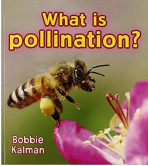
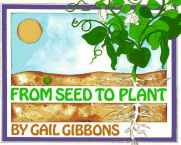



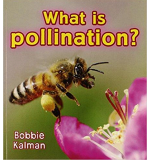
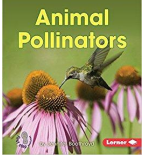


Unit 4: The Power of Pollinators

WEEK 2 At a Glance

Weekly Question: What do plants need to reproduce?			
<p>Texts</p>    	<p>Vocabulary and Language</p> <p>Days 1 & 2: Introduce Weekly Words: <i>attract, benefit, depend, fertilize, interdependent, provide, release, rely</i></p> <p>Day 3: Words with Multiple Meanings</p> <p>Day 4: Words with Multiple Meanings</p> <p>Day 5: Answering the Weekly Question</p>		
	<p>Text Talk</p> <p>Day 1: <i>What is Pollination?</i> Read 1</p> <p>Day 2: <i>What is Pollination?</i> Read 2</p> <p>Day 3: Comparing Texts: <i>From Seed to Plant, What is Pollination?</i> and <i>Pollination: Trading Food for Fertilization</i> (video)</p> <p>Day 4: “Apples and Bees,” Read 1</p> <p>Day 5: “Apples and Bees,” Read 2</p>		
	<p>Stations</p> <p>Guided Independent Reading</p> <hr/> <p>Listening & Speaking: Listen & Respond (<i>Cuckoo/Cucú</i>)</p> <p>Science Literacy: Why do you think many seeds start growing in the spring?</p> <p>Vocabulary: Choose 3!, Talk About It</p> <p>Word Work: select from activities</p> <p>Writing: follows from Text Talk Week 2, Day 2</p>		
<p>Mentor texts</p>   	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Science and Engineering</p> <p>Lesson 1: Observing and Discussing Seed Germination</p> <p>Lesson 2: Looking Inside Seeds</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Studios</p> <p>Children continue and add new elements to work begun in Week 1. In the Writing and Storytelling Studio, children begin writing poems.</p> </td> </tr> </table>	<p>Science and Engineering</p> <p>Lesson 1: Observing and Discussing Seed Germination</p> <p>Lesson 2: Looking Inside Seeds</p>	<p>Studios</p> <p>Children continue and add new elements to work begun in Week 1. In the Writing and Storytelling Studio, children begin writing poems.</p>
<p>Science and Engineering</p> <p>Lesson 1: Observing and Discussing Seed Germination</p> <p>Lesson 2: Looking Inside Seeds</p>	<p>Studios</p> <p>Children continue and add new elements to work begun in Week 1. In the Writing and Storytelling Studio, children begin writing poems.</p>		
	<p>Writing: Report</p> <p>Day 1: Individual Construction: Research</p> <p>Day 2: Deconstruction: The Third Person; Individual Construction: Research</p> <p>Day 3: Deconstruction: Nouns and Adjectives</p> <p>Day 4: Deconstruction: Brochures; Joint Construction: Subtopics</p> <p>Day 5: Individual Construction: Subtopics</p>		

At a Glance U4 W2

Unit 4: The Power of Pollinators

WEEK 2 Days 1 & 2

Vocabulary & Language
Weekly Words

Weekly Question	What do plants need to reproduce?
Language Objectives	I can talk with my classmates about words. (SL.1.2) I can define and use new words. (L.5) I can connect words to my own real-life experiences. (L.5.2.a)
Vocabulary	attract: to interest, to draw closer benefit: something positive, an advantage depend: to rely on, to trust fertilize: to make able to produce babies, seeds, fruit, or eggs interdependent: relying on each other provide: to give what is needed, to supply release: to let go rely: to trust or depend on
Materials and Preparation	Choose four words to teach each day, following the steps of the Weekly Words routine. <ul style="list-style-type: none">● Week 2 Weekly Words cards● Week 2 Weekly Words slides● chart paper Create the week’s Weekly Words chart by writing out the Weekly Words and their definitions. Add icons, sketches, or images as needed.
Opening Day 1	<i>This week we are learning about what plants need to reproduce, to grow healthy and strong and produce seeds. Our Weekly Words are ones we can use to talk about this. You will notice that a few of these words are very closely related! Today’s words are: _____, _____, _____, and _____.</i>

	<p>As children rate their knowledge of each word, ask a few children to share their ideas about the word. Use this opportunity to highlight connections, similarities, and differences to other words used in the classroom, remarking on parts of speech and morphology and affirming children’s word knowledge.</p> <p>As children respond to the Think, Pair, Share prompts, encourage them to use the word as they speak. Offer sentence stems where it might be helpful.</p>
Day 2	<p><i>Let’s continue learning our words for this week. Today’s words are: _____, _____, _____, and _____.</i></p>
Teaching the words	<p>attract (verb) Elaboration: <i>A male cardinal sings from a high branch to attract a mate. Then they will make a nest together and raise their young. This bird feeder is specially designed to attract hummingbirds.</i></p> <p>Think, Pair, Share prompt: <i>What features of a flower might attract a pollinator?</i></p> <hr/> <p>benefit (noun) Elaboration: <i>One benefit of a community garden is that people can spend time together there.</i></p> <p>Think, Pair, Share prompt: <i>What are some other benefits of gardens?</i></p> <hr/> <p>depend (verb) Elaboration: <i>Depend is a synonym for “rely.”</i> <i>This strawberry plant depends on pollinators for pollination. The insect, a syrphid fly, depends on the flower for food.</i></p> <p>Think, Pair, Share prompt: <i>Who do you depend on for something you need?</i> Or: <i>How do you think people depend on insects?</i></p> <hr/> <p>fertilize (verb) Elaboration: <i>When farmers and gardeners fertilize plants, they hope that the</i></p>

plants will have a better chance of growing stronger and producing more crops.

Think, Pair, Share prompt:

How do pollinators help fertilize flowers?

interdependent (adjective)

Elaboration:

The prefix “inter” means between or connected. The suffix “ent” tells us this is an adjective. The root word, or base word, in the middle, is “depend.” This word, interdependent, describes a relationship in which two or more organisms or entities are dependent on one another.

This green sea turtle depends on fish to clean its shell. The fish depend on the tiny plants that grow on the turtle’s shell for food. Each kind of animal gets something they need from the other; they are interdependent.

Think, Pair, Share prompt:

How are pollinators and plants interdependent?

provide (verb)

Elaboration:

Farms provide us with the food we eat. This farmer farms with other women to provide vegetables for families.

Think, Pair, Share prompt:

What support or help do you provide to each other? What materials or other resources does the school provide to you for learning?

release (verb)

Elaboration:

These scientists and volunteers from the New England Aquarium release sea turtles back into the ocean after providing the medical treatment they needed. They take them out of their boxes and send them back out to the ocean.

Think, Pair, Share prompt:

Imagine having a fist full of seeds. If you release them into the air [make a gesture of tossing seeds out from your hand], what happens next?

rely (verb)

Elaboration:

	<p><i>Rely is a synonym for “depend.”</i> <i>This sea turtle relies on care from a scientist to get healthy enough to return to the wild.</i></p> <p>Think, Pair, Share prompt: <i>What is something plants rely on to survive?</i></p>
Closing	<p><i>This week we are learning about what plants need. The words we’re studying this week will help us to talk about this, our texts, and other experiences we’re having together.</i></p>
Standards	<p>SL.1.2 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings sufficient for reading, writing, speaking, and listening.</p> <p>L.5.2.a Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).</p>
Ongoing assessment	<p>Use information gathered from each lesson to plan for embedded opportunities for teaching and reinforcing words.</p> <p>How do children interact with new and familiar words? Are they playful, curious, perplexed, disengaged? Do children connect words to personal experiences? What connections do children make between words they are learning and familiar words? How do children integrate learning and other developing morphological knowledge? How do children respond when they discover an error in their understanding or use of a word? How flexible are they when confronted with new definitions? How do children talk with peers about new words—do they use gestures, substitute familiar words, dig for descriptions, tell stories?</p> <p>Keep a list to follow each child’s vocabulary growth over time.</p>



attract

verb

https://www.thestar.com/news/insight/2013/02/24/cardinals_song_means_spring_is_around_the_corner.html,
<https://www.goodhousekeeping.com/home-products/g28008704/best-hummingbird-feeders/>



benefit

noun

<https://www.unitedway.org/blog/using-your-green-thumb-for-a-good-cause>

Weekly Words U4 W2

Focus on Second/ 2nd Grade for ME | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education



depend

verb

<https://entomology.ces.ncsu.edu/strawberry-pollinating-insects/>



fertilize

verb

<https://www.geturbanleaf.com/blogs/care/fertilize-plants>



interdependent

adjective

<https://sanctuaries.noaa.gov/magazine/5/day-at-the-turtle-spa/>



provide

verb

<https://www.wbur.org/news/2021/05/05/urban-farmer-kafi-dixon-a-reckoning-in-boston>

Weekly Words U4 W2

Focus on Second/ 2nd Grade for ME | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education



release

verb

<https://www.wbur.org/news/2020/07/01/seven-sea-turtles-released-back-into-wild-after-a-winter-of-rehab-in-quincy>



rely

verb

<https://www.jerseyshoreonline.com/ocean-county/sea-turtles-being-released-into-wild/>

Weekly Words U4 W2

Focus on Second/ 2nd Grade for ME | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education

Weekly Words

Unit 4, Week 2

attract

verb

to interest, to draw closer



benefit

noun

something positive, an advantage



depend

verb

to rely on, to trust



fertilize

verb

to make able to produce babies,
seeds, fruit, or eggs



interdependent

adjective

relying on each other



provide

verb

to give what is needed, to supply



release

verb

to let go



rely

verb

to trust or depend on



Unit 4: The Power of Pollinators

WEEK 2 Day 3

Vocabulary & Language
Words with Multiple Meanings

Weekly Question	What do plants need to reproduce?
Language Objective	I can use sentence context to determine the meaning of a word. (L.4.2.a)
Vocabulary	adjective: a word or phrase used to describe a person, place, thing, or idea context: the setting of a word or phrase in speaking or writing that determines or affects its meaning noun: a word that names a person, place, thing, or idea verb: a word that expresses a physical action, mental action, or state of being
Materials and Preparation	<ul style="list-style-type: none">Words with Multiple Meanings slides Note: This lesson uses slides 1-7.
Opening	<i>Today we will look closely at some of our Weekly Words from last week. Some of the words we have been learning have multiple meanings—they can mean different things. Today we will practice figuring out a word’s meaning by looking at its context in a sentence.</i>
Discussion slide 2	<i>Let’s read this word together.</i> Tap and blend the word “land” together. <i>What does the word “land” mean?</i> Click the animation to show the part of speech and definition. <i>What is another meaning of the word?</i> <i>“Land” can be a verb that expresses the action of arriving on the ground or other surface, or it can be a noun naming the part of the earth’s surface not covered by water.</i>

slide 3	<p><i>Let's read a sentence to figure out which meaning of "land" is being used.</i></p> <p>Read the sentence together.</p> <p><i>What does "land" mean in this sentence? How do you know?</i></p> <p><i>Using the context, or the other words in the sentence, helps you figure out which meaning of the word the author is using.</i></p>
slide 4	<p><i>Let's read another word together.</i></p> <p>Tap and blend the word together.</p> <p><i>What does the word "scorched" mean?</i></p> <p>Click the animation to show the part of speech and definition.</p> <p><i>What is another meaning of the word?</i></p> <p><i>"Scorched" can be an adjective describing something that has been burned, or it can be a past tense verb expressing the action of burning.</i></p>
slide 5	<p><i>Let's read a sentence to figure out which meaning of "scorched" is being used.</i></p> <p>Read the sentence together.</p> <p><i>What does "scorched" mean in this sentence? How do you know?</i></p>
slide 6	<p><i>Let's read another word together.</i></p> <p>Tap and blend the word together.</p> <p><i>What does the word "shoot" mean?</i></p> <p>Click the animation to show the part of speech and definition.</p> <p><i>"Shoot" can also be used as a verb. For example, like shooting a basketball or using a camera to shoot a photograph or movie.</i></p>
slide 7	<p><i>Let's read a sentence to figure out which meaning of "shoot" is being used.</i></p> <p>Read the sentence together.</p> <p><i>What does "shoot" mean in this sentence? How do you know?</i></p>
Closing	<p><i>Today we used the context, or other words in the sentence, to find out which meaning of a word was being used. Tomorrow you will write your own sentences with these words.</i></p>

Standards	L.4.2.a Use sentence-level context as a clue to the meaning of a word or phrase.
Ongoing assessment	During the discussion, listen for evidence that children are understanding words with multiple meanings. Do children accurately define vocabulary words? Do they know the alternate meanings of the words? Do they use sentence context to determine the meaning of the word?

Notes

Unit 4: The Power of Pollinators

WEEK 2 Day 4

Vocabulary & Language
Words with Multiple Meanings

Weekly Question	What do plants need to reproduce?
Language Objectives	I can use sentence context to determine the meaning of a word. (L.4.2.a) I can write sentences that show different meanings of a word. (L.4)
Vocabulary	adjective: a word or phrase used to describe a person, place, thing, or idea context: the setting of a word or phrase in speaking or writing that determines or affects its meaning noun: a word that names a person, place, thing, or idea verb: a word that expresses a physical action, mental action, or state of being
Materials and Preparation	<ul style="list-style-type: none"> • Words with Multiple Meanings slides, from Day 3 • paper and pencil, one for each child
Opening	<i>Yesterday we explored words with multiple meanings. Today you will choose one of the words we explored and write two sentences, one to demonstrate each of the word’s meanings.</i>
Discussion	Quickly review the two definitions for each word discussed on Day 3.
slides 2-7	
slide 8	<p><i>Now, choose one of the words we discussed—“land,” “scorched,” or “shoot.”</i></p> <p><i>Then, write two sentences that demonstrate different definitions of that word.</i></p> <p>Send children to write independently or with a partner. Circulate to support them, reviewing the different definitions as necessary.</p>
	Bring the class back together. Invite a child to share their sentences. As a class, discuss how the sentences demonstrate the different meanings of the

	word. Encourage children to use gestures to demonstrate the different meanings of the word in context. Repeat the process with other children, as time allows.
Closing	<i>Today you wrote sentences that demonstrated different meanings of the same word.</i>
Standards	<p>L.4 Use context clues, analyze meaningful word parts, and consult general and specialized reference materials as appropriate to determine or clarify the meaning of unknown and multiple-meaning words and phrases from grade level content.</p> <p>L.4.2.a Use sentence-level context as a clue to the meaning of a word or phrase.</p>
Ongoing assessment	<p>Review children’s sentences.</p> <p>Do children’s sentences reflect understanding of the different meanings of the words?</p>

Notes

Unit 4: The Power of Pollinators

WEEK 2 Day 5

Vocabulary & Language
Answering a Weekly Question

Weekly Questions	<p>Week 1: What is important about seeds?</p> <p>Week 2: What do plants need to reproduce?</p>
Language Objective	I can use new words to discuss a particular question with my classmates. (SL.1.2, L.6.2.a)
Vocabulary:	<p>Week 1</p> <p>become: to begin to be</p> <p>contain: to hold within</p> <p>land (v): to arrive on the ground or other surface</p> <p>mineral: a substance in the earth that is not from an animal or a plant and that contains nutrients</p> <p>ripen: to become ripe or ready</p> <p>scatter: to disperse, to toss or go in different directions</p> <p>scorched: burned</p> <p>shoot: a new plant or branch</p> <hr style="border-top: 1px dotted black;"/> <p>Week 2</p> <p>attract: to interest, to draw closer</p> <p>benefit: something positive, an advantage</p> <p>depend: to rely on, to trust</p> <p>fertilize: to add natural or chemical substances to a plant to produce stronger plants</p> <p>interdependent: relying on each other</p> <p>provide: to give what is needed, to supply</p> <p>release: to let go</p> <p>rely: to trust or depend on</p>
Materials and Preparation	<ul style="list-style-type: none"> ● Week 2 Answering a Weekly Question sheets, one for each small group ● pencils, one or two for each small group ● Weekly Questions for Weeks 1 and 2, printed or projected ● Weekly Words cards for Weeks 1 and 2

	<ul style="list-style-type: none"> • chart paper and markers (2 different colors) <p>Strategically assign children to groups of four, and plan where each group will work around the classroom.</p>
Opening	<i>This week we will use the Answer a Weekly Question routine. After you work in small groups, we'll save a few minutes to share one of your sentences with the whole class.</i>
Key Activity	Facilitate the Answering a Weekly Question routine, as established in even weeks since Unit 1.
Closing	<i>You have really packed words into your answers to the Weekly Questions!</i>
Standards	<p>SL.1.2 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>L.6.2.a Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy, that makes me happy).</p>
Ongoing assessment	<p>Listen to children's conversations as they work.</p> <p>How accurately do children use words in context?</p> <p>What contributions do they make to the construction of a response to a specific question?</p> <p>Observe children's interactions in small groups.</p> <p>How effectively do children work in their groups?</p> <p>What roles do they take on?</p> <p>Reflect on the whole group sharing of one group's response.</p> <p>What more was revealed about children's understanding and application of words?</p> <p>Review each sheet. Use children's answers to inform planning for successive lessons, reteaching words, and informal conversations with individual children.</p>

Names: _____

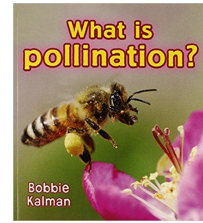
Check the question you answer. Circle the words you use. Write your response.

___ What is important about seeds?

___ What do plants need to reproduce?

become	ripen	attract	interdependent
contain	scatter	benefit	provide
land	scorched	depend	release
mineral	shoot	fertilize	rely

Unit 4: The Power of Pollinators



WEEK 2 Day 1

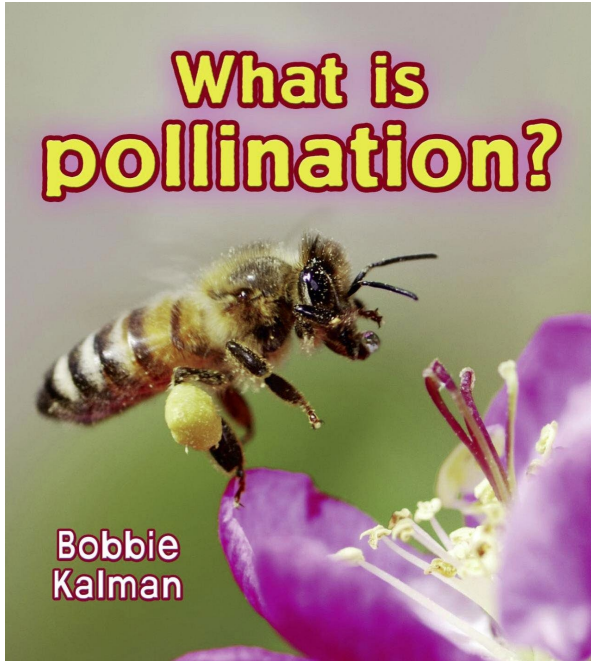
Text Talk
What is Pollination?
 Pages 4-7, Read 1 of 2

Big Ideas	Organisms in an ecosystem are interdependent. Pollination is a result of animal behavior. The parts of an organism have specific functions.
Weekly Question	What do plants need to reproduce?
Content Objective	I can identify key details to describe what plants need to reproduce. (R.4.2, R.6.2.b)
Language Objective	With different partners, I can describe important ideas relating to what plants need to reproduce. (SL.2.2.a)
SEL Objective	I can use discussion prompts to respectfully engage in conversations with my peers. (Relationship Skills)
Vocabulary	<p>petal: the colored parts of a flower that surround the stamen and stigma</p> <p>pistil: female part of the flower, made up of style, stigma, and ovary</p> <p>pollen sac: where bees collect pollen</p> <p>pollination: when pollen is moved from a stamen to a stigma in order for a plant to reproduce</p> <p>pollinator: animal that moves pollen from one flower to another</p> <p>reproduce: to make more of something</p> <p>stamen: male part of the plant that makes pollen</p> <p>stigma: top part of the pistil that receives the pollen</p> <p>style: tube that pollen travels through to the ovary</p>

<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● children's Collecting Notes and Questions: “The Beauty of Pollination” video sheets, from Week 1, Day 3 ● <i>What is Pollination?</i>, Bobbie Kalman ● <i>What is Pollination?</i> excerpts slides Note: This lesson uses slides 1-4. ● projector and screen ● Informational Text Features Chart, from Unit 2 ● Annotations chart, from previous units If necessary, recreate the chart as follows. <div data-bbox="539 583 1318 961" style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Annotations</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%; text-align: center;">Mark</th> <th style="text-align: center;">What it means</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u> </u></td> <td>key details related to a question or idea</td> </tr> <tr> <td style="text-align: center;">!</td> <td>a surprising event</td> </tr> <tr> <td style="text-align: center;"> </td> <td> </td> </tr> <tr> <td style="text-align: center;"> </td> <td> </td> </tr> </tbody> </table> </div> <ul style="list-style-type: none"> ● <i>What is Pollination?</i> text excerpt, pages 4-5, one for each child ● writing tools (in color, if possible), one for each child ● chart paper and markers <p>Prepare the Weekly Question chart.</p> <p>Children will work in pairs to annotate and discuss the text. Assign pairs strategically.</p>	Mark	What it means	<u> </u>	key details related to a question or idea	!	a surprising event				
Mark	What it means										
<u> </u>	key details related to a question or idea										
!	a surprising event										
<p>Opening 3 minutes</p>	<p>Introduce the text.</p> <p><i>Last week, we read From Seed to Plant and focused on why seeds are important. This week, we will explore the parts of a plant and consider what plants need to reproduce, or make new plants. When we watched the video “The Beauty of Pollination,” we recorded questions about pollinators and pollination; perhaps we will address some of those questions with our new text, What is Pollination?, written by Bobbie Kalman.</i></p> <p>Distribute children’s video note taking sheets, and give them a moment to review their questions.</p> <p>Set a purpose for today’s read.</p> <p><i>We will read the first four pages of this book together. Then you will read part of the text with a partner and identify important details. Today, we will gather information to answer this question:</i></p>										

	<p><i>What do plants need to reproduce?</i> [Refer to the Weekly Question, printed or on the Weekly Question chart.]</p>								
<p>Text and Discussion 20 minutes</p> <p>cover, slide 2</p>	<p>Show the front cover and slide 2.</p> <p><i>What do you notice in the photograph?</i> <i>What do you predict we might learn in this text?</i> <i>Why do you think that?</i></p>								
<p>contents, slide 3</p>	<p>Show the contents page. Refer to the Informational Text Features chart to recall the purpose of the table of contents.</p> <p><i>Remember that one feature of informational text is a table of contents. This lists subtopics of the text and helps readers to know on what pages to find certain information. Today we will read two sections, “What is pollen?” and “What is pollination?” We can use the contents to see that these sections start on page 4 and page 6. [Point to the text.]</i></p>								
<p>pages 4-7, slide 4</p>	<p>Read pages 4-7 with minimal interruptions.</p>								
<p>annotation chart</p>	<p><i>Let’s pause here. We have annotated sections of text before—we made marks on the page to help us organize our thinking as we read.</i></p> <p>Refer to the Annotations chart.</p> <p><i>We recorded what different annotation marks might mean.</i></p> <p>Review the chart so far. Then, with the children, add to the chart, as suggested below.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Annotations</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Mark</th> <th style="text-align: center;">What it means</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>Underline</u></td> <td>key details related to a question or idea</td> </tr> <tr> <td style="text-align: center;">!</td> <td>a surprising event, something interesting</td> </tr> <tr> <td style="text-align: center;">?</td> <td>questions</td> </tr> </tbody> </table> </div>	Mark	What it means	<u>Underline</u>	key details related to a question or idea	!	a surprising event, something interesting	?	questions
Mark	What it means								
<u>Underline</u>	key details related to a question or idea								
!	a surprising event, something interesting								
?	questions								
<p>pages 4-5</p>	<p><i>Now you’ll work alongside a partner.</i> <i>Read the text together, aloud. Think about our Weekly Question, What do plants need to reproduce?</i></p>								

	<p><i>As you annotate your text to help you think about this question, talk with your partner about what marks you are using and why.</i></p> <p>Project slide 4 so children can refer to the photographs in color as they work. Distribute copies of the text and writing tools, and send children to tables with partners.</p> <p>Circulate to support children as they work. Encourage them to identify key details or questions, rather than marking the entire text. Facilitate discussion between partners, prompting them to talk to one another about why they marked a particular word or phrase and how it addresses the question, What do plants need to reproduce?</p>
<p>Key Discussion and Weekly Question Chart</p> <p>15 minutes</p>	<p>Invite children back to the whole group with their excerpts. Invite two or three pairs of children to respond to these questions:</p> <p><i>What are some details you identified that answer our question?</i> <i>What surprised you? Why?</i> <i>What questions do you have?</i></p> <p>Think, Pair, Share.</p> <p><i>Based on your reading and our discussion, what do plants need to reproduce? How do you know?</i></p> <p>Add children’s ideas to the Weekly Question chart.</p>
<p>Closing</p> <p>1 minute</p>	<p><i>Tomorrow we will read more from this book, What is Pollination? and think more about our question, What do plants need to reproduce? We’ll learn about the different parts of a plant that are important for pollination.</i></p>
<p>Standards</p>	<p>R.4.2 Ask and answer questions about who, what, when, where, how and why.</p> <p>R.6.2.b Describe the relationship between a series of events, ideas, or concepts, using language that pertains to time, sequence, and cause/effect.</p> <p>SL.2.2.a Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.</p> <p>SEL.Relationship Skills</p>
<p>Ongoing assessment</p>	<p>Circulate and note how children are working in pairs and the conversations they are having.</p> <p>How do children approach the task of annotating? What questions do they ask? What ideas are children discussing with their classmates? Do children engage in conversations respectfully?</p>



What is Pollination?

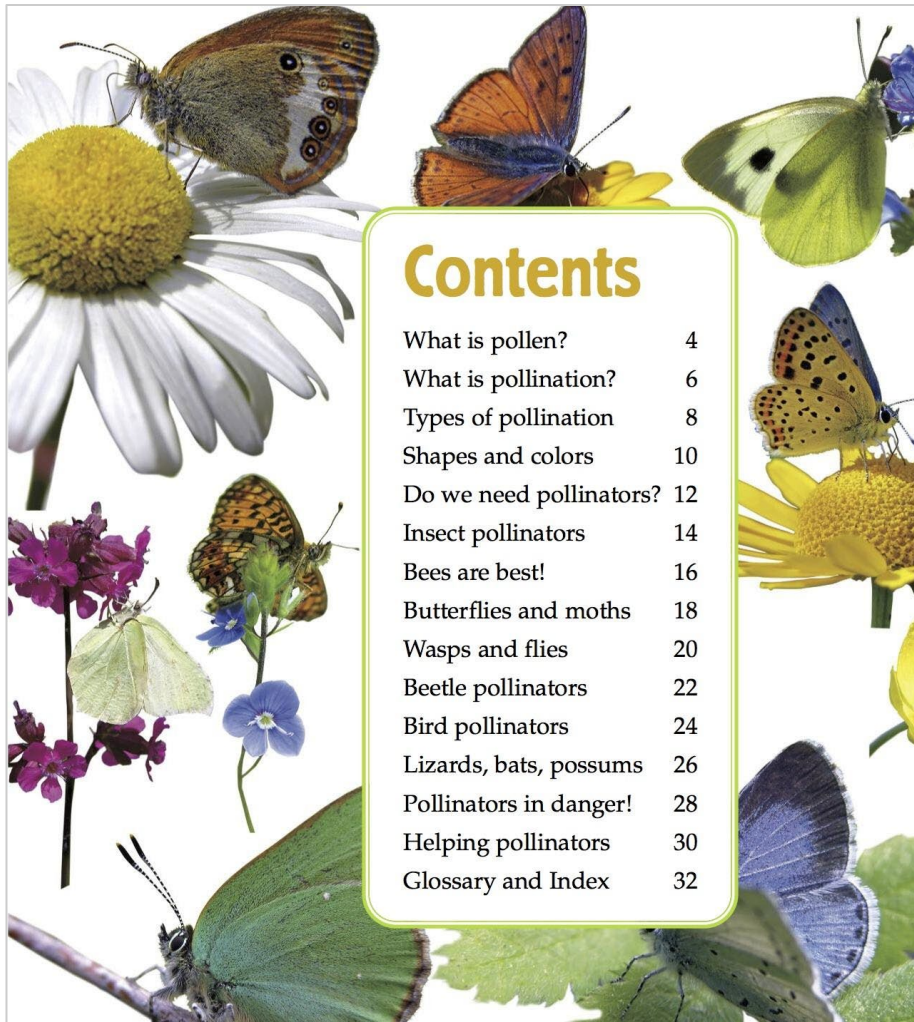
excerpts
pages 4-5, pages 6-7

Text Talk Week 2, Days 1-2

What is pollination?



Bobbie
Kalman



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What is pollination?	6
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What is pollen?

Pollen is the yellow, white, or brown powder at the center of most flowers. Pollen is an important food for bees and some other animals.

The bee on the left is covered in pollen. Bees collect pollen in pollen sacs.



An important part of flowers

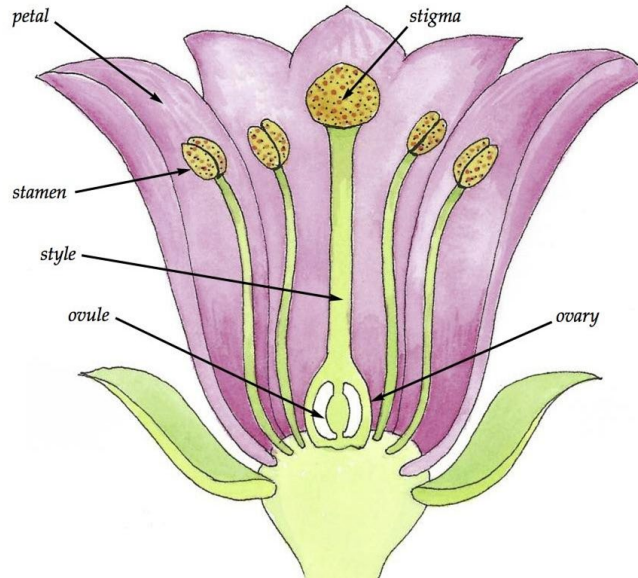
Pollen is a very important part of many flowers. It is the part of a flower that plants need to make fruit, seeds, and new plants. To make new plants, pollen has to move from one flower part to another of the same kind of flower. Most flowers need **pollinators** to move their pollen. Pollinators are animals such as bees, wasps, butterflies, and other small animals that visit flowers.

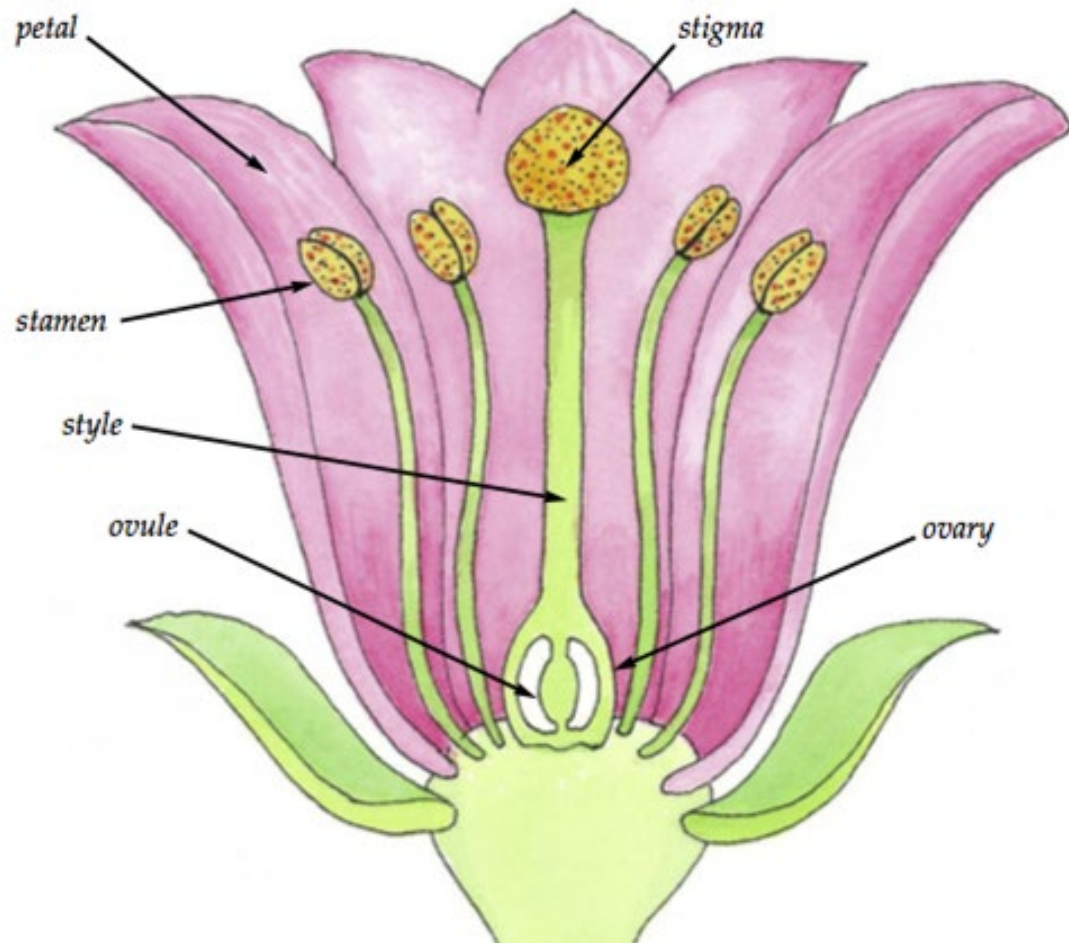


This beetle has pollen all over its body. When it goes to another flower of the same kind, it will leave pollen on that flower. The flower will then be able to make seeds.

What is pollination?

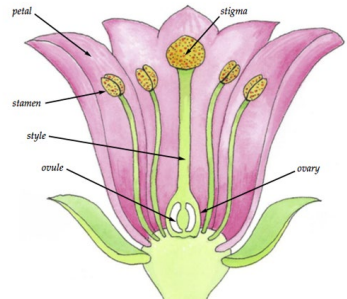
Some flowers have male and female parts. The **stamen** is the male part of the plant that makes pollen. Some flowers have one stamen, and others have many. The **pistil** is the female part of the flower. It is made up of the **style**, **stigma**, and **ovary**. The stigma is the top part. It receives the pollen. The style is the pollen tube. The pollen travels down through the style to the ovary. The ovary contains **ovules**.





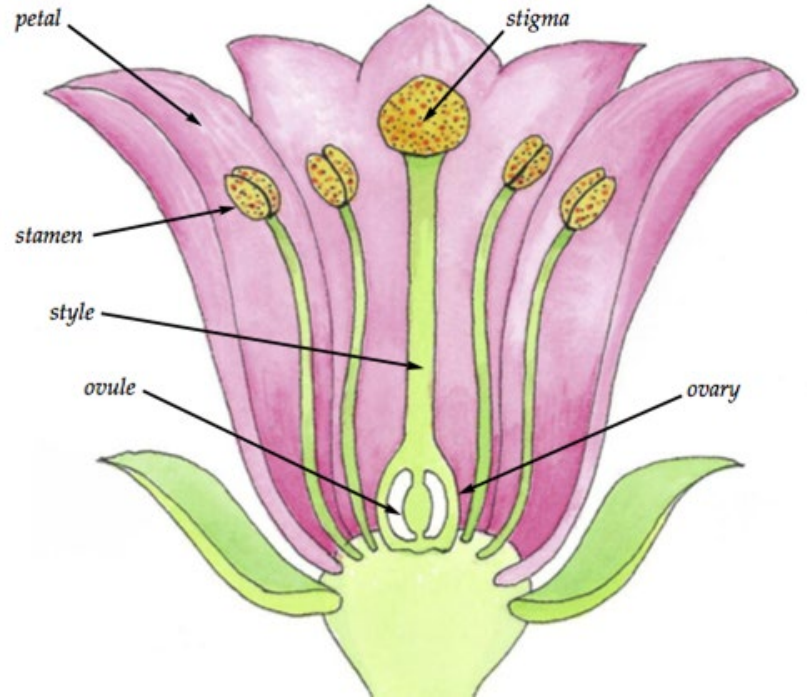
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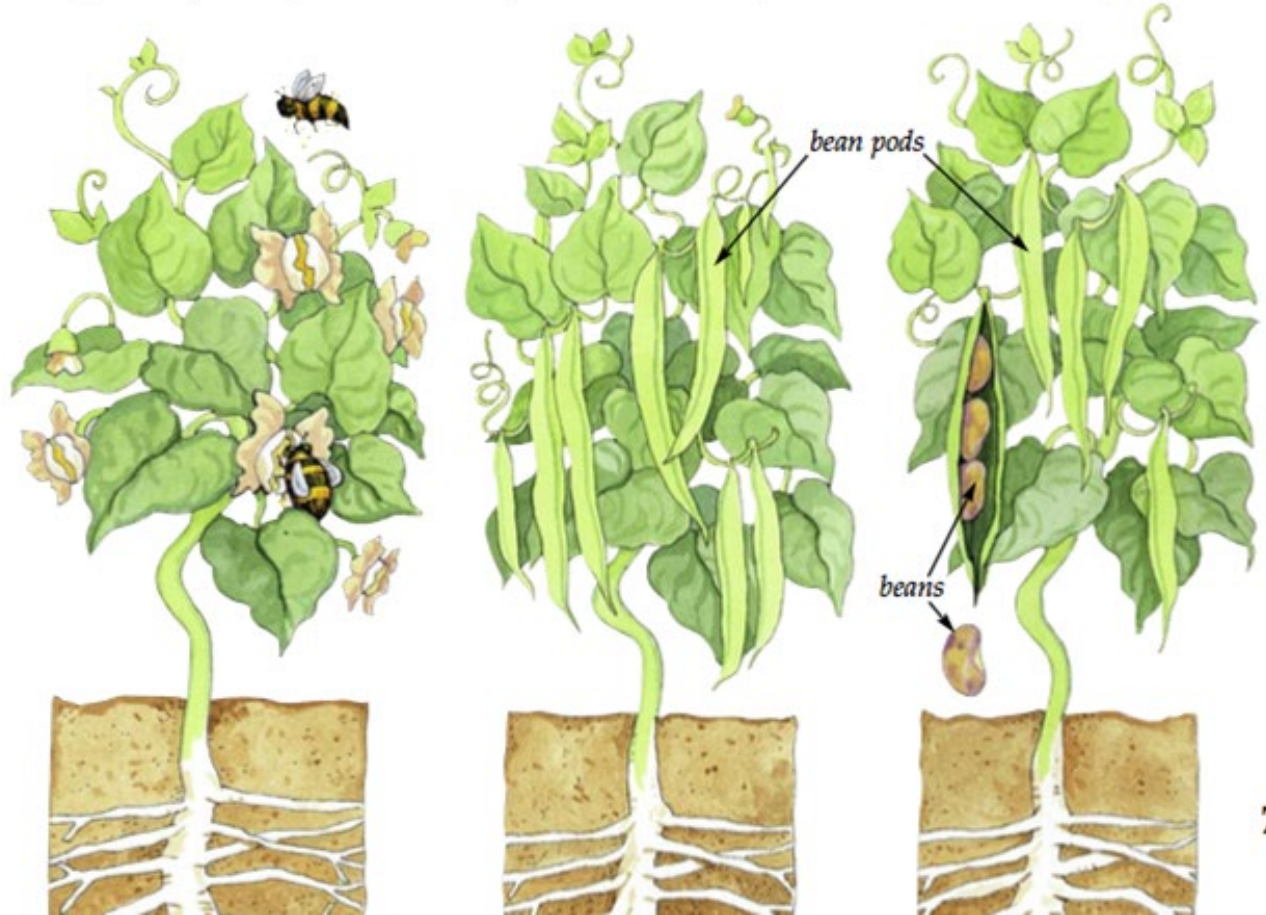
Bees are pollinating the flowers of a bean plant.

After pollination, the ovaries of the flowers become bean pods.

The beans inside are the seeds that can make new plants.

How a plant grows

When pollen moves from a stamen to a stigma, **pollination** has taken place. After a flower is pollinated, its petals fall off. The ovaries of the flowers become fruit, and the ovules become seeds. The fruit of a plant can be a vegetable or nut, as well as fruit. The fruit of the bean plant below are the bean pods. The seeds are the beans inside the pods.



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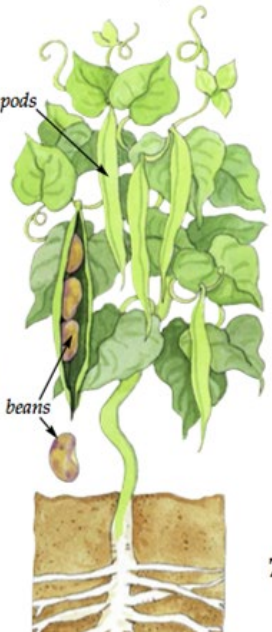
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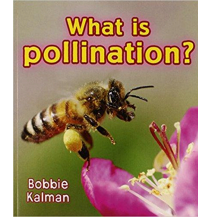


An important part of flowers

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This beetle has pollen all over its body. When it goes to another flower of the same kind, it will leave pollen on that flower. The flower will then be able to make seeds.



WEEK 2 Day 2

Text Talk
What is Pollination?
 Pages 4-7, Read 2 of 2

Big Ideas	The parts of an organism have specific functions. Pollination is a result of animal behavior.
Weekly Question	What do plants need to reproduce?
Content Objective	I can explain how diagrams and images help me to better understand the pollination process. (R.11.2.c, R.11.2.c)
Language Objective	I can determine the meaning of unknown words through context and diagrams. (L.4)
SEL Objective	I can collaborate with my partner to craft a response and respectfully listen to others' responses. (Relationship Skills)
Vocabulary	<p>petal: the colored parts of a flower that surround the stamen and stigma</p> <p>pistil: female part of the flower, made up of style, stigma, and ovary</p> <p>pollen sac: where bees collect pollen</p> <p>pollination: when pollen is moved from a stamen to a stigma in order for a plant to reproduce</p> <p>pollinator: animal that moves pollen from one flower to another</p> <p>reproduce: to make more of something</p> <p>stamen: male part of the plant that makes pollen</p> <p>stigma: top part of the pistil that receives the pollen</p> <p>style: tube that pollen travels through to the ovary</p>
Materials and Preparation	<ul style="list-style-type: none"> ● <i>What is Pollination?</i>, Bobbie Kalman ● <i>From Seed to Plant</i>, Gail Gibbons Flag page 5 (diagram of a flower).

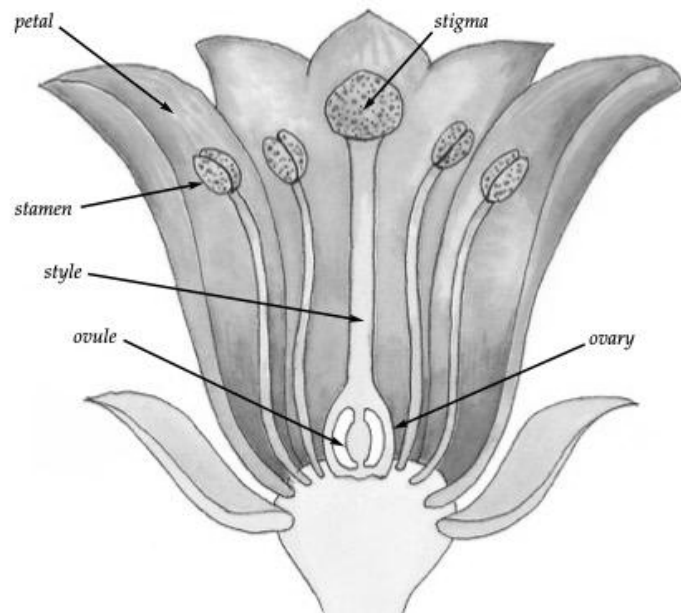
	<ul style="list-style-type: none"> ● Parts of a Flower poster ● <i>What is Pollination?</i> excerpts slides, from Day 1 Note: This lesson uses slides 5-10. Prepare to project the slide onto the whiteboard or chart paper, to model annotating ● markers, for paper or whiteboard ● <i>What is Pollination?</i> text excerpt, pages 6-7, one for each child ● <i>What is Pollination?</i> sheet, one copy for each pair of children ● writing and drawing tools ● writing surfaces ● Writing Station Response: <i>What Is Pollination?</i>, 1 copy On the whiteboard, write the Writing Station prompt. <p>Children will work in pairs to annotate and discuss the text. Consider having them work with the same partners as in the previous lesson.</p>
<p>Opening 1 minute</p>	<p><i>Today we'll continue to think about our Weekly Question, What do plants need to reproduce? Let's look again at the informational text What is Pollination? by Bobbie Kalman.</i></p> <p>Set a purpose for reading.</p> <p><i>As you noticed last time, this text includes informational text features such as a table of contents and captions; it also includes diagrams and images. We will look closely at two diagrams and think about how this informational text feature helps us to better understand the text.</i></p>
<p>Text and Discussion 15 minutes</p> <p>page 6, slides 5-6</p>	<p>Show slide 5.</p> <p><i>This page includes a diagram of a flower. Let's look more closely.</i></p> <p>Show slide 6, including the diagram only.</p> <p><i>We've encountered diagrams before. A diagram is a drawing that includes labels. We saw a similar diagram in From Seed to Plant [show the page] and on our Parts of a Flower poster [show the poster].</i></p> <p><i>Take a quiet look at these three diagrams...</i></p> <p><i>What do you notice?</i></p> <p>Harvest a few observations.</p>
<p>page 6, slide 7</p>	<p><i>Let's read this section titled "What is pollination?" I'll read it twice. First, just listen.</i></p> <p>Show and read slide 7.</p> <p><i>Think for a moment about what did and did not make sense by just reading the text.</i></p>
<p>page 6,</p>	<p><i>This time as I read, let's use the diagram to help us better</i></p>

<p>slide 8</p>	<p><i>understand the text.</i></p> <p>Show slide 8. Read slowly, pointing to and marking the text, as follows:</p> <ul style="list-style-type: none"> ● Point the parts of the flower as they are named in the text. ● Underline the words “stigma” and “ovary.” Circle the stigma in the diagram. ● Make a series of dots to represent the stigma taking in pollen. Draw arrows to signify pollen traveling down the style. <p>Think, Pair, Share.</p> <p><i>Why do you think Bobbie Kalman and Gail Gibbons included a diagram of a flower in their texts? How does this diagram help us to better understand this page?</i></p> <p>If not raised by children, explain that the diagram helps to clarify and illustrate essential vocabulary words (those in bold).</p>
<p>page 7 slides 9-10</p>	<p>Show slide 9.</p> <p><i>Let’s look quietly at the diagram on the next page. What do you notice?</i></p> <p>Make sure children see that the three drawings depict the same plant. Additionally, if children do not do so, point out the captions and labels as features of informational text.</p> <p>Show slide 10, and read the text.</p> <p>Think, Pair, Share.</p> <p><i>What do you understand about what the author is communicating with the text and diagrams?</i></p>
<p>Key Activity 20 minutes</p>	<p><i>Why are diagrams helpful for understanding informational texts?</i></p> <p>Gather a few ideas from the group.</p> <p><i>Now you’ll read these pages with a partner. If it is helpful, you may mark up the flower diagram as you read, like we did together.</i></p> <p>Show a text excerpt.</p> <p><i>When you are finished reading, you can work on this sheet together.</i></p> <p>Show the What is Pollination? sheet. Read the prompt aloud.</p> <p><i>You are explaining pollination to someone who has never heard of it. You need to give precise information. Look at the text, including the diagram, when crafting your response. If you draw as part of your response, it will be important to include labels and details.</i></p> <p>Distribute the <i>What is Pollination?</i> excerpt and <i>What is Pollination?</i> sheets. Send children to work. Circulate to support children as they read and write with partners. Remind children to refer to the text and diagrams</p>

	<p>as they write and/or draw their responses.</p> <p>As they are ready, invite sets of partners to join together and present their responses to each other.</p>
<p>Closing 3 minutes</p>	<p>Bring children back to the whole group with their work. Invite a few pairs of children to share their work.</p> <p>Ask other children to reflect on what they heard and saw: <i>How did they communicate information about pollination?</i> <i>Why was this an effective way to share this information?</i></p> <p>For a whole group reflection, ask, <i>What do we understand now about how diagrams help readers to better understand pollination?</i></p> <p>Add any new ideas from today’s discussion to the Weekly Question chart.</p>
<p>Writing Station Prompt 1 minute</p>	<p>Introduce the Writing Station. <i>We have been talking and reading about pollination. At the Writing Station, you will use the pages we have read so far in What is Pollination? to answer the prompt.</i></p> <p>Show the sheet, read the prompts, and clarify children’s questions about the prompt.</p>
<p>Standards</p>	<p>R.11.2.c Explain how specific visuals contribute to and clarify the meaning of a text.</p> <p>R.11.2.d Compare and contrast the information presented by two texts on the same topic.</p> <p>L.4 Use context clues, analyze meaningful word parts, and consult general and specialized reference materials as appropriate to determine or clarify the meaning of unknown and multiple-meaning words and phrases from grade-level content.</p> <p>SEL.Relationship Skills</p>
<p>Ongoing assessment</p>	<p>Reflect on small and whole group discussions, and review children’s writing.</p> <p>Do children refer to the text and/or details from the diagrams when explaining their thinking?</p> <p>Do children articulate the benefits of diagrams in an informational text?</p> <p>Do children collaborate to craft a cohesive response?</p> <p>Do children actively listen and respectfully respond to their peers?</p>

What is pollination?

Some flowers have male and female parts. The **stamen** is the male part of the plant that makes pollen. Some flowers have one stamen, and others have many. The **pistil** is the female part of the flower. It is made up of the **style**, **stigma**, and **ovary**. The stigma is the top part. It receives the pollen. The style is the pollen tube. The pollen travels down through the style to the ovary. The ovary contains **ovules**.



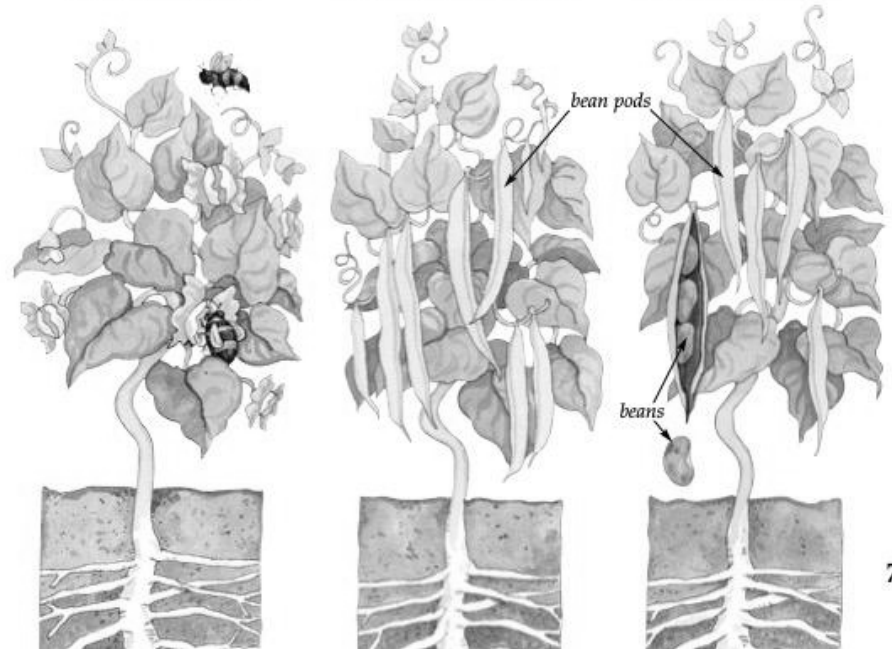
How a plant grows

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Bees are pollinating the flowers of a bean plant.

After pollination, the ovaries of the flowers become bean pods.

The beans inside are the seeds that can make new plants.



Names: _____ Date: _____

What is Pollination?

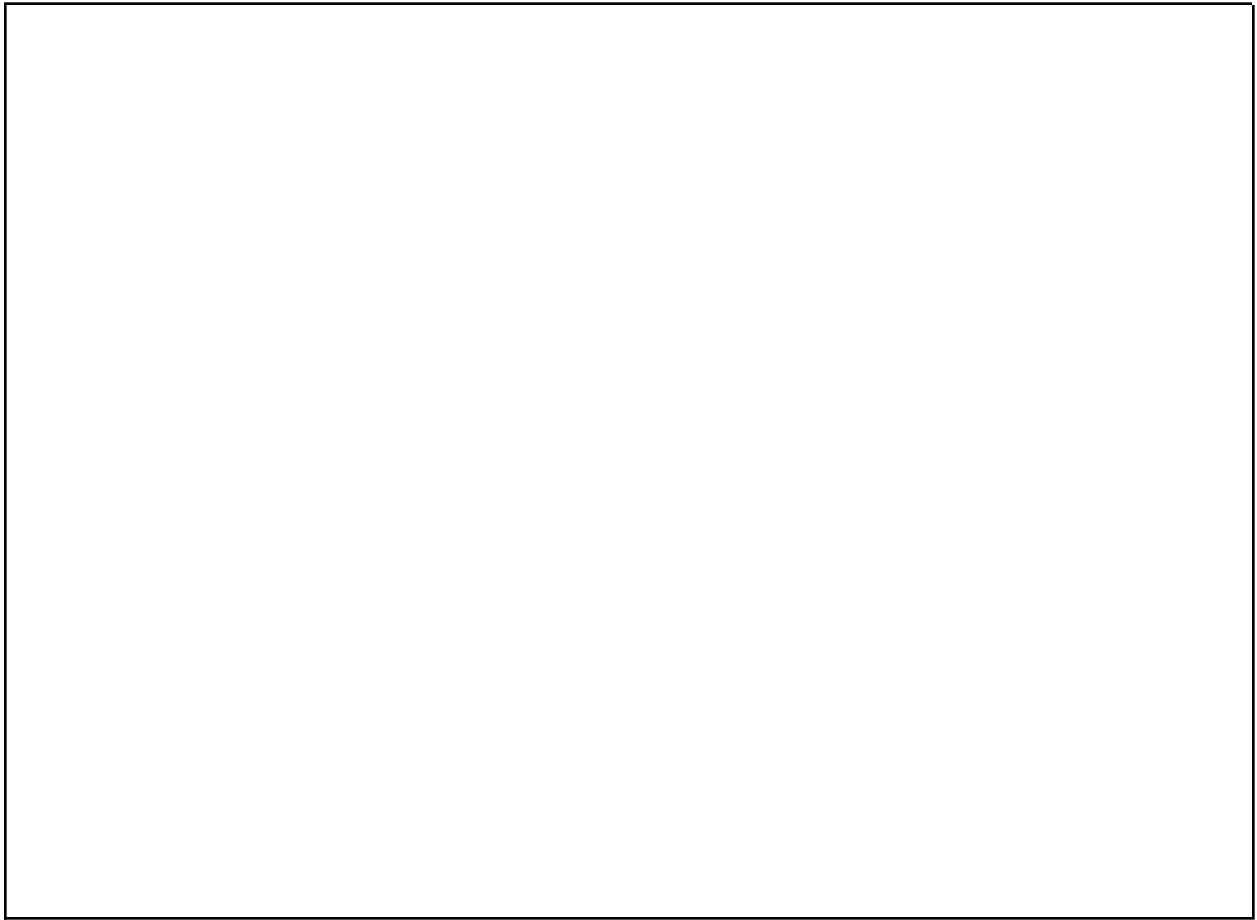
Imagine you just met someone who asked, "What is pollination?"
Write your response below. Draw a diagram to add to your
explanation.



Writing Station Response: ***What Is Pollination?***

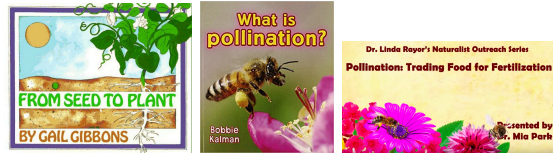
Name: _____ Date: _____

Draw an example of pollination below.
Then, write to describe the process. Use details from pages 4-7 of the text to support your thinking.



Unit 4: The Power of Pollinators

WEEK 2 Day 3



Text Talk
Comparing Texts and Types of Pollination
From Seed to Plant; What is Pollination? and
 “Pollination: Trading Food for Fertilization” (video)

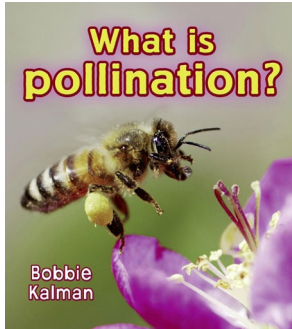
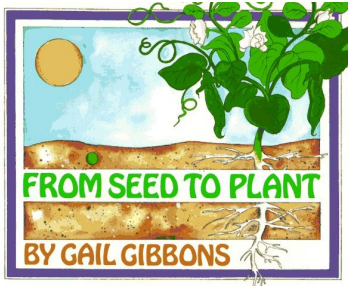
Big Ideas	The parts of an organism have specific functions. Pollination is a result of animal behavior.
Weekly Question	What do plants need to reproduce?
Content Objective	I can gather information from three texts and compare important information about different types of pollination. (R.11.2.c, R.11.2.d)
Language Objective	I can participate in collaborative conversations with diverse partners about different types of texts. (SL.1.2)
SEL Objective	I can organize and explain information accurately and responsibly. (Self-Management)
Vocabulary	cross-pollination: pollen moving from the stamen of one flower to the pistil of another flower of the same type self-pollination: pollen moving from the stamen to the pistil within the same flower
Materials and Preparation	<ul style="list-style-type: none"> ● Comparing Texts and Types of Pollination slides (including both text excerpts and video clip) ● projector and screen ● <i>From Seed to Plant</i>, Gail Gibbons, for reference ● <i>What is Pollination?</i> Bobbie Kalman, for reference ● Comparing Texts and Types of Pollination sheets, one copy for each child ● writing tools ● writing surfaces

<p>Opening 3 minutes</p>	<p>Set a purpose for reading and introduce the texts. <i>Yesterday we talked about the different parts of a flower. This information is important for pollination. Today we will think about different ways that pollination can happen and how we get that information from different texts.</i></p> <p><i>We will look at three sources of information: From Seed to Plant [hold up text], What is Pollination? [hold up text], and a video. In all three texts, we will think about how pollen moves. We will explore two kinds of pollination: cross-pollination and self-pollination.</i></p> <p><i>To help us organize our thoughts, we will jot down notes.</i> Show the sheet and read the headings for the columns and rows.</p> <p><i>At the end of Text Talk, we'll compare and sort the information we've gathered.</i> Distribute sheets, writing tools, and writing surfaces.</p>
<p>Text and Discussion 26 minutes</p> <p><i>From Seed to Plant, slides 2-6 (pages 7-10)</i></p>	<p><i>First, let's revisit several pages in From Seed to Plant. I'll read the pages while you look at the illustrations.</i></p> <p>Read these slides a second time. <i>As I read the text a second time, ask yourself, How does pollination happen? What seems important here?</i></p> <p>Turn and talk. <i>How does pollen move?</i> Harvest a few responses.</p> <p><i>These pages seem to describe cross-pollination, where pollen moves from the stamen of one flower to the pistil of another flower of the same type.</i></p> <p><i>Record this idea on your sheet.</i> Circulate to provide support with note taking.</p>
<p><i>What is Pollination?</i> slides 7-8 (contents, page 9)</p>	<p><i>Now let's read an excerpt from What is Pollination? Listen closely.</i> Read the text slowly. <i>This page seems to describe self-pollination, where pollen moves from the stamen to the pistil within the same flower.</i></p> <p><i>As I read the text a second time, ask yourself, How does pollination happen?</i></p>

	<p>Turn and talk. <i>What seems important here?</i> Harvest a few responses.</p> <p><i>Record another idea on your sheet.</i> Circulate to provide support with note taking.</p>
<p>“Pollination: Trading Food for Fertilization” video</p> <p>slide 9</p>	<p><i>Now we will look at a different source of information: a video. It is titled “Pollination: Trading Food for Fertilization.” It’s a long video; we’ll just watch one clip. In this video, Dr. Mia Park, a pollinator scientist, tells us about different kinds of pollination.</i></p> <p>Show the video, “Pollination: Trading Food for Fertilization” (1:06-4:19).</p> <p><i>Let’s watch the video clip a second time. Watch and listen for information about cross-pollination and self-pollination. Ask yourself, What in the video seems important?</i></p> <p>Turn and talk. <i>What seems important here?</i> Harvest a few responses.</p> <p><i>Now make some notes on your sheet.</i> Encourage children to write two or three notes on their sheets. Circulate to provide support with note taking.</p>
<p>Key Discussion 8 minutes</p>	<p>Think, Pair, Share. <i>We gathered a lot of information from these two text excerpts and a video clip! Look quietly at your notes. Then talk with your partner. Do you notice overlapping information from the different texts? What is different?</i></p> <p>Bring the children back to the whole group. <i>What are the most important points about self-pollination? What are the most important points about cross-pollination?</i></p> <p>Add any new ideas to the Weekly Question chart.</p>
<p>Closing 2 minutes</p>	<p>Facilitate a brief, reflective discussion. <i>How is it helpful to compare different sources of information? What do different kinds of information offer?</i></p> <p><i>Readers are like detectives! We often use multiple sources of</i></p>

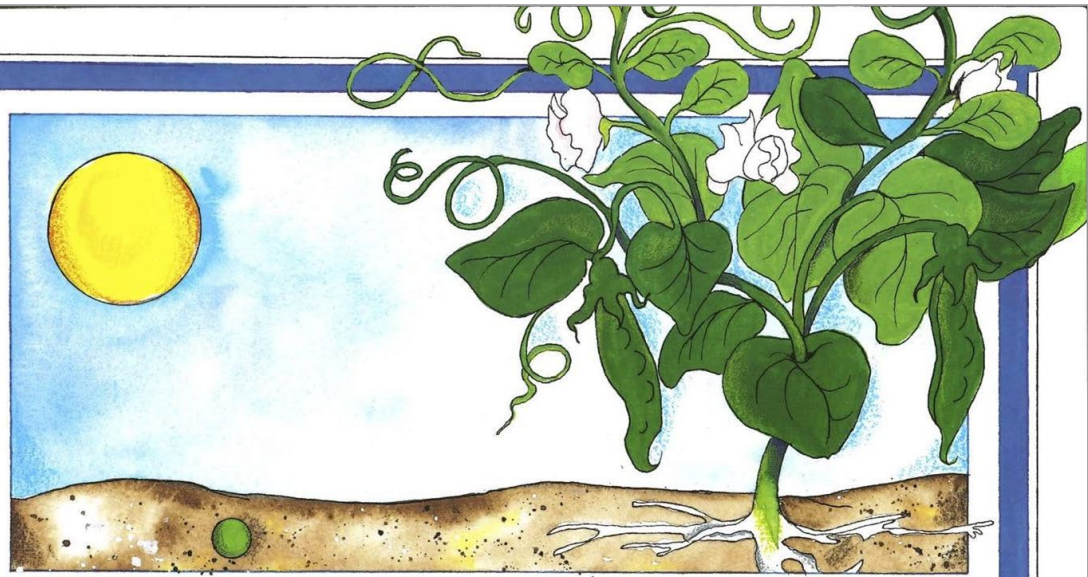
	<i>information to learn about a topic. This helps us gain a better and more complete understanding of the topic—in this case, different kinds of pollination.</i>
Standards	<p>R.11.2.c Explain how specific visuals contribute to and clarify the meaning of a text.</p> <p>R.11.2.d Compare and contrast the information presented by two texts on the same topic.</p> <p>SL.1.2 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>SEL.Self-Management</p>
Ongoing assessment	<p>Listen in as children discuss what seems important in each text.</p> <p>Do children write relevant notes about the two types of pollination?</p> <p>Do children describe the similarities and differences about the two types of pollination?</p> <p>Do children explain the benefit of using multiple sources to gain information?</p>

Notes



Comparing Texts and Types of Pollination

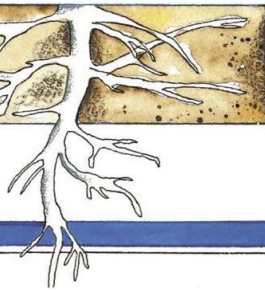
Text Talk Week 2, Day 3



FROM SEED TO PLANT

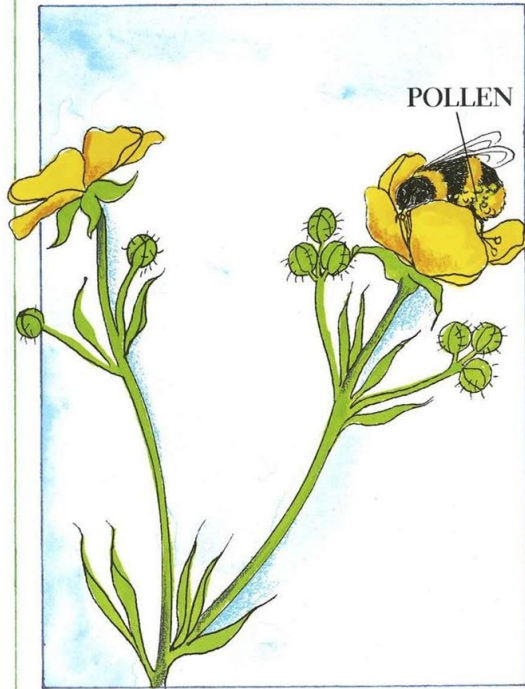


BY GAIL GIBBONS

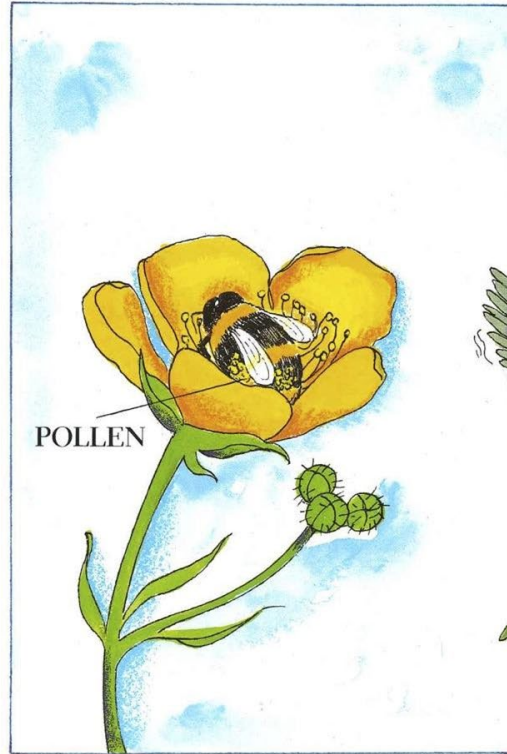




Pollination happens in different ways. Often, wind blows pollen from flower to flower.



Bees, other insects and hummingbirds help pollinate, too. While they visit flowers for their sweet juice, called nectar, pollen rubs onto their bodies.



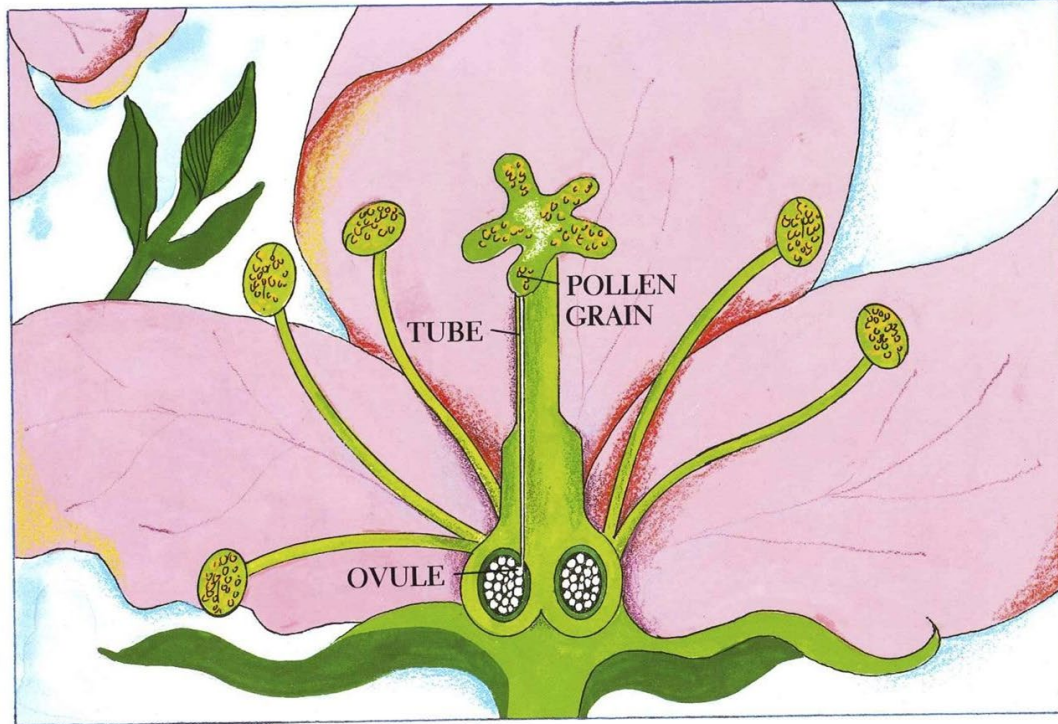
POLLEN



POLLEN

PISTIL

Then they carry the pollen to another flower where it comes off onto its pistil.



If a pollen grain from a flower lands on the pistil of the same kind of flower, it grows a long tube through the pistil into an ovule. This is the beginning of a seed.

What is pollination?



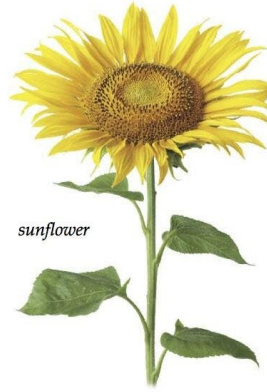
**Bobbie
Kalman**

Contents

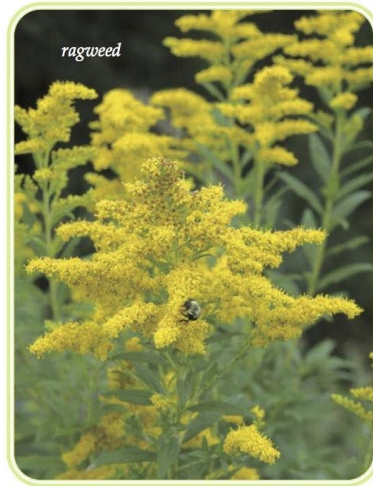
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Self-pollination

During self-pollination, pollen moves from the stamen to the pistil of the same flower. Flowers that self-pollinate have male and female parts that are close together, so the pollen can move easily from the stamen to the pistil. Sunflowers can self-pollinate or be cross-pollinated.



sunflower



ragweed

Wind pollination

Some flowers are pollinated by the wind. Wind sweeps pollen off those flowers and carries it to other flowers. Wind-pollinated flowers have millions of tiny pollen grains. These flowers seldom have nectar. Ragweed flowers are wind pollinated. Many people are very **allergic** to ragweed pollen.



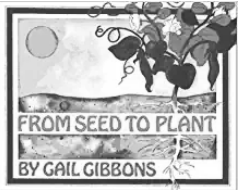
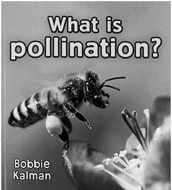

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Comparing Texts and Types of Pollination

Names: _____ Date: _____

<p>topic</p>			
<p>cross-pollination</p>			
<p>self-pollination</p>			

Text Talk U4 W2 D3

Focus on Second/ 2nd Grade for ME | Boston Public Schools Department of Early Childhood P-2/

Maine Department of Education



WEEK 2 Day 4

Text Talk
“Apples and Bees” (informational text)
 Read 1 of 2

Big Ideas	Organisms in an ecosystem are interdependent. Pollination is a result of animal behavior. Animals, including humans, benefit from and depend on pollination.
Weekly Question	What do plants need to reproduce?
Content Objective	I can answer questions such as who, what, why, and how to demonstrate my understanding of the importance of interdependence. (R.4.2)
Language Objective	I can use context to support my understanding of a word or phrase. (L.4.2.a)
Vocabulary	<p>* benefit: something positive, an advantage</p> <p>colony: a group of people or animals</p> <p>consumer: someone who buys and uses products and services</p> <p>* depend: to rely on, to trust</p> <p>* interdependent: relying on each other</p> <p>produce: to make</p> <p>store: to keep something aside to use in the future</p>
Materials and Preparation	<ul style="list-style-type: none"> ● “Apples and Bees” slides ● projector and screen ● Weekly Word cards: depend, interdependent ● Text Talk notebooks ● writing tools ● “Apples and Bees” informational text, one copy for each child <p>On the whiteboard write, How are bees and apples interdependent?</p>

<p>Opening 3 minutes slide 1</p>	<p>Introduce the text, activating background knowledge. <i>Today we will read a new informational text titled “Apples and Bees.” I bet many of you already know something about this topic. What experience do you have with apples, bees, or both?</i></p> <p>Set a purpose for reading. <i>We will spend two days with this text. Today, we will read it all together to consider how bees and apples are interdependent. We’ll discuss some of the new words in the text. Tomorrow, you will read different sections of the text with a partner and in small groups.</i></p>
<p>Text and Discussion 26 minutes slide 2</p>	<p>Refer to the question on the whiteboard. <i>Keep this question in your mind as we read: How are bees and apples interdependent? Interdependent means relying on each other. [Show the Weekly Word cards “depend” and “interdependent.”] Let’s think about how bees and apples depend on one another.</i></p> <p>Show slide 2. <i>Here is the first section of the text. Notice that some words are written in bold print. What might this indicate?</i></p> <p>Affirm children’s knowledge that these words can be found defined in the glossary at the end of the text, a feature of informational text. <i>Glossaries define important words. You will have more time to explore the words in bold and the glossary when you work with your partners tomorrow.</i></p> <p>Distribute the text to pairs of children. <i>Let’s read this copy of the text together. As we read, remember to consider how bees and apples are interdependent.</i></p> <p>Read slide 2. Allow children to make connections to Roxbury. <i>It sounds like the apple changes as it is stored. What does it mean to store something?</i></p>
<p>slide 3</p>	<p>Read slide 3. <i>Apple trees produce apples. Produce means to make or to grow something.</i></p> <p>Think, Pair, Share. <i>What might we produce with strawberries?</i></p> <p><i>We learned about self-pollination and cross-pollination yesterday. It looks like apple trees cross-pollinate. Let’s look at the different</i></p>

	<p><i>possibilities!</i></p> <p><i>From what we already know, how might pollen travel from one apple tree to another?</i></p> <p>Harvest a few ideas.</p>
slides 4-5	<p>Read slide 4, then show the photographs on slide 5.</p> <p><i>Let's consider the idea of interdependence.</i></p> <p>Think, Pair, Share.</p> <p><i>What might it mean for farmers to depend on honeybees?</i></p> <p>Read the second paragraph again.</p> <p><i>What might a "colony" of bees be? Let's look for clues in the sentence to figure this out. A farmer sets up beehives, places where bees live. The word "large" tells us that this refers to a lot of bees. So we can infer that the word "colony" describes a large group of bees where they live.</i></p> <p><i>Why might farmers plant apple trees close to each other?</i></p> <p>Harvest a few ideas.</p>
slides 6-7	<p>Read slides 6 and 7.</p> <p>Consumers are people who buy apples and honey (and other goods).</p> <p><i>The text tells us that honey bee farmers benefit from busy bees. This means they gain something from the bees. [Show the Weekly Word card.]</i></p> <p><i>Thumbs up if you enjoy honey! This is one way we all benefit from bees!</i></p>
<p>Key Discussion 10 minutes</p>	<p><i>Let's think more about this question: How are bees and apples interdependent?</i></p> <p>Distribute Text Talk notebooks and pencils. Distribute printed copies of the text to partners or small groups.</p> <p><i>On a fresh page of your notebooks, write and draw at least one way bees and apples are interdependent. Remember to use words and information from the text.</i></p> <p>Circulate as children write in their Text Talk notebooks. (Children might continue this writing at the Writing Station, if needed.)</p> <p>Think, Pair, Share.</p> <p><i>Share one way that bees and apples are interdependent. Why is</i></p>

	<p><i>this interdependence important?</i></p> <p>Add any new ideas to the Weekly Question Chart.</p>
<p>Closing 1 minute</p>	<p><i>This informational text has lots of interesting information. Tomorrow we will read the text again, with a partner and with a small group.</i></p>
<p>Standards</p>	<p>R.4.2 Ask and answer questions about who, what, when, where, how and why. L.4.2.a Use sentence-level context as a clue to the meaning of a word or phrase.</p>
<p>Ongoing assessment</p>	<p>Listen into children’s conversations and review their writing. How do children respond to the text? Do children articulate what’s critical about the relationship between apples and bees? How do children approach new vocabulary? Do they incorporate the vocabulary into their writing and/or discussions?</p>

Notes

Apples and Bees

Text Talk Week 2, Day 4

A special apple

The oldest apple in North America is the Roxbury Russet. This kind of apple was first discovered and farmed in Roxbury, Massachusetts, about 400 years ago. At that time, people had not yet discovered **refrigeration**. Fortunately, the Roxbury Russet lasts a long time without being kept very cold, and its taste changes from tart to sweet as it is stored.



Through the years, Roxbury Russet apples have been used for many purposes: eating, baking, applesauce, cider, and vinegar. They can still be found at farmers markets and growing in **orchards**. The word **russet** refers to a rough, brownish color, so this apple has a perfect name!

Growing apples

In the springtime, fruit trees are **in blossom**. This is the time when **pollination** has to happen in order for apple trees to produce the apples we eat in the summer and fall. Pollination is the movement of pollen from the male to the female part of a flower. Some types of fruit trees can be pollinated with their own pollen, such as peach trees. Other types of trees need pollen from different trees. Apple trees must be **cross-pollinated** in order to produce fruit.



A Baldwin apple tree might use pollen from a ...



Northern Spy apple tree...



or a Mutsu apple tree...



or an Empire apple tree.

That's one reason why an apple orchard has different kinds of apple trees. But how does pollen travel from one apple tree to another?

A special pollinator

Many different kinds of bees are excellent pollinators, but one bee is special. Honey bees collect pollen to take back to their hives to feed growing bees. Along the way, some of that pollen drops off their bodies, right onto the stigmas of other flowers they visit.



Farmers depend on honey bees. They set up **beehives** in their orchards and fields so that the bees are always close by to pollinate their crops. These beehives are perfect places for large colonies of bees to live.

Each honey bee visits 50 to 100 flowers on each trip from the hive. Apple blossoms usually grow in clusters, or groups, on one branch, making it easy for pollinators to move from one flower to another. Farmers also plant their apple trees close to each other. Honey bees visit so many flowers and trees that they are known as the most important pollinator of apple trees in North America.



Bees and apples

Bees don't only collect pollen. As they travel from flower to flower they also sip **nectar**. Then they carry it back to their hives to make honey. This is their food.



Many people also like honey! Do you? Honey bees make so much honey that when people take some of it to use, there is still plenty left for the bees.

Apple farmers use honey bees to pollinate their trees, and honey bee farmers benefit from having such busy bees to produce lots of honey from all those flowers.

Farmers and consumers depend on each other to keep producing apples and honey.

Most apples and honey come from farms outside the city. But apple trees still grow around us. And some **urban** beekeepers set up hives in yards and community gardens, and on rooftops. These hives allow honey bees to pollinate flowers, vegetable plants, and fruit trees everywhere.



Citations

Information

<http://www.pollinator.ca/bestpractices/colony.html>

<https://extension.psu.edu/the-role-of-pollen-bees-in-fruit-tree-pollination>

https://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/mason_bees.shtml

Photos

Roxbury Russet: <http://appleharvester.blogspot.com/2010/03/roxbury-russet.html>

Apple blossoms: https://commons.wikimedia.org/wiki/File:Apple_blossoms.jpg

Honey bee: <https://www.flickr.com/photos/refmo/2439542125/>

Empire: <https://www.grandpasorchard.com/Tree/Malus-Empire>

Mutsu: <https://www.isons.com/shop/fruit-trees/mutsu-apple-tree/>

Baldwin: <http://appleharvester.blogspot.com/2010/04/story-of-apple-baldwin.html>

Roxbury Russets in tree: https://newenglandapples.files.wordpress.com/2011/12/img_6239.jpg

Honey: Laura Booth

Rooftop hives: <https://www.chowhound.com/pictures/rooftop-hives-buzzing-boston/seaport-hotel>

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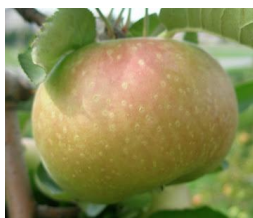
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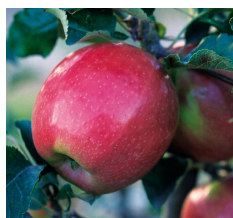
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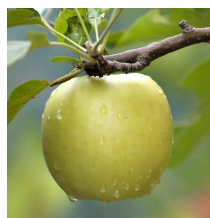
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Glossary

refrigeration: keeping food or drink cold in order to preserve it

orchard: a place where fruit trees are grown

russet: having a rough, brownish color

in blossom: a period when flowers are open

pollination: the movement of pollen from the male to the female part of a flower

cross-pollination: pollen moving from the stamen of one flower to the pistil of another flower of the same type

nectar: a sugary liquid produced by flowers

beehive: a structure in which honey bees are kept, usually in the shape of a box or dome

forage: to look for and gather food

urban: taking place in the city

Written by Melissa Tonachel

Sources: Information

<http://www.pollinator.ca/bestpractices/colony.html>

<https://extension.psu.edu/the-role-of-pollen-bees-in-fruit-tree-pollination>

https://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/mason_bees.shtml

Sources: Photos

Roxbury Russet: <http://appleharvester.blogspot.com/2010/03/roxbury-russet.html>

Apple blossoms: https://commons.wikimedia.org/wiki/File:Apple_blossoms.jpg

Honey bee: <https://www.flickr.com/photos/refmo/2439542125/>

Empire: <https://www.grandpasorchard.com/Tree/Malus-Empire>

Mutsu: <https://www.isons.com/shop/fruit-trees/mutsu-apple-tree/>

Baldwin: <http://appleharvester.blogspot.com/2010/04/story-of-apple-baldwin.html>

Roxbury Russets in tree: https://newenglandapples.files.wordpress.com/2011/12/img_6239.jpg

Honey: Laura Booth

Rooftop hives: <https://www.chowhound.com/pictures/rooftop-hives-buzzing-boston/seaport-hotel>



WEEK 2 Day 5

Text Talk
“Apples and Bees” (informational text)
 Read 2 of 2

Big Ideas	Organisms in an ecosystem are interdependent. Pollination is a result of animal behavior. Animals, including humans, benefit from and depend on pollination.
Weekly Question	What do plants need to reproduce?
Content Objective	I can identify the big ideas of specific paragraphs within a text. (R.5.2.b)
Language Objective	I can identify key details in a text and discuss why they are important. (SL.2.2.a)
SEL Objective	I can engage in a respectful and productive two-way discussion. (Relationship Skills)
Vocabulary	<ul style="list-style-type: none"> * benefit: something positive, an advantage colony: a group of people or animals consumer: someone who buys and uses products and services * depend: to rely on, to trust * interdependent: relying on each other produce: to make store: to keep something aside to use in the future
Materials and Preparation	<ul style="list-style-type: none"> ● “Apples and Bees” slides ● projector and screen ● “Apples and Bees” informational text, one copy for each child

	<p>Have partners sit together. Guide children to read their assigned sections, and then to pause to discuss and write notes about important ideas.</p> <p>Circulate to support children’s reading and discussion. Refer them to the questions on the board. Use the following questions.</p> <p><i>Which details in the text are important?</i></p> <p><i>How do informational text features (headings, photographs, glossary) support the big idea?</i></p> <p>Encourage back and forth discussion, careful listening, and respectful responding.</p> <p><i>Do you agree with your partner? Do you have anything to add?</i></p> <p><i>What else can you tell your partner? What evidence do you have to support that?</i></p> <p><i>You might disagree. You can say, “I respectfully disagree with you because...”</i></p> <p><i>Hmmm. Your partner isn’t sure. Look closely at that part together.</i></p>
<p>Key Discussion 20 minutes</p>	<p>Bring children back to the whole group. Put them together with different classmates to form new groups.</p> <p><i>Now that you have read one section, you’ll have a chance to teach other children about that part. In the order of the text, you will exchange the information you read about. Listen carefully to each other and ask questions!</i></p> <p>Get children settled in their new small groups. Encourage them to refer to their note sheets for support. Circulate to support their conversations, and offer prompting questions. Provide timing signals throughout to make certain that each child has had enough time to share.</p> <p>Bring children back to the whole group.</p> <p><i>How did the Jigsaw routine feel to you? How did talking with others about different sections help you to better understand the text?</i></p>
<p>Closing 5 minutes</p>	<p>Bring the Weekly Question chart to the whole group space. Invite children to sit with their original partners in a circle.</p> <p>Facilitate a discussion about the Weekly Question, What do plants need to reproduce? Prompt children to draw from the text and from discussions throughout the week. Record any new ideas on the Weekly Question Chart.</p> <p>Pose a few guiding questions to prompt further discussion, such as:</p> <p><i>What makes particular organisms interdependent?</i></p> <p><i>What can we understand about how organisms benefit each other?</i></p>

	<i>It seems like many of you are interested in bees. During our next Text Talk, we will explore bees in much more detail!</i>
Standards	<p>R.5.2.b Identify the main topic of a multi-paragraph text and the central ideas of specific paragraphs.</p> <p>SL.2.2.a Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.</p> <p>SEL.Relationship Skills</p>
Ongoing assessment	<p>How do children approach reading the text?</p> <p>Do they surface important ideas?</p> <p>Do children engage in two-way discussions?</p> <p>Do children piece together all the parts of the text?</p>

Notes

Names: _____ Date: _____

Section heading: _____

“Apples and Bees” Important Ideas

Unit 4: The Power of Pollinators

WEEK 2

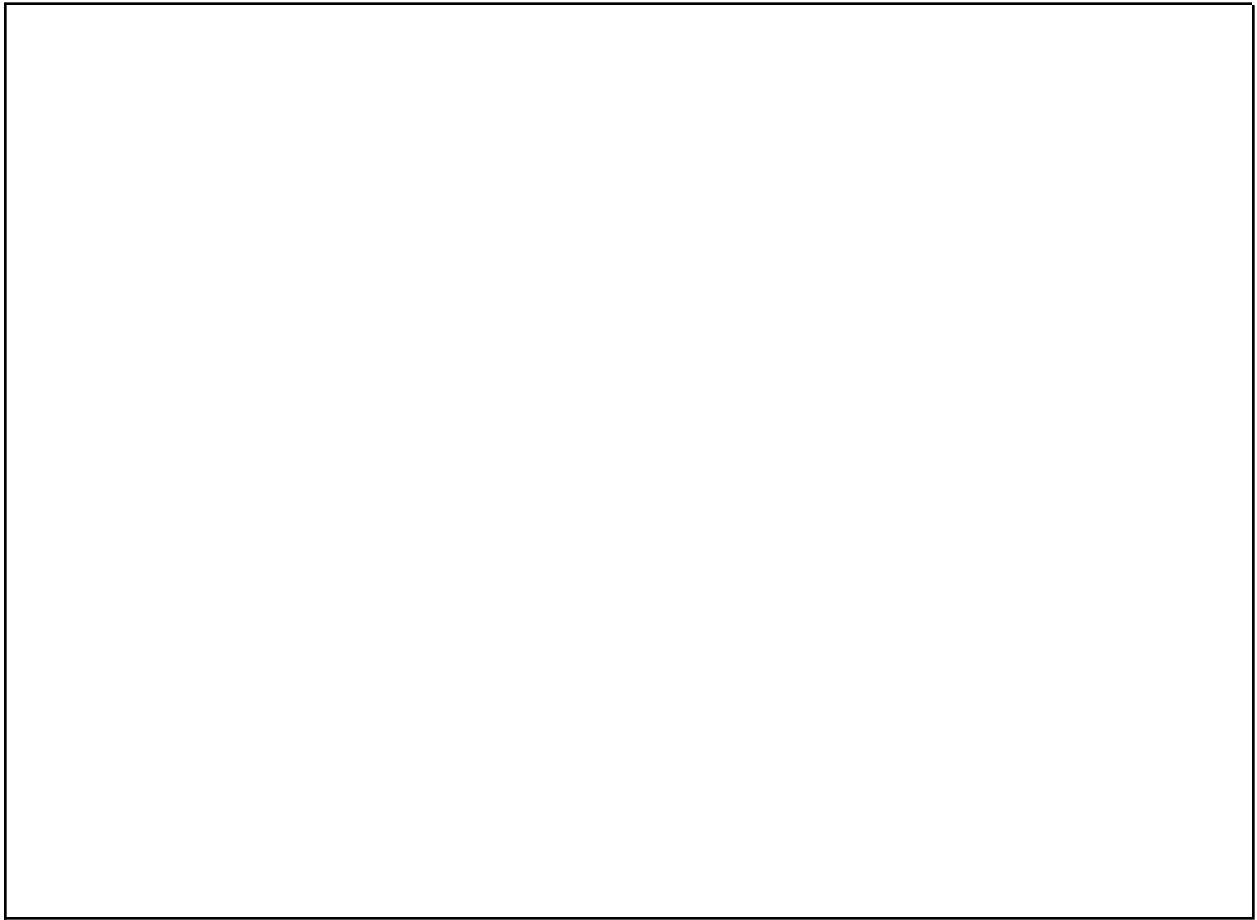
Stations

Station	Activities	Materials Writing tools at each station
Guided Independent Reading		<ul style="list-style-type: none"> individual book bags
Teacher groups: strategic small group instruction		
Listening & Speaking	Listen and Respond	<ul style="list-style-type: none"> audio recording and technology <i>Cuckoo/Cucú</i> book and slides conversation prompts
Science Literacy	Why do you think many seeds start growing in the spring?	<ul style="list-style-type: none"> Unit 4 Science and Engineering packets colored pencils
Vocabulary	Choose 3!	<ul style="list-style-type: none"> Week 1 Weekly Words cards Recording sheets Choose 3! menu
	Talk About It: What is happening in this picture? What will the person who is planting seeds need to do next?	<ul style="list-style-type: none"> Weeks 1 and 2 Weekly Words cards Week 2 image, 2 copies cut apart Week 2 sheets
Word Work <i>(align skills with literacy program)</i>	Marking double vowels (ou/ow) and suffixes	<ul style="list-style-type: none"> Week 2 Name It, Write It, Mark It sheets
	Writing words, using them in sentences	<ul style="list-style-type: none"> Week 2 Look Cover Write Check sheets
Writing	Prompt from Text Talk Day 2: Responding to <i>What Is Pollination?</i>	<ul style="list-style-type: none"> Writing Station Response sheet

Writing Station Response: ***What Is Pollination?***

Name: _____ Date: _____

Draw an example of pollination below.
Then, write to describe the process. Use details from pages 4-7 of the text to support your thinking.



Cuckoo Conversation Prompts: Cut apart and provide with text and audio recording.

Page 3:

What do you think the author meant when she wrote that Cuckoo was “stuck on herself”?

Cuckoo

Page 12:

Why was it so important to save the seeds?

Cuckoo

After reading:

What lesson did the other birds learn at the end of the story?

Cuckoo

I agree with you. I also think ____.

Why do you think that?

I don't think I agree with you because ____.










Cuckoo

Name: _____

Name It	Write It	Mark It
---------	----------	---------

Write the word. Circle and mark the double vowel and the suffix.

Word Bank	crowns	towering	pouting
sounded cloudy	rowdy	loudly	discounted

 shouted d s	 _____ _____ _____	 _____ _____ _____
 _____ _____ _____	 _____ _____ _____	 _____ _____ _____
 _____ _____ _____	 _____ _____ _____	 _____ _____ _____

Skills: Know spelling-sound correspondences for additional common vowel teams and decode words with common prefixes and suffixes.

Name: _____

Look	Cover	Write	Check ✓
------	-------	-------	---------

bought	<hr/> <hr/> <hr/>	
brought	<hr/> <hr/> <hr/>	
piece	<hr/> <hr/> <hr/>	

Skills: Recognize and read grade-appropriate irregularly spelled words.

Use it in a Sentence

bought

brought

piece

Talk About It



<https://www.ugao.com/knowledge-center/10-seed-sowing-seed-starting-tips/>



<https://www.ugao.com/knowledge-center/10-seed-sowing-seed-starting-tips/>

Vocabulary Station U4 W2

**Focus on Second/ 2nd Grade for ME | Boston Public Schools Department of Early Childhood P-2/
Maine Department of Education**

Talk About It

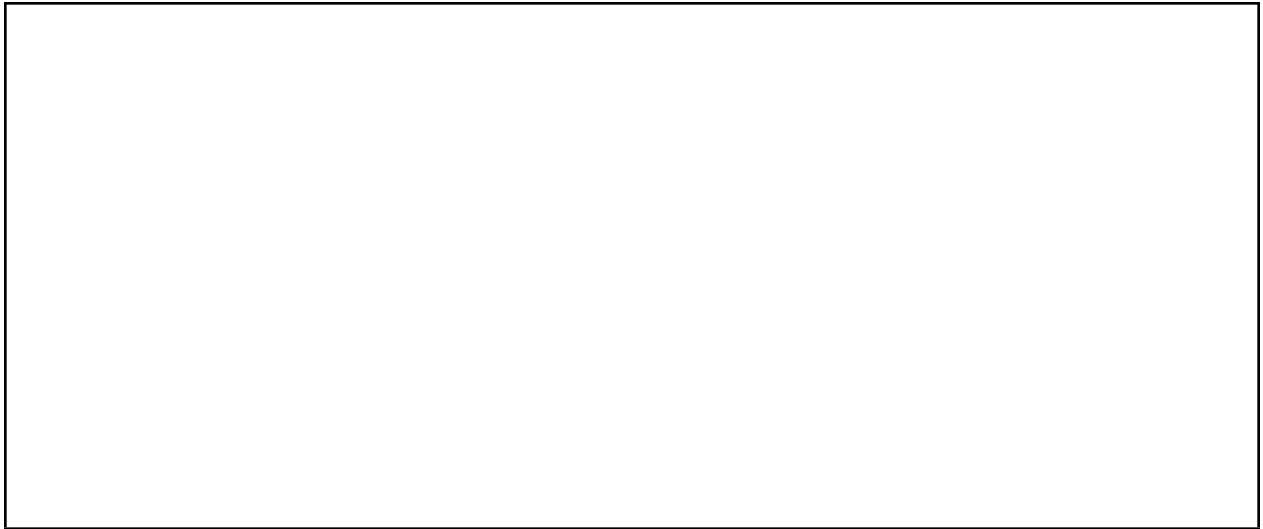
Name: _____

Date: _____

What is happening in this picture?

What will the person who is planting seeds need to do next?

Look carefully at the image. **Talk** with your partner, **draw and write** about your ideas, and then **share** your writing. Use important vocabulary words as you talk and write. **Circle** the important words you use.



Unit 4: The Power of Pollinators

WEEK 2 Lesson 1

Science and Engineering: Life Sciences
Ecosystems: Observing and Discussing Seed Germination

Note: Depending on the time elapsed, the seeds set up in bags with favorable conditions in Week 1, Lesson 3 have probably sprouted. However, sprouting can take differing lengths of time even among the same kinds of seeds. If another day is needed for sprouting, consider reversing the order of Week 2 lessons and adapting the discussion according to this change.

Big Idea	Living things grow and change over time.
Guiding Question	Why is it important to understand how living things grow and change over time?
Content Objective	I can observe seeds placed in different conditions and make observations about how they germinate. (2-LS2-3 (MA), Practice 4)
Language Objective	I can discuss what conditions are required for seeds to sprout, based on my observations. (SL.1.2)
Vocabulary	condition: a characteristic of the environment (that allows seeds to germinate or not) germinate: to begin to develop into a plant sprout: to begin to grow
Materials and Preparation	<ul style="list-style-type: none">● Science and Engineering packets● writing and drawing tools● started seeds in plastic bags● started seeds in soil, those with popsicle stick markers● What conditions do seeds need to germinate? chart, from Week 1, Lesson 3 <p>Prepare for Lesson 2: Soak pumpkin, corn, and pea seeds in separate containers of water for 24 hours (enough for each pair of children to have two of each kind of seed, plus several extra). The seeds should be plump so that children will be able to split them in half and look inside them.</p>

	<p>In addition, germinate a few of each type of seed in plastic bags and/or in soil. These will be used to compare how different seeds develop over time. Children will look at the growth and development of these seeds in Week 3 Studios.</p>
<p>Opening 5 minutes</p>	<p><i>Today you'll work in your groups to observe your planting investigations and record your findings so far.</i></p> <p><i>If you planted in plastic bags, very carefully open the bag and unwrap the seed to see what's happening. Look, record your observations, and talk about what you find. Then, as gently as possible, wrap the seeds back up so they can continue to grow.</i></p> <p><i>If you planted seeds in soil, talk about what you think might be happening underground. Then, very carefully, one person in your group will use the stick to dig up the seed. Look, record your observations, and talk about what you find. Then, as gently as possible, replant that seed so it can continue to grow.</i></p> <p><i>Think and talk together: Do you have enough information to answer the question you are testing, or do your seeds need more time? Do the conditions need to change?</i></p> <p><i>You have fifteen minutes to work. Then we'll come back together to share our observations and discuss the question we are exploring: What conditions do seeds need to germinate?</i></p>
<p>Investigation 15 minutes</p>	<p>Children observe and record the seeds they started in different conditions, and then discuss their findings with group members. Encourage children to support their conclusions with evidence from their observations. Have they answered their question, or does the investigation need more time?</p> <p>For seeds in bags: If one bag of seeds has sprouted much less successfully than the other, ask children to consider where they might move those seeds to give them what they need to grow.</p> <p>For seeds in soil: Encourage children to first predict and discuss what might be happening in the soil. Make sure they dig carefully so as not to damage the developing seed. Once they have finished their observations, these seeds should be replanted.</p> <p>Circulate to listen to children's conversations and support their work.</p> <p>Have children return successfully sprouted seeds to their same locations</p>

	and move or change unsuccessful seeds according to different (hopefully better) conditions they identify.
Discussion 10 minutes	<p>Facilitate a whole group discussion, with each group sharing their observations and their ideas related to the question, What conditions do seeds need to germinate? Encourage them to cite evidence from their observations to support their conclusions.</p> <p>Specific to seeds planted in soil, ask the small groups: <i>What changes have you noticed since planting these seeds in the soil?</i></p> <p>Ask the whole group: <i>We have talked about seeds needing light to grow. Some seeds have sprouted even though it's dark underground. What do you think about this?</i></p> <p>Harvest any new questions and record them on the chart.</p>
Closing	<p><i>Today, we reported back on our investigations and started answering the question about what conditions seeds need to germinate. We also generated some new questions.</i></p> <p><i>Tomorrow we will look inside some seeds to see what's there.</i></p>
Standards and Practices	<p>SL.1.2 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p>
Ongoing assessment	<p>Reflect on the class discussions.</p> <p>How do children cite evidence from their observations in discussion in both small and large groups?</p> <p>Are children using their observations to think about conditions that are most favorable for seed germination?</p> <p>What questions come up, and what do they tell you about children's understandings and misconceptions?</p>

Unit 4: The Power of Pollinators

WEEK 2 Lesson 2

Science and Engineering: Life Sciences
Ecosystems: Looking Inside Seeds

Big Idea	The parts of an organism have specific functions.
Guiding Question	Why are the particular parts of an organism important?
Content Objective	I can use my five senses to gather information about a variety of seeds. (Practice 6, 2-LS2-3 MA)
Language Objective	I can draw, write, and talk about my observations of the parts of a seed. (SL.1.2, SL.1.2.b)
Vocabulary	cotyledon: the food supply of the seed, also called the endosperm embryo: a tiny plant inside the seed germinate: to begin to develop into a plant seed coat: a cover that protects the seed
Materials and Preparation	Read the background information in Science in Unit 4 (Unit Introduction). <ul style="list-style-type: none">● About Plants chart, from Week 1 Mark those ideas and questions that pertain to the structure of seeds, if any.● a variety of seeds that have been soaking● a few of each seed, unsoaked, for comparison● magnifiers, one for each child● Science and Engineering packets● writing and drawing tools● Inside a Seed slides● projector and screen● chart paper Hang the paper next to the space for projection.● markers of different colors

<p>Opening 4 minutes</p>	<p><i>Today we will investigate the parts of a seed. Let's take a look at some of the ideas and questions you already have about this.</i></p> <p>Refer to the ideas and questions marked on the About Plants chart.</p> <p><i>What do you think might be inside a seed to allow it to germinate, or begin growing?</i></p> <p>Show the magnifiers and different kinds of soaked and unsoaked seeds. Use a bean seed to demonstrate how to open a seed, narrating each action.</p> <p><i>When you open a seed, you must do it very carefully, to keep the seed parts intact, or not damaged. Begin with a bean seed. First, remove the seed coat, the outside of the seed. Then use your fingernails to pull the seed in half. Even though the seeds are softer from soaking overnight, this might be tricky.</i></p> <p><i>What will you find? Remember to be extremely careful as you work so that the seed parts are not damaged and you can see as much as possible.</i></p> <p><i>For each seed you open, record your observations. What do you see? What does the seed smell like? What does it feel like? Have you ever tasted this kind of seed? [Note that children should not taste these seeds.]</i></p> <p><i>When you have looked at and recorded observations for each of the different seeds, write some questions you have about what you find.</i></p> <p>Refer to the corresponding page in the Science and Engineering packet.</p>
<p>Investigation 14 minutes</p>	<p>Children explore what is inside each kind of seed, looking with magnifiers, talking about what they see, smell, and feel, and whether they have tasted them before. They then record their observations and questions. Circulate as children work, encouraging them to use precise language to describe what they find. Encourage them to open up as many seeds as possible and to compare them.</p> <p>Children might not see the embryo or know what they are looking at. In this case, point out the embryo asking, <i>What do you notice here?</i></p>
<p>Discussion 10 minutes</p>	<p>Bring children back to the whole group with their packets and a pencil.</p> <p><i>Let's see if we can draw together what you found. We'll find out if you all noticed the same things.</i></p>

	<p>At the top of the chart paper, write the question, What’s inside a seed?</p> <p>Then, invite children to contribute to a large, collaborative diagram of the inside of the bean seed, referring to the observational drawings they have just completed in their packets, and each adding or narrating one part and adding to their classmates’ efforts.</p> <p>Projecting alongside the class diagram, show the slides. Referring to slide 2, confirm or revise the diagram. Have children refer to their own drawings.</p> <p><i>Did you see all of the same parts in all of the seeds you opened and observed?</i></p> <p><i>What is the same and different?</i></p> <p>Show slides 3, 4, and 5 to support this conversation.</p> <p><i>Let’s learn about the role of each part of the seed.</i></p> <p>Label the large diagram as each part is described.</p> <p><i>The seed coat protects the seed until it is germinated.</i></p> <p><i>The embryo is the tiny plant inside the seed that is ready to sprout once the conditions are right for it to grow.</i></p> <p><i>The cotyledon, sometimes called the endosperm, stores the food the embryo needs to grow.</i></p> <p>Give children a few minutes to draw a large seed diagram on the next page of their packets (The Parts of a Bean Seed), and add these labels.</p> <p><i>Let’s think about the seeds you germinated. What do you think has happened to the embryo?</i></p> <p>Harvest children’s ideas. Address misconceptions that the children will not be able to test themselves, and suggest ways to test those they can. Add lingering questions to the chart.</p> <p>Think, Pair, Share to integrate children’s observations, experiences, and discussions so far:</p> <p><i>What makes a seed germinate?</i></p> <p><i>What happens when it germinates?</i></p>
<p>Closing 2 minutes</p>	<p><i>Today we looked at what is inside a seed. You may have noticed the same parts in all of the seeds. In some seeds you were able to see the different parts more clearly than in others.</i></p> <p>Turn children’s attention to the self-assessment questions at the bottom of the page in their packets. Read the questions, and invite them to reflect</p>

	quietly or turn and talk with a partner.
Standards and Practices	<p>SL.1.2 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>SL.1.2.b Build on others' talk in conversations by linking their comments to the remarks of others.</p> <p>2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p>
Ongoing assessment	<p>Reflect on the class discussions.</p> <p>What language do children use to describe what they find inside a seed?</p> <p>Are children integrating the information discussed in class and their observations thus far?</p> <p>How do children demonstrate understanding about the parts of seeds and their functions?</p>

Notes

Inside a Seed

Science and Engineering Week 2, Lesson 2

Inside a
bean seed



Inside a pumpkin seed



Inside a pea seed

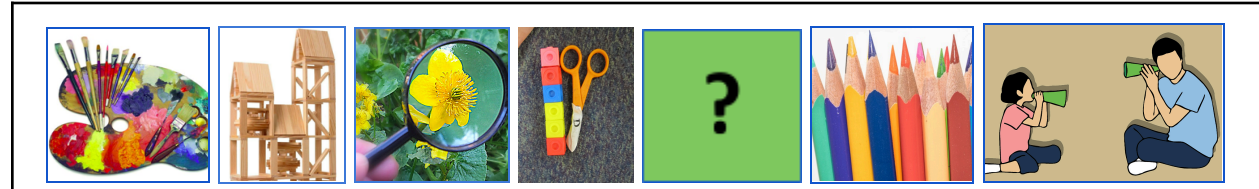


Inside a
corn seed



Unit 4: The Power of Pollinators

WEEK 2 Studios







Exploring Seeds and Plants (continued)

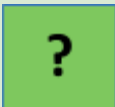

Most activities continue from Week 1: Children interact with ideas about seeds and plants, drawing on their own experiences, emerging ideas, and content vocabulary. In the Discovery Studio, children continue observations.

<p>Big Ideas</p>	<p>Organisms in an ecosystem are interdependent. Pollination is a result of animal behavior. The parts of an organism have specific functions.</p>
<p>Weekly Question</p>	<p>What do plants need to reproduce?</p>
<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● Parts of a Flower poster ● new studios prompts Cut apart and replace studios prompts. ● Unit 4 Observation Sheet <p><u>For the Art, Building, Research, and Writing & Storytelling Studios:</u></p> <ul style="list-style-type: none"> ● Replenish materials from Week 1, as needed. Add additional materials children have identified. <p><u>For the Math Studio:</u></p> <ul style="list-style-type: none"> ● paper clips Each partnership needs 2 paper clips. ● two-color counters Each partnership needs 25 counters. ● Five in a Row Addition and Subtraction gameboard ● white board ● white board markers <p><u>For the Discovery Studio:</u></p> <ul style="list-style-type: none"> ● Science and Engineering packets ● pencils and colored pencils

	<ul style="list-style-type: none"> ● erasers ● magnifiers ● additional planting containers ● soil ● craft sticks and marker, for labeling plants <p>Select samples of work from Week 1 to use in a brief Opening meeting.</p> <p>Decide which studios need particular attention in the opening, and prepare those studios bins for the meeting, along with the Opening Basket.</p> <p>Have sufficient copies of the Observation Sheet on clipboards.</p> <p>Decide which day(s) to host a Thinking and Feedback meeting, and plan Studios time accordingly.</p>
Opening	<p><i>This week we will continue the work you started last week in Studios. Here are some examples of what your classmates have been up to...</i></p> <p>Share selected examples of children’s work.</p> <p><i>In the Discovery Studio you’ll continue your careful observations and observational drawings.</i></p>
Facilitation	<p>Circulate through studios and check in with children about what they are pursuing. Refer to the Weekly Question and to studio-specific prompts and resources.</p> <p>Direct children’s attention to each other’s work. Encourage them to ask each other for help and collaboration.</p> <p>Identify a piece of work for use during Thinking and Feedback and/or for planning purposes.</p>

<p style="text-align: center;">Art</p> 	<p>Collage inspired by <i>Cuckoo</i> and Mexican folk art <i>Continues from Week 1</i></p> <p><u>Content Objective:</u> I can create artwork inspired by the text <i>Cuckoo</i>, by Lois Ehlert.</p> <p><u>Ongoing Assessment:</u> How do children use the materials? What connections do they make to emerging topic understandings?</p>
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<p>Building</p> 	<p>Building Flowers <i>Continues from Week 1</i> <u>Content Objective:</u> I can represent the parts of a flower.</p> <p><u>Ongoing Assessment:</u> How are children understanding the parts of a flower? How do they move between a two-dimensional representation and the three-dimensional representations they are building?</p>
<p>Discovery</p> 	<p>Ongoing Observations and Observational Recordings of Plants <i>Continues from Week 1 and throughout the unit</i> <u>Content Objective:</u> I can make close observations, ask questions, and write notes about seeds as they begin to germinate.</p> <p><u>Process:</u> Children continue from Science Lessons to observe the seeds growing in plastic bags and in containers. Children might bring seeds from home to start in the classroom.</p> <p><u>Facilitation:</u> Encourage children to make very careful observations and precise, detailed drawings. Encourage them to compare what they notice from plant to plant. <i>What’s happening here?</i> <i>Do all seeds germinate and grow in the same ways?</i> <i>What are you wondering about these plants or about other kinds of plants and seeds?</i> <i>How can you best represent what you observe?</i></p> <p><u>Ongoing Assessment:</u> Continually review children’s entries in their packets. Use this information to fuel conversations with individual children, small groups, and the whole class.</p>
<p>Math</p> 	<p>Five in a Row <u>Objective:</u> I can make strategic choices about numbers to add/subtract to reach numbers that will create 5 in a row on a gameboard.</p> <p><u>Process/Directions:</u></p> <ul style="list-style-type: none"> • Children will play in partnerships. Each needs 25 counters, 2 paper clips, and a gameboard. • Partner A chooses two numbers from the grey rows and

	<p>places a paper clip on each number. Partner A adds the numbers and places a counter on the sum.</p> <ul style="list-style-type: none"> ● Partner B moves one of the paper clips to a different number in the grey rows, adds the numbers, and places a counter on the sum. ● The partners take turns moving one paper clip, finding the sum, and covering it with a counter. ● Children might use white boards/markers to show or write out their thinking process. ● The partner who covers 5 squares in a row wins. <p><u>Facilitation:</u> <i>How are you making decisions about which numbers to add? What will be your next move? Why? How can you hit this number?</i></p>
<p>Research</p> 	<p>Continuing Report Research <i>Continues from Week 1 and from Writing lessons</i></p> <p><u>Content Objective:</u> I can paraphrase information found in texts to answer research questions.</p> <p><u>Process:</u> Children choose another plant to research, using research materials provided in the previous week.</p> <p><u>Facilitation:</u> Support children’s ongoing research, and encourage them to support each other.</p> <p><u>Ongoing Assessment:</u> Review children’s research materials and Report Notes packets. Do they underline important information? Is the information related to the subtopic? Do they write notes in their own words?</p>
<p>Writing and Storytelling</p> 	<p>Telling Stories Inspired by <i>Cuckoo</i> <i>Continues from Week 1</i></p> <p><u>Content Objective:</u> I can tell, act out, and write and draw stories about real or imagined events, based on a text.</p> <p><u>Ongoing Assessment:</u> What kinds of stories do children tell? How do children represent elements of the book?</p>

What narrative structures do children use?

Standards	<p>Some standards addressed will depend on the studios in which children work. Some possibilities include work towards those listed in the Studios Introduction (Part 1) and the following studio-specific standards.</p> <p><u>Art:</u> R.5.2.a Retell texts, including details about who, what, when, where, how, and why; demonstrate understanding of the theme.</p> <p><u>Building:</u> 2-LS2-3(MA). Develop and use models to compare how plants and animals depend on their surroundings and other living things to meet their needs in the places they live.</p> <p><u>Discovery:</u> W.3 Routinely produce a variety of clear and coherent writing in which the development, organization, and style are appropriate to the task, audience, and purpose.</p> <p><u>Math:</u> QR.C.6 Use place value understanding and properties of operations to add and subtract. 2.NBT.B.7</p> <p><u>Research:</u> SL.2.2.a Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. W.1.2.a Investigate questions by participating in shared research and writing projects. W.1.2.b Gather information from provided sources and/or recall information from experiences in order to answer questions.</p> <p><u>Writing and Storytelling:</u> R.5.2.a Retell texts, including details about who, what, when, where, how, and why; demonstrate understanding of the theme. SL.3.2.a Describe people, places, and things, tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.</p>
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Art Studio

While you are working, think about:

What is inspiring me?

What is the story I am telling through my artwork? Who are the characters?

What do these images of Mexican artwork make me think about Mexico?

Building Studio

While you are working, think about:

What are the important parts of the flower to represent?

Why is each part important?

What does this help me understand about pollination?

Discovery Studio

While you are working, think about:

What's happening here?

Do all seeds germinate and grow in the same ways?

What am I wondering about these plants or about other kinds of plants and seeds?

How can I best represent what I observe?

Math Studio

While you are working, think about:

How are you making decisions about which numbers to add?

What will be your next move? Why?

How can you hit this number?

Research Studio

While you are working, think about:

What information is important here?

What subtopic am I writing about? Is this information related to that subtopic?

How can I say this in my own words?

Writing and Storytelling Studio

While you are working, think about:

What inspires this story? What does it remind us of?

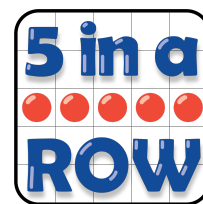
What is the lesson in this story?

What feelings do we want the audience to have as they watch our story?

Five in a Row Addition and Subtraction Stage 8 Gameboard

Directions:

- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.



918	935	335	401	313
446	407	585	929	709
352	613	440	591	754
715	748	630	896	429
346	890	737	307	624

45	67	78	84	39
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670	362	851	546	268
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Unit 4: The Power of Pollinators

WEEK 2 Day 1

Writing Report
Individual Construction: Research

Content Objective	I can paraphrase information found in texts to answer research questions. (W.1.2.a, W.1.2.b, W.3.2)
Language Objective	I can recount key details from the text that relate to the subtopic. (SL.2.2.a)
Vocabulary	information: facts or details about a subject report: a genre of writing whose purpose is to organize information about a topic
Materials and Preparation	<ul style="list-style-type: none"> ● “Boston Local Pollinators” Research slides ● “Boston Local Pollinators” brochures, one color copy for each group and one black and white copy for each child ● writing tools ● writing folders, including research materials and Report Notes packets ● other research resources: Parts of a Flower poster; <i>From Seed to Plant</i>, Gail Gibbons
Opening 1 minute	<i>Today you will use a new research source, the “Boston Local Pollinators” brochure.</i> Hold up a color brochure.
Individual Construction 28 minutes	<i>This brochure is similar to the other brochure we read. This one is called “Boston Local Pollinators.” It contains information about pollinators and the plants they pollinate.</i>
slide 2	<i>When you research today, you will begin by looking for information about your plant. You may find that your plant shows up in more than one section of the brochure.</i>
slide 3	<i>Next you will go back to your Report Notes packet. Read the</i>

	<i>Research Questions. Then go back to the brochure and reread the sections about your plant. Underline the parts of the text that answer the Research Questions.</i>
slide 4	<i>Then say that information out loud, in your own words.</i>
slide 5	<i>In your Report Notes packet, write down the information you said, next to the Research Questions you are answering.</i>
	Send the children to sit in small groups according to their chosen plants, with writing tools, Report Notes packets, and “Boston Local Pollinators” brochures. Children may work collaboratively to identify and discuss the information but should record their own notes. As they work, circulate to support them. Guide children to consult additional research resources as needed.
Closing 1 minute	<i>Today you continued researching for your reports. Tomorrow we will learn about one language feature of reports, and you will have a chance to complete your research.</i>
Standards	<p>W.1.2.a Investigate questions by participating in shared research and writing projects.</p> <p>W.1.2.b Gather information from provided sources and/or recall information from experiences in order to answer questions.</p> <p>W.3.2 Use a combination of drawing and writing to communicate a topic with a beginning, middle (including details), and an end.</p> <p>SL.2.2.a Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.</p>
Ongoing assessment	<p>After the lesson, review children’s brochures and Report Notes.</p> <p>Do children underline important information?</p> <p>Is the information related to the research question?</p> <p>Do they write notes in their own words?</p>

Notes

“Boston Local Pollinators” Research

Writing Unit 4 Week 2 Day 1

Report Research: Step 1

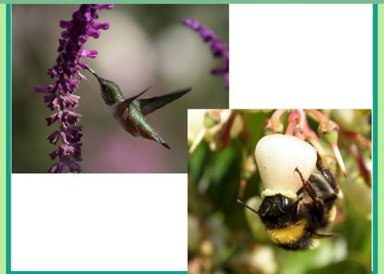
Look for information about your plant. You might find it with more than one pollinator!

Read all of the information about your plant.

Boston Local Pollinators



Butterflies,
Hummingbirds,
and Bees



Report Research: Step 2

Read the Research Questions again.

Re-read the section(s) of the brochure about your plant.

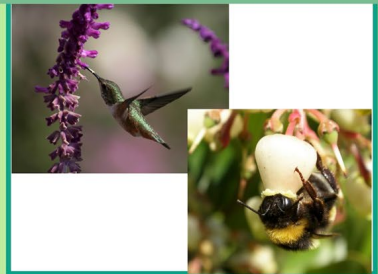
Identify the parts of the text that answer the Research Questions.

Name: _____		Date: _____
Report Notes		
Plant: _____		
Growing Conditions		
Research Questions:	What I'm learning	
When should seeds be planted?		
Where should seeds be planted?		
How much sun does this plant need?		
How much water does this plant need?		

Boston Local Pollinators



Butterflies, Hummingbirds, and Bees



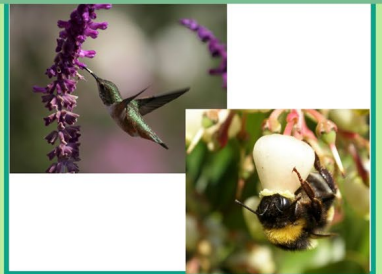
Report Research: Step 3

Say the information in your own words.

Boston Local Pollinators



Butterflies,
Hummingbirds,
and Bees



Report Research: Step 4

Write your notes in your Report Notes, next to the question(s) you are answering.

Name: _____		Date: _____
Report Notes		
Plant: _____		
Growing Conditions		
Research Questions:	What I'm learning	
When should seeds be planted?		
Where should seeds be planted?		
How much sun does this plant need?		
How much water does this plant need?		

Unit 4: The Power of Pollinators

WEEK 2 Day 2

Writing Report

Deconstruction: The Third Person
Individual Construction: Research

Content Objectives	I can identify sentences in the third person. (W.3.2) I can paraphrase information found in texts to answer research questions. (W.1.2.a, W.1.2.b, W.3.2)
Language Objective	I can recount key details from the text that relate to the subtopic. (SL.2.2.a)
Vocabulary	information: facts or details about a subject report: a genre of writing whose purpose is to organize information about a topic the third person: writing that uses pronouns like <i>he, she, it, or they</i>
Materials and Preparation	<ul style="list-style-type: none">• The Third Person and Research slides• research resources from previous lessons• writing tools• writing folders, including research materials and Report Notes packets
Opening 1 minute	<i>Today we will start learning about the language of reports, and you will complete your research.</i>
Deconstruction 10 minutes slide 2	<i>People who write reports become experts in the topics they are writing about. One way to show that they are experts is by writing in the third person.</i> <i>When writers use the third person, they do not use words like “I” and “you.”</i> <i>On this page, Sue Unstead writes all of the sentences in the third person. She says “a bee” and “it.” The whole page gives information about bees.</i>

slide 3	<p><i>Let's practice identifying sentences in the third person. Remember, a sentence in the third person will not include words like "I" and "you."</i></p> <p><i>Let's read this first sentence together. If the sentence is written in the third person, put up a thumb. If it is not written in the third person, don't put up a thumb.</i></p> <p>Read the sentence together and allow children time to put up fingers or not. Then click the animation and read the rationale for whether or not the sentence is in the third person.</p>
slides 4-6	<p>Repeat the process above for each sentence.</p> <p><i>As you continue to take research notes, and as you begin to write your reports later this week, you will use the third person to show you are an expert about your plant!</i></p>
<p>Individual Construction 18 minutes</p> <p>slide 5</p>	<p><i>Today is the last research day. Start by reviewing your Report Notes. Which questions do you still need to answer?</i></p> <p><i>Based on the Research Question(s) you need to answer, decide which research resources you need to review.</i></p>
slide 6	<p><i>Go back to the research resource and reread the sections about your plant. Underline the parts of the text that answer the Research Questions.</i></p>
slide 7	<p><i>Say the information in your own words.</i></p>
slide 8	<p><i>In your Report Notes packet, write down the information you said, next to the Research Questions you are answering.</i></p>
	<p>Send the children to sit in small groups according to their chosen plants, with writing tools, Report Notes packets, and research resources. Children may work collaboratively to identify and discuss the information but should record their own notes. As they work, circulate to support them.</p>
<p>Closing 1 minute</p>	<p><i>Today you completed your report research and learned about the third person. Tomorrow you will continue learning about the language of report.</i></p>
Standards	<p>W.1.2.a Investigate questions by participating in shared research and writing projects.</p> <p>W.1.2.b Gather information from provided sources and/or recall</p>

	<p>information from experiences in order to answer questions.</p> <p>W.3.2 Use a combination of drawing and writing to communicate a topic with a beginning, middle (including details), and an end.</p> <p>SL.2.2.a Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.</p>
<p>Ongoing assessment</p>	<p>Reflect on the class discussion.</p> <ul style="list-style-type: none"> Do children accurately identify sentences in the third person? What rationales do they give for their choices? What are their confusions? <p>After the lesson, review children’s research resources and Report Notes.</p> <ul style="list-style-type: none"> Do children underline important information? Is the information related to the research question? Do they write notes in their own words?

Notes

The Third Person and Research

Writing Unit 4 Week 2 Day 2

Chapter 1



What is a Bee?

A bee is an insect.
Like all insects, it has
six legs. It has a body
made up of three parts.



Bees are insects.

Yes! This sentence is in the third person. It gives information about bees.

I like bees.

No. This sentence talks about the writer and not just bees.

You know a lot about bees!

No. This sentence talks about the audience and not
just bees.

Bees are pollinators.

Yes! This sentence is in the third person. It gives information about bees.

Report Research: Step 1

Based on the Research Question(s) you need to answer, decide which research resources below you need to review.



Plant and Flower Images:

cardinal flower, crocus, highbush blueberry, summer squash

Report Research: Step 2

Re-read the section(s) about your plant.

Underline the parts of the text that answer the Research Questions.

Name: _____		Date: _____
Report Notes		
Plant: _____		
Growing Conditions		
Research Questions:	What I'm learning	
When should seeds be planted?		
Where should seeds be planted?		
How much sun does this plant need?		
How much water does this plant need?		

Report Research: Step 3

Say the information in your own words.



Plant and Flower Images:

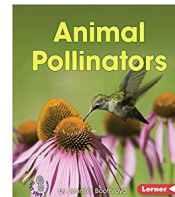
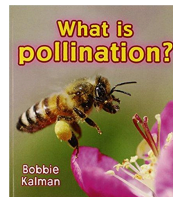
cardinal flower, crocus, highbush blueberry, summer squash

Report Research: Step 4

Write your notes in your Report Notes, next to the question(s) you are answering.

Name: _____		Date: _____
Report Notes		
Plant: _____		
Growing Conditions		
Research Questions:	What I'm learning	
When should seeds be planted?		
Where should seeds be planted?		
How much sun does this plant need?		
How much water does this plant need?		

Unit 4: The Power of Pollinators



WEEK 2 Day 3

Writing Report

Deconstruction: Nouns and Adjectives

Content Objectives	I can identify the general nouns and adjectives in reports. (W.2.2) I can use research to write information about a plant. (W.2.2, W.2.4, W.2.8)
Language Objective	I can write a sentence in the third person that includes general nouns and adjectives. (L.2.1b, L.2.1c)
Vocabulary	<p>adjective: a word or phrase used to describe a person, place, thing, or idea</p> <p>general: naming a group; not specific</p> <p>information: facts or details about a subject</p> <p>noun: a word that names a person, place, thing, or idea</p> <p>report: a genre of writing whose purpose is to organize information about a topic</p> <p>the third person: writing that uses pronouns like <i>he, she, it, or they</i></p>
Materials and Preparation	<ul style="list-style-type: none"> ● Nouns and Adjectives slides ● Report anchor chart images: language, cut apart ● Report anchor chart, from Unit 2, Week 4, Day 3 ● writing tools ● writing notebooks or a blank sheet of paper for each child ● writing folders, including Report Notes packets ● Report Observation Tool, one copy for each child
Opening 1 minute	<i>Today we will continue to learn about the language of report.</i>
Deconstruction 18 minutes slide 2	<p><i>When we wrote explanations, we wrote using general nouns, which talk about a whole group of things, rather than one thing in particular. Many reports also use general nouns.</i></p> <p><i>In this report Jennifer Boothroyd uses the general noun “animal pollinators” to talk about groups of animal pollinators. It is plural.</i></p>

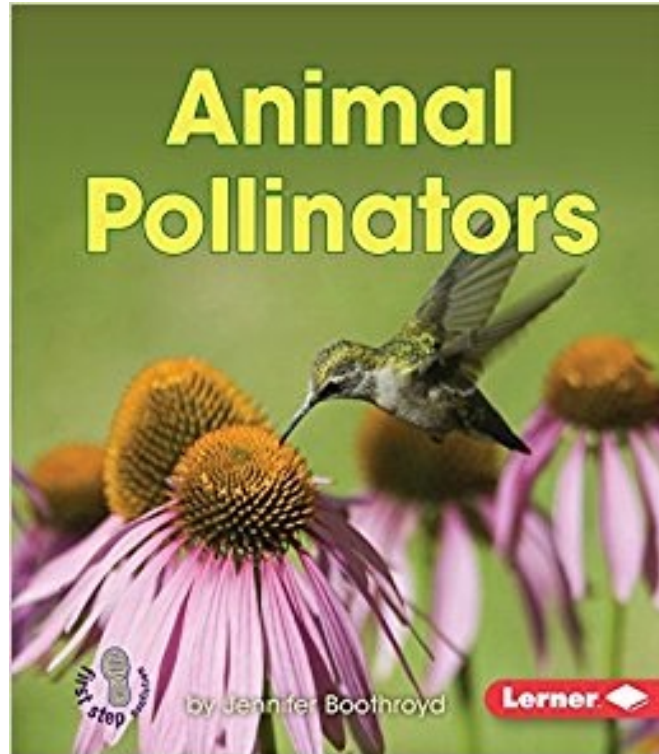
	<i>The -s at the end makes it a general noun.</i>
slide 3	<i>Let’s read these pages from the book together. As we read, listen for general nouns.</i> After reading, harvest the children’s ideas.
slide 4	<i>“Animals” is a general noun. It names all animals, not one in particular.</i>
slide 5	<i>Now let’s read these pages together. Again, as we read, listen for general nouns.</i> After reading, harvest the children’s ideas.
slide 6	<i>“Lizards” is a general noun. It refers to a group of small lizards that pollinate, not the specific lizard in the photograph.</i> <i>“Doves” is a general noun, because it names all doves, not that dove in particular.</i> <i>The reports you write will also use general nouns. If you are writing about cardinal flowers, you are writing about the whole group of cardinal flowers, not one particular flower.</i>
slide 7	<i>Another important language feature of reports is adjectives. We learned about the adjectives in reports when we wrote captions during Unit 2. Let’s review adjectives by looking closely at pages from What is pollination?</i>
slide 8	<i>Let’s read a sentence from this page. Some of the words are covered up.</i> Read the sentence together. <i>This sentence gives us some information.</i>
slide 9	<i>Now let’s read the whole sentence.</i> <i>This gives us a lot more information! The parts that give more information are called adjectives.</i>
slide 10	Read the information on the slide to review adjectives.
slide 11	<i>In the sentence we read earlier, “food” is one of the nouns. The adjective “important” describes what the food is like. “For bees and other animals” is a phrase that describes whose food it is.</i>
slide 12	<i>Let’s read this sentence from Amazing Bees.</i>

	<i>Can you find the adjective? It describes the kind of bees.</i>
slide 13	<i>“Worker” is an adjective that describes what kind of bees.</i>
	<i>Let’s add information about the language of report to our anchor chart.</i> Add the language cards to the chart, with the adjectives card added in Unit 2.
Individual Construction 10 minutes slide 14	<i>Now you will practice writing using the language features of report. Review the notes you have been taking about your plant. Write at least one sentence that gives information about your plant. Use the third person to show that you are an expert who has researched that plant. Use general nouns to write about that type of plant. Include adjectives to pack information.</i> Send children to write with writing tools, notebooks or blank paper, and their writing folders. Encourage them to check in with each other and to resolve questions collaboratively. As they work, circulate to support them and to record observations on the Report Observation Tool.
Closing 1 minute	<i>Today we learned about the nouns and adjectives in reports, and you began using research to write. Tomorrow we will talk more about turning research into writing.</i>
Standards	W.2.2. Write informative/explanatory texts that introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. W.2.4. Produce writing in which the development and organization are appropriate to task, purpose, and audience. W.2.8. Recall information from experiences or gather information from provided sources to answer a question. L.2.1b. Use adjectives and adverbs in sentences and choose between them depending on what is to be modified. L.2.1c. Use collective nouns and frequently occurring irregular plural nouns.
Ongoing assessment	Reflect on the class discussion. Do children accurately identify the general nouns and adjectives? What do they understand about the function of general nouns and adjectives in report? What are their confusions? Review children’s work using the Report Observation Tool, focusing on Language.

Nouns and Adjectives

Writing Unit 4 Week 2 Day 3

Report Language: General Nouns



How Do Animals Pollinate?



Some animals drink **nectar** from flowers.



Nectar tastes sweet.

Animals get nectar with their tongues.

How Do Animals Pollinate?



Some **animals** drink **nectar** from flowers.



Nectar tastes sweet.

Animals get nectar with their tongues.



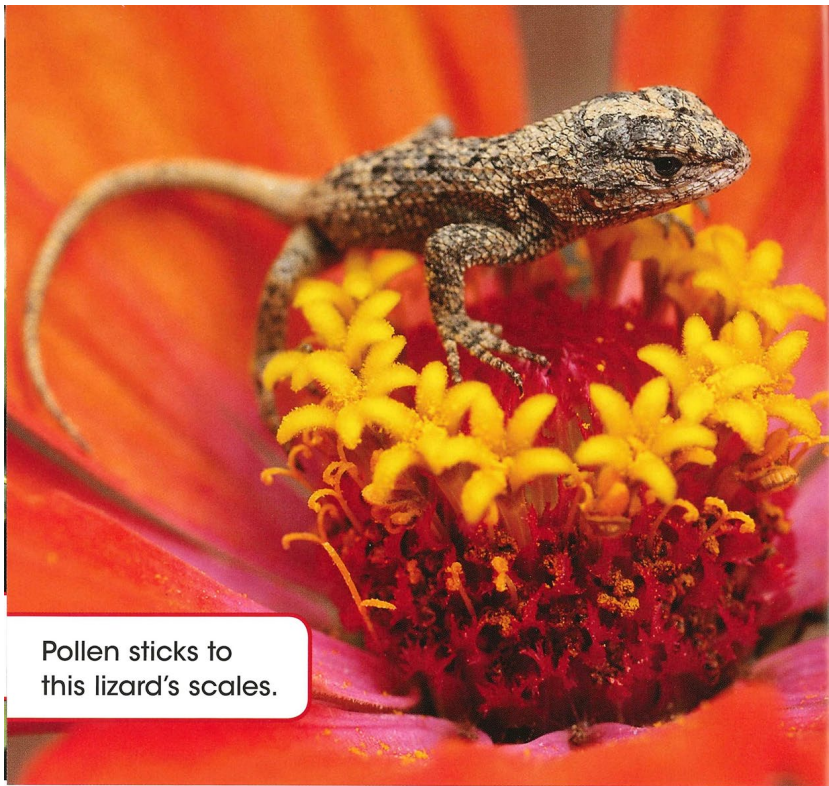
Pollen sticks to this lizard's scales.

Some small lizards pollinate flowers.



Pollen sticks to the dove's feathers.

Doves pollinate flowers.

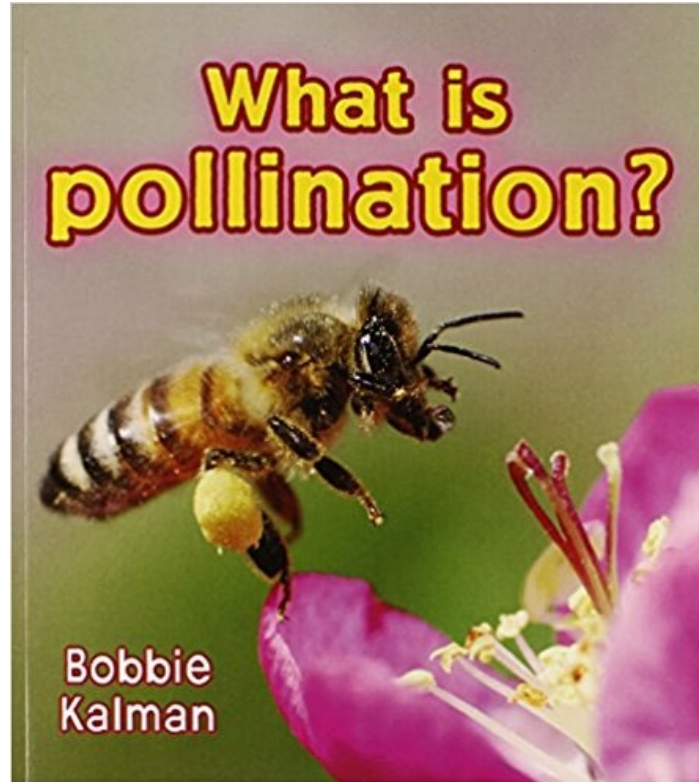


Some small **lizards** pollinate flowers.



Doves pollinate flowers.

Report Language: Adjectives



Pollen is

food

.

What is pollen?

Pollen is the yellow, white, or brown powder at the center of most flowers. Pollen is an important food for bees and some other animals.

The bee on the left is covered in pollen. Bees collect pollen in pollen sacs.



Pollen is an important food for bees and some other animals.

What is pollen?

Pollen is the yellow, white, or brown powder at the center of most flowers. Pollen is an important food for bees and some other animals.

The bee on the left is covered in pollen. Bees collect pollen in pollen sacs.



Remember, **adjectives** describe the nouns. They answer these questions:

Which ones? Whose?

How many?

What like?

What kind?

What is pollen?

Pollen is the yellow, white, or brown powder at the center of most flowers. Pollen is an important food for bees and some other animals.

The bee on the left is covered in pollen. Bees collect pollen in pollen sacs.



food

What like?

important

Which ones? Whose?

**for bees and some other
animals**

What is pollen?

Pollen is the yellow, white, or brown powder at the center of most flowers. Pollen is an important food for bees and some other animals.

The bee on the left is covered in pollen. Bees collect pollen in pollen sacs.



The worker bees are busy night and day.

Busy Bees

The worker bees are busy night and day. Some feed pollen to the baby bees (larvae). Some look after the Queen, feeding and grooming her. They make a special food called royal jelly for the Queen.



The **worker** bees are busy night and day.

bees

What kind?

worker

Busy Bees

The worker bees are busy night and day. Some feed pollen to the baby bees (larvae). Some look after the Queen, feeding and grooming her. They make a special food called royal jelly for the Queen.



Your turn!

1. Review your research notes.
2. Write one sentence that gives information about your plant.
3. Make sure you use the language of report.
 - a. Write in **the third person** to show that you are an expert.
 - b. Use **general nouns**.
 - c. Pack information into your sentence using at least one **adjective**.

Report anchor chart images

language

the third person



A bee is an insect.

general nouns



Animals get nectar with their tongues.

Report Observation Tool

Child's Name: _____

	Yes, date observed and notes	Not Yet, notes and next steps
Structure		
General Statement: introduces and classifies the topic of the report		
Subtopics: information is grouped into subtopics; subtopics are ordered logically		
Medium: Brochure		
Organization: general statement is at the beginning of the brochure; subtopics are arranged logically; subtopics are identified clearly, using headings; title is included on the cover		

	Yes, date observed and notes	Not Yet, notes and next steps
Medium: Brochure, continued		
Images: images are included to clarify and provide more information		
Language		
The Third Person: the third person is used to achieve a formal tone appropriate for the audience		
Nouns: general nouns are used, naming a group or class, rather than something specific		
Adjectives: words and prepositional phrases are used to describe the nouns; adjectives are packed into sentences		

Suggestions for Week 4 revisions, based on observations

A large, empty rectangular box with a thin black border, intended for writing suggestions for Week 4 revisions based on observations.

Unit 4: The Power of Pollinators

WEEK 2 Day 4

Writing Report

Deconstruction: Brochures

Joint Construction: Subtopics

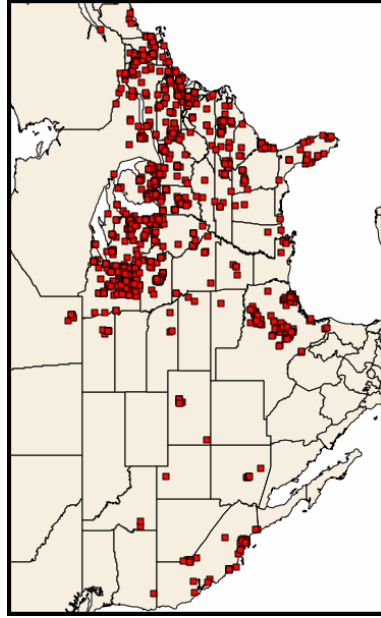
Content Objective	I can write a heading that gives the main idea of a paragraph. (W.1.2.a, W.1.2.b, W.3.2)
Language Objective	With a partner I can describe what I notice about brochures. (SL.1.2)
Vocabulary	heading: the title of a section of the text information: facts or details about a subject report: a genre of writing whose purpose is to organize information about a topic subtopic: a smaller part of the topic
Materials and Preparation	<ul style="list-style-type: none">● sample brochures, one for each pair● Yellow Lady-slipper slides, from Week 1, Day 3 Make a digital copy of the slides to edit as a class. Set up to project the slides on the whiteboard or on chart paper.● writing tools and surfaces● quarter sheets of scrap paper, one piece for each child
Opening 1 minute	<i>Today we will talk about turning research notes into paragraphs.</i>
Deconstruction 10 minutes	<p><i>When we publish our reports, we are going to write them in the form of brochures. Today with a partner, you will explore a brochure and discuss how the information is organized. Then we'll come back together to share what we noticed.</i></p> <p>Pass out brochures. Allow pairs about five minutes to explore the brochures and discuss how the information in brochures is organized. .</p>

	<p>Bring the class back together and harvest the children’s ideas. During the discussion, make sure to highlight the following features of brochures:</p> <ul style="list-style-type: none"> ● Brochures are folded, so people can focus on one section at a time. ● Each section gives information with images and words. ● Many sections have headings to tell the reader what that part is about.
<p>Joint Construction 18 minutes</p> <p>slide 7</p>	<p><i>Now that you have learned about the purpose, stages, and language of report and conducted research about a plant, you are ready to write your report.</i></p> <p><i>These are the steps you will take to use research to write subtopics.</i> Review the steps on the slide.</p>
<p>slide 5</p>	<p><i>Here is an example using the plant we researched together, Yellow Lady’s-slipper.</i></p> <p><i>First I reviewed my research notes.</i> Read the notes aloud.</p>
<p>slide 6</p>	<p><i>Then I turned my notes into a paragraph.</i></p> <p><i>Now I need to reread my paragraph to see if it makes sense. Read the paragraph silently. If there’s anything that doesn’t make sense, think about how to improve it.</i></p> <p>Allow the children one minute to read the paragraph silently. Then read the paragraph together. Harvest the children’s ideas and revise, if necessary.</p>
	<p><i>The information in this paragraph needs to be introduced. Often brochures introduce information using headings.</i></p> <p>Distribute writing tools, surfaces, and paper.</p> <p><i>Like you did for Amazing Bees, think about the main idea of this paragraph. On the paper, write a heading to introduce it.</i></p> <p>Allow the children several minutes to write headings. Then collect and review children’s ideas. Decide on a heading together and add it to the beginning of the paragraph.</p>
<p>Closing 1 minute</p>	<p><i>Tomorrow you will begin writing the subtopics for your reports.</i></p>
<p>Standards</p>	<p>W.1.2.a Investigate questions by participating in shared research and writing projects.</p> <p>W.1.2.b Gather information from provided sources and/or recall</p>

Join Our Network

People like you are monitoring monarchs all over the continent—start monitoring your milkweed patch now!

Long-term data from citizen scientists all over North America help to provide a more complete picture of the health of the monarch population.



Each dot represents a registered MLMP monitoring site. There are over 1200 registered sites throughout the United States, Mexico, and Canada.

Benefits of Monitoring

Collect data that will lead to a better understanding of monarchs and more effective conservation efforts.

Become familiar with the complex community of organisms that call milkweed home!

Watch your site change from the beginning of the season to the end, and from one season to the next.



Contact Us
info@mlmp.org
612.625.8304
University of Minnesota
2003 Upper Buford Cir.
135 Skok Hall
St. Paul, MN 55108
www.mlmp.org



On Facebook:
www.facebook.com/monarchsMLMP



On Twitter:
www.twitter.com/MLMPCitSci

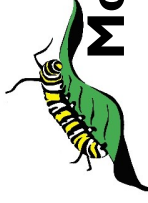


The Monarch SOS mobile app allows access to MLMP and monarch information while monitoring! Scan the QR code or visit www.naturedigger.com to learn more.

Made possible with support from the University of Minnesota Monarch Lab, University of Minnesota Extension, and the National Science Foundation.



UNIVERSITY OF MINNESOTA
EXTENSION



Monarch Larva Monitoring Project

Volunteers and scientists working together to understand monarch butterfly populations across North America

www.mlmp.org



Become a Monarch Monitor Today!

What is the MLMP?

The Monarch Larva Monitoring Project (MLMP) is a citizen science project involving volunteers from across North America. It was developed in 1996 by researchers at the University of Minnesota to collect long-term data on larval monarch populations and milkweed habitat.

The data that you collect will be used by researchers and conservation managers to protect monarchs and their habitat.



"I really enjoy the weekly connection to the sites I monitor, and find that monarchs are a real focus of my life during the time that they're in Minnesota each year."

-MLMP Volunteer

The overarching goal of the MLMP is to better understand how and why populations of breeding monarchs change over time.



How can I Participate?



Find a Site with Milkweed
Milkweed is the only plant on which monarchs lay their eggs. Monitor milkweed in your backyard, a nearby park, or anywhere that has milkweed!

Monitor
Visit your site alone or with a group once per week. We provide datasheets for you to record your observations.



Share Your Data
Submit observations online—www.mlmp.org—and send hard copies to scientists at the University of Minnesota where your data are analyzed.

Submit Anecdotal Observations
Anecdotal observations can be submitted by anyone. These can be sightings of monarchs (eggs, larvae, or adults), milkweed, or other interesting observations at locations not registered as MLMP monitoring sites.

Share Photos, Art, or Experiences
Sign up for our monthly e-newsletter to keep up with research and share your monitoring stories with the rest of the MLMP community. You can also submit photos, artwork, poetry, or even music on our website.



Who can be Involved?

Anyone can join the MLMP! Kids, adults, youth groups, or families—monitoring monarchs provides a fun learning experience for all. Join other volunteers from across North America to help us understand and protect monarch butterflies.



"My enthusiasm to monitor, and raise monarchs is contagious to family, friends, and visitors. Teaching young and young-at-heart about one of nature's magical wonders is truly rewarding."

-MLMP Volunteer and Trainer

Join a team of volunteers from across North America in an effort to understand monarch populations!

www.mlmp.org



NECTAR PLANTS

Nectar plants provide nourishment to adult pollinators.



Bee Balm (*Monarda*)

Blooms midsummer-fall. Grows 1-4 ft. tall with a 2 ft. spread. Used in containers, beds, borders. Deer resistant.

P \$\$\$



Blazing Stars (*Liatris*)

Blooms throughout summer. Grows 2-5 ft. tall with a 1-2 ft. spread. Used in containers, beds, borders.

P \$\$\$



Coneflowers (*Echinacea*)

Blooms summer-fall. Grows 2-4 ft. tall with a 1-2 ft. spread. Used in containers, beds, borders.

P \$\$\$



Cosmos (*Cosmos*)

Blooms summer-fall. Grows 2-5 ft. tall with a 1-2 ft. spread. Used in containers, beds, borders.

A \$



Goldenrod (*Solidago*)

Blooms summer-fall. Grows 2 in.-6 ft. tall with an 8 in.-3 ft. spread. Used in containers, beds, borders, slopes.

P \$\$\$



Ironweed (*Vernonia*)

Blooms summer-fall. Grows 2-8 ft. tall with a 2-3 ft. spread, depending on variety. Used in containers, beds, borders.

P \$\$\$



Joe-Pye Weed (*Eutrochium*)

Blooms late summer. Grows 2-6 ft. tall with a 2-4 ft. spread. Used in containers, beds, borders, ground cover. Deer resistant.

P \$\$\$



Lantana (*Lantana*)

Blooms summer-fall. Grows 4 ft. tall with a 4 ft. spread. Used in containers, beds, borders, slopes, ground cover. Deer resistant.

A \$



Rugosa Rose (*Rosa rugosa*)

Blooms late spring-early summer. Grows 4-8 ft. tall with a 4-6 ft. spread. Used in containers, beds, borders. Deer resistant.

P \$\$\$



Zinnias (*Zinnia*)

Blooms throughout summer. Grows 1-4 ft. tall with a 1 ft. spread. Used in containers, beds, borders. Deer resistant.

A \$

Planting Your Garden



Plant. Grow. Fly.

BLANK PARK ZOO



BLANK PARK ZOO



wild end gardens.



REIMAN GARDENS
IOWA STATE UNIVERSITY



IOWA'S WILDEST ADVENTURE

Ready to Get Started?

To register your garden, visit us online at plantgrowfly.com.

E: plantgrowfly@blankparkzoo.org

P: 515-974-2612

P Plant is native to the Upper Midwest. **P** Plant is a perennial. **A** Plant is an annual.

For a full list of our partners, visit blankparkzoo.com.

Photos courtesy of Reiman Gardens & UNI Tallgrass Prairie Center.



From the Ground Up

First, consider your space.

Your garden can be as big as your backyard or as small as a single pot. Every garden is important and no effort is too small! To qualify as an official Plant.Grow.Fly. garden, be sure to include at least one host plant and one nectar plant from our list. When choosing where to plant your garden, favor sunny, wind-sheltered areas, as pollinators and their plants need full sunlight for at least six hours per day.

Next, choose your plants.

With the help of experts at Iowa State University's Reiman Gardens, we have developed this list of host and nectar plants that support the butterfly species of the Upper Midwest. Most of these plants are native to the region, making them easier to maintain and better adapted to our climate. The best gardens combine both nectar and host plants, encouraging pollinators to spend more time in your garden!

Start planting!

Butterflies are attracted to large splashes of color in the landscape. Planting groups of 3-5 of the same plant is important when creating these color splashes. Purchase plants of different heights, creating tiers within your garden. Choose plants with varying blooming times to provide resources throughout the entire season. See our sample garden plans on our website.

Grow green.

Make informed decisions when purchasing your plants. Ask the greenhouse if their plants are grown locally and if herbicides or pesticides have been applied. Native and non-hybrid cultivars are preferred. We want your garden to be a safe and bountiful place for pollinators to reproduce and collect nutrients.

The birds and the bees.

While your garden will be a sanctuary for butterflies, it will also help other local wildlife such as bees, birds, and mammals by providing more high-quality habitats!

For more information on planting your garden and finding seeds or plants, visit plantgrowfly.com.

HOST PLANTS

Host plants provide a site for butterflies to lay eggs and serve as food for growing caterpillars.



Pussytoes (*Antennaria*)
Blooms April-June. Grows up to 1 ft. tall with a ¾-1½ ft. spread. Low maintenance ground cover. Host to American Lady. **Ⓝ P \$\$\$**



Asters (*Symphyotrichum*)
Blooms in fall. Grows 1-5 ft. with a 1-4 ft. spread. Used in containers and beds. Host to Pearl Crescent and Silvery Checkerspot. **Ⓝ P \$\$\$**



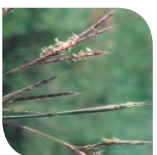
False Indigo (*Baptisia*)
Blooms late spring. Grows 2-4 ft. tall with a 2-4 ft. spread. Used in containers and beds. Host to Silver-Spotted Skipper and Wild Indigo Duskywing. **Ⓝ P \$\$\$**



Lupine (*Lupinus*)
Blooms early to midsummer. Grows 2-3 ft. tall with a 1-2 ft. spread. Used in containers, beds, and on slopes. Deer resistant. Host to Eastern Tailed Blue and Gray Hairstreak. **Ⓝ P \$\$\$**



Milkweed (*Asclepias*)
Blooms and grows throughout summer. Grows 2-4 ft. tall with a 2-3 ft. spread. Used in containers and beds. Deer resistant. Host to Monarch. **Ⓝ P \$\$\$**



Native Grasses
Host to Wood Nymph, Northern Wood Saur, Northern Peary Eye, Crossline Skipper, Delaware Skipper, Least Skipper, Little Glasswing, Sachem, Northern Broken Dash, Peck's Skipper. **Ⓝ P \$\$\$**



Violets (*Viola*)
Blooms spring, fall, winter. Grows 1-12 in. tall with a 6 in. spread. Used in containers, beds, and groundcover. Deer resistant. Host to Great Spangled Fritillary, Regal Fritillary and Variegated Fritillary. **Ⓝ P \$\$\$**



New Jersey Tea (*Ceanothus americanus*) Shrub. Blooms May-July. Grows 2-4 ft. tall with a 3-5 ft. spread. Host to Spring Azure, Summer Azure and Mottled Duskywing. **Ⓝ P \$\$\$**



Herbs: Dill, Fennel, Curry Parsley Annual or perennial depending on variety. Blooms late spring-summer. Used in containers and beds. Host to Black Swallowtail. **\$**



Purple Prairie Clover, (*Dalea purpurea*)
Herbaceous perennial. Grows 1-3 ft. with a 1-1½ ft. spread. Blooms June-August. Used in containers and beds. Host for Southern Dogface, Reakirt's Blue. **Ⓝ P \$\$\$**



Black-Eyed Susan (*Rudbeckia*) Annual and perennial varieties. Blooms midsummer-fall. Grows 2-10 ft. tall with a 1-3 ft. spread, depending on variety. Used in containers and beds. Deer resistant. Host to Silvery Checkerspot. **Ⓝ \$\$\$**



Sunflowers (*Helianthus*)
Annual and perennial varieties. Blooms throughout the summer. Grows 3-10 ft. tall with a 3-4 ft. spread. Used in beds and borders. Host to Painted Lady and Silvery Checkerspot. **Ⓝ \$**



Penstemon (*Penstemon*)
Annual and perennial varieties. Blooms spring-late summer. Grows 8 in.-6 ft. tall with a 8-20 in. spread, depending on variety. Used in containers, beds, slopes and as ground cover. Host to Buckeye. **Ⓝ \$\$\$**

Flip to back to see List of Nectar Plants.



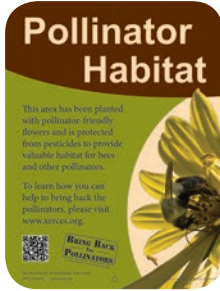
Ⓝ Plant is native to the Upper Midwest. P Plant is a perennial.

2 Install a Pollinator Habitat Sign

- Please send me pollinator habitat sign(s) at \$25 each (including S&H to U.S. addresses).

For international rates, visit www.xerces.org.

9" x 12"; hard-wearing aluminum. Hardware for hanging not included.



Shipping Address

Name _____

Street _____

City/ State/ Zip _____

Phone or Email _____

- Check enclosed (U.S. checks only, payable to the Xerces Society); or,

- Please charge my VISA/MC/DIS for \$ _____
All information below is required to process the credit card.

Number _____

Expiration Date ____/____

Signed _____

3 Spread the word!

Go online to find more information about how to help pollinators, and for fact sheets that you can download and share, available at: www.BringBackthePollinators.org



Three Steps You Can Take to Bring Back the Pollinators



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WHY Bees and other pollinators are essential to a healthy environment, yet are declining in many places. Eighty-five percent of flowering plants, including many crops, need a pollinator to reproduce. As much as one-third of our food supply relies on the work of bees. Beyond farms, pollinators are a vital part of our ecosystems.

ABOUT The **Bring Back the Pollinators** campaign is based on four simple principles: grow pollinator-friendly flowers, protect and provide bee nests and caterpillar host plants, avoid pesticides, and spread the word. Why these four principles?

1. Flowers provide the nectar and pollen resources that feed pollinators.
2. A home for growing pollinators is essential. You can leave patches of bare ground and brush piles or install nesting blocks for native bees, and plant caterpillar host plants.
3. Pesticides are harmful to pollinators, especially insecticides. Herbicides reduce food sources by removing flowers from the landscape.
4. Talking to your community will encourage more people to join this important effort, helping even more pollinators!

ACTION Take the pledge and join this campaign. With the **Bring Back the Pollinators** core values, pollinator conservation can be adapted to any location; whether you tend a community garden or a suburban yard, work in a city park or on a farm.

We make the commitment to you that we will work every day to protect pollinators and their habitat. Will you make a similar commitment to the pollinators? Take the pledge online, BringBackthePollinators.org, or fill out the form to the right and mail it in. Thanks!

The Xerces Society
628 NE Broadway, Suite 200
Portland, OR 97232

855-232-6639 • info@xerces.org • www.xerces.org

Regional offices in California, Massachusetts, Minnesota, Nebraska, New Jersey, North Carolina, Texas, Vermont, and Wisconsin.

Cover photograph by Mace Vaughan, The Xerces Society.

1 Sign the Pollinator Protection Pledge

To bring back the pollinators, I will:

- Grow a variety of pollinator-friendly flowers which bloom from spring through fall,
- Protect and provide bee nest sites and caterpillar host plants,
- Avoid using pesticides, especially insecticides, and
- Talk to my neighbors about the importance of pollinators and protecting their habitat!

Where are you protecting habitat?

(Please circle the one that applies.)

- Farmland
- Natural Area
- Home Yard/Garden
- Public Space
- Other: _____

How much habitat are you protecting:

(Please give a conservative estimate of the amount of habitat you have installed or protected for the benefit of pollinators.)

_____ square feet
or
_____ acres

(Signature)

(Printed Name)

(City/ State/ Zip)

Would you like to receive conservation updates from the Xerces Society?

(E-mail)



Gardeners are **URGED** to participate in the Community Market on Saturday mornings during the months of July and August.



740-544-6439

TheGemCity.org



Toronto Community Gardens



CORNER OF
N. 4TH & CLARK

Brought to you by,
The City of Toronto
Coalition for Revitalization
Main Street Gallery

GARDENING
CHEAPER THAN THERAPY
AND YOU GET TOMATOES

STAMP

BENEFITS OF COMMUNITY GARDENS

Community Organizing

- Community gardens increase a sense of community ownership and stewardship.
- Community gardens foster the development of a community identity and spirit.
- Community gardens bring people together from a wide variety of backgrounds (age, race, culture, social class).



- Community gardens build community leaders.
- Community gardens offer a focal point for community organizing, and can lead to community-based efforts to deal with other social concerns.

Green Space

- Community gardens add beauty to the community and heighten people's awareness and appreciation for living things.
- Community gardens recycle tree trimmings, leaves, grass clippings, and other organic wastes back into the soil.
- Community gardens provide a place to retreat from the noise and commotion of urban environments.
- Development and maintenance of garden space is less expensive than that of parkland.
- Scientific studies show that crime decreases in neighborhoods as the amount of green space increases.
- Community gardens have been shown to actually increase property values in the immediate vicinity where they are located.

TheGemCity.org

1

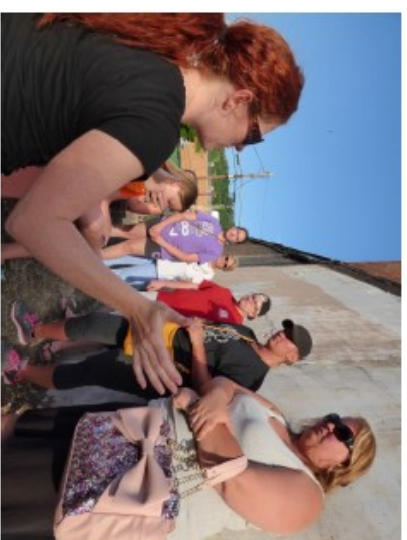


Youth

Community gardens offer unique opportunities to teach youth about:

- Where food comes from
- Practical math skills
- Basic business principles
- The importance of community and stewardship
- Issues of environmental sustainability
- Job and life skills
- Community gardening is a healthy, inexpensive activity for youth that can bring them closer to nature, and allow them to interact with each other in a socially meaningful and physically productive way.

Children are invited to take part in the "Outdoor Garden Art Gallery"



One of the community leaders talks to a group of students and advisers on how they can be involved in the garden project.

If you would like to be a gardener, sponsor, volunteer, child artist or would just like more information on the Community Gardens of Toronto contact Jeremy Troski "Garden Master" at the Main Street Gallery located 307 Main Street, Toronto Ohio 740-537-3451 or George Komar, President of the Toronto Coalition for Revitalization 740-544-6439.



The Community Gardens of
Toronto, Ohio



Your School and Pollinators

How Pollinators Can Help Your School While You Help Pollinators

Getting Started

How can your school get involved?

By visiting our website, www.pollinator.org/education.htm you will find support to:

- **Integrate** pollinator education into your classroom using our Nature's Partner's curriculum - full of fun activities, photographs, and modules for grades 3-6
- **Assign** students' roles to plant and tend a pollinator friendly garden on campus
- **Order** the **Pollinator School Garden Kit** and other fun and educational posters and brochures for your students to help them visualize the importance of pollinators. Go to www.pollinator.org for more details.

The **North American Pollinator Protection Campaign (NAPPC)** is a collaborative body of over 140 organizations that work for the protection of pollinators across Mexico, Canada and the United States. The **NAPPC Education Task Force** produced this brochure for your use and information. Feedback is welcome. For more information please contact info@pollinator.org or 415-362-1137 or visit www.pollinator.org.



NAPPC

Prepared by the
**Education Task Force of the
North American Pollinator Protection
Campaign (NAPPC)**



Schools, Pollinators, and You!

Kids love bugs! Your school is a living laboratory where students can learn through observation and hands-on learning. These skills are developed through the Pollinator Partnership (P2) Education Programs that emphasize language arts and math requirements as well as science curriculum, all developed to the highest education standards.

P2 has created free hands-on learning materials for you and your school to build a school garden, and connect to other schools to encourage pollinator education and enrich classroom education. Resources available for free on www.pollinator.org include standards based curricula, lesson plans, posters, and much more!



Why should educators and students care about pollinators?

Pollinators bring us nearly 1 of every 3 bites of food we eat and are vital in the reproduction of nearly 80% of the flowering plants on the planet. Our food, our forests, our farms and our future need good pollinator-friendly practices – and school is a great place to start.

What is pollination and who are the pollinators?

Pollination happens when pollen is moved within flowers or carried from flower to flower by the wind, by water or in some cases through self-pollination and by pollinating animals such as birds, bees, bats, butterflies, moths, beetles, or other animals.

What does pollination do?

The transfer of pollen in and between flowers of the same species leads to fertilization, and successful seed and fruit production for plants. Pollination ensures that a plant will produce full-bodied fruit and a full set of viable seeds, and in some cases it increases genetic diversity to strengthen the genetic make-up of the plant.

Why does pollination matter to us?

Worldwide, roughly 1,000 of the 1,200 plant species grown for food, beverages, fibers, spices, and medicines need to be pollinated by animals in order to produce the goods on which we depend.

Foods and beverages produced with the help of pollinators include apples, blueberries, chocolate, coffee, melons, peaches, pumpkins, vanilla, and almonds, to name a few.

In the U.S., pollination by honey bees, native bees, and other insects produces \$40 billion worth of products annually.

Are pollinators in trouble?

Worldwide there is disturbing evidence that pollinating animals have suffered from loss of habitat, chemical misuse, introduced and invasive plant and animal species, and diseases and parasites.

Many pollinators are federally “listed species,” meaning that there is evidence of their disappearance in natural areas.

The U.S. has lost over 50% of its managed honey bee colonies over the past 20 years.

A lack of research has hindered our knowledge about the status of pollinators.

Whenever we look closely at pollinator populations, we see problems – the monarch butterfly migration across North America is showing extremely low overwintering numbers, and at least 10 different bumble bee species in the U.S. are not being spotted with normal frequency, in fact 4 appear to have disappeared from their normal ranges.

Here are 5 things you can do to help pollinators:

- Plant a pollinator garden or buffer to provide habitat and forage for local pollinating animals.
- Reduce or eliminate your use of pesticides, and if you must use them, follow directions carefully. The way you apply and dispose of a pesticide can make a big difference for pollinators!
- Educate yourself about the native pollinators in your area, and view them as your ally in making a green and sustainable world.
- Make wise consumer choices; purchase organic produce, local honey, native plants and locally produced fibers whenever possible.
- Join P2 to increase public awareness about the importance of protecting pollinators.

Pollinator Partnership

The Pollinator Partnership (P2) is the world's largest organization devoted solely to the health of pollinators, critical to food and ecosystems, through conservation, education, research, and policy. P2 is a nonprofit 501(c)3 headquartered in San Francisco, CA. For more information or to make a tax-deductible donation contact info@pollinator.org, call 415.362.1137, or visit www.pollinator.org.



Manage for BOTH Pollinators and Plants

Areas planted to attract pollinators need to be managed to protect both the plants and the pollinators in the area.

To protect the pollinators visiting the habitat you create, you should avoid or minimize the following:

- Tillage
- Insecticides and Some Fungicides
- Plastic Mulch
- Removal of Beneficial Plants



Little-Known Fact: Leaving natural areas protects and attracts native pollinators by providing food and a safe haven away from insecticides.

Assistance for New Jersey Farmers

Contact Jolie Goldenetz Dollar, Pollinator Habitat Restoration Specialist for the Mid-Atlantic Region, at the Cape May Plant Materials Center for help with pollinator conservation and native plant restoration.

Location: 1536 Route 9 North
Cape May Courthouse, NJ 08210
Phone: 609.465.5901, ext. 101
Email: jolie.dollar@nj.usda.gov

Pollinator Habitat Funding

Funding for pollinator habitat is available through the following NRCS programs:

- Conservation Stewardship Program (CSP)
- Environmental Quality Incentives Program (EQIP)
- Wildlife Habitat Incentives Program (WHIP)
- Agriculture Management Assistance (AMA)

Through these programs, you can select any of the following conservation activities to help you attract and protect native pollinators on your farm.

- **Pollinator Plantings** – provide a food source and secure nesting for ground-nesting bees by establishing a variety of flowering plants. Use NRCS practices such as:
 - » **Conservation Cover**
 - » **Field Borders**
 - » **Early Successional Habitat**
 - » **Tree/Shrub Establishment**
- **No Till Planting** – protects ground-nesting pollinators by reducing ground disturbance.
- **Pest Management** – protects pollinators by reducing pesticide applications.
- **Buffer Plantings** - marginal areas around organic farms can include pollinator plantings.



May 2011

USDA is an equal opportunity provider and employer.

Attracting Native Pollinators to Your Farm



Native leaf-cutter bee on aster.
Courtesy of Eric Mader, Xerces Society.

The Importance of Pollinators

One out of every three mouthfuls of food and drink we consume is available because of pollinators. Although there are many animals that play a role in the pollination of our food, bees are the most important of these pollinators.

Historically, the agriculture industry has used managed hives of European Honey Bees for pollination. With the recent decline of this species due to colony collapse disorder, it is important to diversify the pollinators we use for crop production and supply valuable pollinator habitat. This habitat benefits both native bees and honey bees.

Native Bee Pollinators Can Help!

Whether you are producing fruits, vegetables, or both, it is beneficial to attract and protect native pollinators.

Native bees can provide the following benefits:

- More effective flower pollination than honey bees, on a bee-per-bee basis
- More active during cooler and wetter conditions compared to honey bees
- More abundant and larger fruit production because of buzz pollination
- Increase in crop yields because of added pollination service
- Reduction of dependence on and costs related to rented commercial bees, such as the European Honey Bee.



Buzz pollination results in more abundant and larger fruit production.



Mace Vaughan, Xerxes Society

Attracting Native Pollinators

PROVIDE THE BASICS: Food, Shelter, and Protection from Insecticides

➤ Food: Pollen and Nectar from Flowers

Plant pollinator-friendly flowering plants to attract native bees. These plantings should include native plants with varied bloom times to maximize the diversity of pollinators and provide a food source throughout the entire growing season.

These plantings can be part of a field border, riparian buffer, marginal production area, or a hedgerow.

➤ Shelter: Three Types of Bee Nests



Matthew Shepherd, Xerxes Society

Since *wood-nesting* solitary bees make individual nests in beetle tunnels in snags (standing dead trees) or artificial nest structures, nesting tubes can be placed in habitat areas.



Mace Vaughan, Xerxes Society

For *cavity-nesting* social bees, such as the bumble bee, make sure your landscape has some unmowed or wild areas, especially adjacent to hedgerows or forest edges.

Little-Known Fact: Most native bees are unlikely to sting because they don't have a communal nest to protect. The yellow jackets and other stinging wasps that eat rotting fruit or hang around picnic areas are not bees, nor are they significant pollinators. (Xerxes Society).



➤ Protection from Insecticides

Pollinators can be negatively affected or killed by pesticides, especially insecticides. To protect and attract pollinator populations, it is very important to limit or avoid using insecticides.

If you do need to use insecticides, carefully protect the pollinator habitat areas by:

- Minimizing use
- Using the least toxic formulation (see chart below)
- Avoiding application to flowering plants
- Always following the label
- Spraying during dry and calm conditions
- Spraying right after dusk when bees are least active if possible.

When using insecticides, choose the formulation that is least toxic to bees.

Formulation	Toxicity to Bees
Dust	
Wettable Powder	
Flowable	
Emulsifiable Concentrate	
Soluble Powder	
Solution	
Granular	
	Least Toxic

Monarch Ecology

The monarch butterfly is well-known for its long-distance seasonal migration and its spectacular winter gatherings. While many monarchs migrate to central Mexico, monarchs in western states also migrate to the California coast, which is the only place in the United States that regularly hosts the awe-inspiring sight of thousands of monarchs gathered for the winter. These days, most of California's monarchs cluster in groves of nonnative eucalyptus, although they prefer native trees such as Monterey pine, Monterey cypress, and redwood. Many of these native trees are now less common on California's coast, which may explain why monarchs tend to be seen on eucalyptus.

In the spring, monarchs disperse across California and the West, searching for milkweed plants on which to lay their eggs. Monarch caterpillars will only eat milkweed to grow and develop into adults. Several generations are produced throughout the spring, summer, and fall, with the last generation migrating to the California coast in the fall. Remarkably, monarchs overwinter in the same groves of trees as prior generations. How they navigate to these groves each year remains a mystery.

Monarch nectaring on narrow-leaved milkweed, a key caterpillar host plant in western states. (USFWS Pacific Region.)



The Xerces Society is a nonprofit organization that protects wildlife through conservation of invertebrates and their habitat. To protect western monarchs, the Xerces Society is working with multiple partners, to:

- ⇒ Understand where monarchs are breeding in the western United States in order to prioritize restoration and active management efforts,
- ⇒ Increase production of native milkweed seed to help reverse loss of milkweed in important monarch breeding areas,
- ⇒ Protect, manage, and restore coastal California overwintering habitat,
- ⇒ Empower citizen scientists and land managers to track and conserve western monarchs and their habitats, and
- ⇒ Provide technical guidance to public and private agencies and citizens on monarch habitat restoration and enhancement.

www.xerces.org/monarchs



The Monarch Joint Venture is a partnership of federal and state agencies, nongovernmental organizations, and academic programs that are taking a science-based approach to protecting the monarch migration across the Lower 48 U.S. states. The MJV is achieving this goal through a combination of: 1) monarch habitat conservation; 2) education; and 3) research and monitoring to inform monarch conservation efforts.

www.monarchjointventure.org



The Pacific Grove Museum of Natural History inspires discovery, wonder, and stewardship of the natural world. The Museum highlights the miraculous life and endangered migration of monarch butterflies throughout the California Central Coast, and provides education and interpretation at the Monarch Grove Sanctuary in downtown Pacific Grove.

www.pgmuseum.org

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Support for the Xerces Society's western monarch conservation projects comes from Xerces Society members as well as Alice C. Tyler Perpetual Trust, Bay and Paul Foundations, Hind Foundation, CS Fund, the Disney Conservation Fund, the Edward Go-roy Charitable Trust, Endangered Species Chocolate, Monarch Joint Venture, the Turner Foundation, Inc., and U.S. Fish and Wildlife Service.

(Front photo: The Xerces Society/Carly Voight.)

WESTERN MONARCHS IN PERIL



Conserving this iconic species

Hundreds of thousands of monarch butterflies spend the winter in tree groves along the coast of California. They travel from as far north as Canada, but with a 74% decline in the numbers since the late 1990s, the future of this migration is at risk.

Read about how you can help!

Monarchs in Decline

The future of the western monarch migration is at risk. Since 1997, citizen scientists have monitored California's overwintering monarchs, revealing a 74% decline in the population since the late 1990s. This underscores the need to gain a clear understanding of the status of monarchs and their habitat, and to take conservation action.

Scientists suspect monarchs are disappearing because:

- ↪ **Breeding habitat is being lost and degraded** due to herbicides and insecticides, urban and rural development, and the intensification of agriculture, as well as long-term drought, which may be linked to climate change;
- ↪ **Overwintering groves are being destroyed** by development; and
- ↪ **The quality of overwintering habitat is declining** as trees in the monarch groves age.



Overwintering cluster in Monterey pine. (The Xerces Society/Candace Fallon.)



Monarch caterpillar on showy milkweed. (The Xerces Society/Candace Fallon.)

Six Things YOU Can Do To Help Protect Western Monarchs and Their Habitat

- 1. Plant native milkweed in its historic range.** This can be in your backyard, at your workplace, or at your school. Nonnative tropical milkweed, although widely available, should not be planted because it may interfere with the monarchs' natural breeding and overwintering cycles and increase monarch parasites. We also recommend against planting milkweed within 5–10 miles of an overwintering site, as it may confuse monarchs into breeding out of season. Use our Milkweed Seed Finder to find plant suppliers: <http://www.xerces.org/milkweed-seed-finder/>.
- 2. Plant native flowers.** Monarchs need nectar to provide energy to migrate, breed, and overwinter. Flowers can be planted anywhere, including overwintering sites. See <http://www.xerces.org/monarch-nectar-plants/> for lists of good flowers to use in your area.
- 3. Avoid using insecticides and herbicides.** These may kill or harm butterflies or caterpillars and the plants that monarchs use for nectar or breeding.
- 4. Consult with a monarch expert before cutting or trimming any trees,** if you live near an overwintering site or monarchs roost on your property. Monarchs are very choosy about the overwintering sites they use. Improper tree trimming or removal may result in unsuitable habitat for overwintering monarchs.
- 5. Become a citizen monitor.** The Xerces Society is looking for volunteers to:
 - visit overwintering sites to monitor monarch populations for the Western Monarch Thanksgiving Count, www.westernmonarchcount.org; and
 - report monarch and milkweed observations across the West through the Western Monarch Milkweed Mapper, www.westernmonarchmapper.org.
- 6. Support monarch conservation efforts.** Volunteer for or donate money to projects and nonprofit organizations that protect monarchs.

Unit 4: The Power of Pollinators

WEEK 2 Day 5

Writing Report
Individual Construction: Subtopics

Content Objective	I can use research notes to write a report. (W.1.2.a, W.1.2.b, W.3.2)
Language Objective	I can write using the third person, general nouns, and adjectives. (L.1.2.a, L.1.2.b, L.1.2.e)
Vocabulary	general statement: the beginning of a report, which introduces and classifies the topic heading: the title of a section of the text report: a genre of writing whose purpose is to organize information about a topic subtopic: a smaller part of the topic
Materials and Preparation	<ul style="list-style-type: none">● Yellow Lady’s-slipper slides, from Week 1, Day 3● brochure pages, one copy for each child● sample brochure● writing tools● writing folders, including research materials and Report Notes packets● Report Observation Tools, from Day 3● Thinking and Feedback visuals● sticky notes, a few, for recording suggestions
Opening 1 minute	<i>Today you will begin to use research to write subtopics.</i>
Individual Construction 19 minutes slide 7	Review the steps on the slide. <i>Yesterday I modeled how I used these steps to write my paragraph. Today you will follow the same steps as you write.</i>
	Show the brochure pages. <i>This is the paper we will use to write our reports. Each section here</i>

	<p><i>will fit on one panel of the brochure.</i></p> <p>Hold up a sample brochure to indicate each panel. <i>The first three sections include lines. This is where you will write your subtopics. Start writing your paragraph on the second line, leaving the dark top line blank to fill in the heading.</i></p> <p><i>The columns on the second page each include small boxes with lines and small blank boxes. The first small box with lines is for continuing subtopics.</i></p> <p><i>The second box, with the darker outline, will be used to write the general statement. The blank boxes are for the labeled plant and flower diagrams. We will work on both of those sections next week.</i></p> <p>Group the children according to the plants they are reporting on. Send them to work with writing tools, writing folders, and brochure pages. As children write, circulate to support their work. Record notes on the Report Observation Tools.</p>
<p>Closing 10 minutes</p>	<p>Bring the class back together. Use the Thinking and Feedback protocol for a challenge one child is facing. Record suggestions on sticky notes to place in the child’s writing folder.</p> <p><i>Next you will continue writing your report subtopics.</i></p> <p>Have the children put away their papers in their writing folders.</p> <p>After the lesson, review the Report Observation Tools. Note any emerging trends. Plan for individual, small group, or whole group instruction based on these needs, following the guidance outlined in Week 3, Days 1-3.</p>
<p>Standards</p>	<p>W.1.2.a Investigate questions by participating in shared research and writing projects.</p> <p>W.1.2.b Gather information from provided sources and/or recall information from experiences in order to answer questions.</p> <p>W.3.2 Use a combination of drawing and writing to communicate a topic with a beginning, middle (including details), and an end.</p> <p>L.1.2.a Use collective nouns (e.g., group).</p> <p>L.1.2.b Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth, mice, fish).</p> <p>L.1.2.e Use adjectives and adverbs and choose between them depending on what is to be modified.</p>
<p>Ongoing assessment</p>	<p>As children write, circulate and take notes on the Report Observation Tool.</p>

