Let's Explore Outdoors!

Outdoor Exploration Vol. 2
Wonder Workbook

CHICAGO ACADEMY OF SCIENCES | PEGGY NOTEBAERT NATURE MUSEUM

10 Ways to Connect with the Environment

1. **Look up!** The sky is always above us but sometimes we don't remember to enjoy observing it. What do you see when you look up?
2. **Tickle a plant.** How do the petals, stem or leaves feel on your fingers?
3. **Watch an ant.** Outdoors look down to see if you can find this common insect. What is the ant doing?
4. **Look out the window.** What can you see? Keep a notebook or take a picture to help track the changes over a day or week or even months.
5. **Listen closely.** Use your ears to notice the sounds all around. Do you hear sounds from humans? Can you hear birds? Or the wind?
6. **Stomp in a puddle.** After a rain, get your boots or old shoes on and play in the puddles!
7. **Take a breath.** Notice the feeling and scent of the air.
8. **Notice the ground under you!** If you can, sit or lay down and feel the ground! Standing or sitting I like to notice the gentle pull of gravity holding me to the ground. I like to think of it as an Earth hug!
9. **Meet a tree.** Stand under (or hug) a large tree. What does the bark feel like? Notice the shape of the branches and leaves above you.
10. **Check out the shadows.** When and where can you find shadow? Observe how they change!

10 maneras de conectarse con el medio ambiente

1. **¡Mira para arriba!** El cielo siempre está por encima de nosotros, pero a veces no recordamos disfrutar de observarlo. ¿Qué ves cuando miras hacia arriba?
2. Cosquillas a una planta. ¿Cómo se sienten los pétalos, el tallo o las hojas en los dedos?
3. **Mira una hormiga.** Al aire libre, mire hacia abajo para ver si puede encontrar este insecto común. ¿Qué está haciendo la hormiga?
4. **Mira por la ventana.** ¿Que puedes ver? Mantenga un cuaderno o tome una foto para ayudar a rastrear los cambios durante un día o una semana o incluso meses.
5. **Escucha atentamente.** Use sus oídos para notar los sonidos a su alrededor. ¿Escuchas sonidos de humanos? ¿Puedes escuchar pájaros? O el viento?
6. **Pisotea en un charco.** Después de una lluvia, ¡póntе las botas o los zapatos viejos y juega en los charcos!
7. **Toma un respiro.** Observe la sensación y el aroma del aire.
8. **¡Observe el suelo debajo de usted!** Si puedes, siéntate o recuéstate y siente la tierra. De pie o sentada me gusta notar el suave tirón de la gravedad que me sostiene contra el suelo. ¡Me gusta pensar en ella como un abrazo a la tierra!
9. **Conoce un árbol.** Párate debajo (o abraza) un árbol grande. ¿Cómo se siente la corteza? Observe la forma de las ramas y las hojas sobre usted.
10. **Mira las sombras.** ¿Cuándo y dónde puedes encontrar sombra? ¡Observa cómo cambian!

Image Investigator

Summary: Students observe an image and create an accompanying story to construct an explanation as to what might be going on in the image.

Grade Range (suggested): K-5

Materials:

- An image or video
- Image Investigator worksheet

ENGAGE

1. Tell students that today we will be looking at an image/video to try to understand what might be happening in it, and uncover the story that it is telling.

PREPARE TO EXPLORE

2. Introduce the image/video you will be looking at. Ask students to look closely at the image for a minute or two or watch the video once or twice.

EXPLORE

3. Once students have had a minute to look at the image or watch the video, ask them "What is going on here?" The goal of this activity is to guide your student's thinking and understanding as to what is going on in the image/video. Avoid inserting information--let students look closely and reason out their responses, rather than by discussing the facts.
4. Follow up the first question with, "What do you see that makes you say that?" to encourage students to back up their explanation with evidence from the image. This step can be repeated many times, having students build on their own ideas.
5. When a train of thought comes to an end, ask "What more can we find?" to pull out more evidence or to continue to build the explanation.

REFLECT and SHARE

6. Now that your students have thought about the image/video and what might be going on, have them write a story that explains it using the worksheet. They can use words and/or pictures to tell their story.
7. Have students share their story with someone!

Extensions and Variations:

- Use the same graphic organizer, but look at a different image or video. It could be related to any content!
- Take all of the stories your class creates and put them together in a book to share!

Image Investigator

Use words and/or pictures to tell a story about what you observed.

Investigador de imagen

Resumen: Los estudiantes observan una imagen y crean una historia que la acompaña para construir una explicación de lo que podría estar pasando en la imagen.

Rango de grado escolar (sugerido): K-5

Materiales:

- Una imagen o video
- Hoja de trabajo del Investigador de Imágenes

Engranar:

1. Diga a los estudiantes que hoy veremos una imagen / video para tratar de comprender lo que podría estar sucediendo en él y descubrir la historia que está contando.

Preparar para explorar:

2. Presente la imagen / video que estará viendo. Pida a los alumnos que observen detenidamente la imagen durante un minuto o dos o que vean el video una o dos veces.

Explorar:

3. Una vez que los estudiantes hayan tenido un minuto para mirar la imagen o ver el video, pregúnteles "¿Qué está pasando aquí?" El objetivo de esta actividad es guiar el pensamiento y la comprensión de su estudiante sobre lo que está sucediendo en la imagen / video. Evite insertar información: permita que los alumnos observen detenidamente y razonen sus respuestas, en lugar de discutir los hechos.
4. Siga la primera pregunta con: "¿Qué ves que te hace decir eso?" para alentar a los estudiantes a respaldar su explicación con evidencia de la imagen. Este paso puede repetirse muchas veces, haciendo que los estudiantes desarrollen sus propias ideas.
5. Cuando un tren de pensamiento llega a su fin, pregunte "¿Qué más podemos encontrar?" para sacar más evidencia o continuar construyendo la explicación.

Reflexionar y Compartir:

6. Ahora que sus alumnos han pensado en la imagen / video y lo que podría estar pasando, pídales que escriban una historia que lo explique usando la hoja de trabajo. Pueden usar palabras y / o imágenes para contar su historia.
7. ¡Haga que los estudiantes compartan su historia con alguien!

Extensions and Variations:

- Utiliza el mismo organizador gráfico, pero mira una imagen o video diferente. ¡Podría estar relacionado con cualquier contenido!
- ¡Tome todas las historias que crea su clase y compártalas en un libro para compartir!

Investigador de imagen:

Use palabras y / o dibujos para contar una historia sobre lo que observó.

Drawing from the Museum's Collections

Draw/Label:

Use pictures and words to show what you notice about **ONE** of the specimens on this page.

Think:

What can you learn about this organism from observing the specimen?

What questions do you have about this specimen?

Dibuja de la Colección del Museo

Dibuja/Etiqueta:

Usa dibujos y palabras para mostrar lo que notas sobre **UN** espécimen en esta página.

Piensa:

¿Qué puedes aprender sobre este organismo al observar la muestra?

¿Cuáles preguntas tienes sobre este espécimen?

Color Exploration with a Flower Sensory Bin

A sensory bin is a bin or container full of items selected to stimulate the senses! This bin invites imaginative play, use of minor motor skills, and rich sensory experiences for young children. This colorful sensory bin is inspired by summer flowers and is a fun way to play with and explore colors!

Materials:

- Bin
- Potting Soil
- Real or fake flowers - a variety of colors and sizes!
- Real or fake leaves/ plants
- Small plastic plant pots (*Did you buy plants this summer? This is a great way to reuse those plastic pots*!)
- Additional toys - like spoons or cups for scooping

A Sensory Bin Guide for Grown Ups

A little on how and why: Especially, if this type of play is new to your child, be sure to set the expectations ahead of time ("A grown-up has to take the bin down" and "All the items have to stay together"). Provide some encouragement and guidance as needed. Invite your child to sort the objects (this is a great way to name and explore colors), suggest scooping and pouring (excellent for minor motor skills) and encourage pretend (let your child lead the way)!

Remember, many bins have small items which could be a choking hazard for young children.

On sustainability: There are lots ways to make your bin a bit more gentle on the earth!

- *Think about storage so the bin can be used over and over*- Play with and store items in the same container (just be sure you have a tight fitting lid)! Or, if that's too bulky, store the cleaned materials separately in smaller bins or zip top bags for reuse.

- *Use natural items* - Make the base natural and biodegradable. We love rice, beans, soil or sand, and strips of crimped paper as a base material. Add other natural objects with different textures and sizes like pinecones, wooden blocks, rocks or sticks.

- *Reuse*- Yes, those bins with perfectly themed toys on pinterest are sooo cute but, don't worry, the toys, spoons, containers and objects you already have are perfect for this project!

Fur and Feathers

How do mammals and birds stay warm in the winter, dry in water, and protected from wind and sun? They've got fur or feathers!

Just like how we wear sweaters, coats, scarves, and hats in the winter, mammals and birds have **layers** of fur or feathers to keep warm and dry. The first layer close to the skin is **soft and fluffy**—this keeps the heat in, like a sweater. The outer layer is **smoother and stiff**—it's like a raincoat, or a jacket that blocks the wind.

Let's take a look at a few animals to see how their fur or feathers helps them stay comfortable where they live!

Can you guess what this animal is?

It's a beaver! Where do you think it lives?

Beavers live in rivers, streams, ponds and marshes. They build dens in the water made mostly of tree branches and mud. Their dens have entrances both above the water and also underwater. Since they spend so much time in the water, their fur has to be both warm and waterproof.

Beavers have an outer layer of waterproof fur called **guard hairs** that they coat with oil from their skin. This fur is long and coarse.

Their inner layer of fur is called **underfur** and is very soft and dense—it holds in the heat from their body to keep them warm.

Can you guess what this animal is?

It's a raccoon! Where do you think it lives?

Raccoons are very adaptable and can live in all sorts of places: forests, marshes, riverbanks, lake shores, and, of course, cities! While they'll sleep in trees or burrows during the day, they spend the nights foraging and hunting for food. They are great swimmers!

Raccoons have an outer layer of stiff, coarse **guard hairs** which helps protect them from wind and keeps them dry when swimming or if they get caught in the rain.

Their inner layer of fluffy **underfur** keeps them warm. It is less dense than the underfur of a beaver, but longer.

Can you guess what this animal is?

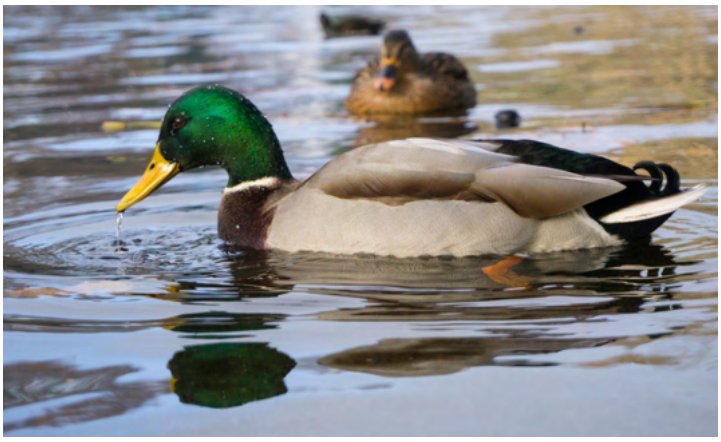
It's a rabbit! Where do you think it lives?

Rabbits are also adaptable to many habitats. They can live in meadows, forests, grasslands, prairies, deserts, and cities. Even though rabbits aren't spending as much time in the water as a beaver or raccoon, they still need protection from water and wind.

Rabbit **guard hairs** protect them from wind and rain. Their guard hairs are shorter and thinner than beavers', and not as coarse as a raccoons'.

Their **underfur** is very long and fluffy which lets it trap a lot of heat in the air pockets between the fur (like a big parka or a sweater).

Can you guess what this animal is?



It's a mallard duck! Where do you think it lives?

These **ducks** can live in lakes, rivers, ponds, marshes, wetlands, and swamps. Since they spend most of their time in the water, they need an outer layer of waterproof feathers called contour feathers to help stay dry.

Contour feathers (the flight and body feathers) are stiff and slick just like a raincoat. The contour feathers also block wind when the ducks are flying.

Ducks have a thick inner layer of fluffy feathers called "**down**" that are good insulation for flying up high where it's cold, or for sitting on chilly water all day.

Move around your home checking out the different fabrics and materials. What materials around your house would make a good rain coat? What materials would help block the wind? Which materials would make good underfur or down to help stay warm?

Loose Parts: Inspiring Child-led Play

From your Nature Museum Camp Directors, Becca and Nicole

We wanted to share are a few of our notes and reflections from Summer Camp we think might inspire some fun child led play at home. We love loose parts for play at camp and we think you can bring these ideas to your play time, too!

What are loose parts:

In play, loose parts are objects and materials that can be moved, carried, used, combined, or separated in a variety of ways. A child can interact with loose parts in many ways and they can lead the play.

Why loose parts:

Some toys, for example a puzzle or toy call, have only one (or two) "fixed" or "set" ways to play or interact with that object. However, loose parts allow children more imaginative, inventive, and self-directed play. A child can decide if a stick is a spoon or a microphone! This type of play may support and help children develop independence, confidence, and problem-solving skills

Some of our favorite loose part from the camp "tool kit":

bowls, cups, wooden spoons, watering cans, muffin tins, wooden blocks, chalk, stumps, flowers, wood chips, stones, toy shovels and rakes, plastic buckets, ribbons, pots and pans, sticks, logs, bark, leaves, and water

Enjoy some play and let us know what loose parts you love!

Let's take a senses walk!

A five senses walk is a great way for us to explore outside! Can you think of your five senses? For this walk, we'll use our ears for listening, we'll use our eyes for looking, we'll use our nose for smelling, and we'll use our fingers to explore some gentle touch. While we're doing our five senses walk outside, we won't be tasting anything. You can do this type of five senses walk anywhere. Let's see what we can find!

TOUCH

A good place to explore using gentle touch is an area with plants! We can touch plants to learn more about their texture and explore their edges, too.

Find a nearby leaf and give it a gentle touch. What do you notice about the leaf's texture?

How does the top of the leaf feel? How does the side of the leaf feel?

Find a nearby tree. Gently touch the trunk of the tree. What do you notice about the tree?

How does the bark feel?

SIGHT

Let's use our eyes next. Find a place where you can safely spend some time doing some close looking.

What is something you see?

What do you notice about it?

What do you notice about its color and shape?

What is it doing?

How is it similar to or different from the things you see around it?

SOUND

Now, let's focus on hearing! Find a place where you can safely stand or sit and really listen to the sounds around you. Make your ears as big as you can by putting your hands behind them to help with your listening!

What can you hear?

What kind of human sounds did you hear?

What kind of animal sounds did you hear?

What kind of nature sounds did you hear?

SMELL

Finally, let's use our sense of smell! Find a spot where you can safely smell the objects near you (like flowers!).

What objects can you smell?

How do they smell? Do they remind you of any other smells?

How would you describe those smells? Sweet? Stinky? Sour? Any other words?

Take a deep breath and smell the air around you.

How does it smell? Can you smell any other scents in the air?

Sound Mapping!

An outdoor exploration with Kayla and Nicole from the Education Department

Source: Sound Maps and many other nature activities can be found in a book we love—"Sharing Nature with Children" by Joseph Cornell.

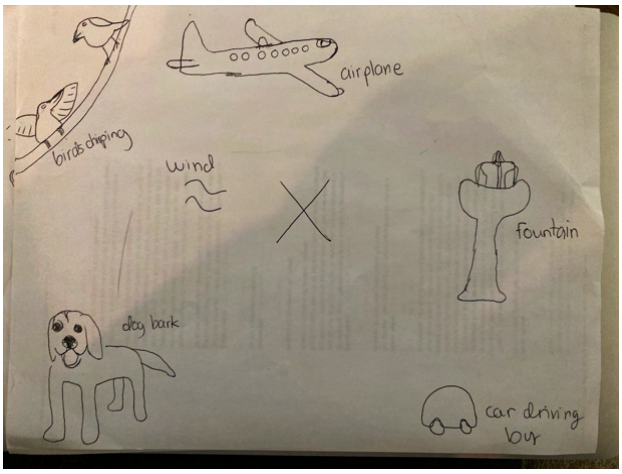
Materials:
Paper or note card with an "X"
Pencil
Attach the paper to a piece of cardboard with a rubber band to make a little DIY clipboard!

Getting Ready:
Get your supplies ready. Let your child know that you'll be making a special kind of map—a map of sounds. Scientists use their senses to learn about the world around so consider reviewing the five senses together!

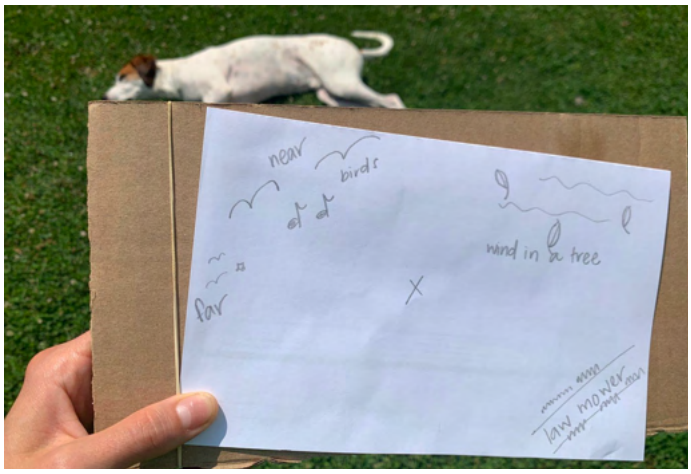
Let's get Started:
Once in an appropriate spot outside. (Or use a video or audio clip online for an indoor version!)
On your map, the "X" indicates your location. Use pictures, words, and/or symbols to indicate interesting sounds around you. We like to try to focus on the natural sounds!
For example, a small wavy line could represent a small breeze, or a drawing of a bird could indicate bird songs.

Prompts to Use During Sound Mapping:
What sounds do you hear?
What will you use to represent that sound?
Are the sounds close or far away?
Do you hear any sounds of nature? The wind or birds? Do you hear sounds caused by people?

Kayla's Sound Map:



Nicole's Sound Map:



Encourage your child to close their eyes while listening for sounds. To help them increase their hearing ability, ask them to make "deer" ears by cupping their hands behind the ears. This hand position will create a greater surface area to capture sounds.

Note: This map could include the other senses too! We could add smells or sights to a "sensory" map, if you like.

Share:
Afterward, share your maps with each other. You could make multiple maps in the same spot and compare them. Or ask your child to explain what symbols they used and why. Later, kids could color and add details to their map!

Let's Make a Scientific Drawing

Let's make close observations to create a scientific drawing using found objects (seeds, sticks, leaves, rocks, critters, etc.). A scientific drawing is based on careful observations. A good scientific drawing has words (labels) and pictures. You don't have to be a "good artist" to make a scientific drawing. All you have to do is make sure the drawing reflects your real observations. Scientific drawings communicate information to others, and to ourselves at a later time, so it's important to include lots of details.

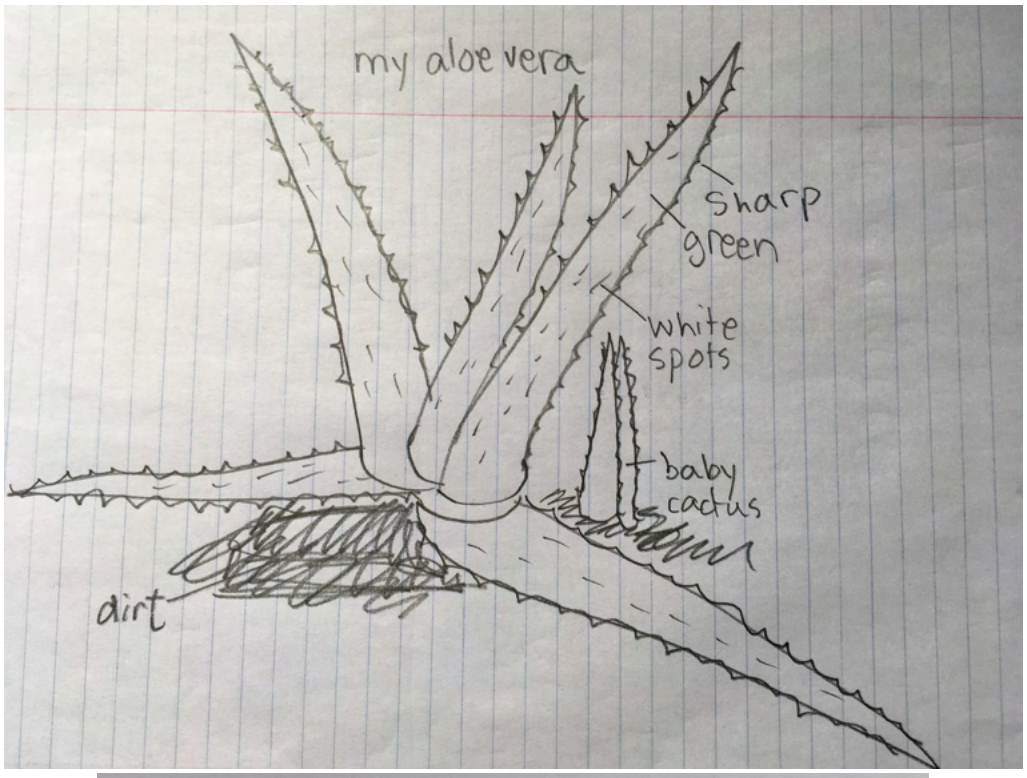
SUPPLIES

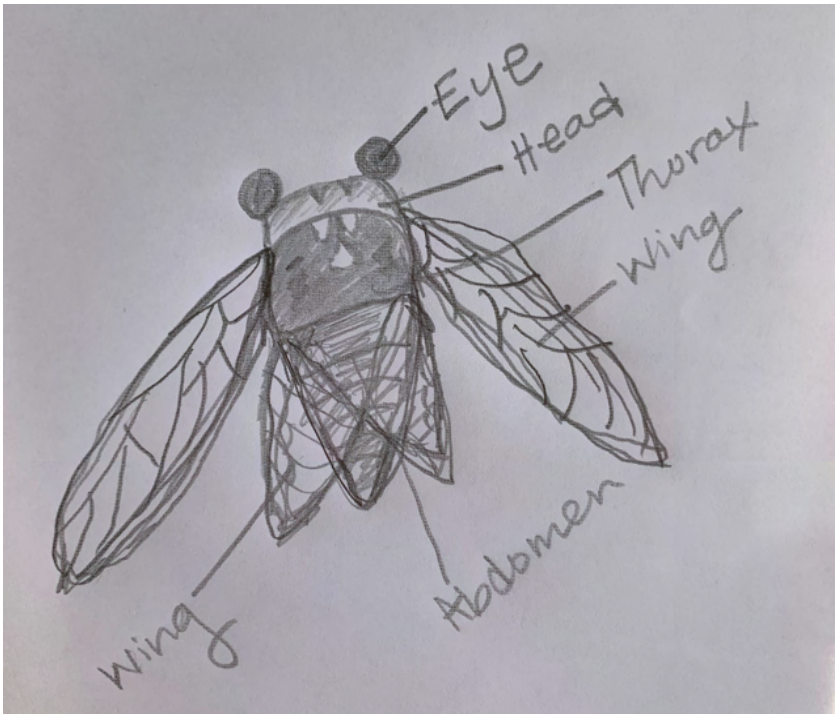
- Found objects (natural objects, household objects, anything!) or a photo of something in/from nature
- Drawing tool (pencil, pen, marker, etc.)
- Paper

DIRECTIONS

1. Select an object for your scientific drawing. It can be a household object or an object from outside.
2. Make close observations of your object. What colors, patterns, shapes, textures, etc. do you observe? What is unique or interesting about your object?
3. Show those details by making a scientific drawing with pictures and words.
4. As you draw, draw what you actually see. Imaginative drawings are important and fun too, but when scientists do scientific drawings, they draw only what they observe.
5. Add labels along the way. Including labels helps when others look at your scientific drawing because they can understand all the parts. A label can also share extra information - a color you don't have in your box, or a texture that's hard to draw, for example.
6. Before you finish, take another look at your object and drawing. Is there a detail you missed that you can add in? Is there another label you add to help others understand your drawing?

EXAMPLES:





Scientific Drawing

Add details and labels to your scientific drawing! Draw what you actually see.

La Ilustración Científica

¡Incluye detalles y etiquetas en tu ilustración científica! Dibuja lo que realmente puedes ver.

Neighborhood Species

Species name:

_____

Description (color, size, etc.):

_____

_____

_____

_____

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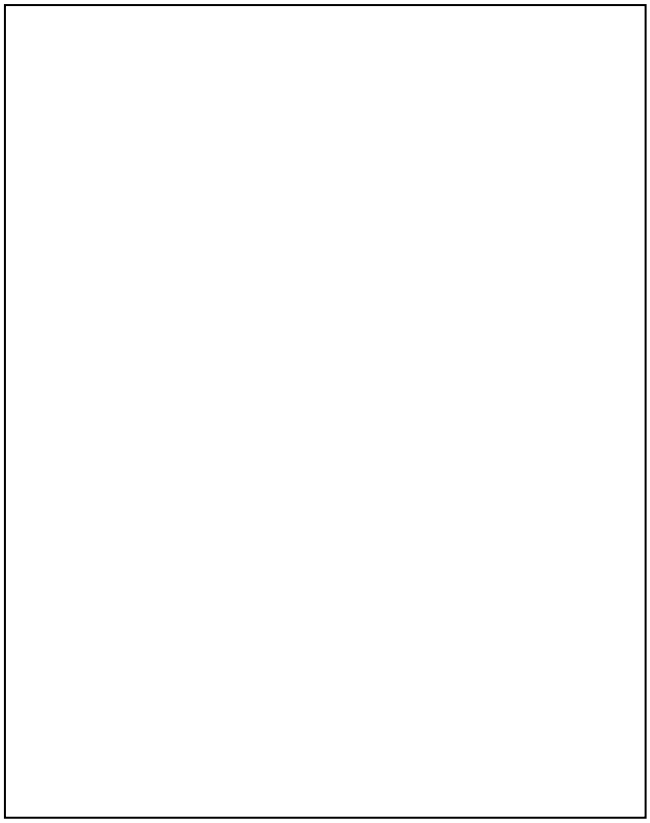

Diet:

_____

_____

Habitat (where did you see it?):

_____

_____

Behaviors (what was it doing?):

_____

_____

_____

Drawing and research done by: _____

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Species name:

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Description (color, size, etc.):

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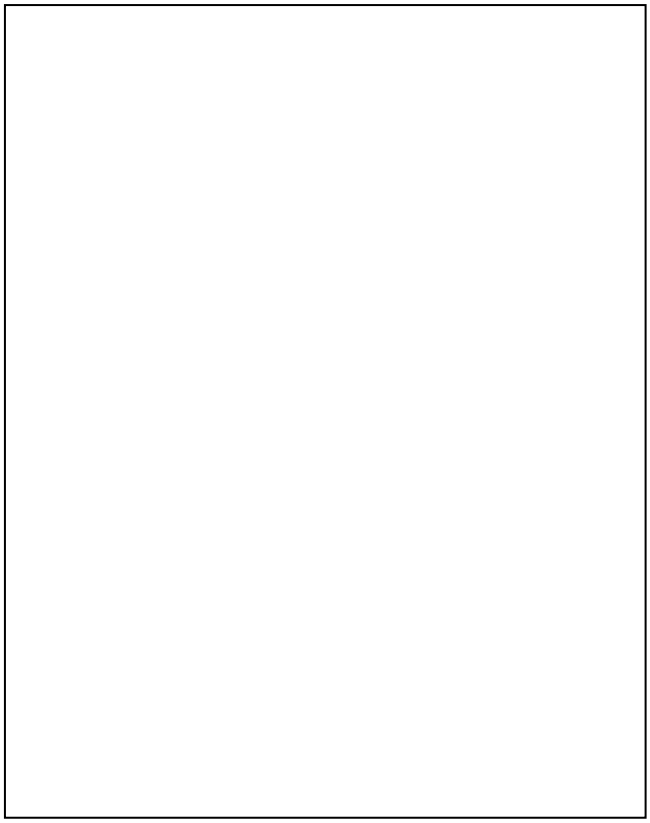

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_____

_____

Habitat (where did you see it?):

_____

_____

Behaviors (what was it doing?):

_____

_____

_____

Drawing and research done by: _____

My Observations

I'm observing_____.

I notice:

(use words and drawings to describe what you're observing)

I wonder:

(write all the questions you have about what you're observing)

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Story Time Graphic Organizer

Story Time Book Title: _____

Use words and pictures to share about a main idea in the story you read.

Describe some adventure or exploration that happened.

How is nature involved in the story?

As you were reading the story, how did you feel?

Does the story give you any ideas in your own life?

After reading the story, what do you wonder?

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