate, scat, tracks, vertebrate</i></p>	
---	--

**New Mexico STEM Ready! / Next Generation Science Standards**

NOTE: see NGSS Connections to *Going Out: Field Activities* at the end of this chapter for more possible field trip NGSS connections and for suggestions using each standard.

3.LS4.C Adaptation

3.LS4.D Biodiversity & Humans

**Background:**

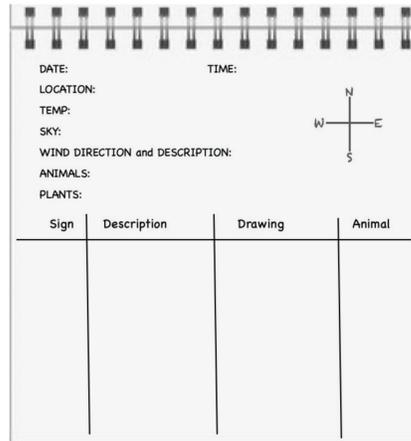
Numerous animals live in the bosque, but they are not always easy to find. **Vertebrate** animals (those with backbones) tend to stay in cool places during the heat of the day. They also may hear or smell humans and hide away from them. While most birds are active during the day (owls in the bosque being an exception), they are often more visible in the early morning and late evening. Fortunately, animals leave behind many signs that tell us they are in the area. These include **tracks, scat** (poop), bird nests, holes in the ground, mounds of dirt, feathers, fur, bones, scratches, bite marks, and more. Signs left by **invertebrates** (animals without backbones, including insects, spiders, isopods, etc.), include spider webs, cicada shells, rolled leaves, old cocoons, holes in the ground or bored into logs, and chewed leaves. Remember, invertebrates are wildlife, too!

These signs can tell us not only what animals live there, but also a great deal about the habitat needs of the animal that left them behind. **Habitat** includes the food, water, shelter and space suitable to an animal's needs; an appropriate arrangement of all of these is required for a given species to live in a certain location. By looking at where animals leave tracks, what they leave behind in scat, where they locate their nests, and so on, we are able to learn about their habitat requirements. In this activity, we search for signs of animals.

**Procedure:**

- ♣ It may help to scout out the area for this activity before your field trip. Some bosque trails now have gravel, which is not conducive to finding tracks. Find a location that has dirt trails, many trees and other vegetation as well as open areas. You might find an area with gopher mounds, bird nests or other obvious signs.
- ♣ Start by asking students what animals live in the bosque. Remember to accept invertebrates in their answers, as they are animals, too! *Ask if any students have been in the bosque before, and if so, what types of animals did they actually see?* There might be fewer animals listed now. Tell them that animals are often very hard to find, so today you will look for signs of animals, things that tell us that an animal is nearby. For older students, you may want to include the terms **vertebrates** and **invertebrates**.

- ♣ Divide the class into small groups. Assign each group a search area with clear boundaries. It can be “stay between this path and the river” or “within ten paces of this path” or whatever is appropriate. Many areas in the bosque look alike and if separated from the group, students can get disoriented and feel lost.
- ♣ Students should look carefully throughout the area for signs of animals. Look first; never put your hands, feet, or face where you have not looked. Things to look for include tracks, scat (poop), bird nests, holes in the ground, mounds of dirt (left by gophers), feathers, fur, bones, scratches, bite marks, spider webs, cicada shells or old cocoons, chewed leaves or sounds made by the animals.
- ♣ Record observations in field journals. Have students create a data chart in their journals with four columns:



DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

LOCATION: \_\_\_\_\_

TEMP: \_\_\_\_\_

SKY: \_\_\_\_\_

WIND DIRECTION and DESCRIPTION: \_\_\_\_\_

ANIMALS: \_\_\_\_\_

PLANTS: \_\_\_\_\_

Sign	Description	Drawing	Animal

- **Sign:** Record the sign observed (e.g., “nest,” “tracks,” “scratch marks”)
- **Description:** Provide details about the sign, including the environment in which the sign was found (e.g., “in a cottonwood tree,” “in sandy soil under a willow”). Include a tally when appropriate (e.g., number of small bird tracks, coyote tracks, etc.).
- **Drawing:** Draw the sign and include labels as appropriate and measurements, when possible.
- **Animal:** If possible, identify the animal that created the sign.

**NOTE: Do not collect the evidence!**

- ♣ If time permits, have students use natural history guides, or the guide included below, to identify their finds, if possible. If there is not time while in the field, try to identify signs when back in the classroom.
- ♣ At the end of the allotted time, bring students together to share findings. Use the following questions to lead a discussion of their discoveries.

*How many different types of animals did you detect?*

*How many of each animal might live here? How do we know?*

*How many of these animals live underground? In the trees? On the ground?*

Introduce the concept of habitat (the arrangement of food, water, shelter or cover and space suitable to animals’ needs). *What can we learn about an animal’s habitat needs by the signs they leave behind?*

*How might each of these animals find food?*



*Where might each of these animals find water?*

*What types of homes did you find? Does that tell us anything about where the animal lives?*

*What would happen to these animals if these areas changed – there were no longer large trees, or the river dried up, or the plants died, etc.?*

*Can you name any animals that likely wouldn't be able to survive in this habitat based on their needs?*

**3.LS4.C, 3.LS4.D**

***Assessment:***

Have students write about their findings, either in their field journal or as an assignment. Students should answer appropriate discussion questions as well.

***Extension:***

- For each sign that was found, draw or find a picture of the animal to match with a picture of its sign.
- Pick one of the animals discovered in the bosque. Research specific habitat needs for this species. Create a poster, model, etc. to share this information with the class.
- Additional activities in this *Guide* that would be appropriate follow-ups are “*The Web*” and “*Who Lives Where?*”
- Older students could discuss or learn more about what you can learn from tracks (size of animal, direction they were going, interaction with other animals), scat (diet, illness), etc.

***Reference:***

Track and Scat guides provided by the **Albuquerque Bernalillo County Water Utility Authority** Education Program. <https://www.abcwua.org/education/>

# Animal Scat

## Pellets, piles, splats & cylinders...

### Pellets

Round - small  
Rabbit



Round - tiny  
Worm



Oval - small  
Gopher  
Squirrel  
Mouse



Oval - medium  
Porcupine



Redondo - pequeño  
Conejo

Redondo - minísculo  
Lombiz

Óvalo - pequeño  
Tuza  
Ardilla  
Ratón

Óvalo - mediano  
Puercoespín

### Bolitas

# Excrementos de animales

## Bolitas, pilas, salpicaduras & cilindros...

### Cylinders

Blunt, Medium  
Seeds  
Raccoon



Blunt, Medium  
Broken  
House cat



Blunt, Short  
Bug parts  
Skunk



Redondado, largo  
Semillas  
Mapache

Redondado, mediano  
Descontinuado  
Gato domestico

Redondeado, corto  
Partes de bichos  
Zorillo/mofeta

### Piles or Splats

Loose pile  
with seeds  
Coyote, sometimes



Large white splat  
may have dark splotches in it  
Crow  
Owl  
Hawk



Small white splat  
may have dark splotches in it  
Robin  
Dove or pigeon  
Other small bird



Pila suelta  
con semillas  
Coyote, a veces

Salpicadura blanco y grande  
con morado o verde  
Cuervo  
Buho  
Gavián

Salpicadura blanco y grande  
con morado o verde  
Mirlo  
Paloma  
Otra ave pequeña

### Pilas o Salpicaduras

Pointy, large

Pet dog, coyote, fox

Pet scat is all one texture;  
Coyote/fox scat contains

fur, bones, fruit, seeds, grass

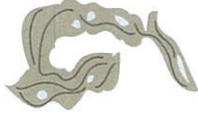


Pointy, twisty  
Weasel

Twisty with fur, bones

Large, green: Goose, crane

All one texture



Apuntado, grande

Perro doméstico, coyote, zorro

De perros es todo una misma  
textura; de coyotes/zorros  
contiene pelo, huesos, fruta,  
semillas o sacate

Apuntado, sinuoso  
Comadreja

Retorcido con pelo  
y huesos

Apuntado, termino blanco  
Minisculo: Lagartijo,

Grande, verde: Ganso, grulla  
Todo una misma textura

Caution: do not touch animal scat, use a tool to investigate

Precaución: no toque los excrementos de animales, use un implemento para investigar

# Animal Tracks

## How many toes? ¿Cuántos dedos?

0 or 1 or 2	Long and narrow Human wearing shoes 	Short and round Horse 	Small with 2 toes Deer (unlikely in the bosque) 
	Largo y angosto Humano llevando zapatos	Corto y redondo Caballo	Pequeño con 2 dedos Cervo (poco probable en el bosque)

3	Webbed Duck Goose 	Partly webbed Coot 	Not webbed Most birds 	Not webbed Sandhill Crane 
	Palmeado Pato Ganso	Parcialmente palmeado Gallareta	No palmeado Casi todos los aves	No palmeado Grulla Gris

4	X-shaped Roadrunner Woodpecker 	Nails (Canine) Pet dog Coyote, Fox 	No nails (Feline) Pet cat 	No nails (rabbit) Cottontail rabbit (One foot Trail) 
	Forma de X Correcaminos Carpintero	Uñas (canino) Perro (mascota) Coyote, Zorro	No uñas (felino) Gato (mascota)	(Un pie Rastro) No uñas (conejo) Conejo del desierto

# Huellas de animales

These drawings are not to scale!

¡Estos dibujos no guardan las proporciones!

4 or 5	5 hind toes and 4 front toes Sets of 2 tracks Porcupine 	Sets of 4 tracks Squirrel 	Sets of 4 tracks Mouse 
	4 dedos en las patas frontes y 5 en las traseras Grupos de 2 huellas Puercoespin	Grupos de 4 huellas Ardilla	Grupos de 4 huellas Ratón

5	Raccoon 	Weasel 	Beaver 	Barefoot human 
	Mapache	Comadreja	Castor	Humano descalzo

Other tracks and trails	
Turtle/tortuga 	Snake/serpiente 
Bicycle tire/llanta de bicicleta 	Beetle/escarabajo 