
Planning for the Unit



Unit Overview

In the *Life Science: Wondering About Noises in Trees* unit, students investigate the phenomenon of noises coming from a tree. They are challenged to solve the mystery of what's causing these noises and why. Students discover that many animals spend time in trees and that the noises from the tree are likely coming from animals. What are those animals doing in the tree to make so much noise? Students learn that animals can make noises in trees when they get food and make shelter for themselves or for their babies. For example, a woodpecker taps tree bark to get bugs to eat. Next, students investigate why the tree is a good place for the animals to get food and make shelter. They discover that trees have things that animals need, including food (fruit and nuts, seeds, leaves, and bugs), building materials, and places for shelter. In the course of solving the mystery of the noises from the tree, students are introduced to core ideas in life science, including needs of living things and dependence of animals on plants. The unit includes an emphasis on gathering evidence to construct and test students' ideas and sharing those ideas as scientists do. Students gather evidence for these ideas from a variety of sources: a book, photographs, sound recordings, and videos. They share their developing ideas through discussion, drawing, writing, movement, and use of the class Tree Model. Through the activities, students are exposed to the crosscutting concepts of *Patterns* and *Cause and Effect*. The context of noises from a tree provides a familiar and intriguing starting point for students to engage in doing science.

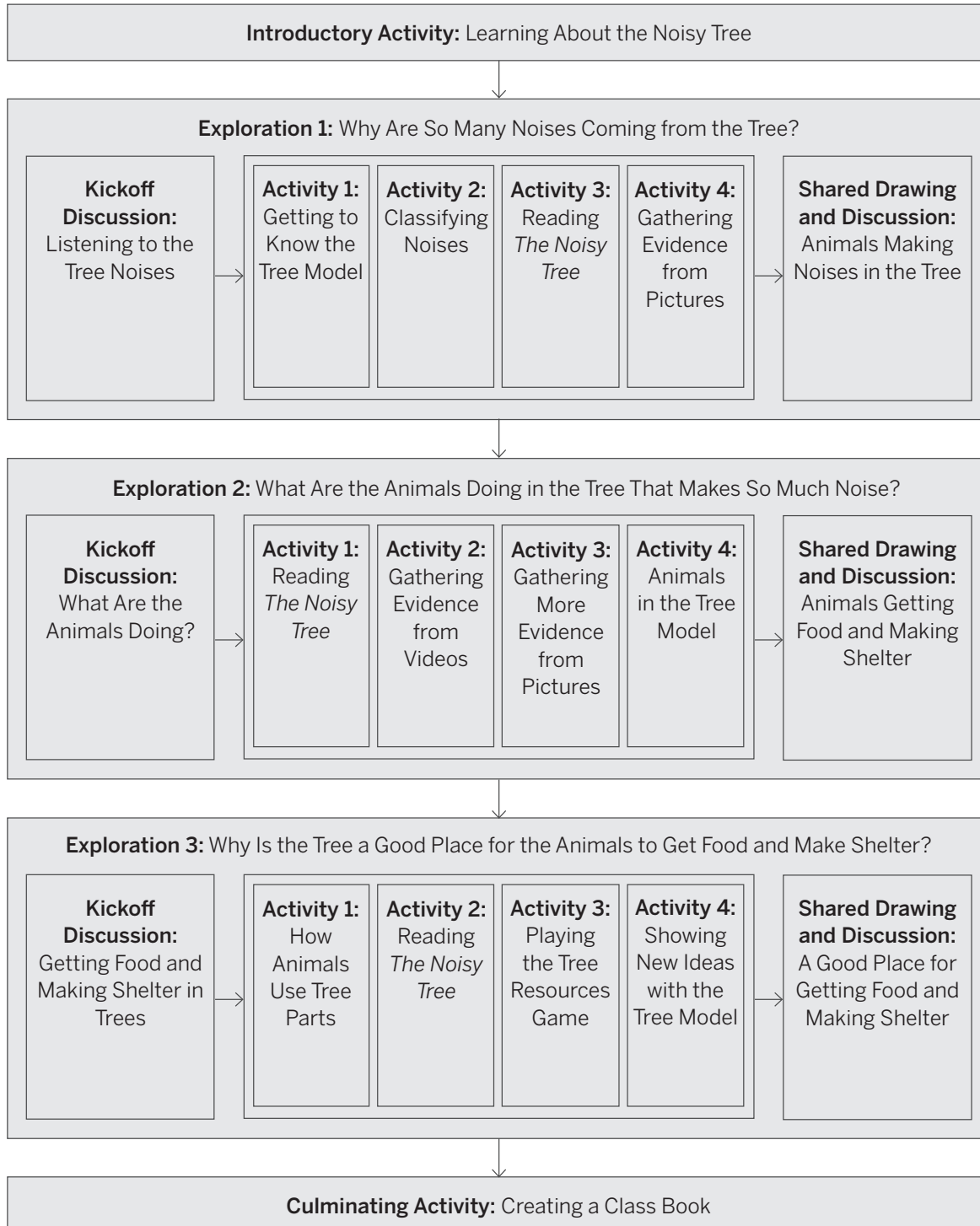
Structure of the Unit

Each unit in the Amplify Science Transitional Kindergarten (TK) curriculum begins with an Introductory Activity that introduces a phenomenon. The Introductory Activity is followed by a series of three Explorations—each Exploration is comprised of a Kickoff Discussion, four activities, and a Shared Drawing and Discussion—in which students investigate to collect evidence that will help them construct an understanding of the phenomenon. Each unit ends with a Culminating Activity that consolidates students' understanding. See the unit diagram on the next page for a visual representation of the flow of instructional activities.

Depending on your class schedule and configuration, each unit can be implemented in a variety of instructional formats. (For additional information about how to personalize a unit for your class, see Flexible Implementation in the Instructional Resources section on page 6.) Each instructional activity is designed to span approximately 15 minutes. Depending on the implementation options you choose, teaching the entire unit will take approximately 4–6 weeks.



Life Science: Wondering About Noises in Trees





Science Background

A wide range of animals spend time in trees and use things in the trees to meet their survival needs. The survival needs of animals include food, water, oxygen, shelter, and space. This unit focuses on food and shelter. Foods that animals find in trees include leaves, fruit, seeds and nuts, and small animals such as bugs living on the tree. Shelter can provide animals and their young with protection from predators and harsh weather, a stable temperature, and/or a suitable level of moisture. Shelter that animals make in trees includes nests made from twigs and leaves, holes in trunks and branches, and high branches that are out of reach of some predators.

This unit introduces students to the parts of a tree. Trees are plants with woody trunks and branches. All trees also have leaves, although conifer trees, such as pines, have very slender leaves called needles. All trees have roots that extend underground. Some, but not all, trees have flowers, fruit or nuts, and seeds.

Language and Literacy

Language and literacy in the Amplify Science TK units emphasize listening, speaking, reading, and writing to figure out and communicate science ideas. This approach accounts for the developmental needs of young learners by considering the relationship of language development to each component of literacy. Units are designed to help students develop the language of science that will facilitate their learning of challenging concepts and that will support them in using language as a tool for explaining their learning to others. Across each unit, students have many opportunities to hear and use the language of science while listening to Read-Alouds, investigating, and composing drawings and written text to communicate what they are learning.

In this unit, students are introduced to the central phenomenon with the unit's book, *The Noisy Tree*. Primary sources—sound recordings of animal noises and videos of animals moving through and hiding in trees—as well as interactions with a classroom model tree and visits to neighborhood trees, make this phenomenon come alive. Throughout the unit, the class revisits these different sources to gather additional evidence that will support them in figuring out why there are noises in trees. As students investigate with the book and through hands-on activities, they learn the language of science and build their capacity for communicating science ideas. Students are supported in talking like scientists through the use of language frames that build in complexity across the unit and by participating in the Vocabulary routine and the Shared Listening routine. (For more information about instructional routines, see page 7.) After gathering evidence from firsthand experiences and text, students record their ideas in their Science Notebooks. At the end of each Exploration, students participate in a Shared Drawing and Discussion activity to compose a shared drawing and a shared writing about the central phenomenon. Students collaborate to orally compose the ideas for the shared drawing and shared writing while the teacher records students' ideas. This unit concludes with students drawing their ideas for a class book titled *Animals in Trees*.



About the Book: *The Noisy Tree*

The Noisy Tree begins with a fictional narrative told from the perspective of a girl who notices interesting noises coming from a tree in the park. In order to figure out what's making the noises, the girl decides to observe all that she can. Vivid photos bring the girl's observations to life. This story introduces students to the noises they will be investigating in the classroom and models scientific practices of observing and investigating. Following the story are reference pages providing more information about trees, including a diagram showing the main parts of a tree, and entries on different ways that eight common North American animals use trees to get food and make shelter. The information in the reference section of the book supports students' firsthand investigations of noises in trees.

Unit Glossary

animal: a living thing, such as an ant, a cat, a clam, or a bird, that needs to eat

evidence: things you see, hear, or read that help you answer a question

observe: to use any of the five senses (sight, hearing, smell, taste, touch) to learn more about something

scientist: someone who learns about the natural world

senses: sight, hearing, smell, touch, and taste

shelter: a safe place for an animal

Standards Connections

Amplify Science TK units provide precursory experiences to support students in developing the foundational skills and practices that will enable them to be successful in achieving Next Generation Science Standards (NGSS) and Common Core State Standards for English Language Arts and Math (CCSS-ELA and CCSS-Math) in later elementary years. In this unit, learning about animals getting food and making shelter in trees prepares students for later investigations of the NGSS Disciplinary Core Idea—*Ecosystems: Interactions, Energy, and Dynamics*. As students learn to gather evidence and share ideas, they prepare for later experiences with the NGSS science and engineering practices of *Engaging in Argument from Evidence* and *Obtaining, Evaluating, and Communicating Information*, as well as the crosscutting concepts of *Patterns* and *Cause and Effect*. The unit also provides experience with the CCSS-ELA strands of *Language, Speaking and Listening*, *Reading: Informational Text*, and *Writing*, as well as CCSS-Math Practice 1 (*Make sense of problems and persevere in solving them.*) and the domains of *Measurement and Data* and *Geometry*.



Instructional Resources

Teacher References

The Introductory Activity, Explorations, and Culminating Activity typically include one or more teacher references to support your planning and instruction. Teacher references provide information such as how to plan for flexible implementation of the unit, how to set up detailed models or materials, and depictions of the shared drawing and shared writing as the unit progresses. Teacher references can be found after the Materials and Preparation sections.

Flexible Implementation

Amplify Science TK units are structured to allow you to make decisions about how best to teach each unit to your students. While the sequence of the Introductory Activity, Explorations, and Culminating Activity within a unit is fixed, Activities 1–4 within each Exploration can be implemented flexibly.

The instructional guide is written for teaching in a whole-class setting. However, Activities 1–4 within each Exploration are designed so you can choose to implement them in alternative settings such as small groups or centers. Adjusting these activities for flexible implementation does not mean adding or removing steps of an activity; rather, it means modifying how some steps are accomplished. To support your planning and decision-making, each Exploration includes a Suggestions for Flexible Implementation teacher reference that provides guidance for how to adjust Activities 1–4 to incorporate an independent science center. Students can visit the centers multiple times throughout a day or across the span of multiple days. During your center time, students can rotate through the centers until they have engaged with all the activities. You might consider inviting an adult volunteer to supervise a science center.

Visual Directions Cards are provided to support students to interact more independently in activities at centers. Offering visual cues for engaging in an activity at a center can be a valuable pedagogical tool for supporting students' success. Provided Visual Directions Cards include: *draw and write*, *explain*, *listen*, *make*, *observe*, *read*, *share*, and *think*. For the *make* card, you can attach a sample of what students will make at the center. The Visual Directions Cards are provided after the activities in Exploration 1. The Suggestions for Flexible Implementation teacher reference in each Exploration includes suggestions for which cards to place at a center for a given activity. These cards can be reused as needed throughout the unit.



Instructional Routines

The Amplify Science TK units include two instructional routines—Vocabulary routine, Shared Listening routine—that are used repeatedly throughout the activities. These instructional routines support students’ learning by offering structured sequences for participating with classmates. Routines are initially introduced by the teacher. As the unit progresses, students become increasingly familiar with the routines and gradually take on greater responsibility for participation. The first time each routine is used, the steps will be listed within the activity in the instructional guide. Subsequent uses will refer to the name of the routine but will not list individual steps. The steps for each routine, in the context of an example, are listed below.

Vocabulary Routine

- **Introduce the word *scientist*.** Hold up the vocabulary card for *scientist*.

- 💬 This is the word *scientist*. A scientist is someone who learns about the natural world.
- 💬 We are going to practice saying the word. Say the word after me: *scientist*.
- 💬 Now say the word together: *scientist*.
- 💬 Now whisper the word *scientist* to your partner.
- 💬 A scientist is someone who learns about the natural world.

Post the vocabulary card to the Vocabulary section of the classroom wall.

Shared Listening Routine

- **Provide the Shared Listening prompt.**

- 💬 You and your partner will take turns sharing what you think might be making the noises in the tree.

- **Model the Shared Listening routine.**

- 💬 Partner A shares: *I think . . .*
- 💬 Partner B listens carefully.
- 💬 Partners switch roles.
- 💬 Partner B shares: *I think . . .*
- 💬 Partner A listens carefully.

- **Assign partners and have students begin the Shared Listening routine.** Allow some time for partners to conduct the Shared Listening routine. Circulate to listen to students’ ideas.



Assessment Opportunities

The Amplify Science TK units include a series of embedded assessment opportunities designed to support both you and your students in monitoring their progress toward learning goals.

Each Exploration includes a Formative Assessment Opportunity within one of the activities. These assessment opportunities are designed to support you in monitoring students' progress toward answering the unit's science questions and understanding the unit's central science ideas, as well as their facility with engaging in focal science practices. The Formative Assessment Opportunities include suggestions of what to look for in students' responses as indicators of their progress toward understanding and applying these key science ideas and practices.

The Culminating Activity includes an opportunity for a paired self-assessment in which partners reflect about new ideas they have developed by engaging in the unit. The self-assessment supports students in monitoring their understanding and taking ownership of their learning.

Teacher Support

In each unit, you will find a series of teacher support notes accompanying many of the instructional activities. These notes are designed to provide additional information that can be used to enhance your instruction. Teacher support notes include the following three categories:

- **Background:** relevant information about science content and practices
- **Rationale:** descriptions of pedagogical approaches and explanations of why an activity was designed in a particular way
- **Instructional Suggestion:** specific teaching tips, strategies, or suggestions for adapting or extending instruction

Getting Ready to Teach

Teaching a science class that integrates hands-on activities with reading, writing, and discussion can be challenging—especially the first time. Employing the following basic strategies and practices can help make things go more smoothly.

Learn more about the Amplify Science TK curriculum. For information about the Amplify Science approach as well as background information that will help you prepare to teach the TK units effectively, refer to the Amplify Science website.

Read the teacher guide. Be sure to read the Overview and all the activities before you present each section. If you can, reading through the entire unit will give you the best sense of where the unit is moving.



Read the unit's book. Read *The Noisy Tree* before you present it to students. This should take just a few minutes and will enable you to better anticipate your students' language and literacy needs and to prepare for using the book in Read-Aloud activities.

Plan ahead. Reading the Preparation at a Glance (pages 12–13) will give you a sense of the activities in which extra preparation time is needed. There are some activities that will require more preparation time, especially the first time you teach them.

Involve adult volunteers to help prepare class materials. Recruiting the assistance of adult volunteers can be an important time-saving strategy. The Preparation at a Glance indicates which activities have self-contained tasks that can be handed off to adult volunteers.

Set aside time to prepare before teaching. Before teaching the Introductory Activity, each Exploration, and the Culminating Activity, review Materials and Preparation in the Overview for that section. The Materials section lists the items that will be used in the activity and how many of each will be needed for the class and for students. The Preparation section details specific instructions for preparing the activities and materials.

Prepare a dedicated wall space in your classroom. Choose a dedicated section of your classroom wall for science learning. Throughout the unit, you will post science questions, science ideas, vocabulary, and class charts to the wall. You may choose to create headers for each section of the wall or use different-colored backgrounds to distinguish between the sections. Although this will take up extra space in your classroom, it helps create a print-rich environment and provides an invaluable resource for students as they talk about, draw, and write about science ideas.

Assemble Science Notebooks ahead of time. Throughout the unit, students will draw and write their ideas in a Science Notebook. You can make copies of the Science Notebook Cover copymaster and Science Notebook Page copymaster ahead of time (see the Preparation section in Exploration 1) and bind one notebook for each student. You can also ask for adult volunteers who are willing to make copies of the Science Notebook at their workplaces. Many workplaces have sufficiently large copy volumes that they are happy to make such an in-kind contribution.

Make a plan for how you will project videos and/or play sound recordings. Some activities involve projecting videos and/or playing sound recordings for students. Be sure to preview any videos or sound recordings before projecting/playing them for students to ensure that you are not showing ads or other irrelevant content. Decide how you will project videos/play sound recordings (e.g., from your computer, projector, smartphone) so all students can access the content.

Share information with parents and guardians. Each Introductory Activity and Culminating Activity includes an optional Home Connection with information about the unit for parents and guardians, as well as an activity for extending unit learning at home with their students. If you choose to have families participate in the Home Connection, refer to the Preparation section and associated teacher support note in these activities.



Materials and Preparation Across the Unit

Materials at a Glance

Note: Check and follow your district's safety regulations pertaining to the use of proper safety equipment and procedures for students participating in hands-on science activities.

Print Materials

The items below are all the provided print materials needed to teach the *Life Science: Wondering About Noises in Trees* unit.

Quantity	Description	When used
1	big book, <i>The Noisy Tree</i>	throughout
1 set	Science Questions (3 cards)	Explorations 1, 2, 3
1 set	Tree Cards (24 cards)	throughout
1 set	Vocabulary Cards (6 cards)	throughout

Items to Be Provided by the Teacher

The quantities listed are what you will need to provide to teach the unit once for a class of 24 students. Please note that you will need to replenish the consumable items after each class use.

Quantity	Description	When used
varies	bags, paper, grocery (or brown construction paper or a brown marker)*	Exploration 3
1	box cutter or sharp scissors	Exploration 1
1	box, cardboard, large*	Exploration 1
1	box, cardboard, medium*	Exploration 1
1	box, cardboard, small*	Exploration 1
1	computer or other digital device	Explorations 1, 2
varies	craft materials (pipe cleaners and/or craft sticks, tissue paper and/or fabric pieces, large beads and/or pom-poms, construction paper)*	Exploration 3



Quantity	Description	When used
24	crayons, sets*	throughout
6–12	index cards (3.5" x 5")*	Exploration 2, Culminating Activity
1	marker, black	throughout
1	markers, colored, set	throughout
4	paper, chart, sheets*	Exploration 1, Culminating Activity
12	paper clips	Exploration 3
2	paper, construction, sheets (8.5" x 11")*	Culminating Activity
1	paper cutter or scissors	throughout
78	pipe cleaners*	Exploration 1
1	pocket chart or whiteboard with magnets	throughout
6–12	sentence strips*	throughout
1	stapler	throughout
6–8	stuffed animals	Explorations 2, 3
1	tape, masking, roll*	throughout
78	tissue paper, squares (6" x 6" each)*	Exploration 1
24	tokens, plastic	Exploration 3
24	tree parts, real (several each of leaves, twigs, pieces of bark, acorns, small branches)*	Exploration 3
3	tubes, cardboard*	Exploration 1
varies	optional: additional craft materials (crayons, glue, safety scissors, string)*	Exploration 3

*consumable



Preparation at a Glance

The information provided here is an overview of the amount of time we estimate it will take you to prepare the materials for each activity in the unit. This does not include the time you will need to spend reading the instructional guide, previewing the book, or reviewing students' work.

The Materials and Preparation sections in the Introductory Activity, Explorations, and Culminating Activity include detailed preparation steps to be completed before beginning instruction. This preparation time is summarized in the tables below to assist in your planning.

Asterisks in the tables below denote self-contained preparation tasks that are easily handed off to adult volunteers. Doing so can reduce or eliminate preparation time in those instances. Plan ahead by inviting adult volunteers to come in a few days before these activities.

Activity	Preparation time frame (in minutes)
Introductory Activity	10: Prepare an area of the classroom wall. Optional: Make copies of the Home Connection copymaster.*

Exploration 1

Activity	Preparation time frame (in minutes)
Kickoff Discussion	10: Search for sound recordings on the Internet.*
Activity 1	40: Gather materials for the Tree Model.* Build the Tree Model.* Prepare materials for Tree Model leaves and make three sample leaves.*
Activity 2	40: Search for sound recordings on the Internet.* Make copies of the Science Notebook Cover copymaster and the Science Notebook Page copymaster.* Assemble Science Notebooks.*
Activity 3	n/a
Activity 4	10: Create Language Frame 1.* Prepare Language Frame Cards: Set 1.*
Shared Drawing and Discussion	5: Create Science Idea 1.*



Exploration 2

Activity	Preparation time frame (in minutes)
Kickoff Discussion	n/a
Activity 1	n/a
Activity 2	40: Search for videos on the Internet.* Create Language Frame 2.* Prepare Language Frame Cards: Set 2.*
Activity 3	5: Prepare a subset of the Tree Cards.*
Activity 4	10: Gather stuffed animals.
Shared Drawing and Discussion	5: Create Science Idea 2.*

Exploration 3

Activity	Preparation time frame (in minutes)
Kickoff Discussion	n/a
Activity 1	20: Gather real tree parts.*
Activity 2	n/a
Activity 3	25: Create Language Frame 3.* Prepare Language Frame Cards: Set 3.* Prepare materials for the Tree Resources Game.*
Activity 4	15: Gather materials to add to the Tree Model. Prepare model bark.*
Shared Drawing and Discussion	5: Create Science Idea 3.*

Activity	Preparation time frame (in minutes)
Culminating Activity	30: Create the What Scientists Do chart.* Prepare a subset of the Language Frame Cards.* Prepare cover for the class book.* Make copies of the Class Book Page copymaster.* Optional: Make copies of the Home Connection copymaster and assemble mini-books.*

Introductory Activity: **Learning About the Noisy Tree**



Introductory Activity Overview

This Introductory Activity introduces students to the *Life Science: Wondering About Noises in Trees* unit and sets the stage for the Explorations to follow. The teacher reads aloud the first few pages of *The Noisy Tree*, which begins the story of a young girl who works like a scientist as she observes nature in her park. She hears mysterious noises from a tree and wonders what is going on. During the Read-Aloud, students are introduced to their role as scientists. After reading, students share their initial ideas about what could be making the noises in the tree. The purpose of this Introductory Activity is to introduce students to the unit phenomenon and to their role as scientists in order to motivate their learning throughout the unit.

Students learn

- Scientists wonder about things and try to figure out more about them.
- Scientists use their senses to figure things out.

Vocabulary

- scientist



Materials and Preparation

Materials

For the Class

- *The Noisy Tree* big book
- 1 vocabulary card: *scientist*
- masking tape*
- optional: stapler*
- optional: Home Connection: Observing Trees copymaster

For Each Student

- optional: 1 set of the Home Connection: Observing Trees student sheets

*teacher provided

Preparation

1. **If you haven't already prepared a dedicated wall space in your classroom, do so now.** Throughout the unit, you will post science questions, science ideas, vocabulary, and class charts. Refer to this section of the classroom wall often so students begin to use it as a reference for the ideas they are learning.
2. **Locate the following print materials:**
 - *The Noisy Tree* big book
 - vocabulary card: *scientist*
3. **Preview *The Noisy Tree*.** Familiarize yourself with the pictures and language in the book.
4. **Optional: Make copies of the Home Connection: Observing Trees copymaster.** If you choose to include the optional Home Connection activity, make copies of the Home Connection: Observing Trees copymaster (located at the end of the Introductory Activity). Make enough copies so each student can get one set of 2 pages to take home. Staple together each set of student sheets.
5. **Have on hand the following materials:**
 - *The Noisy Tree* big book
 - vocabulary card
 - masking tape
 - optional: sets of Home Connection: Observing Trees student sheets



Introductory Activity: Learning About the Noisy Tree

What?

The teacher reads aloud pages 4–8 of *The Noisy Tree* and introduces students to the unit phenomenon of noises coming from a tree. Students are also introduced to their role as scientists. Students share their ideas about what could be making the noises in the tree.

Why?

Listening to a Read-Aloud of the first part of *The Noisy Tree* introduces students to the phenomenon they will explore throughout the unit. Participating in the Vocabulary routine and the Shared Listening routine familiarizes students with key learning activities they will encounter across the unit's Explorations.

How?

1. **Introduce the unit.** Let students know that they are beginning a new science unit in which they will solve a mystery.
2. **Introduce *The Noisy Tree*.** Show the front cover of the book and invite students to share their observations. Explain that this book will introduce students to the mystery they will help solve.
3. **Begin reading page 4 aloud.** Pause after you have finished reading.

💬 We are going to be scientists, too. We will wonder about things and try to figure out more about them.

4. **Introduce the word *scientist*.** Let students know that they will be learning many new science words. Hold up the vocabulary card for *scientist*. Introduce the Vocabulary routine by using the word *scientist*.

💬 This is the word *scientist*. A scientist is someone who learns about the natural world.

💬 We are going to practice saying the word. Say the word after me: *scientist*.

💬 Now say the word together: *scientist*.

💬 Now whisper the word *scientist* to your partner.

💬 A scientist is someone who learns about the natural world.

Post the vocabulary card to the Vocabulary section of the classroom wall.



- 5. Continue reading aloud through page 6.** Pause after you have finished reading and point out that the girl in the book is looking and listening closely to figure things out.

The girl looked closely and figured out that the beetle is drinking from the flower. In our work as scientists, we will look and listen closely in order to figure things out, too.

- 6. Continue reading aloud through page 8.** Pause after you have finished reading and let students know that these noises in the tree are the mystery they will help to figure out. Read page 8 again and have students close their eyes and imagine what might be making the noises.

- 7. Introduce the purpose for the Shared Listening routine.**

Scientists often work together with other scientists. They share their ideas in order to learn more about the things they study. They talk about their own ideas, and they listen to new ideas from other scientists.

Shared listening means that we will take turns talking about our own ideas and listening to other people's ideas.

- 8. Provide the Shared Listening prompt.**

You and your partner will take turns sharing what you think might be making the noises in the tree.

- 9. Model the Shared Listening routine.**

Partner A shares: *I think . . .*

Partner B listens carefully.

Partners switch roles.

Partner B shares: *I think . . .*

Partner A listens carefully.

- 10. Assign partners and have them begin the Shared Listening routine.** Allow some time for partners to conduct the Shared Listening routine. Circulate to listen to students' ideas.


- 11. Have students act out their ideas.** Let students know that they can also use their bodies to share their ideas about noises in trees. Model moving your body as you think aloud about what might make a noise in a tree.

I think wind moving branches could make a noise in a tree. I can move my body like branches in the wind to show my idea.



Have students act out their ideas. Encourage volunteers to demonstrate their movements for the class.

12. Wrap up the Introductory Activity.

 We are going to work as scientists. We will help this girl with the mystery by looking and listening closely to things to figure out more about them.

Teacher Support

Instructional Suggestion

Providing More Experience: Class Nature Walk

You can extend the Introductory Activity by taking a class nature walk if you have access to a natural or semi-natural area with trees. This area can be a part of the schoolyard, a small local park, or a larger protected area. Let students know that they will look and listen to figure out more about what is in, on, and around the trees. Guide students on a walk, pausing frequently to model looking and listening closely to the trees. For example, you can say, “I look closely at this tree, and I see leaves.” “I look closely at these leaves, and I see that they have lines on them.” “I listen closely to this tree, and I hear chirping.” During the class nature walk, invite students to share any observations they make.

Instructional Suggestion

Providing More Experience: Home Connection

The Introductory Activity includes an optional Home Connection that introduces families to one of the science practices students will learn in this unit. Home Connections can encourage interaction and discussion between students and their families around science concepts, which is beneficial for student learning. The Home Connection: Observing Trees invites students and an adult to observe sights and sounds near a tree or several trees. Make one copy of the Home Connection: Observing Trees copymaster for each student to take home.

Name: _____ Date: _____

Home Connection: Observing Trees

We are beginning a new science unit called *Life Science: Wondering About Noises in Trees*. One of the important science practices that students will learn about in this unit is gathering evidence to answer questions. We invite you to engage your student in the following activity to help develop this practice at home.

Directions:

1. Go to a place with one or more trees.
2. Look around and ask your student to discuss what they see. Encourage them to look carefully at what is in or around the tree(s), as well as the different parts of the tree(s).
3. Have your student close their eyes and discuss what they hear. Encourage them to listen carefully and think about what might be making the sounds they hear.
4. Record your student's responses to the questions below.
5. In the box on the next page, have your student draw a tree that they observed.

What is one thing you saw in or around the tree?

What is one thing you heard in or around the tree?

Name: _____ Date: _____

Home Connection: Observing Trees (continued)

Exploration 1:

**Why Are So Many Noises Coming
from the Tree?**



Exploration 1 Overview

In this Exploration, students investigate Science Question 1: *Why are so many noises coming from the tree?* Exploration 1 begins with the Kickoff Discussion in which students listen to sound recordings of noises like those from the tree and share their initial ideas in response to Science Question 1. Four activities help students gather evidence about trees and possible sources of noises from a tree. In Activity 1, students are introduced to the Tree Model that they will use throughout the unit. In Activity 2, students listen to additional sound recordings and draw their ideas about the source of each sound. In Activity 3, the teacher reads aloud a new section of *The Noisy Tree*. In Activity 4, students observe a series of tree pictures and use a language frame to describe their observations. Exploration 1 ends with the Shared Drawing and Discussion in which the class summarizes and applies what they have learned. The purpose of Exploration 1 is for students to use science practices and ideas about patterns to figure out that trees often have a lot of animals in them and that animals make noises.

Students learn

- Trees often have lots of animals in them. Animals make noises.
- Trees have trunks, branches, and leaves.
- Scientists ask questions and gather evidence to answer their questions.
- Scientists draw, write, and talk to share their ideas.

Activities at a Glance

Kickoff Discussion: Listening to the Tree Noises

The teacher introduces Science Question 1: *Why are so many noises coming from the tree?* to motivate the activities students engage in throughout Exploration 1.

Activity 1: Getting to Know the Tree Model

Students are introduced to the Tree Model in order to build an understanding of the parts of a tree and to become familiar with a central resource of the unit.

**Activity 2: Classifying Noises**

Students listen to a series of sound recordings and make drawings of their ideas about the source of each noise. This activity supports students' preliminary understanding that many noises are made by animals.

Activity 3: Reading *The Noisy Tree*

The teacher leads a Read-Aloud of a new section of *The Noisy Tree* to introduce students to animals in the tree. This section of the book helps students understand how scientists make observations to gather evidence to help answer their questions.

Activity 4: Gathering Evidence from Pictures

Students describe what they observe in trees on the Tree Cards in order to gather evidence that many kinds of animals can be found in trees. Students use a language frame to practice sharing ideas like scientists do.

Shared Drawing and Discussion: Animals Making Noises in the Tree

The class participates in a shared drawing and an accompanying discussion to consolidate and apply their understanding of Science Idea 1: *Trees often have lots of animals in them. Animals make noises.*

Vocabulary

- evidence
- observe
- scientist
- senses



Materials and Preparation

Materials

For the Class

- *The Noisy Tree*
- Science Question 1: *Why are so many noises coming from the tree?*
- 3 vocabulary cards: *evidence*, *observe*, *senses*
- Tree Cards (24 cards)
- Language Frame Cards: Set 1 (11 cards)
- Science Notebook Cover copymaster
- Science Notebook Page copymaster
- 1 computer or other digital device*
- 2–4 sentence strips*
- 2 sheets of chart paper*
- 1 large cardboard box*
- 1 medium cardboard box*
- 1 small cardboard box*
- 3 (or more) cardboard tubes*
- box cutter or sharp scissors*
- paper cutter*
- stapler*
- tissue paper*
- pipe cleaners*
- colored markers*
- marker*
- masking tape*
- pocket chart or whiteboard with magnets*
- optional: 1 additional sheet of chart paper*

- optional: Visual Directions Cards (8 cards)

For Each Student

- 1 set of crayons*
- 1 assembled Science Notebook

*teacher provided

Preparation

1. **Optional: Plan for flexible implementation.** If you would like to use the flexible implementation option, refer to the teacher reference on pages 32–33 (Suggestions for Flexible Implementation: Exploration 1) to determine any adjustments you may need to make for planning and instruction. Activities 1, 2, and 4 can be implemented flexibly to incorporate a science center with an adult-led introduction and wrap-up. Activity 3 requires adult facilitation.
 - **Visual Directions Cards:** Determine whether or not the Visual Directions Cards will be helpful if you choose to take advantage of the flexible implementation. This optional card set is provided as a Class Resource, located after the activities in Exploration 1. Make a copy of the card set (8 cards) and cut apart each card.

**2. Locate the following print materials:**

- Science Question 1: *Why are so many noises coming from the tree?*
- vocabulary cards: *evidence, observe, senses*
- Tree Cards (24 cards)

3. Prepare Science Idea 1 (Shared Drawing and Discussion).

On one or two sentence strips, write “Trees often have lots of animals in them. Animals make noises.” You will post this during the Shared Drawing and Discussion activity.

4. Prepare Language Frame 1 and accompanying card set (Activity 4, Shared Drawing and Discussion).

- **Language Frame 1.** On one or two sentence strips, write “There is a _____ in the tree.”
- **Language Frame Cards: Set 1.** This card set is provided as a Class Resource, located after the activities in Exploration 1. Make a copy of the card set (11 cards) and cut apart each card.

5. Arrange the language frame and cards in a pocket chart or on a whiteboard (Activity 4, Shared Drawing and Discussion).

- Refer to the teacher reference on page 37 (Language Frame 1) to see what the setup with the sentence strip(s) and cards will look like.
- Place the language frame in a pocket chart or attach it to a whiteboard with magnets.

- Place the cards beneath the language frame. Make sure the cards are turned over so they are not revealed to students until you discuss them in Activity 4.

6. Gather materials for the Tree Model (Activity 1).

You will create a Tree Model for the class to use throughout the unit. You will need to obtain the following materials to create the model. You will need three different-size cardboard boxes, measuring a total of 3'–3 ½' tall when stacked on top of one another. Approximate measurements for each box are listed below for your reference.

- 1 large box (at least 9" x 11" x 14")
- 1 medium box (at least 7" x 8" x 11")
- 1 small box (at least 6" x 6" x 8")
- 3 (or more) cardboard tubes (Wrapping paper tubes are recommended. Taping together 2 paper towel tubes in place of 1 longer tube will also work.)
- masking tape
- box cutter or sharp scissors

7. Create the Tree Model (Activity 1).

You will need to create the basic Tree Model before teaching the activities in Exploration 1. Refer to the teacher reference on page 34 (Tree Model: Setup) to see what the assembled Tree Model will look like.

- **Tree holes.** Cut a large oval-shaped hole on one side of the large cardboard box, a medium



oval-shaped hole on one side of the medium cardboard box, and a small oval-shaped hole on one side of the small cardboard box.

- **Tree trunk.** Stack the three cardboard boxes—the largest box at the bottom and the smallest box at the top. You may choose to secure the boxes together with masking tape.
- **Tree branches.** Cut small holes (corresponding to the number of cardboard tubes you have) in the small box and the medium box. Insert one tube into each hole.

8. Gather materials for leaves (Activity

1). Each student will create a few leaves to attach to the branches of the Tree Model. Refer to the teacher references on pages 35–36 (Leaves, Tree Model with Leaves) to see examples of different kinds of leaves students can make and what the Tree Model will look like once the leaves are attached.

- For each leaf, you will need to provide the following materials:
 - 1 piece of tissue paper (cut to approximately 6" x 6")
 - 1 pipe cleaner
- Provide enough tissue paper and pipe cleaners for each student to make 1–3 leaves.
- Create three different sample leaves, making sure to leave several inches of pipe cleaner at the end of each leaf so it can be attached to a branch of the Tree Model. In Activity 1, Step 3, you

will need to demonstrate for students how to make each leaf.

- Poke the pipe cleaner through the piece of tissue paper in various places.
- Wrap the pipe cleaner around one end of the tissue paper.
- Crumple up the tissue paper and wrap the pipe cleaner around the middle of the tissue paper.

9. **Search for sound recordings on the Internet.** You will need to play sound recordings for students in several activities (listed below). Make sure there are no background noises in the sound recordings that will distract students. If you use the audio from video clips, make sure students cannot see the video when you play the sounds. Use the suggested search terms (in parentheses below) to find the sound recordings. Be ready to play these from a computer or other device. (Keep all sound recordings handy as you will need to replay some of the recordings in subsequent Explorations.)

• Kickoff Discussion, Shared Drawing and Discussion

- woodpecker ("woodpecker drumming")
- squirrel making a nest ("crunching leaves")

• Activity 2

- car horn ("car horn honking")
- barking dog ("barking dog sounds")



- whistle (“whistle sound”)
- roaring lion (“roaring lion sounds”)
- quacking duck (“quacking duck sounds”)
- mooing cow (“mooing cow sounds”)

10. Prepare to list noises that students identify (Activity 2). As students identify the noises you play, you will record them on the board or on a sheet of chart paper.

11. Assemble Science Notebooks (Activity 2). Throughout the unit, students will draw their ideas in Science Notebooks. You may collect notebooks after students compose each entry to review their work. You will need to assemble one Science Notebook for each student and one for yourself.

- **Science Notebook cover.** Make enough copies of the Science Notebook Cover copymaster so each student will have a cover.
- **Science Notebook pages.** Make 20 copies of the Science Notebook Page copymaster for each student.
- **Combine cover and pages.** For each notebook, staple the cover and the 20 pages on the short left-hand side.

12. Review *The Noisy Tree* (Activity 3, Shared Drawing and Discussion). Preview pages 9–15.

13. Preview Shared Drawing and Discussion activity (Shared Drawing and Discussion). Throughout the unit,

you will add to a shared drawing and accompanying writing on two separate sheets of chart paper. You will draw (using colored markers) and write with student input during the Shared Drawing and Discussion activity at the end of each Exploration. Refer to the teacher references on page 38 (Shared Drawing: Exploration 1) and page 39 (Shared Writing: Exploration 1) to see what the shared drawing and writing will look like at the end of Exploration 1. Post two sheets of chart paper next to each other. Alternatively, instead of one sheet of chart paper, you could use a sentence strip each time you add to the shared writing.

14. Have on hand the following materials:

- **Kickoff Discussion:** Science Question 1, *The Noisy Tree*, vocabulary card: *evidence*, masking tape, sound recordings
- **Activity 1:** Tree Model, prepared sample leaves, tissue paper, pipe cleaners
- **Activity 2:** sound recordings, vocabulary card: *senses*, masking tape, Science Notebooks, crayons, optional: chart paper
- **Activity 3:** *The Noisy Tree*, vocabulary card: *observe*
- **Activity 4:** Tree Cards
- **Shared Drawing and Discussion:** prepared Science Idea 1, *The Noisy Tree*, sound recordings, colored markers



Teacher References

Suggestions for Flexible Implementation: Exploration 1

Activities 1, 2, and 4 can be implemented flexibly to incorporate a science center with an adult-led introduction and wrap-up. Activity 3 requires adult facilitation. Refer to the following suggestions about how to modify these activities to incorporate a science center into Exploration 1:

Activity 1: Getting to Know the Tree Model

- **Introduction:** Follow Steps 1–3 to introduce the Tree Model and to demonstrate making leaves for the Tree Model.
- **Science center (Step 4):** Students work independently to create leaves to add to the Tree Model.
- **Wrap-up:** Once all students have completed the center activity, gather the class at the Tree Model and follow Steps 5–7 to synthesize student learning.
- **Materials adjustments:** *n/a*
- **Visual Directions Cards:** *make* (affix a leaf sample to the card)

Activity 2: Classifying Noises

- **Introduction:** Follow Steps 1–4 to introduce the Science Notebook and to demonstrate how to listen to the sound recording and draw on a notebook page. Use any routines you have in place to remind students how to work at a listening center.
- **Science center (Steps 5–8):** Students work at the center to listen to each sound, discuss with a partner, and then draw what they think made the sound.
- **Wrap-up:** Once all students have completed the center activity, gather the class with their notebooks and follow Steps 9–11 to synthesize student learning.
- **Materials adjustments:** *n/a*
- **Visual Directions Cards:** *listen, share, draw and write*

**Activity 3: Reading *The Noisy Tree***

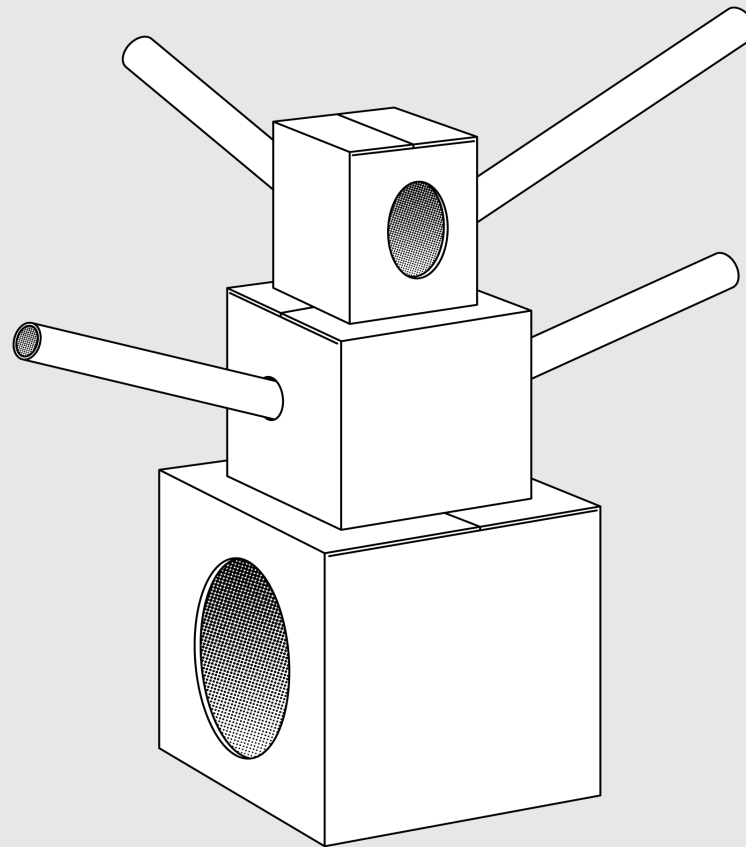
- This activity requires adult facilitation. Follow all steps as written.

Activity 4: Gathering Evidence from Pictures

- **Introduction:** Follow Steps 1–5 to introduce the Tree Cards and the language frame. When demonstrating the activity, set expectations for observing multiple Tree Cards and using the language frame cards to complete the language frame after each observation.
- **Science center (Steps 6–8):** Students work at the center to observe Tree Cards and practice sharing their observations with the language frame and language frame cards.
- **Wrap-up:** Once all students have completed the center activity, gather the class together and follow Step 9 to synthesize student learning.
- **Materials adjustments:** Prepare one language frame with language frame cards for each pair of students working at the center.
- **Visual Directions Cards:** *observe, share, explain*

**Tree Model: Setup**

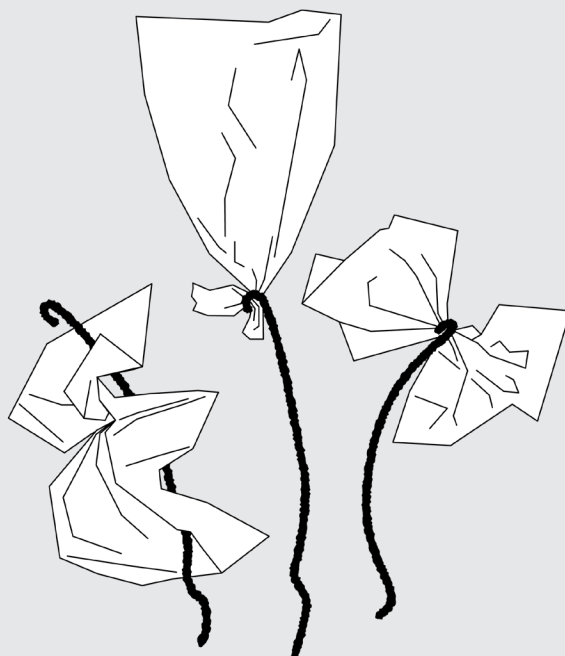
Before beginning to teach the activities in Exploration 1, you will create a basic Tree Model for the class to use throughout the unit. You will create the Tree Model by stacking three different-size boxes on top of one another. You will also make holes in the boxes to represent holes in the tree trunk, and you will make smaller holes for inserting cardboard tubes to represent branches. Below is an example of how the basic Tree Model will look.





Leaves

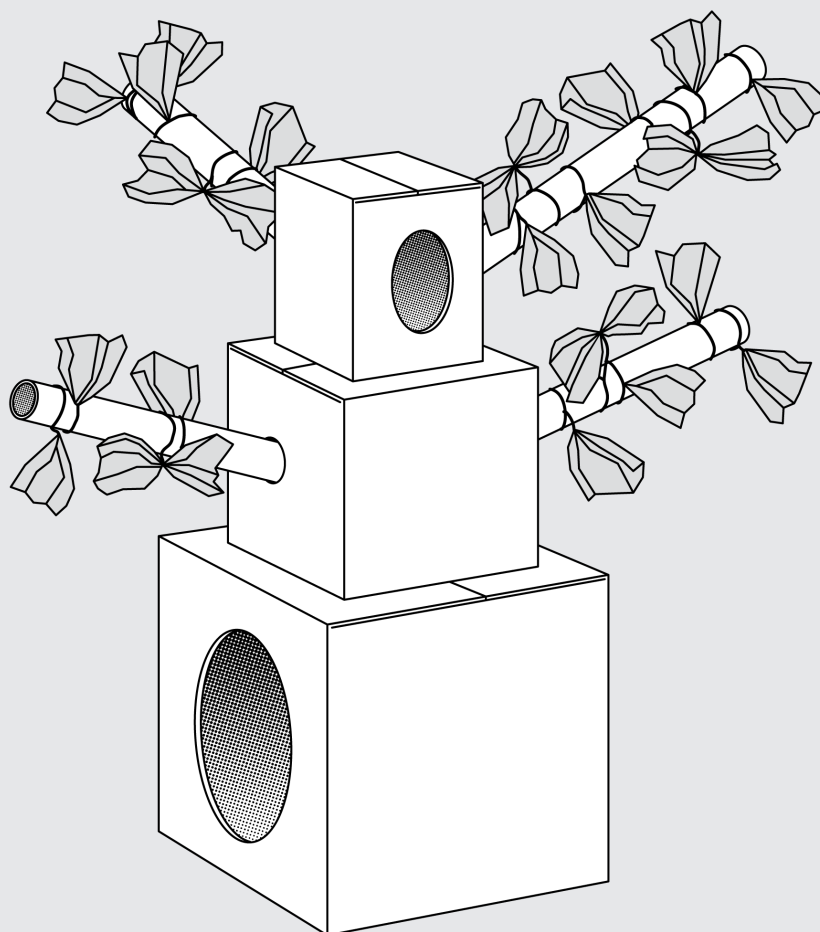
In Activity 1, students will create leaves made from pipe cleaners and tissue paper to attach to the branches of the Tree Model. Before beginning to teach the activities in Exploration 1, you will want to create three different sample leaves to show students. In Step 3 of the activity, you will need to demonstrate how to make each leaf. Below are examples of the sample leaves you will create.





Tree Model with Leaves

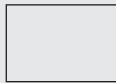
In Activity 1, students will attach their leaves to the branches of the Tree Model by twisting the stems/pipe cleaners around the branches/cardboard tubes. Below is an example of how the Tree Model will look once the leaves are attached.



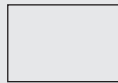
**Language Frame 1**

On one or two sentence strips, write the language frame shown below. Place the language frame in a pocket chart or attach it to a whiteboard with magnets. Place the cards in the pocket chart beneath the language frame. Make sure the cards are turned over so they are not revealed to students until you discuss them in Activity 4.

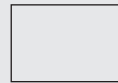
There is a _____ in the tree.



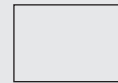
owl



raccoon



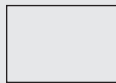
bear



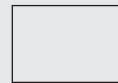
koala



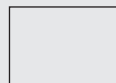
wasp



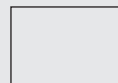
butterfly



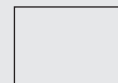
gecko



bat



monkey



bird



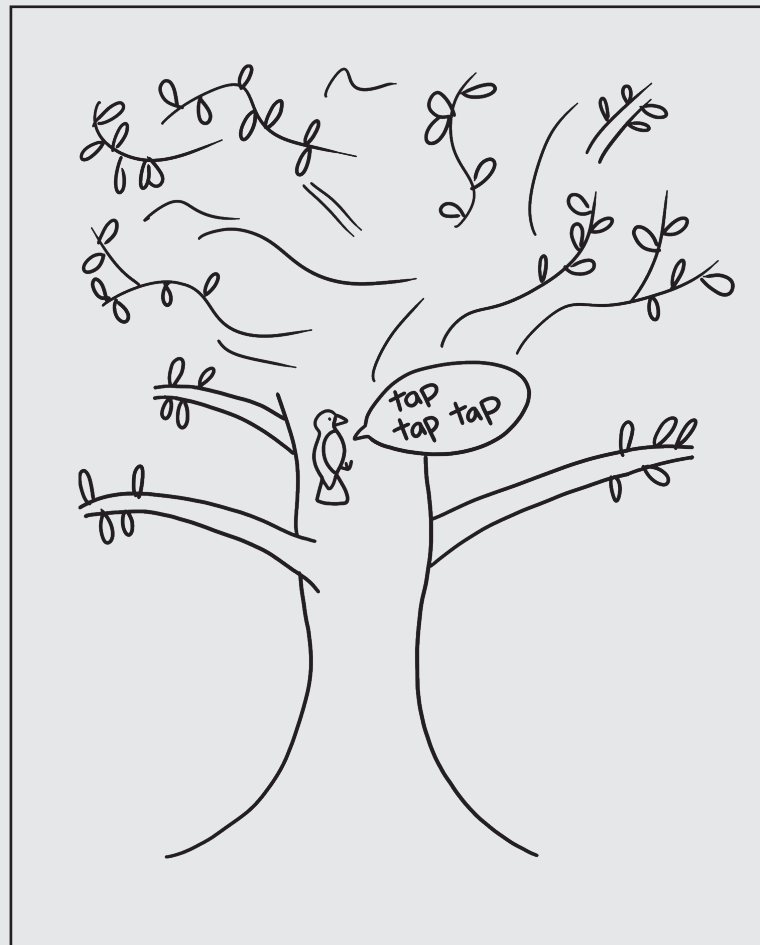
porcupine



Shared Drawing: Exploration 1

Throughout the unit, you will add to a shared drawing on a sheet of chart paper. You will create this, with student input, during the Shared Drawing and Discussion activity at the end of each Exploration. Keep the drawing relatively simple and leave room for additional animals and tree parts. You will add additional details during Explorations 2 and 3. Below is an example of how the shared drawing for Exploration 1 will look. Using colored markers, be sure to include the following:

- a large tree with high branches and leaves
- a woodpecker tapping at the tree with a speech bubble to indicate the tap-tap-tapping noise it is making



**Shared Writing: Exploration 1**

On a separate sheet of chart paper (posted next to the shared drawing), you will create a shared writing, with student input, during the Shared Drawing and Discussion activity at the end of each Exploration. Below is an example of how the shared writing for Exploration 1 will look. Alternatively, instead of one sheet of chart paper, you could use a sentence strip each time you add to the shared writing.

There is a woodpecker in the tree.



Kickoff Discussion: Listening to the Tree Noises

What?

The class reviews what happened in the first section of *The Noisy Tree* and then listens to sound recordings of noises that are similar to the ones the girl in the book heard. The class is introduced to Science Question 1 and discusses their initial ideas in response to this question.

Why?

Listening to noises like those described in the book deepens students' connection to the unit phenomenon and motivates them to figure out more about these sounds. Introducing and discussing Science Question 1 models how scientists approach a problem.

How?

1. **Display *The Noisy Tree*.** Invite students to share what they remember from reading the first section of the book in the Introductory Activity.
2. **Revisit page 8.** Remind students that the girl in the book observed a tree carefully and heard noises coming from it. Read aloud the text on the page.
3. **Play the sound recordings of the woodpecker and the squirrel making a nest.** As you play each recording, connect it to how the girl in the book described the noise. Make sure you do not reveal what is making each noise.

💬 One noise the girl heard coming from the tree was a tap-tap-tapping noise.

Play the woodpecker recording.

💬 Another noise the girl heard coming from the tree was a crunchy noise, like crinkling paper.

Play the squirrel recording.

4. **Introduce Science Question 1.**

💬 Just like the girl in the book, we are wondering about the noises coming from the tree. When scientists wonder about things, they ask questions.

Post Science Question 1 to the classroom wall and read it aloud.

💬 Why are so many noises coming from the tree?

5. **Invite students to share their ideas about Science Question 1.** Provide the Shared Listening prompt and give students time to engage in the Shared Listening routine with partners.



Take turns sharing why you think there are so many noises coming from the tree.

6. Introduce *evidence*.

To help answer questions like this one, scientists gather evidence. The girl in the book gathered evidence as she looked and listened closely to the tree.

Use the Vocabulary routine to introduce *evidence*: things you see, hear, or read that help you answer a question.

7. Wrap up the activity.

Let students know they will continue working to figure out an answer to the question.

Teacher Support

Instructional Suggestion

Science Practice: Gathering Evidence

The concept of evidence and the idea that scientists base their ideas on evidence is central to science. For young learners, it is important to reinforce this idea with concrete examples. Make sure your students know that they can find evidence to answer questions by making observations directly with their senses or by gathering information in books and other secondhand media. Consider talking students through a few examples of gathering evidence to answer questions. You could think aloud by saying, “I have a question: *Is it raining outside?* I could gather evidence with my senses to find out if it was raining. I could listen closely for the pitter-patter sound that rain makes, I could look outside and see if there were raindrops falling. Or, I could go outside and feel if it was raining.” Think aloud by saying, “Here’s another question: *Are all bananas yellow?* I could gather evidence by getting a bunch of bananas and looking closely to see if they were all yellow or if they were different colors. I could also read about bananas in a book to figure out if they are all yellow.” Then, have students provide ideas for how to gather evidence for another question such as *What happens when you mix dirt with water?* In this unit, students will gather evidence from *The Noisy Tree*, from photographs, and from sound recordings and videos.



Activity 1: Getting to Know the Tree Model

What?




Students become familiar with the Tree Model by observing the model and making and adding leaves to it.

Why?

Interacting with the Tree Model helps students develop an understanding of the parts of a tree and prepares them to use the model in later Explorations. Discussing the Tree Model introduces students to the scientific practice of modeling.

How?

1. Display the Tree Model.

-  This is a model of a tree. Scientists make models to show their ideas.
-  A model is similar to the real thing but not exactly the same. Our Tree Model is similar to a real tree but not the same as a real tree.
-  We will use our Tree Model as we try to figure out more about the noises the girl heard coming from the tree.

2. Have students observe and discuss the Tree Model. Encourage students to share their observations about the parts of the model and their characteristics. [There are boxes with holes in them. There are long tubes sticking out of the boxes in all directions.] Students may notice that the Tree Model has a trunk and branches but no leaves.

3. Display the three leaf samples you created. Let students know that they will each make a few leaves to add to the Tree Model. Show students how to make the three kinds of leaves by using one pipe cleaner and one piece of tissue paper for each leaf.

4. Give students time to make leaves for the Tree Model.

5. Attach leaves to the Tree Model. After students have finished making their leaves, have them attach the leaves to the Tree Model by wrapping one end of the pipe cleaner around a branch. Provide assistance with this process as needed.

6. Compare the Tree Model to a real tree. Have students reflect on how the Tree Model is similar to and different from a real tree. Then, have students share their ideas with one another. As needed, display page 26 of *The Noisy Tree* and point out the parts of the tree.



[The Tree Model has a trunk, branches, and leaves like a real tree. The Tree Model is smaller than a real tree. The Tree Model is made of cardboard boxes and tissue paper, but a real tree is not. The Tree Model is inside, and most trees are outside.]

- 7. Conclude the activity.** Let students know they will come back to the Tree Model as they continue to investigate the noises from the tree.

Teacher Support

Instructional Suggestion

Going Further: Embodying Tree Noises

If you have additional time, you may want to invite pairs of students to work with the Tree Model to recreate the phenomenon introduced in *The Noisy Tree*. One student could use the Tree Model to recreate noises they read about in the book and heard in the sound recordings. Students might choose to tap the tree, rustle the leaves, or vocalize the noises while their partners listen. After one partner has had a turn embodying the noises, the two can switch roles.

Instructional Suggestion

Going Further: Thinking More About Models

This activity engages students in the science and engineering practice of *Developing and Using Models*. Students' use of the Tree Model throughout the unit is authentic to one of the ways scientists use models—to show their ideas. The Tree Model, like many scientific models, is similar to the thing it represents in important ways and different in many other ways. While explicit instruction on modeling is beyond the scope of this unit, there are opportunities for deeper discussion around modeling. For example, consider bringing in real leaves and having students discuss the ways the leaves on the Tree Model are similar to and different from a real tree's leaves. Thinking about how models represent scientific ideas in this basic and concrete way prepares students to engage with more complex and abstract models in later grades.



Activity 2: Classifying Noises

What?

Students listen to different noises and make drawings of their ideas about what made each noise. Students look for patterns in the data they've recorded and discover that many of the noises they listened to are made by animals.

Why?

Listening to a variety of noises and discussing what makes the noises provides students with evidence that many noises are made by animals. This activity also provides an opportunity for students to practice making observations and analyzing data to look for patterns.

How?

1. **Set purpose.** Let students know that they will listen to several noises and think about what makes each noise in order to help them figure out why so many noises were coming from the tree.

2. **Introduce senses.**

💬 We are going to gather evidence when we hear different noises. Hearing is one of our five senses.

Use the Vocabulary routine to introduce *senses*: sight, hearing, smell, touch, and taste.

3. **Introduce the Science Notebook.**

💬 When scientists gather evidence to figure something out, they often draw and write their observations and ideas to keep track of them.

Display a copy of the Science Notebook.

💬 As we work as scientists, we will draw and write our ideas in this notebook. You will each get your own notebook.

Open to the first page.

💬 On these pages, we will draw our ideas about what's making the noises we hear.

Show students that all the pages are the same. Then, show students where they will write their names on the cover.


4. **Play the first sound recording you selected and model thinking and drawing.** Think aloud to model considering what makes the noise by providing an example.

💬 That noise sounds a lot like the noise I hear when my neighbor's dog barks. I think a dog is making that noise. I'm going to draw a dog in the box on this page.



Model making a quick drawing of your idea on the first page of your sample Science Notebook.

5. **Distribute materials.** Distribute one Science Notebook and one set of crayons to each student. Have students write their names on the front cover of their notebooks.
6. **Play the next sound recording.** Invite students to turn to a partner to share what they think made the noise. Then, have students make a quick drawing of their ideas on the first page of their notebooks.
7. **Invite students to share their ideas.** After students have completed their drawings, invite volunteers to share ideas about what made the noise. Encourage students to use the thumbs-up signal to indicate if they agree with their classmates' ideas. Guide the group to consensus and then record (on the board or a sheet of chart paper) what made the noise.
8. **Repeat Steps 6 and 7 for the remaining sound recordings.** Have students use a new page in their notebooks for each drawing.
9. **Consider patterns in what made the noises.** Ask students to look at their drawings to see what they notice about the kinds of things that made the noises. Invite volunteers to share what they notice. Accept all responses and guide students to recognize that many of the noises were made by animals.
10. **Have students put a star next to each drawing of an animal.**
11. **Conclude the activity.**

 We observed noises, and we noticed that there are many kinds of things that make noises. One kind of thing that makes noises is animals.

Teacher Support

Instructional Suggestion

Providing Additional Support: Analyzing Data

In this activity, students are gathering data as they record their ideas about what made each noise and then analyzing the data as they review their drawings. Some students may need additional support to analyze the data. If you anticipate that your students will need additional support, consider having students record their ideas about what made each noise on individual index cards or small pieces of paper. After you have played each sound recording, give students time to review and sort their cards. Physically manipulating the cards may help students notice that several of the sounds were made by animals. After students have sorted the cards, they can share what they noticed about the different kinds of things that made the noises. Support students in looking at their cards to conclude that many of the noises were made by animals.



Activity 3: Reading *The Noisy Tree*

What?

The teacher reads aloud the next section of *The Noisy Tree* in which the girl makes new observations of the tree in the park.


Why?

The girl's actions model how scientists observe to gather evidence. Her observations provide students with evidence that there are animals in the park.

How?

1. **Set purpose.** Remind students that they are trying to figure out why so many noises are coming from the tree in *The Noisy Tree*. Explain that the class will read a new section of the book to gather evidence to help them answer this question.
2. **Display *The Noisy Tree*.** Invite students to share what they remember about the book. As needed, lead a picture walk of pages 4–8 to remind students that the book is about a girl who visits a park and wonders about the noises she hears from a tree.
3. **Open to page 9 and display the picture for students.**
 - 💬 In the next part of the book, the girl makes new observations at the park. She pays close attention to what she sees and hears.
 - 💬 Even though we are not at the park, we can read about her observations and use them to help answer our question. Scientists work together. They use ideas from other scientists. Often, they learn about those ideas by reading.
4. **Read aloud page 9.** Pause after you have finished reading and point out the green leaves and the high branches on the tree. Ask students to think of a time they have seen a tree with green leaves and high branches. Encourage students to imagine the tree.
5. **Continue reading aloud through page 11.** Pause after you have finished reading and invite students to share their ideas about the questions on the page.
6. **Continue reading aloud through page 14.** Pause after you have finished reading and invite students to share their ideas about the noise the bird on this page makes. Encourage students to think about the noises they have already listened to and if this bird might make any of those noises.
7. **Continue reading aloud through page 15.** Pause after you have finished reading and ask students to look at the photographs on this page and reflect on the kinds of things the girl observed in the park. If students do not mention it, point out that she observed many animals.

**8. Introduce *observe*.**

 The girl in the book looked closely at the tree and listened closely to the noises coming from the tree. She observed the tree closely with her senses.

Use the Vocabulary routine to introduce *observe*: to use any of the five senses (sight, hearing, smell, taste, touch) to learn more about something.

9. Formative Assessment Opportunity. Remind students that they are reading to gather evidence that will help them answer Science Question 1: *Why are so many noises coming from the tree?* Provide the Shared Listening prompt and give students time to engage in the Shared Listening routine with partners.

 Take turns sharing why you think so many noises are coming from the tree.

As students share with their partners, circulate to listen to their ideas. Look for students who make the connection between the animals in the park and the noises the girl hears. These students may describe in general that animals could be making the noises, or they may try to identify the specific animals that make the focal noises in the text—the tap-tapping and crunchy noises described on page 8. Students do not need to identify specific animals at this point in the Exploration, but those who are building toward an understanding of Science Idea 1 (*Trees often have lots of animals in them. Animals make noises.*) will discuss animals as the source of the noises.



Activity 4: Gathering Evidence from Pictures

What?

Students observe pictures of trees and notice that there are animals in many of the trees. They use a language frame to describe their observations.

Why?

Observing pictures of trees builds students' dexterity with describing trees and provides students with evidence that many kinds of animals can be found in trees. Using a language frame to describe observations provides students with a structured opportunity to share ideas the way scientists do.

How?

1. **Set purpose.** Let students know that they will observe pictures of trees to figure out if there is anything in the trees that could be making noises.
2. **Model observing a Tree Card.** Hold up Tree Card 12. Think aloud to model observing the tree and making note of the koala in the tree.
3. **Introduce the language frame.**

🗣 Scientists share their ideas with other scientists. We can use these words to help us talk about and share our ideas when we observe something in the tree that could be making noises.

Point to the language frame and read it aloud.

🗣 There is a _____ in the tree.

4. **Model using the language frame.** Think aloud to model describing the tree on Tree Card 12 by using the language frame.

🗣 There is a koala in the tree.

Point to the words of the language frame again and have students join you in reading the completed sentence aloud: *There is a koala in the tree.* Then, think aloud to model describing the tree on Tree Card 2 and then point to the language frame.

🗣 I don't see anything in this tree that could be making noises so I don't need to use these words to describe this picture.

5. **Explain the procedure for observing Tree Cards.** Hold up a few Tree Cards and let students know that they will work in pairs to observe the trees in the pictures. If students observe something in the tree that they think could be making noises, they can use the language frame to describe what they see.



6. **Distribute materials.** Distribute several Tree Cards to each pair of students.
7. **Students discuss pictures.** Once students have had a chance to discuss their Tree Cards, have them trade with another pair. Do this a few times so each pair has a chance to discuss several of the pictures.
8. **Invite students to share by using the language frame.** For each picture:
 - Display the picture.
 - Invite a volunteer to share what they observed in the picture.
 - If the volunteer observed something that could be making noise, invite them to place the corresponding language frame card in the blank in the language frame (e.g., a student sharing their observation of Tree Card 21 would choose the *raccoon* card and place it in the language frame).
 - Point and read the completed frame together (e.g., *There is a raccoon in the tree.*).Repeat with additional pictures as time permits.

9. **Synthesize observations.**

- 💬 What was something we observed in many trees?
[Animals.]
- 💬 Were there animals in every tree?
[No.]
- 💬 We looked at pictures and gathered evidence to figure out that there are animals in many trees, but not in all trees.

Teacher Support

Instructional Suggestion

Going Further: Recording Observations

To provide more experience with making and recording close observations, have students choose one of the trees they observed and draw it in their Science Notebooks. Encourage students to draw details they observed in the tree picture, including any animals if they are visible. Ask students to use the language frame to describe orally what they drew.



Shared Drawing and Discussion: Animals Making Noises in the Tree

What?



The class discusses why so many noises are coming from the tree and then represents their ideas in a shared drawing. Students use the language frame to describe the shared drawing in an oral and written explanation.

Why?

Participating in the shared drawing and accompanying discussion helps students apply their understanding that trees often have lots of animals in them and that animals make noises. This collaborative activity also reinforces students' understanding that scientists draw, write, and talk in order to share their ideas.

How?

1. Review the activities in Exploration 1.

-  We have been working as scientists to gather evidence to help answer this question:
Why are so many noises coming from the tree?
-  Remember that evidence is things you see, hear, or read that help you answer a question.


Invite students to share some of the ways they have gathered evidence to help answer this question.

2. Students share ideas about noises from the tree.

Invite volunteers to share their ideas about why so many noises are coming from the tree. Guide the class to conclude that the noises from the tree were made by animals. As needed, use artifacts from the activities in Exploration 1 (e.g., Tree Cards, *The Noisy Tree*) to review two key ideas:

- There are often animals in trees.
- Animals make noises.

3. Introduce the Science Ideas section of the classroom wall.

-  As we learn new science ideas, I will post them here on the wall.

4. Introduce Science Idea 1.

Hold up Science Idea 1 and read it aloud.

-  Trees often have lots of animals in them. Animals make noises.

Remind students that they have gathered evidence from many activities to figure out this idea. Post Science Idea 1 on the classroom wall.

**5. Display page 15 of *The Noisy Tree*.**

💬 We have figured out that there were noises coming from the tree because of the animals in the tree. The girl in the book observed many animals. I wonder if we can figure out which animals were making the noises.

6. Replay the sound recordings of the woodpecker and the squirrel making a nest. Have students reflect on what could have made each noise. Guide them to recognize that the tap-tap-tapping noise is a woodpecker.**7. Turn back to page 14 of *The Noisy Tree* and read it aloud.** Pause after you have finished reading and discuss the noises from the tree.

💬 We think this woodpecker made a tap-tap-tapping noise when it hit its beak against the tree.

💬 We're not sure what made the crunchy noise. We will keep trying to figure out which animal made the crunchy noise.

8. Introduce shared drawing.

💬 We know that scientists share their ideas by talking and listening to one another. Scientists also draw and write to share what they learn and to remember their ideas.

💬 Each time we learn something new about what is going on in the tree, we will draw and write what we have figured out.

💬 As we draw what we have learned, we will think about the ideas together. You will help me decide what to draw.

💬 Today we will draw to explain what we have figured out about why so many noises are coming from the tree.

9. Lead shared drawing of what is in the tree. Elicit and then synthesize students' ideas. Use colored markers to draw the following on a sheet of chart paper:

- a large tree with high branches and leaves
- a woodpecker tapping at the tree with a speech bubble to indicate the tap-tap-tapping noise it is making

Keep the drawing relatively simple and leave room for additional animals and tree parts. You will add additional details during Explorations 2 and 3.

10. Revisit the language frame.

💬 We just drew our ideas about what is happening in the tree. Scientists draw, write, and talk to share their ideas.



Point to the language frame.

💬 We used these words to share our ideas about what we observed in pictures of trees.

💬 Now we can use these words to help us talk about and write our ideas about what is going on in the tree in the book.

- 11. Lead shared writing.** Point to the woodpecker on the drawing and then to the language frame as you model building a sentence.

💬 If someone asked us what is making the noise, we could say, “There is a woodpecker in the tree.”

Invite students to repeat this sentence with you. Then, write this sentence on the sheet of chart paper (or sentence strip) next to the shared drawing.

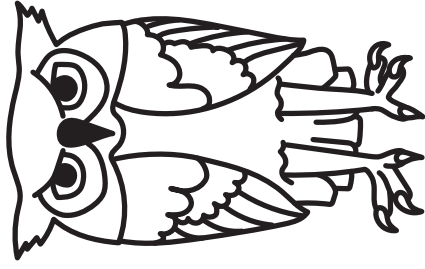
- 12. Conclude the Exploration.** Let students know that they will continue working to explain what is going on in the tree.

Teacher Support

Rationale

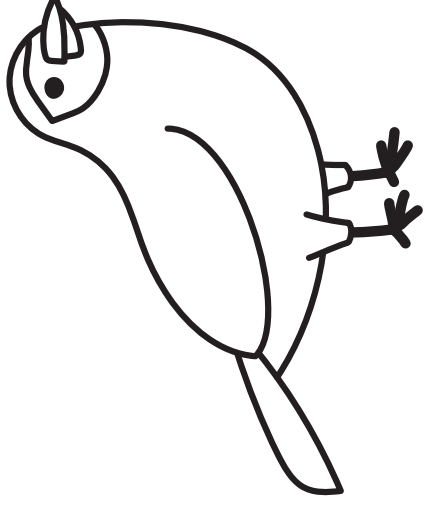
Pedagogical Goals: About the Language Frame Cards

To support students in describing what they observed on the Tree Cards, Language Frame Cards: Set 1 includes all the kinds of animals shown on the Tree Cards. The language frame cards include only one card to represent each kind of animal. For example, there is one language frame card for gecko, rather than two for each of the two kinds of geckos in the Tree Cards. The *owl* and *bird* language frame cards are an exception. Even though owls are birds, owls look distinct enough that we have chosen to include two separate language frame cards. In order to avoid promoting a misconception that owls are not birds, you may want to mention explicitly that owls are a kind of bird.



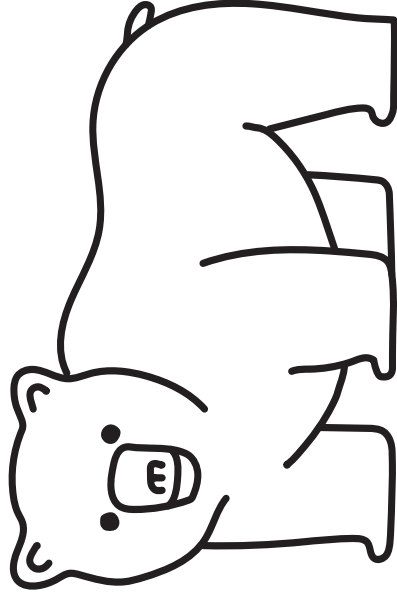
owl

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bird

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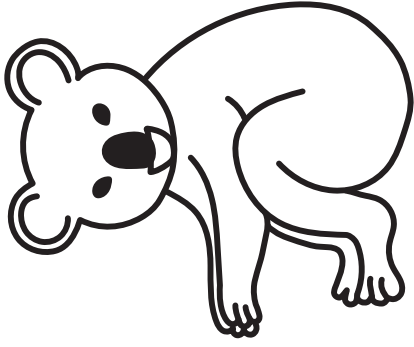
bear

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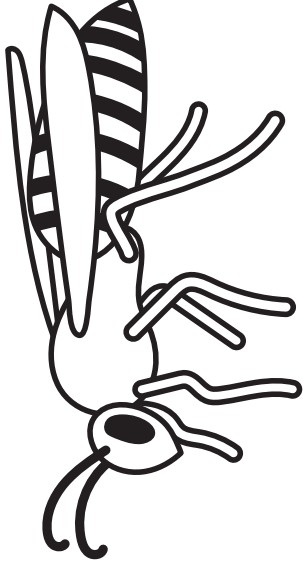
raccoon

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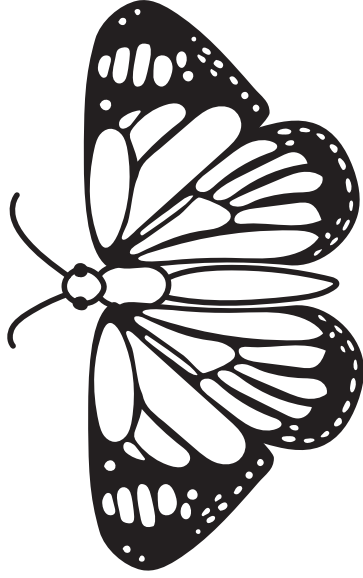
koala

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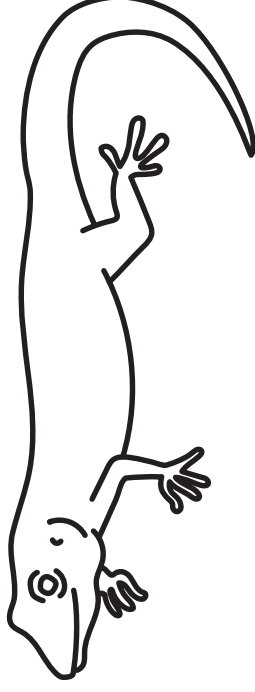
wasp

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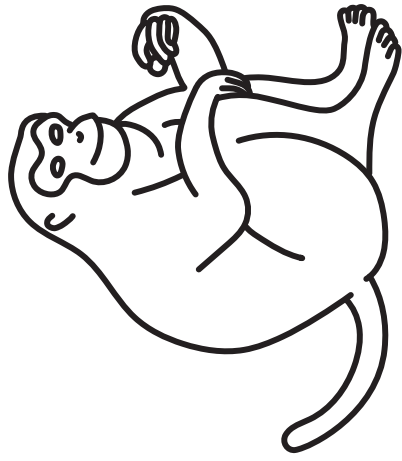
butterfly

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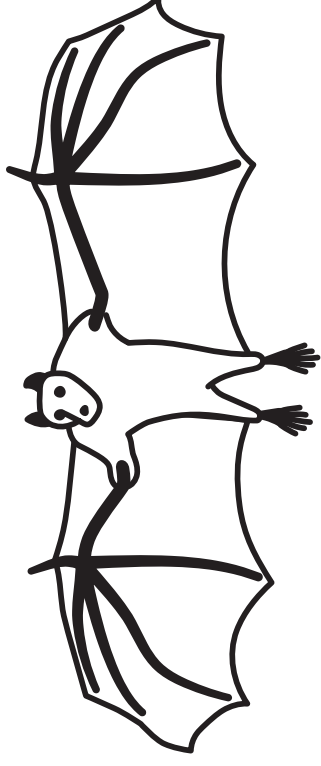
gecko

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monkey

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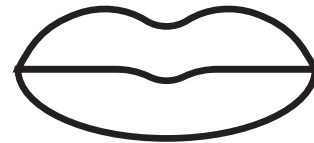
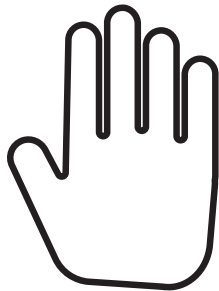
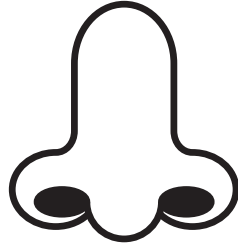
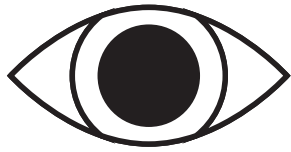
bat

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porcupine

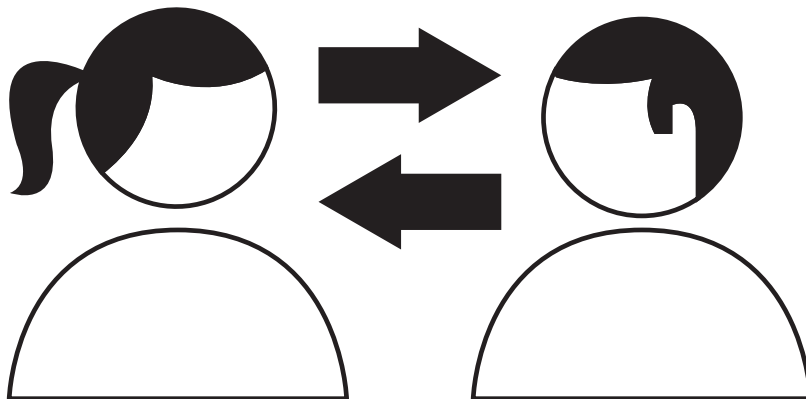
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observe

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share

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listen

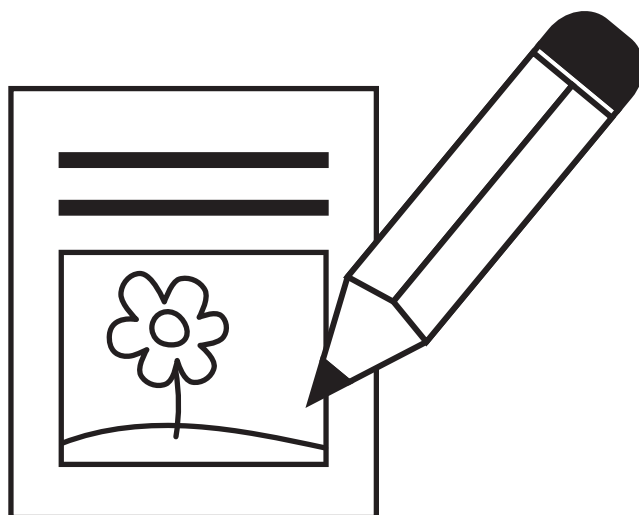
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make

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draw and write

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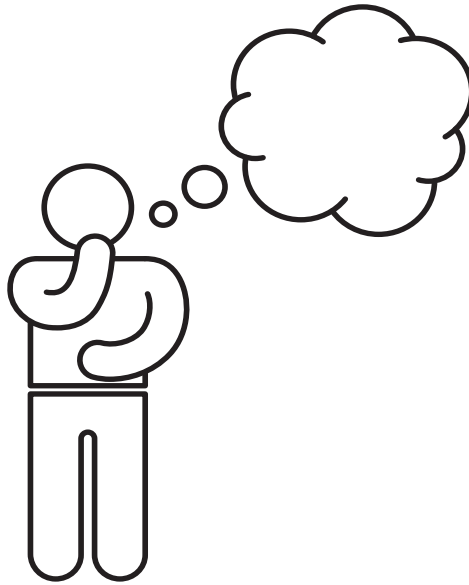
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read

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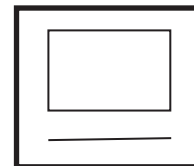
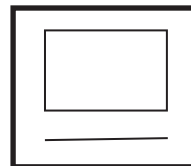
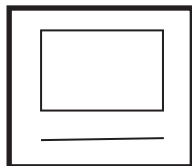
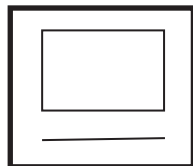
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think

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explain

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'S

Science Notebook

Name: _____ Date: _____