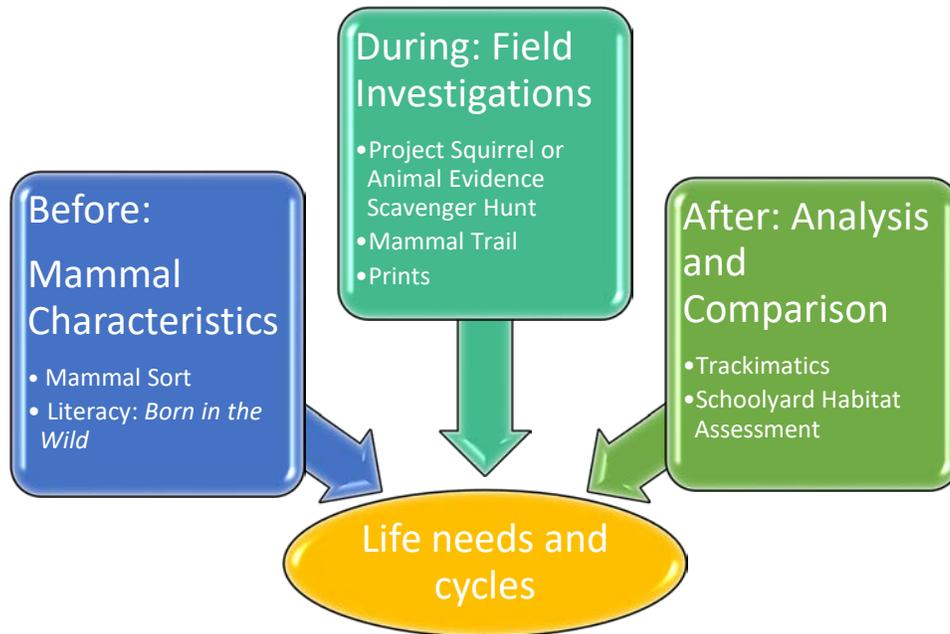


# MAMMALS



Your students will be visiting Blandy to engage in a field investigation focused on mammal life needs, physical characteristics, and life cycles.

To enhance classroom connections, we have developed lesson clusters. **Field investigations** are more meaningful to students when they are integrated into their curriculum. This lesson cluster can be used to introduce and/or review and synthesize for a systems approach and increase depth of knowledge about mammals in Virginia. **Before-visit activities** introduce students to physical characteristics of mammals and focus on sorting and very basic classification. With the **after-visit activities**, students delve more deeply into sorting and comparison and habitat assessment.



# MAMMALS

## BEFORE 1: Mammal Sort

**Before** your visit to introduce students to the diversity of mammals in our area. Students sort mammal and mammal track images based on their own observations. Possible sorts include – body covering (long fur, short fur, fur color...), types of limbs, number of toes, hooved/not hooved, wild/domestic. Students then explain their sorts to each other.

**Standards Addressed:** Science Foundational Blocks 1, 3. Science (2018): K.1c, K3; 1.1c & f, 1.5. Mathematics Foundation Block 6

### Materials

- Mammal cards (40 total)

### Lesson Preparation

1. Group students into teams of 4-5.
2. Print and cut out two sets of the mammal cards. You may wish to pre-arrange them for targeted sorts.

### Instructional Strategy

1. Give each student group 8 cards. Ask them to look at the cards and talk about what they see. Tell them to think about different ways to sort the cards.
2. Ask each group to share one possible way to sort. Record these ideas on a board or other visual.
3. Tell the groups that they get to sort their cards any way they want.
4. When the sorts are complete, do a gallery walk and have each group explain their sort.
  - a. Ask for students' observations and thoughts. Do they agree with the way the animals were sorted?
  - b. Do any of the cards from one group fit into the card from another group? Why or why not?
5. Add any additional sort ideas to the list. To reinforce learning, do another sort based on student ideas.



# MAMMALS

## BEFORE 2: *Born in The Wild*: Read Aloud

Before your visit to introduce students to the idea that mammal babies look similar, but not the same as their parents. Also, an opportunity to identify life needs and how animals meet those needs.

**Standards Addressed:** Science (2018): Foundation Block 5. K.1, K.7. 1.1, 1.5; 2.1, 2.4, 2.5. English (2017): Foundation Block 5. K.9, K.12, 1.10, 1.14, 2.8, 2.12

### Materials

- *Born in the Wild* by Lita Judge (read-aloud video: <https://www.youtube.com/watch?v=07UROxePVWw>)

### Lesson Preparation

1. Pre-read the text. Identify any potential challenges for your students.
2. The basic outline is as follows:
  - a. Babies take different amounts of time to grow up.
    - i. Some babies are born tiny, some are born ready to run
  - b. All baby mammals need milk to drink.
    - i. As they get older, they eat different foods
  - c. All babies need protection
    - i. Some blend in with their environments
    - ii. Some are protected by mothers
    - iii. Some are protected by a big family!
  - d. Babies need shelter
    - i. Some build nests
    - ii. Some dig holes
    - iii. Some find homes in hollow trees and caves
  - e. Babies usually need to stay with their parents to learn
    - i. Some babies are carried
    - ii. Others can run!
  - f. Babies are parts of a family
    - i. Some families are small
    - ii. Some families are big
    - iii. Some families are HUGE
  - g. Babies need to stay clean and to be cuddled to be healthy. Adults take care of the babies.
  - h. Play makes babies strong and helps them learn skills
    - i. Baby predators play at hunting
    - ii. Babies play games that help them learn to climb, jump, swing, or swim



# MAMMALS

- iii. They learn to make sounds to communicate and how to build the things they need
3. Plan your reading instruction to suit your students' literacy needs.

## Instructional Strategy

1. Read the book out loud. Ask students to identify the needs of the babies and how those needs are met.
2. Next discuss each of the needs. Ask students if they can think of other ways that animal babies meet their life needs. Create a list of ideas.
3. Ask students to make a drawing of an animal baby having its needs met. If applicable, have students write an explanatory sentence for their illustration.

## Specials Extension

- Work with the art instructor to turn student drawings into a book.
- Collaborate with the PE teacher to have students move like baby animals at play, running or hiding from predators.



# MAMMALS

## DURING: Field Investigation:

### VA Standards Addressed:

**Science (2018):** Foundational Block 1, 3, 5, K.1, K.3, K.5, K.7; 1.1, 1.5, 1.7; 2.1, 2.4, 2.5, 2.7

**Mathematics (2016):** Foundational Blocks 1, 5. K.1, K.2, K.12. 1.1, 1.2, 1.13. 2.15:

**English (2017):** Foundational Blocks (2017)1, 3, 4; K.3, K.7; 1.5, 1.6, 1.7; 2.4, 2.5, 2.6

*During* your field investigation at Blandy, your students will engage in several indoor and outdoor lessons where they learn about many of Virginia’s mammals. They’ll delve into physical characteristics and adaptation, explore seasonal changes and behavioral adaptations, investigate life needs and cycles, and hunt through habitat for mammals and the evidence they leave behind.

Below is an overview of the “standard” program activities to assist you with integrating this field experience into the classroom experiences. This will change due to weather, the volume of students, or communication with environmental educators.

- **Prints:** By closely observing photographs of mammals, their feet, and plaster prints, students draw conclusions about commonalities in all mammals, and the specific characteristics that allow them to thrive in their specific homes. Older students will graph their observations, while younger students engage in further sensory exploration.
- **Mammal Trail:** Students learn that mammals use sound, body language, and smell to communicate. Using their sense of smell, they learn about the appearance, diet, reproduction, habitat, and one cool fact about a Virginia mammal.
- **Field Investigation: Project Squirrel or Animal Evidence Scavenger Hunt:** PK-1<sup>st</sup> graders look for and watch squirrels at Blandy. They observe and tally behaviors for reporting in Project Squirrel, a community science project. 1<sup>st</sup>-2<sup>nd</sup> graders look for food and water sources, shelter, and other evidence that the life needs of Virginia mammals have been met in a scavenger hunt designed to develop the concepts of habitat and seasonality.



# MAMMALS

## AFTER 1: Schoolyard Habitat Assessment

*After your visit*, students extend their learning about mammal life needs. Students will look at their schoolyard outside spaces from the point of view of different mammals. Does it have the elements that animal needs to live there? What would need to change?

**VA Standards Addressed:** Science (2018) Foundation Blocks 1, 5, 6. K.1, K.7. 1.1, 1.5. 2.1, 2.5. History (2015) Foundation Blocks 3, 4. K.5, K.6. 1.5

### Materials

- Habitat assessment pages (12 mammals that match the tracks, plus black bear for modeling)
- Clipboards or other hard surfaces
- Pencils

### Lesson Preparation

1. Decide what outdoor area you plan to use.
2. Check for safety hazards like uneven ground, poison ivy, debris, stinging insect colonies.
3. If using, pull up and print or project an aerial view of the school grounds.

### Instructional Strategy

1. Introduction – Tell students they will be looking at their schoolyard from the perspective of another animal. They are not *pretending* to be that animal, just thinking about what it needs. Ask students to list life needs (food, water, shelter, space, ability to reproduce)
2. Model the Activity – Use the habitat assessment form for the black bear.
  - a. PK – 1<sup>st</sup>: Ask students to *predict* what they think the animal may need. Guide them into describing food, water, shelter and space – and what each of those mean for the selected animal.
  - b. For 2<sup>nd</sup> grade: show a rough aerial view of the schoolyard (building outlines, sidewalks, and any major features). Ask the students what additional features should go on the map, and add those features based on their suggestions. Guide students to include directional arrows and a key. Don't give too much detail, let the students know they can add their own observations to their own.
  - c. Read life needs out loud. Ask the students if they can see a place in the schoolyard where that need would be met. If yes, (PK-1<sup>st</sup>) circle that need (2<sup>nd</sup>) shade it on the map. If no, X it out.
3. Have students work in pairs to map and identify if the habitat will support their animal.



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4. When all students have completed mapping and identifying, return to the classroom. Discuss which animals could make the schoolyard home. What elements were missing? Brainstorm, how could we add those elements?
5. Depending on student ability, have them either draw a new schoolyard that would meet the needs of their animal AND be a good place for kids to learn and play, or as a class write a persuasive letter to the administration asking for habitat additions.



# MAMMALS

## AFTER 2: Trackimatics

*After your visit*, students objectively compare mammal prints using standard or non-standard measurements to determine size, counting number of toes, and ordering the prints in order of measured size.

**Standards Addressed:** Science (2018): Foundation Block 3. K.1, K.3. 1.1. 2.1. Mathematics (2016): Foundation Blocks 1, 3. K.1, K.6, K.9, K.12. 1.2, 1.10, 1.13. 2.8

### Materials

- Student prints from the Blandy visit
- Measuring tools (can be rulers, may also be uniform objects like paperclips or pennies)
- Datasheet

### Lesson Preparation

1. Have student prints from Blandy visit ready to distribute to the appropriate student.
2. Depending on the experiences of your students, have appropriate measuring tools available. For emergent measurers, use uniform non-standard tools like paperclips or pennies. For 2<sup>nd</sup> grade, use inch graded tools.

### Instructional Strategy:

1. Familiarize students with the datasheet. Help them identify the tasks of drawing their print, measuring it, and counting the number of toes.
  - a. Demonstrate the measuring technique you want them to use. This may be a time to talk about halves or rounding.
  - b. Most plaster prints include a plaster base. Make sure you demonstrate to students that they are to measure the PRINT, not the base length.
2. Have students collect and record data on their prints. Encourage them to check each other's work.
3. Bring students together in a circle with their prints and papers. Tell them that we will be comparing prints.
4. Ask who thinks they have the longest print? Call on a student and have them share the length. Ask if anyone has one that is longer. Continue until you identify the longest print.
5. Ask who has the shortest print. Repeat as for longest.
6. Ask students to order their prints from shortest to longest. (Depending on the experience of your students, this kind of ordering may require teacher assistance)
7. Compare the difference between the longest and shortest print. How much longer is the longest print?
8. If all the animals were to make prints one right after the other, how long would that trail of footprints be? How could we figure that out? (More experienced students can practice addition)



# MAMMALS

equations, less experienced students can compile all their measuring counters, then group into place values to figure out the total length.)

9. Optional extensions:

- a. How long are our feet? Have students trace the outline of their feet (with or without shoes) and measure the length of the outline. Compare student foot lengths to each other, as well as to the animal prints.
- b. What animal has the LONGEST footprint? (Elephant footprints are approximately 18 inches long, the longest dino footprint ever found was 42 inches long. Have students measure the length and see how many of their prints can fit into each!

## Specials Extension

PE – have student measure their strides when walking, hopping, skipping, and running. Then have them use their strides to measure elements of the gym or outdoor areas.



# MAMMALS

## Mammal Cards

big brown bat



bottlenose dolphin

cottontail rabbit



humpback whale



black bear



Norway rat



Virginia big-eared bat



woodchuck (groundhog)



# MAMMALS

beaver



little brown bat



bobcat



raccoon



white-tailed deer



Allegheny woodrat



# MAMMALS

gray fox



short-tailed shrew



coyote



spotted skunk



red fox



striped skunk



# MAMMALS

eastern mole



chipmunk



star-nosed mole

fox squirrel



house mouse



gray squirrel



# MAMMALS

white-footed mouse



flying squirrel



muskrat



meadow vole



Virginia opossum



mink



# MAMMALS



harbor seal



fisher

Florida manatee



Least weasel



eastern red bat

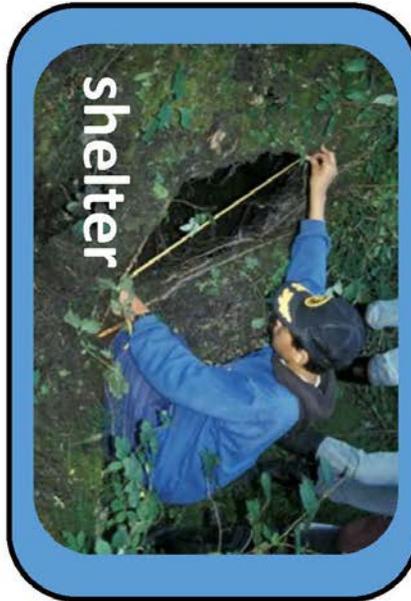
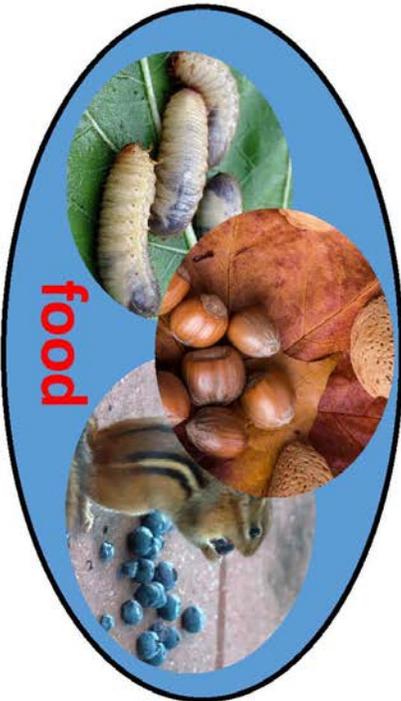


river otter



# MAMMALS

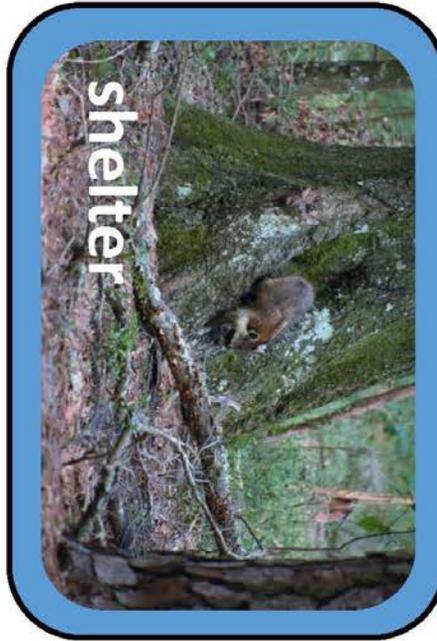
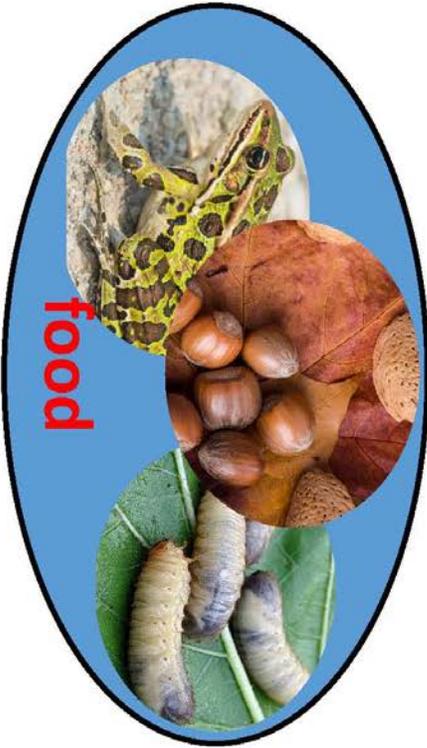
## Habitat Assessment Pages



What does a black bear need?



# MAMMALS



What do raccoons need?



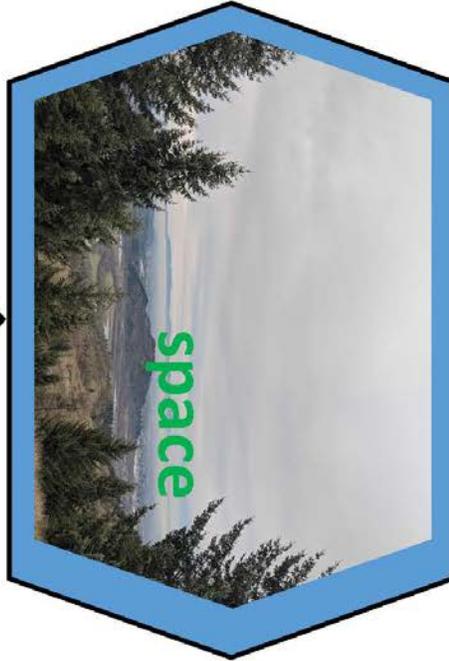
# MAMMALS



What do beavers need?



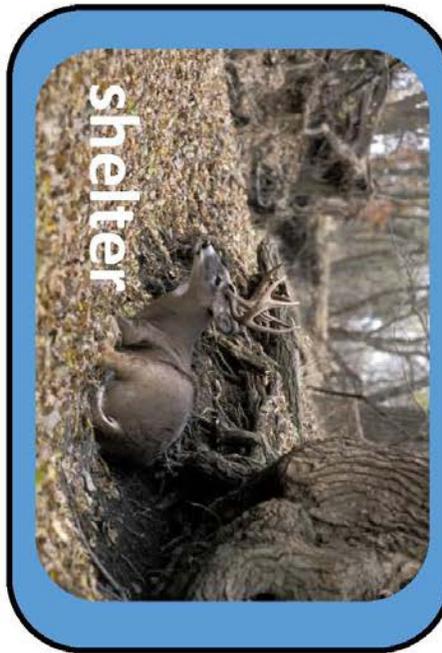
# MAMMALS



What do bobcats need?



# MAMMALS



What do deer need?



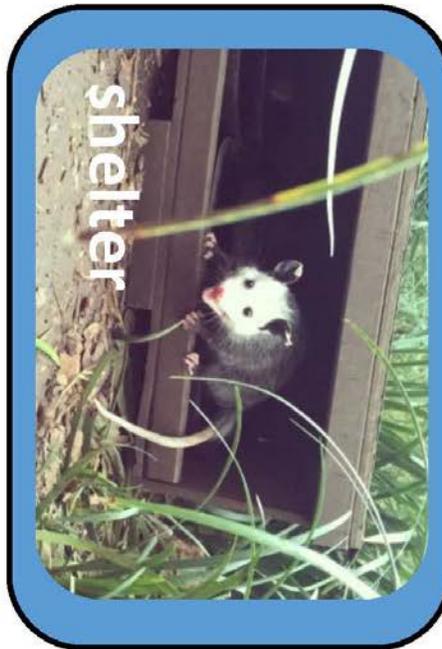
# MAMMALS



What do foxes need?



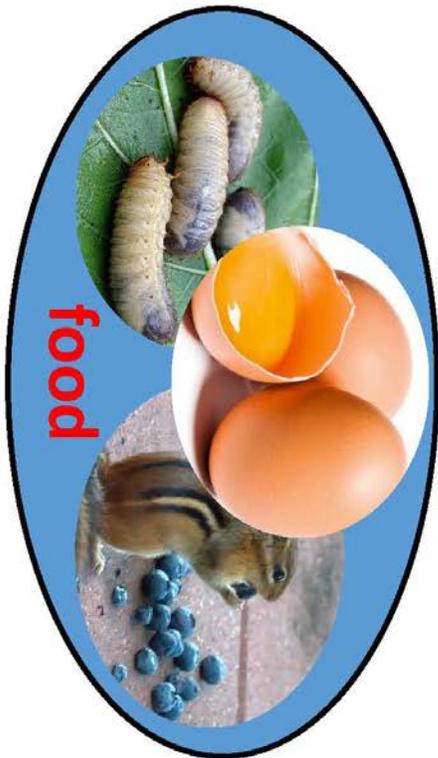
# MAMMALS



What do opossums need?



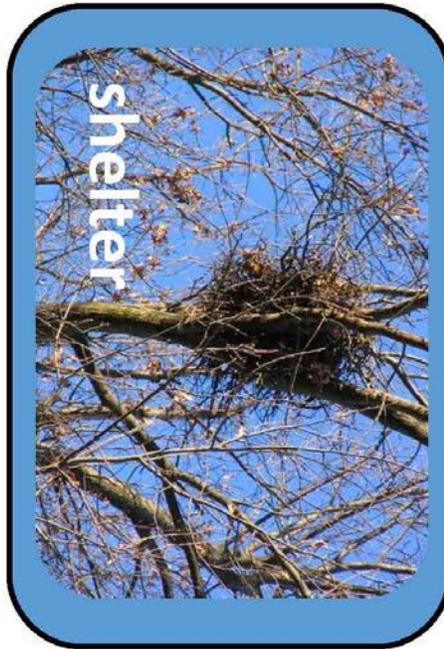
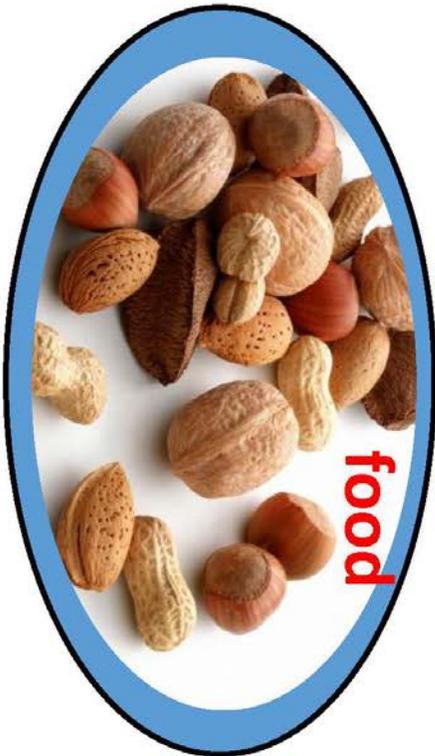
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What do skunks need?



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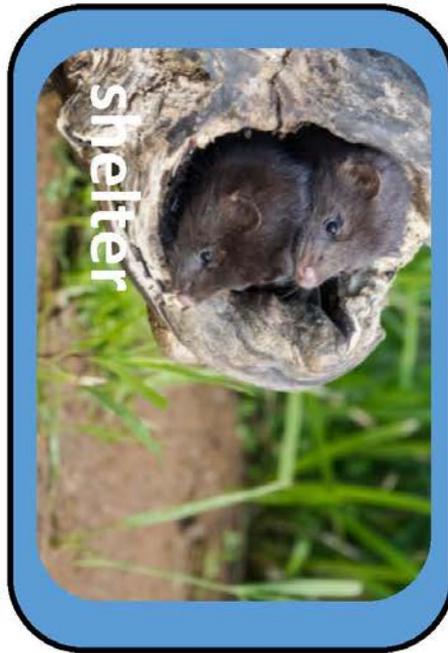
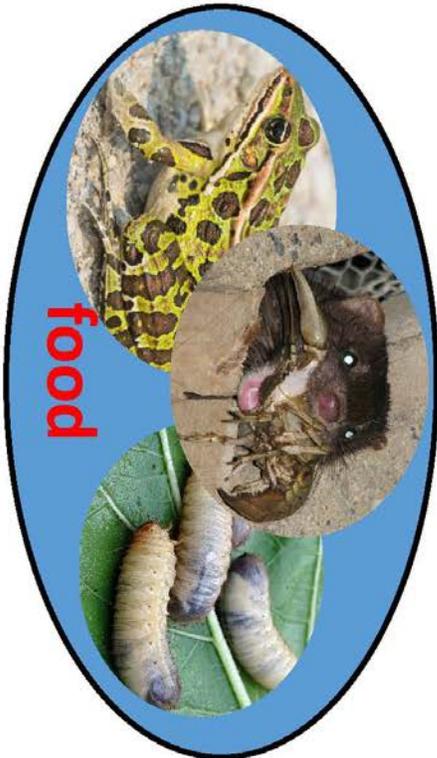
What do squirrels need?



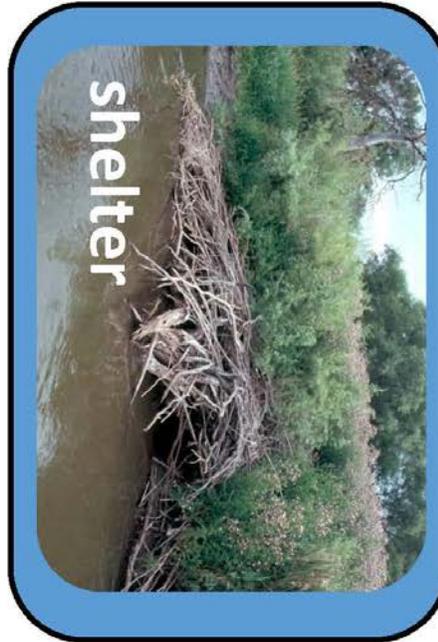
# MAMMALS



What do mink need?



# MAMMALS



What do otters need?



# MAMMALS



What do woodchucks need?



# MAMMALS



What do cottontail rabbits need?



# MAMMALS

Trackimatics Datasheet

Draw your track

How many toes?

How big is it?

Name \_\_\_\_\_

Animal \_\_\_\_\_

