
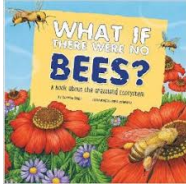



<p>Weekly Question: Why is pollination important to people and other animals?</p>		
<p>Texts</p>   	<p>Vocabulary and Language</p> <p>Days 1 & 2: Introduce Weekly Words: <i>critical, damage, evolve, extinct, food chain, legislation, nourishment, pesticide</i></p> <p>Day 3: Changing Nouns to Verbs</p> <p>Day 4: Changing Verbs to Nouns</p> <p>Day 5: Answering a Weekly Question</p>	
	<p>Text Talk</p> <p>Day 1: “Disappearance of Bees: What’s the Impact?” (video)</p> <p>Day 2: Pollinator Project Introduction and Planning</p> <p>Day 3: <i>What If There Were No Bees?</i>, Read 1 of 3</p> <p>Day 4: <i>What If There Were No Bees?</i>, Read 2 of 3</p> <p>Day 5: <i>What If There Were No Bees?</i>, Read 3 of 3, and MA Legislation</p>	
	<p>Stations</p> <p>Guided Independent Reading</p> <hr/> <p>Listening & Speaking: Listen & Respond (“Bats Are Pollinators”)</p> <p>Science Literacy: How have our classroom plants changed?</p> <p>Vocabulary: Choose 3!, Talk About It</p> <p>Word Work: select from activities</p> <p>Writing: follows from Text Talk Week 6, Day 1 and Day 5</p>	
	<p>Science and Engineering (3 days)</p> <p>Lesson 1: Quadrat Study 8 (final)</p> <p>Lessons 2 & 3: Properties of Materials for Designing Hand Pollinators</p>	<p>Studios (2 days)</p> <p>Work on the Pollinator Project begins. Studios are flexible and open for children to access and use any materials and processes explored thus far.</p>
	<p>Writing: Argument</p> <p>Day 1: Deconstruction and Joint Construction: Reasons</p> <p>Day 2: Deconstruction and Joint Construction: Collecting Evidence</p> <p>Day 3: Deconstruction and Individual Construction: Media</p> <p>Day 4: Individual Construction: Planning and Writing</p> <p>Day 5: Individual Construction</p>	

Unit 4: The Power of Pollinators

WEEK 6 Days 1 & 2

Vocabulary & Language
Weekly Words

Weekly Question	Why is pollination important to people and other animals?
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	critical: very important damage (n): harm that makes something less valuable; (v): to do harm evolve: to develop over time extinct: having no living examples, such as an animal or plant food chain: a series of organisms, each dependent on the next as a source of food legislation: the process of passing laws nourishment: food or other substances needed for health and growth pesticide: a substance used to destroy insects that are harmful to plants
Materials and Preparation	Choose four words to teach each day, following the steps of the Weekly Words routine. Note that children will encounter <i>critical</i> , <i>extinct</i> , <i>food chain</i> , and <i>pesticide</i> during the Day 1 Text Talk lesson. <ul style="list-style-type: none"> ● Week 6 Weekly Words cards ● Week 6 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>We know why pollination is important for plants and pollinators. This week and next week we are learning about why pollination is important to humans and other animals. Our Weekly Words are ones we can use to talk about this. Today’s words are: _____, _____, _____, and _____.</i>

Vocabulary & Language U4 W6 D1 & D2

	<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>critical (adjective) Elaboration: <i>Bees and other insects are critical for the pollination of strawberry plants. They are so important that we might not have strawberries without these pollinators!</i></p> <p>Think, Pair, Share prompt: <i>We have been learning about bats. In what ways are bats and flowers critical to each other?</i></p> <hr/> <p>damage (noun, verb) Elaboration: <i>Many insects are essential for the health of flowering trees. Other insects, like this longhorn beetle, are pests that do damage to trees. “Damage” can be used as both a noun—a tree’s <u>damage</u>—and a verb—some insects <u>damage</u> trees.</i></p> <p>Think, Pair, Share prompt: <i>Describe how you think this little beetle might damage a big tree. What kind of damage can you see in the photograph? As you talk, notice whether you are using the word “damage” as a noun or a verb.</i></p> <hr/> <p>evolve (verb) Elaboration: <i>Because the earth is growing warmer each year, white spruce trees are producing more cones. There are more cones for red squirrels to eat in the fall, and because of this, the females have evolved to have their babies earlier. This means a healthier population of red squirrels.</i></p> <p>Think, Pair, Share prompt:</p>

Certain pollinators have evolved to feed on nectar from certain kinds of flowers. What do you think about this?

extinct (adjective)

Note: Consider introducing this word after introducing “food chain.”

Elaboration:

We all know that dinosaurs became extinct thousands of years ago. The Western Black Rhino became extinct in 2020 when the last two Western Black Rhinos died. There are no more of this species of rhinos living on earth.

Think, Pair, Share prompt:

Think about interdependent ecosystems.

[Reminder: **ecosystem**: a group of animals and plants living in one place and impacting each other]

Why might it matter when a species becomes extinct?

food chain (noun)

Elaboration:

A food chain describes how different organisms get energy. A series of interdependent food chains is called a food web.

Think, Pair, Share prompt:

This food chain starts with the sun. With your partner, describe the rest of the food chain.

legislation (noun)

Elaboration:

This is a government building. Inside, our Senators and State Representatives argue for the laws they think are important. Their main job is to work on legislation.

Think, Pair, Share prompt:

We are looking at legislation to protect pollinators this week. Why is this legislation important?

nourishment (noun)

Elaboration:

We get nourishment from healthy food. Chips or sweets may taste good and be fun to eat, but they do not give us the nourishment we need to grow and be strong.

Think, Pair, Share prompt:

How do bees get nourishment?

How do flowers get nourishment?

	<p>pesticide (noun) Elaboration: <i>Pesticides are often used to kill bugs that eat plants we grow for food. Some farmers choose to use substances that are not harmful to keep these bugs away.</i></p> <p>Think, Pair, Share prompt: <i>Why might this person be wearing protective clothing and a mask to spray pesticides?</i></p>
Closing	<p><i>This week we are beginning to learn about how pollination is important to animals, including humans. 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 from phonics lessons 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>



critical

adjective

<https://blog.nature.org/science/2013/04/23/wild-pollinators-are-critical-in-keeping-our-picnic-baskets-full/>



damage

noun, verb

<https://news.clemson.edu/inspectors-survey-low-country-trees-after-invasive-beetle-discovered/>

Weekly Words U4 W6

Focus on Second | Boston Public Schools Department of Early Childhood P-2



evolve

verb

<https://www.smithsonianmag.com/science-nature/ten-species-are-evolving-due-changing-climate-180953133/?page=8>, <https://bplant.org/compare/6693-8176>



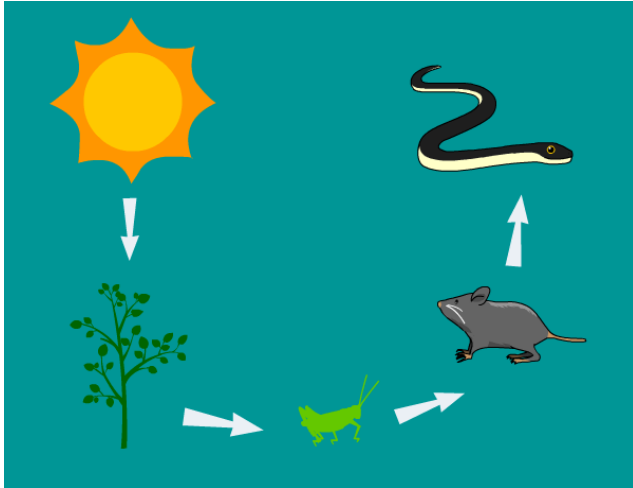
extinct

adjective

<https://www.popularmechanics.com/science/animals/g201/recently-extinct-animals-list-470209/>

Weekly Words U4 W6

Focus on Second | Boston Public Schools Department of Early Childhood P-2



food chain

noun

<https://jr.brainpop.com/science/animals/foodchain/>



legislation

noun

<https://legislature.maine.gov/lis/security-screening/9120>

Weekly Words U4 W6

Focus on Second | Boston Public Schools Department of Early Childhood P-2



nourishment

noun

<https://www.goodhousekeeping.com/home-products/g28008704/best-hummingbird-feeders/>



pesticide

noun

<https://www.sustainability-times.com/environmental-protection/two-thirds-of-agricultural-land-globally-are-at-risk-of-pesticide-pollution/>

Weekly Words U4 W6

Focus on Second | Boston Public Schools Department of Early Childhood P-2

Weekly Words

Unit 4, Week 6

critical

adjective

very important



damage

noun

harm that makes something less
valuable

verb

to do harm



evolve

verb

to develop over time



extinct

adjective

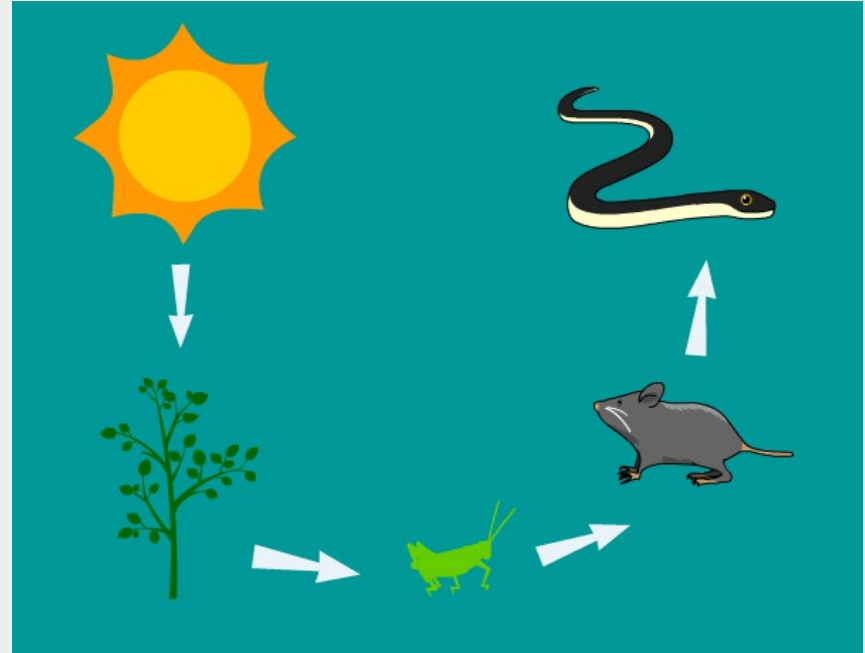
having no living examples, such as
an animal or plant



food chain

noun

a series of organisms, each dependent on the next as a source of food



legislation

noun

the process of passing laws



nourishment

noun

food or other substances needed
for health and growth



pesticide

noun

a substance used to destroy
insects that are harmful to plants



Unit 4: The Power of Pollinators

WEEK 6 Day 3

Vocabulary & Language
Changing Nouns to Verbs

Weekly Question	Why is pollination important to people and other animals?
Language Objectives	I can change a noun to a verb by taking off the suffix. (L.5) I can figure out the meaning of a new word by relating it to a similar word. (L.5)
Vocabulary	noun: 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"> Changing Parts of Speech sides Note that this lesson uses slides 1-8.
Opening	<p><i>We know that some words have additions at the end, called suffixes, that change the meaning of the word.</i></p> <p><i>Some of our Weekly Words are nouns with suffixes. We will look closely at these three words today.</i></p>
Discussion slide 2	<p><i>All three of these words are nouns—they name something. All three also have suffixes.</i></p>
slide 3	<p><i>Let’s start with the word “marking.”</i></p> <p>Review the definition.</p>
slide 4	<p><i>If we remove the suffix “ing” from “marking,” we get the word “mark.”</i></p> <p><i>“Mark” can be a verb.</i></p> <p><i>Based on what you know about the word “marking,” what do you think the verb “mark” means?</i></p>

slide 5	<p><i>Our next word is “legislation.”</i></p> <p>Review the definition.</p>
slide 6	<p><i>If we remove the suffix “tion” from “legislation,” what word do we get?</i></p> <p><i>“Legislate” is a verb.</i></p> <p><i>Based on what you know about the word “legislation,” what do you think “legislate” means?</i></p>
slide 7	<p><i>Our last word today is “nourishment.”</i></p> <p>Review the definition.</p>
slide 8	<p><i>If we remove the suffix “ment” from “nourishment,” what word do we get?</i></p> <p><i>“Nourish” is a verb.</i></p> <p><i>Based on what you know about the word “nourishment,” what do you think “nourish” means?</i></p>
Closing	<p><i>Today we used what we know about root words and suffixes to change nouns to verbs and to determine the meaning of words.</i></p>
Standard	<p>L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings sufficient for reading, writing, speaking, and listening.</p>
Ongoing assessment	<p>Reflect on the lesson.</p> <p>Do children accurately identify the root words?</p> <p>Do they apply their knowledge of root words and suffixes to define the verbs?</p>

Notes

Changing Parts of Speech

Vocabulary & Language Week 6, Days 3-4

marking

legislation

nourishment

marking

noun

a pattern or marks or coloring on a
plant or animal



noun	- suffix	verb
marking	mark - ing	mark
legislation		
nourishment		

legislation

noun

the process of passing laws



noun	- suffix	verb
marking	mark - ing	mark
legislation	legislate - tion	legislate
nourishment		

nourishment

noun

food or other substances needed
for health and growth



noun	- suffix	verb
marking	mark - ing	mark
legislation	legislation - tion	legislate
nourishment	nourishment - ment	nourish

locate

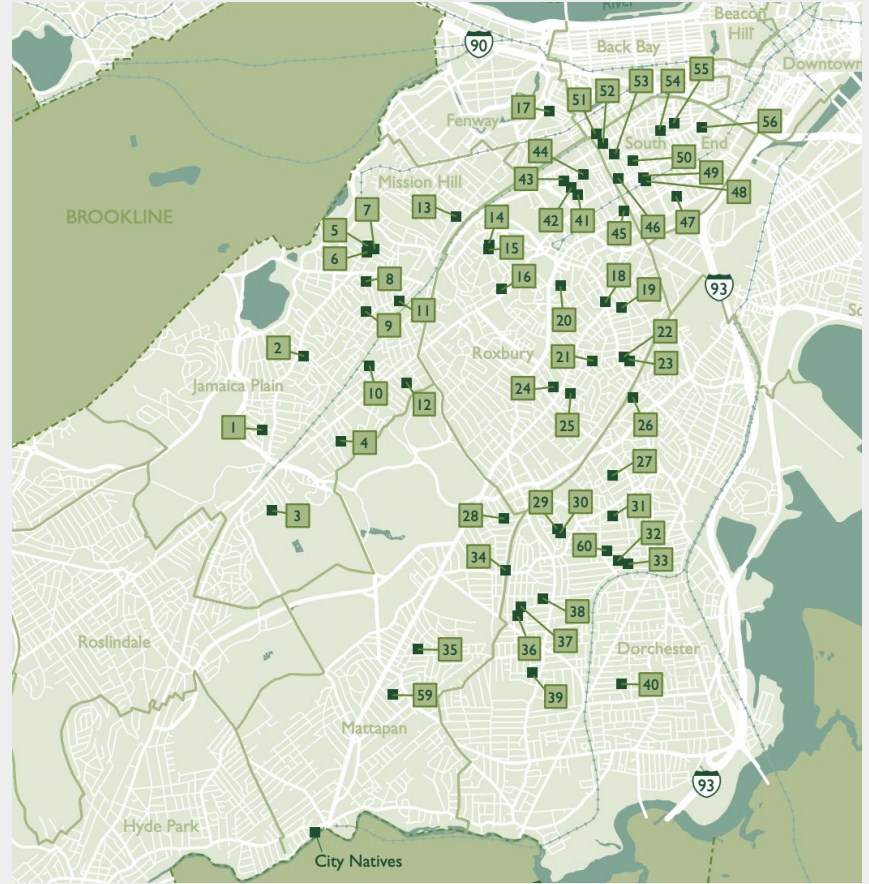
disperse

navigate

locate

verb

to find the position or place of



verb	+ suffix	noun
locate	locate e + tion	location
disperse		
navigate		

disperse

verb

to scatter



verb	+ suffix	noun
locate	locate e + tion	location
disperse	disperse e + al	dispersal
navigate		

navigate

verb

to find one's way to, around, or through



verb	+ suffix	noun
locate	locate e + tion	location
disperse	disperse e + al	dispersal
navigate	navigate e + tion	navigation

Unit 4: The Power of Pollinators

WEEK 6 Day 4

Vocabulary & Language

Changing Verbs to Nouns

Weekly Question	Why is pollination important to people and other animals?
Language Objectives	I can change a verb to a noun by adding a suffix. (L.5) I can figure out the meaning of a new word by looking at the root word and the suffix. (L.4.2.c)
Vocabulary	noun: 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">Changing Parts of Speech sides, from Day 3 Note that this lesson uses slides 9-15.
Opening	<i>Yesterday we used what we know about root words and suffixes to change nouns to verbs and to determine the meaning of words. Today we will change verbs to nouns and determine the meaning of the nouns.</i>
Discussion slide 9	<i>All three of these words are verbs—they show action.</i>
slide 10	<i>Let's start with the word "locate."</i> Review the definition.
slide 11	<i>If we add the suffix "tion" to "locate," we get the word "location." "Location" is a noun. Based on what you know about the word "locate," what do you think "location" means?</i>
slide 12	<i>Our next word is "disperse."</i> Review the definition.

slide 13	<p><i>If we add the suffix “al” to “disperse,” what word do we get? “Dispersal” is a noun. Based on what you know about the word “disperse,” what do you think “dispersal” means?</i></p>
slide 14	<p><i>Our last word is “navigate.” Review the definition.</i></p>
slide 15	<p><i>If we add the suffix “tion” to “navigate,” what word do we get? “Navigation” is a noun. Based on what you know about the word “navigate,” what do you think “navigation” means?</i></p>
Closing	<p><i>Today we used what we know about root words and suffixes to change verbs to nouns and to determine the meaning of words.</i></p>
Standards	<p>L.4.2.c Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional). L.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings sufficient for reading, writing, speaking, and listening.</p>
Ongoing assessment	<p>Reflect on the lesson. Do children apply their knowledge of root words and suffixes to define the nouns?</p>

Notes doggy

Unit 4: The Power of Pollinators

WEEK 6 Day 5

Vocabulary & Language
Answering a Weekly Question

Weekly Questions	<p>Week 5: What makes a plant and a pollinator a good match?</p> <p>Week 6: Why is pollination important to people and other animals?</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 5</p> <p>disperse (n: dispersal): to scatter</p> <p>essential: necessary, needed</p> <p>locate (n: location): to find the position or place of</p> <p>mutual: done by each for the other; having the same relationship toward each other</p> <p>slurp: to noisily suck food or drink</p> <p>species: a group of living things (that can mate with one another but not with those of other groups)</p> <p>spread: to scatter or send out</p> <p>transfer: to move or carry from one place to another</p> <hr style="border-top: 1px dotted black;"/> <p>Week 6</p> <p>critical: very important</p> <p>damage (n): harm that makes something less valuable; (v): to do harm</p> <p>evolve: to develop over time</p> <p>extinct: having no living examples, such as an animal or plant</p> <p>food chain: a series of organisms, each dependent on the next as a source of food</p> <p>legislation: the process of passing laws</p> <p>nourishment: food or other substances needed for health and growth</p> <p>pesticide: a substance used to destroy insects that are harmful to plants</p>
Materials and Preparation	<ul style="list-style-type: none"> ● Week 6 Answering a Weekly Question sheets, one for each small group ● pencils, one or two for each small group ● Weekly Questions for Weeks 5 and 6, printed or projected ● Weekly Words cards for Weeks 5 and 6

	<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>

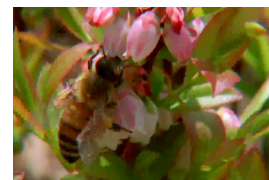
Names: _____

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

___ What makes a plant and a pollinator a good match?

___ Why is pollination important to people and other animals?

disperse	slurp	critical	food chain
essential	species	damage	legislation
locate	spread	evolve	nourishment
mutual	transfer	extinct	pesticide



WEEK 6 Day 1

Text Talk:
“Disappearance of Bees: What’s the Impact?” (video)

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	Why is pollination important to people and other animals?
Content Objective	I can ask and answer questions to demonstrate my understanding about the impact of the disappearance of bees in the South Sichuan Province of China. (R.4.2, 2.T2.4)
Language/SEL Objective	In small and large groups, I can make and discuss connections between a real-life dilemma and how it connects to my community. (SL.1.2, Social Awareness)
Vocabulary	<p>conjure: to do or produce out of imagination</p> <p>* critical: very important</p> <p>ecosystem: a group of animals and plants living in one place and impacting each other (*Week 4)</p> <p>hand pollinate: to use a tool to transfer pollen from the stamen of one flower to the pistil of another to aid pollination</p> <p>harvest: the gathering of crops, or the season in which crops are gathered</p> <p>impact: to have a strong effect on someone or something (*Unit 2, Week 3)</p> <p>* pesticide: a substance used to destroy insects that are harmful to plants</p>
Materials and Preparation	<ul style="list-style-type: none"> ● Disappearance of Bees: What’s the Impact? video (https://mass.pbslearningmedia.org/resource/vt107.1a.rv.text.beesdisap/disappearance-of-the-bees-whats-the-impact/#.WvCY6NMvzBJ) ● world map ● “Disappearance of the Bees” Notes sheet, one for each child

	<ul style="list-style-type: none"> ● writing tools ● clipboards or other writing surfaces ● Weekly Word cards for (<i>critical, pesticide</i>) ● chart paper, 2 pieces <p>At the top of one sheet of chart paper, write the title, Ways We Can Help Protect Bees.</p> <p>On the other piece, prepare the Weekly Question Chart.</p> <ul style="list-style-type: none"> ● Writing Station Response: “Disappearance of Bees: What’s the Impact?”, 1 copy
<p>Opening 2 minute</p>	<p><i>Today’s text is a video titled “Disappearance of Bees: What’s the Impact?” We’ll watch just part of it, where we’ll learn about a real-life dilemma: a place with no bees. The video takes place in China, in the South Sichuan Province, although this dilemma exists in other places, as well.</i></p> <p>Show where the South Sichuan Province is on the map. Invite children to share any knowledge or connections they have.</p> <p><i>As we watch, we’ll stop to discuss and take notes. And after we watch, we will think about how this dilemma connects to our own community.</i></p> <p>Distribute Notes sheets, writing tools, and clipboards.</p>
<p>Text and Discussion 20 minutes 0:00-2:06</p>	<p><i>You’ll notice a few voices in this video: the farmers speak in Mandarin, another voice translates into English, and another voice narrates.</i></p> <p>Affirm children’s linguistic cultures and knowledge.</p> <p>Show the video from the beginning, and stop at 2:06.</p> <p><i>What dilemma does the video describe? Confirm your idea with a partner, and then write it in the first box on your sheet.</i></p> <p>Harvest several ideas.</p> <p><i>We have watched only a small part of this video. What questions do you have so far? [If children need prompting, suggest a question, such as <i>What do farmers do if there are now no bees to pollinate the pear trees?</i>]</i></p> <p>Pass out Text Talk Notebooks for children to take a Note Break. Have children write questions or current reactions/thoughts.</p> <p><i>Write down one question in the next box, and then share it with your partner.</i></p> <p>After they write, invite a few children to share their own or their partners’</p>

	<p>questions.</p> <p>Use the Weekly Word card to define or review the definition of “pesticide,” and revisit the term “hand pollination,” which children will encounter in depth during Science and Engineering Lesson 2.</p>
2:07-4:10	<p>Return to the video, and watch through 4:10.</p> <p><i>How are people addressing this dilemma? What are they doing in response to the problem of having no bees? Confirm your idea with a partner, and then write it in the next box on your sheet.</i></p> <p>Harvest several ideas.</p> <p><i>How did the farmer conjure, or create, a hand pollinator? Why are these details important?</i></p> <p>Provide time for children to talk with partners and add new ideas to their sheets under the second question.</p>
4:10 - 5:31	<p>Preview challenging vocabulary, such as “substitute” and “sustainable.” Play the video to 4:39.</p> <p><i>Did you hear that?! We learn here that one hive of bees can pollinate up to 3 million flowers in a day. Compare this to a human, who can pollinate about 30 trees in a day!</i></p> <p>Play the remainder of the video.</p> <p><i>Why are scientists worried that hand pollination is not sustainable?</i></p>
Key Discussion 13 minutes	<p><i>How are bees critical—very important—to this community? Confirm your idea with a partner, and then write it in the first box on your sheet.</i></p> <p>Harvest several ideas.</p> <p><i>Let’s think about how this connects to our community. With your partner, talk about some ways we can help to protect bees here. Write or draw a few ideas as you talk.</i></p> <p>Circulate to support children as they talk and record their ideas.</p> <p>Bring the group back together. Invite children to share their own and their partners’ ideas. Record these ideas on the chart, Ways We Can Help Protect Bees. Keep this chart for Day 5.</p>
Closing 1 minute	<p><i>We have learned more about how people in a particular community are addressing a pollination problem.</i></p>

<p>Weekly Question 3 minutes</p>	<p>Introduce the Weekly Question Chart. <i>Throughout this week, we will be asking and answering this question: Why is pollination important to people and other animals? Today’s video text already has us thinking about this. What can we write on our chart?</i></p> <p><i>We’ll add to this chart over this week and next.</i></p>
<p>Writing Station Prompt 1 minute</p>	<p>Introduce the Writing Station prompt. <i>At the Writing Station, you’ll write and draw more about ways we can protect bees.</i></p> <p>Read the prompts and clarify children’s questions.</p> <p>Invite children to close their eyes and make a movie in their head, imagining what it would be like to hand pollinate.</p>
<p>Standards</p>	<p>R.4.2 Ask and answer questions about who, what, when, where, how and why. 2.T2.4 Explain and describe human interaction with the physical world (the environment). 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. SEL. Social Awareness.</p>
<p>Ongoing assessment</p>	<p>Review the Notes sheets.</p> <ul style="list-style-type: none"> Do children accurately identify the dilemma? Do children identify how the dilemma was addressed? Do children make connections to the importance of bees in our community? Do children engage in collaborative conversations with their peers?

Notes

Name: _____

“Disappearance of the Bees” Notes

1. What is the dilemma?

What questions do I have now?

2. How are people addressing this dilemma?

3. How are bees critical to this community?

4. What are ways we can help protect bees?

Imagine yourself hand pollinating a plant. Draw a picture.



Unit 4: The Power of Pollinators

WEEK 6 Day 2

Text Talk: Pollinator Project Introduction and Planning

Big Ideas	Organisms in an ecosystem are interdependent. Living things have life cycles with distinct phases. The parts of an organism have specific functions. Pollination is a result of animal behavior. Animals, including humans, benefit from and depend on pollination.
Weekly Question	Why is pollination important to people and other animals?
Content Objective	I can gather information from multiple sources to identify information about pollinators that is important and useful to gardeners. (R.11.2.c, R.11.2.d, SL.2.2.a)
Language/SEL Objective	I can exchange ideas and questions with peers to make a plan about a shared project. (SL.1.2, Relationship Skills)
Vocabulary	communicate: to share information about something interdependent: relying on each other (*Week 2)
Materials and Preparation	Reread the Pollinator Project Overview in the Unit 4 introductory documents, including notes for preparation. Prepare to propose and make available activities that are likely to capture children’s expressed interests, respond to their questions, and further their thinking about unit content. Suggestions are included in the Project Overview and in Week 6 Studios. In this lesson, children will peruse classroom resources in small groups. Set up six different areas with different kinds of resources from the unit, two areas each with: <ul style="list-style-type: none">● laptop/computer with slides ready to view● books and poems● posters

Assign children to six small groups.

- Inspiration Walk sheets, one for each child
- writing tools
- clipboards
- chart paper, 2 pieces

Create the following two charts.

What gardeners need to know about pollinators	Questions we want to continue researching

Pollinator Project Planner			
Project Idea	To communicate...	When and who	Progress notes
bookmark, brochure, flyer, letter, poster, or poem	people should plant to attract pollinators	during Writing, each child	
hand pollinators	what to do if there aren't enough pollinators	Engineering Lessons and Art Studio, each child or pairs	

Review information about community gardens. Identify one garden or

	urban farm that might serve as the audience for the class project.
Opening 1 minute	<i>We are about to begin our final project of the year: the Pollinator Project! For this project, we are going to use everything we are learning about plants and pollinators to help answer this weekly question: Why is pollination important to people and other animals? We'll share this information with people in our community who are interested in gardening.</i>
Text and Discussion 30 minutes	<p><i>To gather information about the importance of pollinators and identify questions that require more research, we're going to take an Inspiration Walk. To inspire our project work, we'll revisit slides, texts, and posters from our study. In small groups, you'll visit three different stations. At each station, you and your group will find and record important information and questions.</i></p> <p>Show the Inspiration Walk Notes sheet. Note that the pages correspond with the type of resource, and this will determine which page they use first, second, and third.</p> <p><i>In the first column, write any information you think gardeners should know about what makes pollinators so important.</i></p> <p>Connect to Writing lessons.</p> <p><i>What do you already know about gardeners as an audience—what is important to them?</i></p> <p><i>In the right hand column, write down questions you have about pollinators, or something you would like to find out more about to make a strong argument to gardeners about the importance of pollinators.</i></p> <p>Distribute Inspiration Walk Notes sheets, clipboards, and writing tools. Assign children to their groups and each group to a first station. Set a timer for 7 minutes. As children work, circulate to support them to write their ideas and questions.</p> <p>At the timer, rotate children to their second station for 7 minutes, and then to the third after another 7 minutes.</p>
Key Discussion 8 minutes	<p>Bring the group back together. Harvest a couple of ideas from each group about what gardeners need to know about pollination, and record them on the chart. Highlight trends and ideas that emerge as particularly important.</p> <p>Similarly, harvest and record children's questions.</p> <p>Read the questions back to the group, encouraging children to read along.</p> <p>Refer to the Pollinator Project Planning chart.</p> <p><i>Let's begin filling out this chart. It will help us keep track of our work</i></p>

	<p><i>for the project.</i></p> <p>Review the information already on the chart—noting that they have already begun Writing and will begin designing hand pollinators in Science and Engineering lessons (also Day 2).</p> <p><i>What other ideas do you have about ways to communicate about why pollination is important?</i></p> <p>Reference the Project Overview and Week 6 Studios to suggest ideas, as needed.</p> <p>Collaboratively with the children, fill in, to the degree possible, the first three columns of the chart. Emphasize that the information in the chart will guide classroom work in the next few weeks. Allow children to identify particular areas, activities, and materials of interest, and add their names or initials to the third column.</p>
<p>Closing 1 minute</p>	<p><i>We have a good start on our project already! We'll be starting our project work today during Writing and in Science and Engineering lessons. And we'll be using our Studios time to work on all these different parts.</i></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>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.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 and Next steps</p>	<p>Note how children interact with the content and with their peers during the Inspiration Walk.</p> <p>Do children identify important information about pollinators from a variety of resources?</p> <p>Do children consider their audience (gardeners) in identifying important information?</p> <p>Do children effectively exchange their ideas with their peers in both small and whole groups?</p> <p>After the lesson, review the charts and think strategically about the project ahead:</p> <ul style="list-style-type: none"> ● Do the activities children have suggested lead to investigation of their most important questions and to satisfying products? ● Are the activities feasible each on their own and as part of the

	<p>whole project? Do any activities need to be refined?</p> <ul style="list-style-type: none">● How are children’s questions connected to topics already visited in the unit? How can those connections be amplified to build a deeper understanding of the unit’s Big Ideas?● What resources might children need to carry out their work?● Are children poised to work successfully in small groups?● Are there any children who have not expressed interest in a particular aspect of the project? How might they be engaged? What lessons in the previous weeks have most captured their interest?● What skills do children have that can be applied to the various activities and the overall presentation of the project?● How can we meet children’s interests during Studios? What materials will be needed? <p>Make notes on the chart, in a different color marker or with sticky notes, to share back with the children on successive days.</p> <p>Gather any needed materials.</p>
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Notes

Name: _____ Pollinator Project Inspiration Walk Notes

Resource: Slides	
What do gardeners need to know about pollinators?	Questions we want to continue researching

Resource: Books and Poems

What do gardeners need to know about pollinators?

Questions we want to continue researching

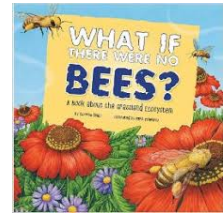
Resource: Posters

What do gardeners need to know about pollinators?

Questions we want to continue researching

Unit 4: The Power of Pollinators

WEEK 6 Day 3



Text Talk:
What If There Were No Bees
 Read 1 of 3

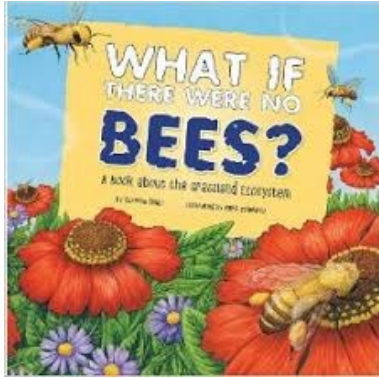
Big Ideas	Organisms in an ecosystem are interdependent. Pollination is a result of animal behavior. Animals, including humans, benefit from and depend on pollination.
Weekly Question	Why is pollination important to people and other animals?
Content Objective	I can use text and images to identify the author’s main point and the reasons that support it. (R.11.2.c, R.11.2.d, R.10.2.a)
Language Objectives	I can combine information I already know with new details from a text read aloud. (SL.2.2.a) I can use what I know about the meaning of individual words to predict the meaning of compound words. (L.4.2.d)
SEL Objective	I can evaluate the impact the extinction of bees would have on our world. (Decision Making)
Vocabulary	blanketing: covering chain reaction: a series of events in which the result of one event becomes the cause of the event that follows * critical: very important dart: to move quickly from one place to another ecosystem: a group of animals and plants living in one place and impacting each other (*Week 4) * extinct: having no living examples, such as an animal or plant * food chain: a series of organisms, each dependent on the next as a source of food

	<p>grassland: a large area that is mostly made up of grass, plants, trees</p>
<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● <i>What If There Were No Bees? A Book about the Grassland Ecosystem</i>, Suzanne Slade ● Weekly Word card for “ecosystem” ● <i>What If There Were No Bees</i> slides, pages 4-5 ● projector and screen <p>Write the following discussion questions on the board, with space left above the first question and between the pairs of questions.</p> <p>What is the author’s main point? What is one reason that supports the author’s point?</p> <p>What types of dangers do bees face? How would humans be affected if there were no bees?</p>
<p>Opening 3 minutes</p>	<p>Introduce the text.</p> <p><i>Today we will read the book What If There Were No Bees? A Book about the Grassland Ecosystem. An ecosystem is a group of plants and animals that live together in a certain place and impact each other. [Revisit Weekly Word card]</i></p> <p><i>We already know a lot about bees.</i></p> <p>Think, Pair, Share.</p> <p><i>What do you think would happen if there were no bees?</i></p> <p>Harvest a few ideas, and write them at the top of the whiteboard.</p> <p>Set a purpose for reading.</p> <p><i>With this title, What If There Were No Bees?, we can already guess that the author, Suzanne Slade, is making an argument about bees. Today as we read we will identify the main point the author makes and the reasons she gives to support her thesis.</i></p> <p>For this lesson, skip the text boxes.</p> <p><i>Like other informational texts we have read, this book includes text boxes. We won’t read them today, but we’ll come back to them.</i></p>
<p>Text and Discussion 20 minutes</p> <p>page 3</p>	<p>Read through page 3.</p> <p><i>“Grassland” is a compound word; what are its parts? We have seen this word before, when we studied erosion. Look closely at the illustration. What does “grassland” mean?</i></p> <p><i>Here’s another figure of speech [reread the sentence]: “Bees do the work of giants!”</i></p>

	<p><i>Turn and talk: what do you think this means? As part of her argument, Suzanne Slade tells us how important bees are, despite their size.</i></p>
slide 2 pages 4-5	<p>Show slide 2. Give children time to look at the illustration before reading.</p> <p><i>These pages provide us with a lot of information, through both words and the diagram by the illustrator, Carol Schwartz. The diagram, with arrows, shows several food chains.</i></p> <p>Use the Weekly Word card to revisit the definition.</p> <p>Point to the bee.</p> <p><i>The bee is here, at the center of it all. The many arrows show us different food chains. For instance, let's follow the yellow arrows. The bee is eaten by a wasp. Then the wasp is eaten by a skunk, and the skunk is eaten by an owl.</i></p> <p>Think, Pair, Share.</p> <p><i>Describe one other food chain that the bee is part of.</i></p> <p>Be sure to highlight the flower nectar and honeycomb and their roles in the food chains.</p> <p><i>Based on the information on these pages, what might Suzanne's Slade's main point, or thesis, be?</i></p>
page 10	<p>Point out the missing bee in the illustration.</p> <p><i>Why do you think the bee is missing in this illustration? How does this illustration support the author's point?</i></p>
page 19	<p>Engage children's experience to define the word "blanketing."</p>
page 20	<p>Read through page 20.</p> <p><i>Now that we have read the full text, what do you think is Suzanne's Slade's main point?</i></p>
page 21	<p><i>Here's a simple map of the world.</i></p> <p>Point to the key.</p> <p><i>The key indicates that yellow areas of the map are where we find grasslands. What do you notice? How does this map help us to better understand the author's main point?</i></p>
Key Discussion 15 minutes	<p>Move children into groups of four for the Numbered Heads Together routine. Read the two sets of questions on the board. Have children discuss the first question, drawing on the text to support their answers.</p>

	<p>Pose the discussion questions and remind children to use evidence from the text in their responses.</p> <p>Harvest children’s thinking by calling on one “numbered head” and giving other children an opportunity to respond or make connections.</p> <p>Repeat this process with the second set of questions and a different “numbered head.”</p>
<p>Closing 2 minutes</p>	<p><i>Let’s revisit our original ideas about what would happen if there were no bees.</i></p> <p>Review the initial ideas recorded on the whiteboard. <i>What can we add now?</i></p> <p>Record any new ideas on the Weekly Question chart.</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>R.10.2.a Describe how reasons support specific points the author makes in a text.</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>L.4.2.d Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark).</p> <p>SEL.Decision Making</p>
<p>Ongoing assessment</p>	<p>Listen in on children’s discussions.</p> <p>Do children articulate the author’s main point and reasons that support this belief?</p> <p>Do children use text and images to support their inferences about the author’s main point?</p> <p>Do children use knowledge of individual words to predict the meaning of compound words?</p>

Notes

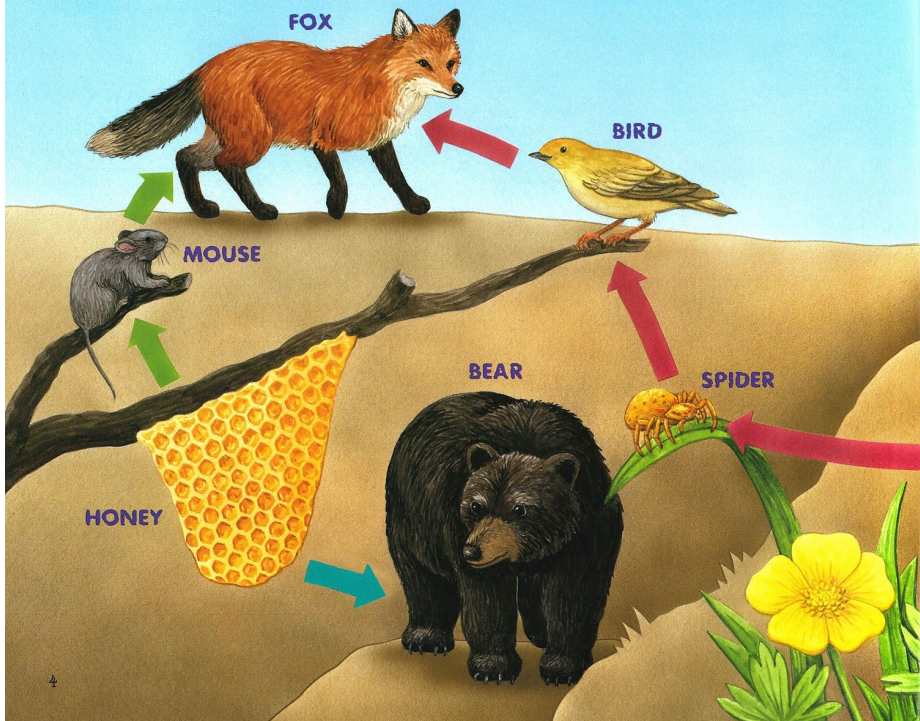


What If There Were No Bees?

excerpt (pages 4-5)

Text Talk Week 6, Day 3

GRASSLAND PLANTS, ANIMALS, AND INSECTS are tied to one another by food chains. Bees, as well as other living things, belong to several chains. Many food chains are connected by one plant or animal to create larger food webs.

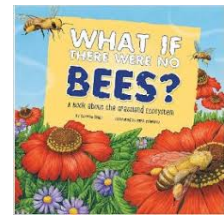


IT'S CRITICAL

Did you know people are part of food chains too? We are at the top of many different food chains.

Unit 4: The Power of Pollinators

WEEK 6 Day 4



Text Talk:
What If There Were No Bees
 Read 2 of 3

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	Why is pollination important to people and other animals?
Content Objective	I can use key details from the text to describe a chain reaction that would occur if bees became extinct. (R.6.2.b)
Language Objective	I can participate in partner discussions by listening and speaking one at a time. (SL.1.2.a)
SEL Objective	I can determine the chain reaction that would occur if bees became extinct. (Decision Making)
Vocabulary	<p>blanketing: covering</p> <p>chain reaction: a series of events in which the result of one event becomes the cause of the event that follows</p> <p>* critical: very important</p> <p>dart: to move quickly from one place to another</p> <p>ecosystem: a group of animals and plants living in one place and impacting each other (*Week 4)</p> <p>* extinct: having no living examples, such as an animal or plant</p> <p>* food chain: a series of organisms, each dependent on the next as a source of food</p> <p>grassland: a large area that is mostly made up of grass, plants, trees</p> <p>keystone species: a family of living organisms upon which other organisms depend</p>

<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● <i>What If There Were No Bees?: A Book about the Grassland Ecosystem</i>, Suzanne Slade, 2 copies Flag pages 4 and 10-19 of each book. ● <i>Soccer Star</i>, Mina Javaherbin, from Unit 3 Flag page 23 (“My sister runs to my teammates...”). ● chart paper and marker Prepare the following chart. <table border="1" data-bbox="540 510 1330 892"> <tr> <th colspan="2">Organisms that would be affected if bees became extinct</th> </tr> <tr> <td style="width: 50%; height: 150px; vertical-align: top;">Animals</td> <td style="width: 50%; height: 150px; vertical-align: top;">Plants</td> </tr> </table> <ul style="list-style-type: none"> ● <i>What If There Were No Bees?</i> Chain Reaction sheet, one copy for each child ● writing and drawing tools ● <i>What If There Were No Bees?</i> Chain Reaction slides ● projector and screen 	Organisms that would be affected if bees became extinct		Animals	Plants
Organisms that would be affected if bees became extinct					
Animals	Plants				
<p>Opening 4 minutes</p>	<p>Reintroduce the text. <i>We will read What If There Were No Bees?: A book about the Grassland Ecosystem again today. Yesterday, we discussed Suzanne Slade’s main point. What is the important message she wants her readers to understand?</i></p> <p>Harvest and affirm several responses.</p> <p>Set a purpose for reading. Show page 4. <i>Bees are a part of many food chains. Today we will think more deeply about Suzanne Slade’s argument and think about chain reactions. A chain reaction is a series of events that are caused one by another. Here’s an example.</i></p> <p>Show <i>Soccer Star</i>. Open to page 23. <i>Maria really wants to play on the team. [Turn the page.] When the other team’s player kicks the ball, Jose jumps. [Turn the page.] When he jumps, he falls, and when he falls, he hurts his wrist. When he can’t play, the team needs another player... and Maria gets to play!</i></p>				

	<p><i>That's a chain reaction—one event is caused by the event before it.</i></p>
<p>Text and Discussion 15 minutes page 11</p>	<p>Return to <i>If There Were No Bees?</i>. On page 11, first read the text box. <i>Many organisms depend on bees.</i></p> <p>Read the heading and main text. <i>According to this page, what plants would suffer if bees became extinct?</i></p> <p>List the plants on the chart.</p> <p>Turn to pages 12-13. Pause to look at the illustration. <i>What's happening in the illustration? What's missing now?</i></p> <p>Read the main text, and add to the chart. <i>What is the chain reaction so far? [Having no bees causes there to be no strawberries along with other fruits and vegetables.]</i></p> <p>Read the text box.</p>
<p>page 15</p>	<p><i>Look carefully at the illustration while I read.</i></p> <p>Read the text on page 14. Add plants and animals to the chart.</p> <p>Read the text box. Add to the chart. <i>The text and illustrations describe a series of related events, a chain reaction.</i></p> <p>If helpful, flip back through the previous few pages to retell the chain reaction.</p> <p>Read to the end of the text.</p>
<p>Key Activity 20 minutes</p>	<p><i>We learned in a text box that bees are a keystone species. Many species would be affected if bees became extinct.</i></p> <p><i>Now you'll work with a partner to talk, write, and draw about a chain reaction that would occur if there were no bees.</i></p> <p>Show the sheet. Indicate the available resources: copies of the book with pages flagged, the chart, and slides. Send children to work in pairs at tables or with clipboards, as is comfortable.</p> <p>As children work, circulate the books and click through the slides, as useful. Encourage children to think about the relationships from one event to the next. Support them to include important details in their drawings and to add labels.</p> <p>Bring the group back together. Invite a few pairs to share their work and others to respond with “Me, too” or other signals to indicate connections.</p> <p>Facilitate a whole group discussion. <i>What makes certain plants and animals interdependent?</i></p>





	<i>What do we understand now about how organisms benefit each other?</i>
Closing 1 minute	<i>Today we read, thought, talked, wrote, and drew about what would happen if bees became extinct. Tomorrow, we will revisit this text and find out what some leaders in our State are doing to help protect bees in our community.</i>
Standards	<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.1.2.a Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).</p> <p>SEL.Decision Making</p>
Ongoing assessment	<p>Note how children approach the work of identifying and representing a chain reaction.</p> <p>Do children discuss and note a logical chain reaction?</p> <p>What questions do children ask?</p> <p>Review children’s sheets.</p>

Notes

Name: _____

What If There Were No Bees? Chain Reaction

Write or draw a chain reaction that would happen if there were no bees. Label your drawings.

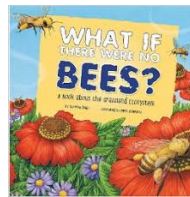
If there were no bees... 	Then.... 	After... 	Finally...
			

Talk with your partner:

How are the living things in this chain reaction interdependent?

Unit 4: The Power of Pollinators

WEEK 6 Day 5



Text Talk:
What If There Were No Bees?
 Read 3 of 3
 and
Legislation to Protect Pollinators

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	Why is pollination important to people and other animals?
Content Objective	I can identify and compare the main idea and purpose of texts. (R.5.2.b, R.9.2.b, R.11.2.c, R.11.2.d)
Language Objective	In small and large groups, I can describe key ideas and make connections between texts and a real-life dilemma. (SL.1.2, SL.1.2.c, SL.2.2.a)
SEL Objective	I can identify ways that I and others can help protect bees in our community. (Decision Making)
Vocabulary	<p>absorb: to soak up</p> <p>bill: a proposed law that has not been voted on</p> <p>* critical: very important</p> <p>ecosystem: a group of animals and plants living in one place and impacting each other (*Week 4)</p> <p>* extinct: having no living examples, such as an animal or plant</p> <p>* food chain: a series of organisms, each dependent on the next as a source of food</p> <p>grassland: a large area that is mostly made up of grass, plants, trees</p> <p>* legislation: the process of passing laws</p>

	<p>legislator: someone who makes laws</p> <p>permission: being allowed</p> <p>present: existing</p> <p>replace: to put in place of</p> <p>training: instruction and practice to prepare for a specific activity, such as a job or sport</p>
<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● <i>What If There Were No Bees?: A Book about the Grassland Ecosystem</i>, Suzanne Slade ● Legislation to Protect Pollinators slides ● Legislation child-friendly text, one copy for each pair of children Determine which pairs of children will read the House and Senate versions, matching readers to the length and complexity of each text. ● Text Talk Notebooks ● writing tools ● Ways We Can Help Protect Bees chart, from Day 1 ● marker ● Writing Station Response: Legislation to Protect Pollinators, 1 copy <p>On the whiteboard, write:</p> <p style="padding-left: 40px;">Why did the author write <i>What If There Were No Bees?</i></p>
<p>Opening 1 minute</p>	<p>Reintroduce the text. Set a purpose for reading.</p> <p style="padding-left: 40px;"><i>Today we will look again at some pages in What If There Were No Bees?: A book about the Grassland Ecosystem to discuss the author’s purpose: why did Suzanne Slade write this text?</i></p> <p style="padding-left: 40px;"><i>Then, we will consider some legislation that leaders in the state of Massachusetts have proposed to protect bees in their community. We can learn from this work</i></p> <p>Revisit the Weekly Word card for “legislation.”</p>
<p>Text and Discussion 14 minutes pages 2-3</p>	<p style="padding-left: 40px;"><i>We will read only a few pages from What If There Were No Bees?</i></p> <p>Read page 3. Think, Pair, Share.</p> <p style="padding-left: 40px;"><i>Why do you think the author wrote What If There Were No Bees?</i></p>
<p>pages 8-9</p>	<p>Skip to pages 8-9. Read the text, including the text box. Think, Pair, Share.</p> <p style="padding-left: 40px;"><i>Now why do you think the author wrote What If There Were No Bees?</i></p>

<p>pages 18-20</p>	<p>Skip to page 18, and read through page 20. Facilitate a whole group discussion. <i>Why did the author write What If There Were No Bees?</i> <i>What can readers learn from this book?</i></p>
<p>Legislation slides and child-friendly text 10 minutes</p>	<p><i>In her book, Suzanne Slade describes several dangers to bees. On the last page, she names a couple of things people can do to protect them. What is being done about this locally, where we live?</i></p> <p><i>In the state near us, in Massachusetts, many legislators—people who make laws— are concerned about pollinators, too, and they want to set rules about what chemicals farmers may and may not use. A bill is a proposal for a law that has not been fully voted on yet; legislators are still making arguments to each other about whether these bills should become laws, and why.</i></p> <p>Show slide 2. <i>Many community and state organizations have been working for a long time to convince lawmakers to protect pollinators. [Name the organizations on the slide.]</i></p> <p>Show slide 3. <i>There are two bills being considered at their State House now: House Bill 896, “An Act to protect Massachusetts pollinators” and Senate Bill 528, “An Act protecting pollinators by eliminating harmful products.” Both of them address a specific kind of pesticides, called neonicotinoids, or “neonics.”</i></p> <p>Show slide 4. <i>This is what the House bill looks like. We can see the names of all the legislators who support this bill, who want it to become a law.</i></p> <p>Briefly show slide 5. <i>Here’s the rest of the bill. It is very specific. Let’s read a more child-friendly version of the bill.</i></p> <p>Show and read the text on slides 6-8. Inviting children to make connections, and answering their clarifying questions. <i>What is the purpose of this bill?</i></p> <p>Show slide 9. <i>Here is the Senate bill.</i></p> <p>Show and read slide 10. Turn and talk. <i>How is the purpose of the Senate bill similar to the purpose of the House bill? How is it different?</i></p>

<p>Key Activity 10 minutes</p>	<p>Have children turn to work with partners. Distribute Legislation child text (to each pair), with Text Talk Notebooks, and writing tools. Direct children to read House Bill 896 or Senate Bill 528, as planned.</p> <p><i>Read and annotate the legislation with your partner. Then, in your notebooks, write and draw to answer this question: What are the leaders doing to protect pollinators? How might we learn from them?</i></p> <p>As children work with their assigned text, circulate to support them to understand vocabulary and each section of text; to annotate with underlining, exclamation points, and question marks; to discuss what they understand; and to cite the text as they write.</p> <p>Bring children back together and invite them to share their thoughts and writing about the legislation they have read. Facilitate a discussion to compare the two bills and what they aim to accomplish.</p> <p><i>After discussing this legislation, Is there something you would like to say to our legislators?</i></p>
<p>Closing 2 minutes</p>	<p><i>What connections do you make among the book What if There Were No Bees?, the video “Disappearance of the Bees: What’s the Impact,” and this legislation?</i></p> <p>Add children’s thinking to the Ways We Can Help Protect Bees chart (children may suggest contacting legislators to convince them to make these bills into law).</p> <p><i>We’ll keep all of these ideas in mind as we work on our Pollinator Project.</i></p>
<p>Weekly Question Chart 2 minutes</p>	<p>Refer to the Weekly Question Chart.</p> <p><i>This week we have been thinking about this question: Why is pollination important to people and other animals?</i></p> <p>Read the chart together. Add any essential ideas that may be missing. Identify and color-code 2-3 themes that emerge.</p> <p><i>We’ll continue to think about this same question next week.</i></p> <p>Save this chart for use in Weeks 7 and 8.</p>
<p>Writing Station Prompt 1 minute</p>	<p>Introduce the Writing Station prompt.</p> <p><i>At the Writing Station, you’ll write down what you might say to convince legislators to protect pollinators.</i></p> <p>Read the prompts and clarify children’s questions.</p>

Standards	<p>R.5.2.b Identify the main topic of a multi-paragraph text and the central ideas of specific paragraphs.</p> <p>R.9.2.b Identify the main purpose of a text, including what the author wants to answer, explain, or describe.</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>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.c Ask for clarification and further explanation as needed about the topics and texts under discussion.</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. Decision Making</p>
Ongoing assessment	<p>Listen in and observe as children work with partners.</p> <p>Review children’s Text Talk notebooks.</p>

Notes

Legislation to Protect Pollinators

The slides that follow are of Boston legislation. If there is similar legislation in Maine, replace these slides. If not, these slides can still be used.

Text Talk Week 6, Day 5





HOUSE No. 896

The Commonwealth of Massachusetts

Presented by: Carolyn C. Dykema

An Act to protect Massachusetts pollinators.

SENATE No. 528

The Commonwealth of Massachusetts

Presented by: James B. Eldridge

An Act protecting pollinators by eliminating harmful products.

HOUSE No. 896

The Commonwealth of Massachusetts

PRESENTED BY:

Carolyn C. Dykema

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying

An Act to protect Massachusetts pollinators.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
Carolyn C. Dykema	8th Middlesex
Tram T. Nguyen	18th Essex
Maria Duaine Robinson	6th Middlesex
Tami L. Gouveia	14th Middlesex
Christina A. Minicucci	14th Essex
David Henry Argosky LeBoeuf	17th Worcester
Steven C. Owens	29th Middlesex
Patricia A. Duffy	5th Hampden
Colleen M. Garry	36th Middlesex
Timothy R. Whelan	1st Barnstable
Kay Khan	11th Middlesex
Lindsay N. Sabadosa	1st Hampshire
Lori A. Ehrlich	8th Essex
Natalie M. Blais	1st Franklin
Jeffrey N. Roy	10th Norfolk
Brian M. Ashe	2nd Hampden
Susannah M. Whippis	2nd Franklin
Mary S. Keefe	15th Worcester
Jack Patrick Lewis	7th Middlesex
Steven Ultrino	33rd Middlesex
Ryan C. Fattman	Worcester and Norfolk
Hannah Kane	11th Worcester
Angelo L. D'Emilia	8th Plymouth
Joanne M. Comerford	Hampshire, Franklin and Worcester
Angelo J. Puppalo, Jr.	12th Hampden
David F. DeCoste	5th Plymouth
Shawn Dooley	9th Norfolk
Danielle W. Gregoire	4th Middlesex

Kevin G. Honan	17th Suffolk	2/12/
Michael P. Kushmerek	3rd Worcester	2/12/
Kate Hogan	3rd Middlesex	2/12/
Sarah K. Peake	4th Barnstable	2/12/
Ruth B. Balsler	12th Middlesex	2/12/
Kimberly N. Ferguson	1st Worcester	2/12/
Sal N. DiDomenico	Middlesex and Suffolk	2/12/
Daniel R. Carey	2nd Hampshire	2/12/
Ann-Margaret Ferrante	5th Essex	2/12/
Bradley H. Jones, Jr.	20th Middlesex	2/12/
Mindy Domb	3rd Hampshire	2/15/
John Barrett, III	1st Berkshire	2/15/
Brian W. Murray	10th Worcester	2/15/
Adrian C. Madaro	1st Suffolk	2/15/
Paul J. Donato	35th Middlesex	2/15/
Carmine Lawrence Gentile	13th Middlesex	2/15/
Carole A. Fiola	6th Bristol	2/16/
Jessica Ann Giannino	16th Suffolk	2/16/
Steven G. Xiarhos	5th Barnstable	2/16/
Christine P. Barber	34th Middlesex	2/16/
Thomas M. Stanley	9th Middlesex	2/16/
Jay D. Livingstone	8th Suffolk	2/18/
James M. Murphy	4th Norfolk	2/18/
Carol A. Dubery	3rd Bristol	2/20/
Richard M. Haggerty	30th Middlesex	2/22/
Patrick Joseph Kearney	4th Plymouth	2/22/
Michael O. Moore	Second Worcester	2/23/
Danillo A. Sena	37th Middlesex	2/24/
Eltzabeth A. Malta	11th Suffolk	2/24/
Tricia Farley-Bouvier	3rd Berkshire	2/24/
Sheila C. Harrington	1st Middlesex	2/24/
Kathleen R. LaNatra	12th Plymouth	2/24/
Dylan A. Fernandes	Barnstable, Dukes and Nantucket	2/24/
Michael J. Barrett	Third Middlesex	2/25/
David Paul Linsky	5th Middlesex	2/25/
James J. O'Day	14th Worcester	2/25/
Antonio F. D. Cabral	13th Bristol	2/25/
Michael S. Day	31st Middlesex	2/25/
David Allen Robertson	19th Middlesex	2/25/
William C. Galvin	6th Norfolk	2/25/
Joan Meschino	3rd Plymouth	2/25/
Paul W. Mark	2nd Berkshire	2/25/
Tommy Vitolo	15th Norfolk	2/25/
James K. Hawkins	2nd Bristol	2/26/
Kate Lipper-Garabedian	32nd Middlesex	2/26/
David M. Rogers	24th Middlesex	2/26/
Mark J. Cusack	5th Norfolk	2/26/
Sean Garballey	23rd Middlesex	2/26/
Andres X. Vargas	3rd Essex	2/26/

Michelle M. DuBois	10th Plymouth	2/26/2021
Michelle L. Ciccolo	15th Middlesex	2/26/2021
William J. Driscoll, Jr.	7th Norfolk	2/26/2021
Josh S. Cutler	6th Plymouth	2/26/2021
Daniel Cahill	10th Essex	2/26/2021
David Biele	4th Suffolk	3/3/2021
Brendan P. Crighton	Third Essex	3/5/2021
Jacob R. Oliveira	7th Hampden	3/2/2021
Alice Hanlon Peisch	14th Norfolk	3/2/2021
John H. Rogers	12th Norfolk	3/8/2021
Adam J. Scanlon	14th Bristol	3/1/2021
Peter Capano	11th Essex	3/9/2021
Eric P. Lesser	First Hampden and Hampshire	3/16/2021
Adam G. Hinds	Berkshire, Hampshire, Franklin and Hampden	4/20/2021

HOUSE No. 896

By Ms. Dykema of Holliston, a petition (accompanied by bill, House, No. 896) of Carolyn C. Dykema and others relative to the use and protection of pollinators by further regulating the spraying, release, deposit or application of a neonicotinoid on certain agricultural land. Environment, Natural Resources and Agriculture.

The Commonwealth of Massachusetts

In the One Hundred and Ninety-Second General Court
(2021-2022)

An Act to protect Massachusetts pollinators.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section 2 of chapter 132B of the General Laws, as appearing in the 2018 Official Edition, is hereby amended by inserting after the definition of "Nematode" the following definition:-

"Neonicotinoid," a pesticide belonging to the neonicotinoid class of chemicals which act selectively on nicotine acetylcholine receptors of organisms and are absorbed into plant tissue and can be present in pollen and nectar, including but not limited to, imidacloprid, acetamiprid, clothianidin, dinotefuran, nithiazine, nitenpyram, thiacloprid, and thiamethoxam and any other pesticide identified as a neonicotinoid by the United States Environmental Protection Agency.

SECTION 2. Section 6 of said chapter 132B, as so appearing, is hereby amended by inserting after the second paragraph the following paragraph:-

No person shall distribute a neonicotinoid, or any substance containing a neonicotinoid, except a neonicotinoid-treated nursery plant, to any person except a certified commercial applicator, a certified private applicator, or a licensed applicator.

SECTION 3. Said chapter 132B, as so appearing, is hereby amended by inserting after section 6K the following section:-

Section 6L. (a) Neonicotinoids shall only be sprayed, released, deposited or applied on any property within the commonwealth by a certified commercial applicator, certified private applicator or licensed applicator.

(b) Upon entering into an agreement to provide services that include application of neonicotinoids, a certified commercial applicator, certified private applicator, or licensed applicator shall provide to property owners the following: (i) a form authorizing the applicator to apply neonicotinoids; (ii) a copy of any warning statements concerning bees on the label of neonicotinoids being applied; and (iii) an acknowledgment signifying that the owner has received and understands this information. This subsection shall not apply to any certified commercial applicator, certified private applicator, or licensed applicator using a neonicotinoid on property that he or she owns.

(c) The subsections (a) and (b) shall not apply to the following products: (i) pet care products used to mitigate fleas, mites, ticks, heartworms, or other animals that are harmful to the health of a domesticated animal; (ii) personal care products used to mitigate lice and bedbugs; (iii) indoor pest control products used to mitigate insects indoors, including ant bait and (iv) any products used by licensed or certified applicators for use in industrial, institutional, structural and health related pest control, as defined in 333 CMR 10.03.7.

SECTION 4. Section 10 of said chapter 132B, as so appearing, is hereby amended by inserting in line 61 after the word "management" the following words:- and the protection of pollinators from adverse effects of pesticide applications.

SECTION 5. Section 14 of said chapter 132B, as so appearing, is hereby amended by inserting after the word "inclusive", in lines 9 and 10, the following words:- , section 6L.

SECTION 6. The Massachusetts Department of Transportation shall identify opportunities in the commonwealth for the replacement of non-native, cool-season turf grasses around solar energy installations on property owned by the department with native plant communities that include flowers, wildflowers, vegetables, weeds, herbs, ornamental plants, cover crops and legume species to attract honey bees and other pollinators.

SECTION 7. Sections 2 through 5, inclusive, shall take effect 6 months after the passage of this Act.

HOUSE No. 896

The Commonwealth of Massachusetts

Presented by: Carolyn C. Dykema

An Act to protect Massachusetts pollinators.

Section 1. Neonicotinoids are a kind of pesticide. They are absorbed into plants and can be present in pollen and nectar.

Section 2. Neonicotinoids can only be used with training and a license.

HOUSE No. 896

The Commonwealth of Massachusetts

Presented by: Carolyn C. Dykema

Section 3. Companies who apply these chemicals must:

- have permission from property owners to use them
- give them information about how the chemicals can harm honeybees
- have a signed paper showing that the property owner has received this information.

HOUSE No. 896

The Commonwealth of Massachusetts

Presented by: Carolyn C. Dykema

Section 4. Companies who apply these chemicals must take steps to protect pollinators from negative effects of using pesticides.

Section 6. The Massachusetts Department of Transportation must identify opportunities to replace some grasses with native flowers, wildflowers, vegetables, weeds, and other plants that attract honeybees and other pollinators.

SENATE No. 528

The Commonwealth of Massachusetts

PRESENTED BY:

James B. Eldridge

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act protecting pollinators by eliminating harmful products.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	
James B. Eldridge	Middlesex and Worcester	
Sean Garballey	23rd Middlesex	
Elizabeth A. Malia	11th Suffolk	2/24/2021
Michael J. Barrett	Third Middlesex	2/25/2021
Tami L. Gouveia	14th Middlesex	2/26/2021
James J. O'Day	14th Worcester	2/26/2021
Joanne M. Comerford	Hampshire, Franklin and Worcester	3/5/2021
John H. Rogers	12th Norfolk	3/8/2021
Michael O. Moore	Second Worcester	3/9/2021
Lindsay N. Sabadosa	1st Hampshire	3/18/2021
Kay Khan	11th Middlesex	9/10/2021

SENATE No. 528

By Mr. Eldridge, a petition (accompanied by bill, Senate, No. 528) of James B. Eldridge, Sean Garballey, Elizabeth A. Malia, Michael J. Barrett and other members of the General Court for legislation to protect pollinators by eliminating harmful products. Environment, Natural Resources and Agriculture.

[SIMILAR MATTER FILED IN PREVIOUS SESSION
SEE SENATE, NO. 463 OF 2019-2020.]

The Commonwealth of Massachusetts

An Act protecting pollinators by eliminating harmful products.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section 1 of chapter 132B of the General Laws, as appearing in the 2018 Official Edition, is hereby further amended by inserting after the definition of "Nematode" the following definition:-

"Neonicotinoid," a pesticide belonging to the neonicotinoid class of chemicals which act selectively on nicotine acetylcholine receptors of organisms and are absorbed into plant tissue and can be present in pollen and nectar, including but not limited to, imidacloprid, acetamiprid, clothianidin, dinotefuran, nithiazine, nitenpyram, thiacloprid, and thiamethoxam and any other pesticide identified as a neonicotinoid by the United States Environmental Protection Agency.

SECTION 2. Section 6 of said chapter 132B, as so appearing, is hereby amended by adding the following:-

No person shall distribute a neonicotinoid, or any substance containing a neonicotinoid, except a neonicotinoid-treated nursery plant.

SECTION 3. Section 6 of said chapter 132B, as so appearing, is hereby amended by striking the words ", except a neonicotinoid-treated nursery plant".

SECTION 4. Said chapter 132B is hereby further amended by inserting after section 6K the following section:-

Section 6L. (a) Neonicotinoids shall not be sprayed, released, deposited or applied on any property within the commonwealth.

(b) No blooming or flowering plant, plant material or seed that has been treated with a neonicotinoid shall be sold within the commonwealth unless it is clearly and conspicuously labeled as having been treated with a neonicotinoid and includes a brief description of the risks to pollinators and other non-target organisms associated with the use of neonicotinoids.

SECTION 5. Section 6L of said chapter 132B, as so appearing, is hereby amended by striking the words "unless it is clearly and conspicuously labeled as having been treated with a neonicotinoid and includes a brief description of the risks to pollinators and other non-target organisms associated with the use of neonicotinoids".

SECTION 6. Section 14 of said chapter 132B, as so appearing, is hereby amended by inserting after the word "inclusive", in lines 9 and 10, the following words:-, section 6L.

SECTION 7. Sections 1, 2, 4, and 6 shall take effect on January 1, 2022.

SECTION 8. Sections 3 and 5 shall take effect on January 1, 2023.

SENATE No. 528

The Commonwealth of Massachusetts

Presented by: James B. Eldridge

An Act protecting pollinators by eliminating harmful products.

Section 1. Neonicotinoids are a kind of pesticide. They are absorbed into plants and can be present in pollen and nectar.

Section 4. Neonicotinoids shall not be sprayed, released, deposited, or applied on any property within the state.

This full law shall take effect on January 1, 2023.

HOUSE No. 896

The Commonwealth of Massachusetts

Presented by: Carolyn C. Dykema

An Act to protect Massachusetts pollinators.

Section 1. Neonicotinoids are a kind of pesticide. They are absorbed into plants and can be present in pollen and nectar.

Section 2. Neonicotinoids can only be used with training and a license.

Section 3. Companies who apply these chemicals must:

- have permission from property owners to use them
- give them information about how the chemicals can harm honeybees
- have a signed paper showing that the property owner has received this information.

Section 4. Companies who apply these chemicals must take steps to protect pollinators from negative effects of using pesticides.

Section 6. The Massachusetts Department of Transportation must identify opportunities to replace some grasses with native flowers, wildflowers, vegetables, weeds, and other plants that attract honeybees and other pollinators.

SENATE No. 528

The Commonwealth of Massachusetts

Presented by: James B. Eldridge

An Act protecting pollinators by eliminating harmful products.

Section 1. Neonicotinoids are a kind of pesticide. They are absorbed into plants and can be present in pollen and nectar.

Section 4. Neonicotinoids shall not be sprayed, released, deposited, or applied on any property within the state.

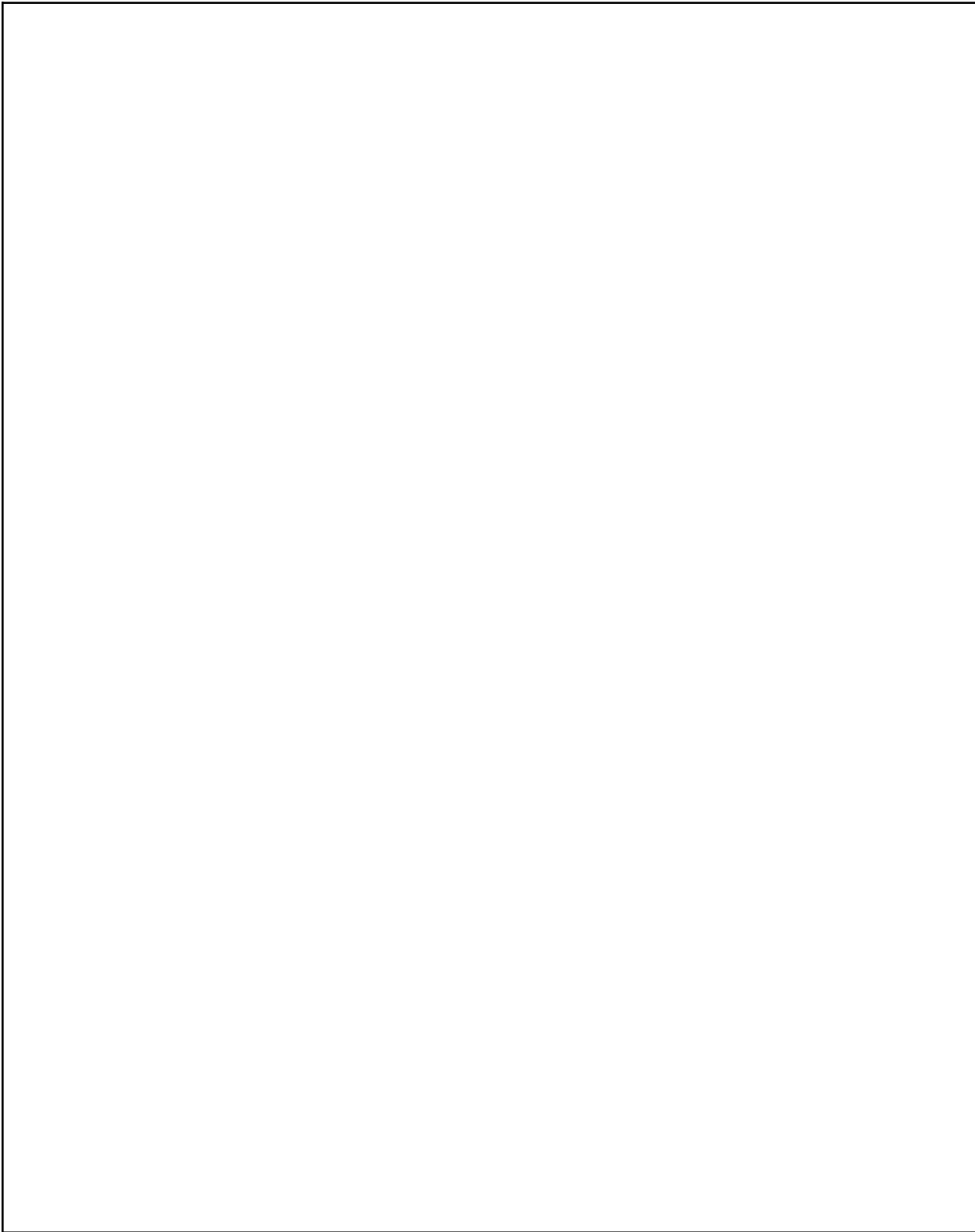
This full law shall take effect on January 1, 2023.

Writing Station Response: **Legislation to Protect Pollinators**

Name: _____ Date: _____

If you could have lunch with a legislator, what would you say to them about the bills to protect pollinators?

Be sure to give reasons and cite evidence to support your argument.



Writing Station U4 W6 D5

Unit 4: The Power of Pollinators

WEEK 6

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 “Bats Are Pollinators” informational text “Bats Are Pollinators” slides conversation prompts
Science Literacy	How have our classroom plants changed?	<ul style="list-style-type: none"> Unit 4 Science and Engineering packets colored pencils
Vocabulary	Choose 3!	<ul style="list-style-type: none"> Week 5 Weekly Words cards Recording sheets Choose 3! menu
	Talk About It: This young child is eating cherries right from a tree. What needs to happen for these cherries to grow? How would you explain this process to a four year old?	<ul style="list-style-type: none"> Weeks 5 and 6 Weekly Words cards Week 6 image, 2 copies cut apart Week 6 sheets
Word Work <i>(align skills with literacy program)</i>	Marking syllables: open and closed, r-controlled, -le	<ul style="list-style-type: none"> Week 6 Name It, Write It, Mark It sheets
	Finding words with aw/au vowel teams in text	<ul style="list-style-type: none"> Week 6 Read, Annotate, Write sheets
	Writing words, using them in sentences	<ul style="list-style-type: none"> Week 6 Look Cover Write Check sheets
Writing	Prompt from Text Talk Day 1: “Disappearance of Bees: What’s the Impact?” video	<ul style="list-style-type: none"> Writing Station sheets
	Extends from Text Talk Day 5: Talking to Legislators	<ul style="list-style-type: none"> Writing Station sheets

“Bats Are Pollinators” Conversation Prompts: Cut apart and provide with text and audio recording.

Page 1:

What is one special feature of a bat’s body that helps it get nectar from deep inside of flowers?

“Bats Are Pollinators”

Page 2:

How does a bat use sound to help it find things in the dark?

“Bats Are Pollinators”

After reading:

Share three new things you learned about bats from this text. Go back to the text and show your partner where you found this new information.

“Bats Are Pollinators”

I agree with you, and I would like to add ____.

I respectfully disagree with you because ____.

What evidence do you have to support that?

Talk About It



<http://www.littlegrove.com/2016/06/northstar-cherries.html>



<http://www.littlegrove.com/2016/06/northstar-cherries.html>

Vocabulary Station U4 W6

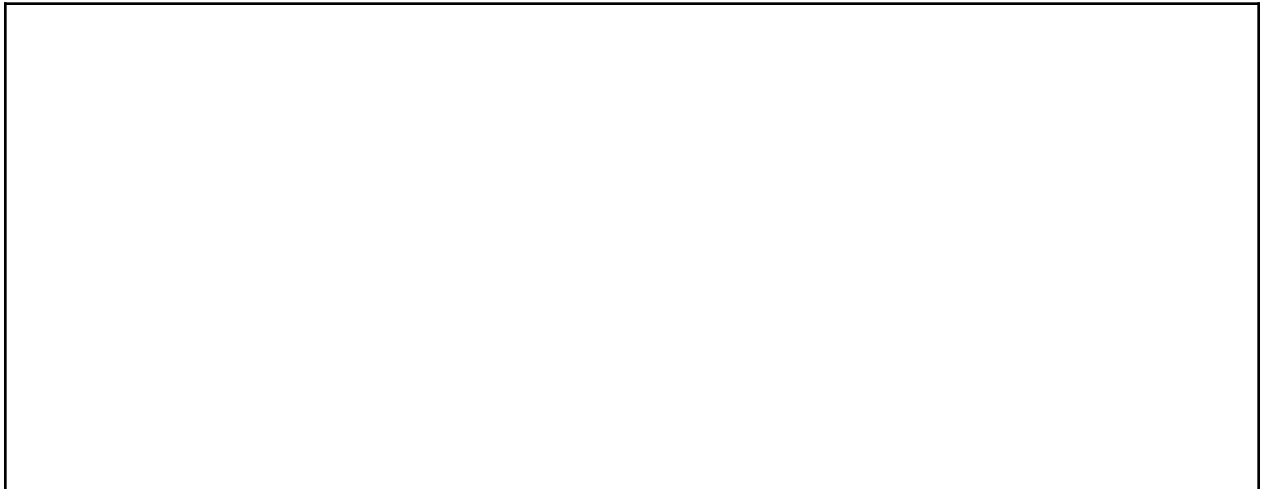
Talk About It

Name: _____ Date: _____

This young child is eating cherries right from a tree. Based on what you know about pollination, what needs to happen for these cherries to grow?

How would you explain this process to a four year old?

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.






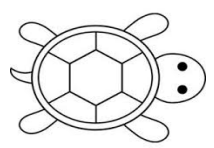






Name: _____

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

Write the word. Scoop the syllables. Mark the syllables: **c** for a closed syllable, **o** for an open syllable, **r** for an r-controlled syllable, and **-le**.

Word Bank		table	wiggle	needle
apple	candle	marbles	turtle	beagle



 	 _____ _____ _____	 _____ _____ _____
 _____ _____ _____	 _____ _____ _____	 _____ _____ _____
 _____ _____ _____	 _____ _____ _____	 _____ _____ _____

Skills: Know and apply grade-level phonics and word analysis skills in decoding words.

Name: _____

Read	Annotate	Write
------	----------	-------

Read "The Sock Mystery." Underline words with **aw** and **au**.
Then write each word in the correct column.

aw 	au 
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>

Skills: Know spelling-sound correspondences for additional common vowel teams.

Underline words with
aw and **au**

The Sock Mystery

Do you ever wonder what happens to your socks when you put them in the laundry? It seems to me that I put many more socks in the laundry than I get back. I know that when I put a pair of dirty socks in the hamper or laundry basket, I put both socks in together. But when I get my clean laundry back, very often only one sock returns.

I am not sure what causes this to happen.

Maybe my dryer is haunted. Maybe there is a law that says only one sock can come back at a time. Maybe there is something in the dryer that grinds socks up into sawdust.

All I know is that I get exhausted looking all over my house for my missing socks! Every time it happens my mother launches into a long talk about how I need to be more careful. I try to explain that it is not my fault, but she still gets mad at me. The funny thing is that many times the missing sock is later found back in my dresser drawer.

Underline words with
aw and **au**

One day I was visiting my Aunt Dawn. I go over there all the time to play with my cousin Paul. It was raining, so we were drawing and working on a jigsaw puzzle. Aunt Dawn was doing the laundry when I got there. All of a sudden, Aunt Dawn began to squawk at Paul. She was upset because she could not find all the socks. Paul said the last time that he saw the socks, they were in the laundry. I sort of crawled out of the way. There was no point in trying to help find the socks. I was just glad that this time, I knew it was not my fault.

Name: _____

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

trouble	<hr/> <hr/> <hr/>	
couple	<hr/> <hr/> <hr/>	
young	<hr/> <hr/> <hr/>	

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

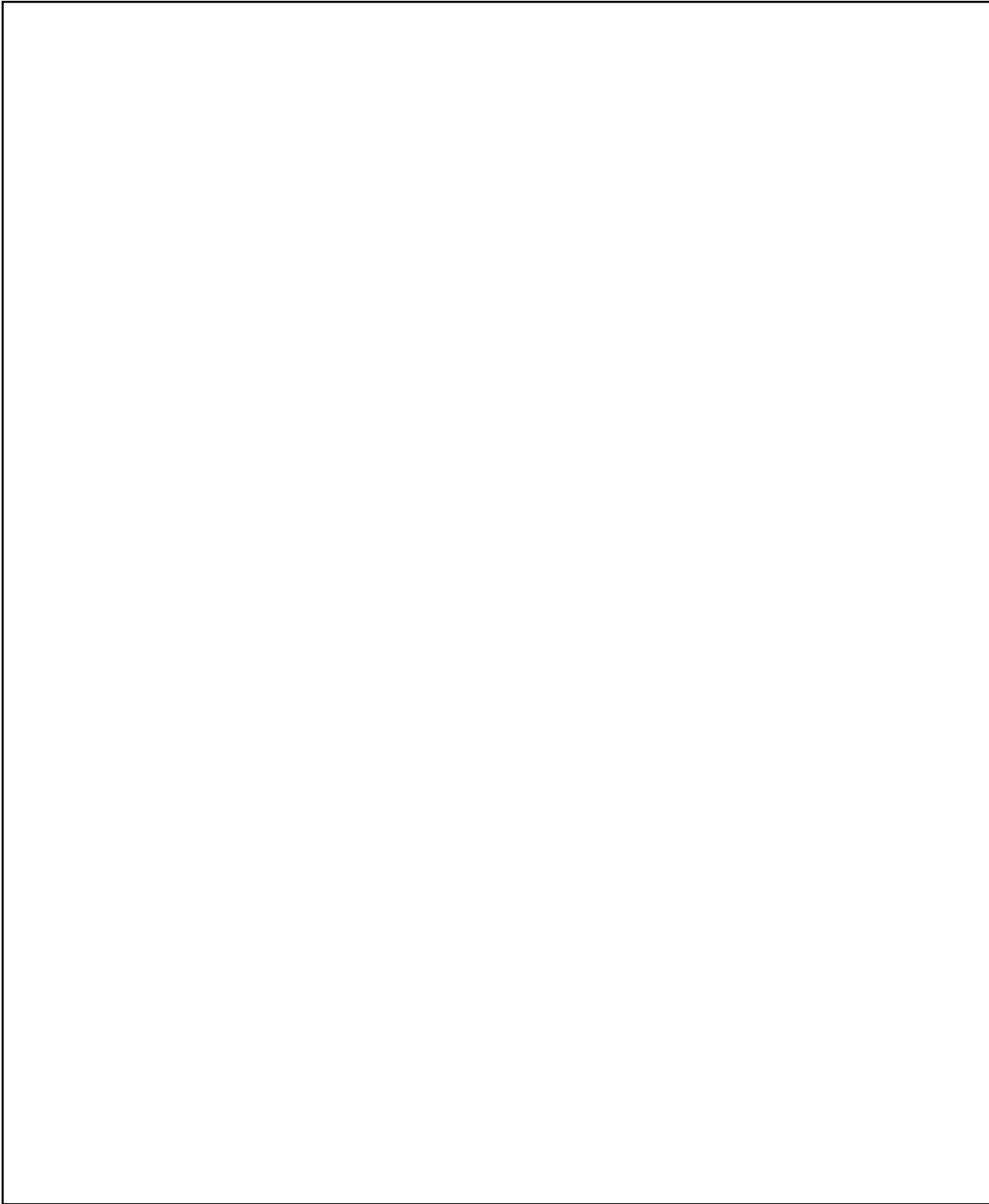
Use it in a Sentence

trouble

couple

young

Imagine yourself hand pollinating a plant. Draw a picture.

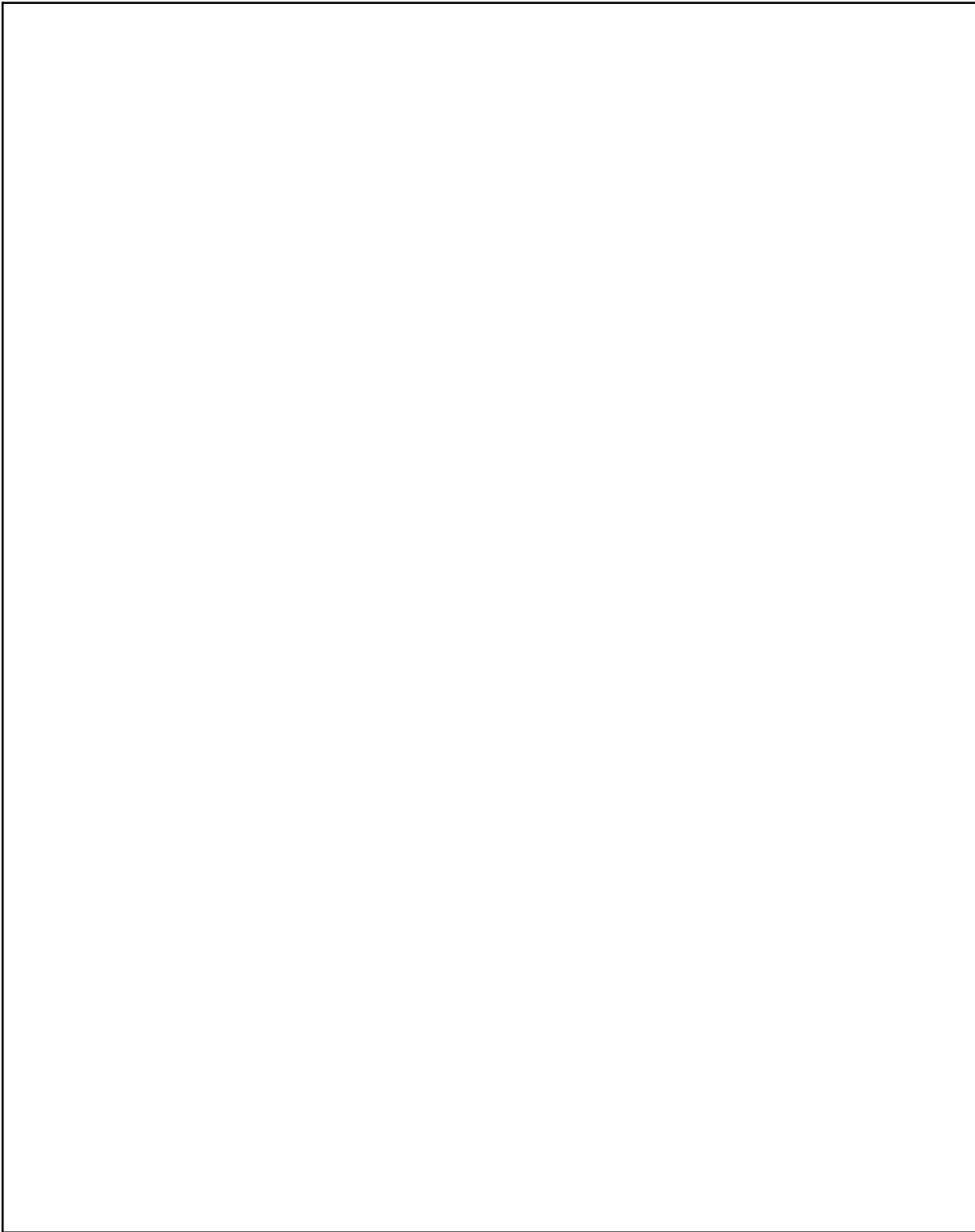


Writing Station Response: **Legislation to Protect Pollinators**

Name: _____ Date: _____

If you could have lunch with a legislator, what would you say to them about the bills to protect pollinators?

Be sure to give reasons and cite evidence to support your argument.



Writing Station U4 W6 D5

Unit 4: The Power of Pollinators

WEEK 6 Lesson 1

Science and Engineering: Quadrat Study 8
Observing Plants and Pollinators
This lesson completes the year-long Quadrat Study.

Big Ideas	Organisms in an ecosystem are interdependent. Living things grow and change over time.
Guiding Questions	What makes particular organisms interdependent? Why is it important to understand how living things grow and change over time?
Content Objective	I can make observations about the different kinds of living things in my quadrat and describe how they depend on each other to live and grow. (2-LS2-3 (MA), 2-LS4-1, Practice 6)
Language Objective	I can describe the living things I observe in speaking and writing. (L.6.2.a, W.2.2.a)
Materials and Preparation	This lesson occurs outdoors. Review outside learning and safety agreements. Review children’s entries in Science and Engineering packets from the first quadrat study. Select a few that show different and informative observation <ul style="list-style-type: none">● hula hoops or equivalent lengths of rope or twine knotted to enclose a circle, one for each child● Science and Engineering packets● writing and drawing tools, in one or more containers to carry outdoors● hand lenses, one for each child● chart paper and markers
Opening 9 minutes	<i>Today we’re going back out to the schoolyard for the last observation in our quadrat study. Remember, in a quadrat study scientists study the distribution of objects or organisms in an area—or how many of something there are.</i>

	<p><i>Let's take a look at a couple of observations from our last quadrat study. Last time, we observed plants that were growing in our quadrat.</i></p> <p>Show the selected examples. Use a simplified Science Circle protocol to guide the conversation.</p> <p><i>Today, we will continue to look at the plants in our quadrat. We will note any changes we can observe. We will also look for evidence of insects or other pollinators that might be living there.</i></p> <p>Distribute packets. Take the children out to the schoolyard with quadrat markers (hula hoops/ropes) and writing and drawing tools.</p> <p>Direct children to return to their same spots.</p>
<p>Investigation 15 minutes</p>	<p>Once outside, offer reminders as needed for placing the quadrat marker on the ground, observing everything within its frame. Remind them that along with observing plants, they might need to look under leaves or gently turn over rocks to find other living organisms.</p> <p>As children work, circulate to support their observation and representation. Ask the following questions.</p> <ul style="list-style-type: none"> ● <i>What plants do you notice?</i> ● <i>Do you see any new plants?</i> ● <i>How have the plants changed?</i> ● <i>How does the plant get what it needs to live and grow?</i> ● <i>Do you notice evidence of other organisms that are or may have been in your quadrat?</i> <p>If a child's quadrat includes no plants, ask them to record that data. Ask the following questions.</p> <ul style="list-style-type: none"> ● <i>Why do you think there are no plants growing in this area?</i> ● <i>Do you think a plant could grow here?</i> ● <i>What might you change to help a plant grow here?</i> ● <i>Do you see evidence that other organisms are or have been here?</i> <p>Bring the children back indoors.</p>
<p>Discussion 5 minutes</p>	<p>Facilitate a discussion to reflect on changes in the quadrats over the course of the school year. Ask the following questions, inviting children to turn and talk, to use established discussion prompts, and/or to use the "Me, too" sign to indicate connections to each other's observations and reflections.</p> <ul style="list-style-type: none"> ● What did your quadrat look like the first time you visited it?

	<ul style="list-style-type: none"> ● How did your observations change later in the autumn? ● What do you remember about your quadrat in the winter? ● How has your quadrat changed throughout the school year? ● Based on what you have observed so far, what predictions do you have about what your quadrant may look like during the summer?
Closing 1 minute	<i>What did you learn about your quadrat by observing plants and other organisms?</i>
Standards and Practices	<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> <p>W.2.2.a With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.</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>As children work to record their observations, take note of their approach to the task, particular interests, and how they might be best supported with ongoing outdoor learning.</p> <p>Review children’s packets. What plants did children record? How did they describe what organisms need to live and grow in their quadrat?</p> <p>Review each child’s Quadrat Study observations over the course of the year.. Look for ways in which their recording evolved in drawing and writing.</p>

Notes

Unit 4: The Power of Pollinators

WEEK 6 Lesson 2

Science and Engineering
Properties of Materials for Designing Hand Pollinators

Big Idea	Pollination is a result of animal behavior.
Guiding Question	How does pollination happen?
Content Objective	I can use a model of a flower to show how a material can pick up and deposit pollen from one flower to another. (2-PS1-2, Practice 2)
Language Objective	I can discuss and record how much pollen is picked up and deposited by different materials. (SL.1.2)
Vocabulary	agricultural engineer: someone who develops tools and systems for farming deposit: to place or put down; to drop off (*Unit 2, Week 4) effective: producing a good or positive result (*Week 4) model: a small copy of something reproduce: to have young or offspring; to make again scarce: in short supply, low in number
Materials and Preparation	On the whiteboard, write these questions: What properties of materials are most important for picking up and depositing pollen? Would this material be effective for picking up and depositing pollen? ● chart paper and markers Create the following chart. Note that the Observations column will be left blank here and used in Lesson 3.

Evaluating Materials for Hand Pollinators

What properties of materials are most important for picking up and depositing pollen?

Object	Material	Properties	Observations
marble	glass		
tape	adhesive tape		
eraser	imitation rubber		
aluminum foil	aluminum		
pompom	imitation wool		
pipe cleaners	chenille		
<i>Leave blank for other</i>			

- one real flower with male and female parts, such as a lily, tulip, or daffodil, or image
- Flowers for Testing sheets, one for each child
- Parts of a Flower poster, for reference
- sticky notes, a few for each pair of children
- writing tools

For each pair of children, plus an extra set for demonstration, gather:

- eraser, 1 piece (one third of the provided eraser sticks)
- marble, 1
- aluminum foil or wax paper, 1 2-inch square
- pompom, 1
- pipe cleaner, 1 2-inch piece
- tape, 1 piece about 2 inches long
- small plastic cups, 2
Cut the bottom out of one of each pair of cups.
- baking soda, ½ teaspoon

Note: Materials will be used continuously in Weeks 6-8. Devise an

	<p>organization system that children can manage for accessing their sets of materials as needed.</p>
<p>Opening 15 minutes</p>	<p><i>This week we will begin our Engineering project. We now know that flowers need to be pollinated to reproduce, or to form seeds.</i></p> <p>Think, Pair, Share.</p> <p><i>What might cause pollination to <u>not</u> happen?</i></p> <p>As children share their thinking in the whole group, highlight or surface these ideas:</p> <ul style="list-style-type: none"> ● In some places pollinators are scarce—there are not many of them. ● Sometimes, such as when plants grow in greenhouses, it’s difficult for pollinators to get to plants. <p><i>In these cases, farmers and gardeners might use hand pollinators—a tool to pollinate flowers by hand instead of leaving the job to animal and insect pollinators.</i></p> <p><i>You are about to become agricultural engineers. Agricultural engineers design and improve technology for farmers to help with their work. To support pollination, you will design and build tools that farmers or gardeners could use to pollinate flowers by hand.</i></p> <p><i>What materials will you use to build such a tool? The first thing to find out is this: What properties of materials are most important for picking up and depositing—dropping off—pollen?</i></p> <p><i>We considered the properties of materials when making chairs, way back in the fall. We thought about what properties were important to build specific kinds of chairs.</i></p> <p><i>Here are the materials we will be working with for this design challenge: making a hand pollinator.</i></p> <p>Refer to the Evaluating Materials for Hand Pollinators chart. Name and show each material and ask children to name a few properties of each one. Record their ideas on the chart.</p> <p><i>This time, you will be considering whether a material’s properties make it effective for picking up and depositing pollen.</i></p> <p>Read the first question on the board.</p> <p><i>A hand pollinator must be able to both pick up and deposit pollen to be effective—to work well—in pollinating a flower. What would happen if a material could pick up pollen from one flower, but not deposit it on another flower?</i></p>

Harvest children's responses. [The new flower will not be pollinated and then it will not be able to make new seeds.]

You and your partner will have a collection of materials. First, talk together to make predictions. For each material, ask [refer to the second question on the board]: Would this material be effective for picking up and depositing pollen?

*After you consider the materials and make predictions, test them! Agricultural engineers work with models. A **model** represents the parts of a real object. Let's take a look at a real flower and the model of the flower you will use.*

Show the flower. Review the parts of the flower and how pollination happens in nature.

Show the Flowers for Testing sheet.

Next to each flower on this page is the name of an object. These are the objects you will test to find out how effectively they work for picking up and depositing pollen.

Demonstrate the setup of the investigation.

Let's set up our investigation. These plastic cups will be our models of flowers.

Place the intact cup upside down and spread the baking soda across the flat surface (the bottom of the cup).

In our model, the flat part of this cup is the stamen—the male part of the flower—and the baking soda is the pollen.

Place the cup with the bottom removed upside down on top of a Flowers for Testing sheet.

In our model, this cup is the stigma—the female part of the flower.

Refer to the Parts of a Flower poster and to the real flower.

Demonstrate the method of the investigation.

To test how a material picks up pollen, you will touch the baking soda—the "pollen" on the "stamen"—with the object you are testing. Use a light touch. It's important that you use the same kind of light touch with each test.

To deposit pollen, tap the object with the pollen gently three times on the edge of the cup—the "stigma." We call this the Three Tap Method, and we'll do it the same way each time.

Answer children's clarifying questions about the method.

	<p><i>Why do you think it's important to pick up and deposit the pollen the same way for each material we test? [to compare the results for each material]</i></p> <p><i>We'll discuss what you discover during our next Science and Engineering lesson.</i></p>
<p>Investigation 15 minutes</p>	<p>As children work, encourage them to talk with their partners about the various materials, describing the materials' properties and sharing their observations about which are effective at picking up and depositing the "pollen."</p> <p>Encourage children to be very careful in controlling conditions—use of the Three Tap Method—noting that differences in conditions may yield differences in results.</p> <p>Listen for and note insightful observations and connections. For example, materials that are slippery don't pick up pollen well; materials with a fuzzy texture—similar to insects' legs or bodies—pick up and deposit pollen effectively. If children name additional properties of the materials, have them write each one on a sticky note and add it to the chart, in the appropriate row of the Properties column.</p> <p>Assure children that they will have more time in the next lesson to test materials.</p>
<p>Closing</p>	<p>Guide children to clean up and organize materials.</p> <p>Leave the questions on the board for the next lesson, or write them on chart paper. The investigation will continue at the beginning of Lesson 3; in addition, allow children to explore the materials during Studios.</p>
<p>Standards and Practices</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>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>
<p>Ongoing assessment</p>	<p>Review observational notes from the investigation.</p> <p>How do children approach and go about conducting their investigation?</p> <p>What aspects of their observations do they discuss?</p> <p>What conclusions do children draw, and how do they use evidence</p>

	from their observations and data to do so?
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Notes:

Large empty rectangular box for taking notes.



Name: _____ Date: _____

Be an Agricultural Engineer!

Directions: Observe the different materials that can be used to make a hand pollinator and think about their properties.

1. Which **material or materials** do you predict will work well in a hand pollinator design? Why?

2. Which **material or materials** do you predict will NOT work well in a hand pollinator design? Why not?

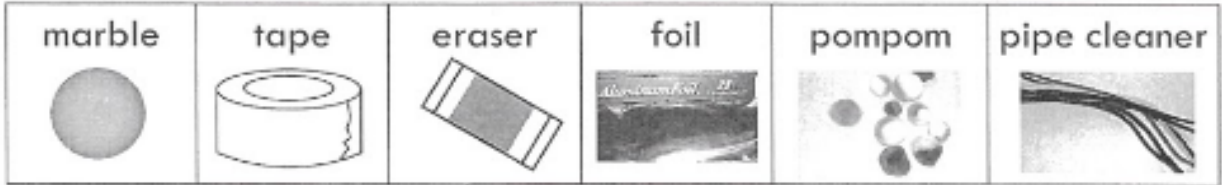
3. What **properties** do you predict will be important for a material to have if it is used in a hand pollinator design? Why?

Name: _____ Date: _____

B

Be An Agricultural Engineer!

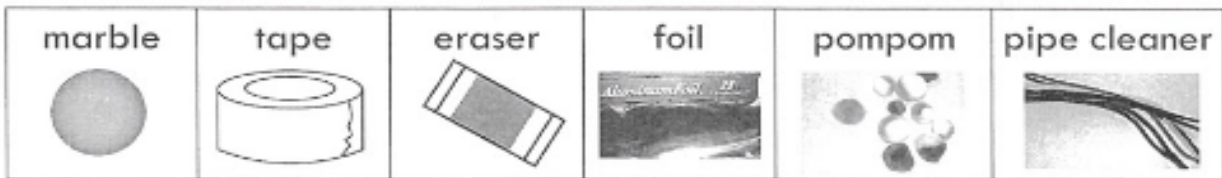
1. Circle the **material** or **materials** that you predict will work well in a hand pollinator.



glass adhesive tape rubber aluminum foil wool chenille

Why do you think so? _____

2. Put an **X** through the **material** or **materials** that you predict will **NOT** work well in a hand pollinator.



glass adhesive tape rubber aluminum foil wool chenille

Why not? _____

3. Circle the **texture** or **textures** that you predict will work well in a hand pollinator.

smooth	fuzzy	rough	sticky	other _____	other _____
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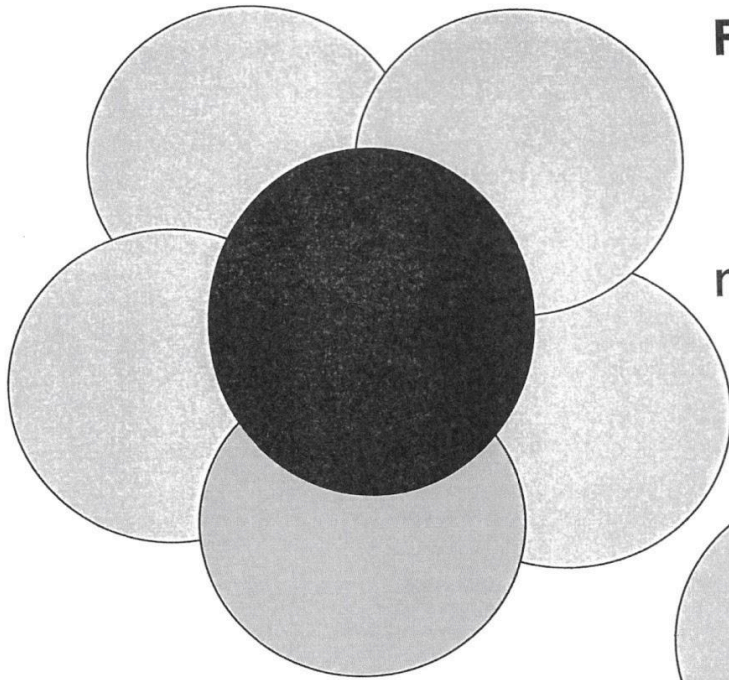
Why do you think so? _____

Name: _____ Date: _____

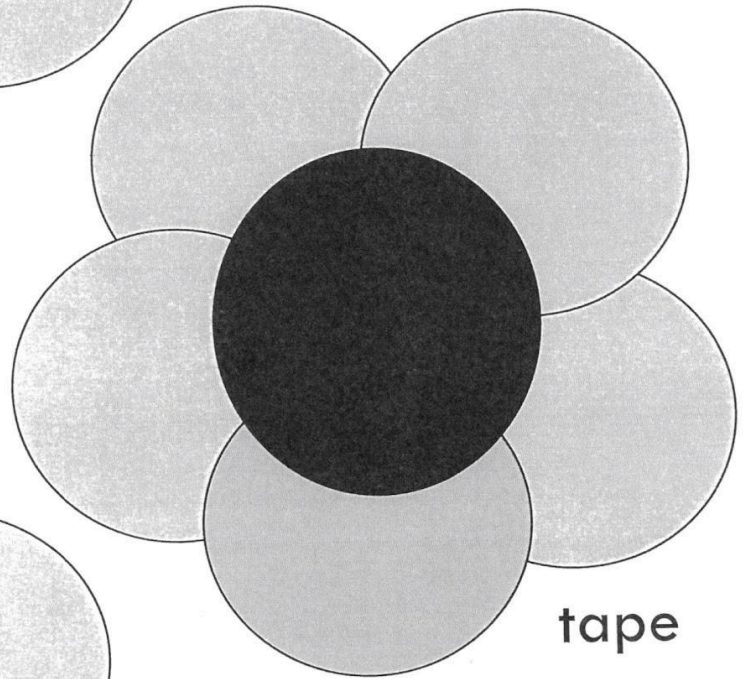
A

B

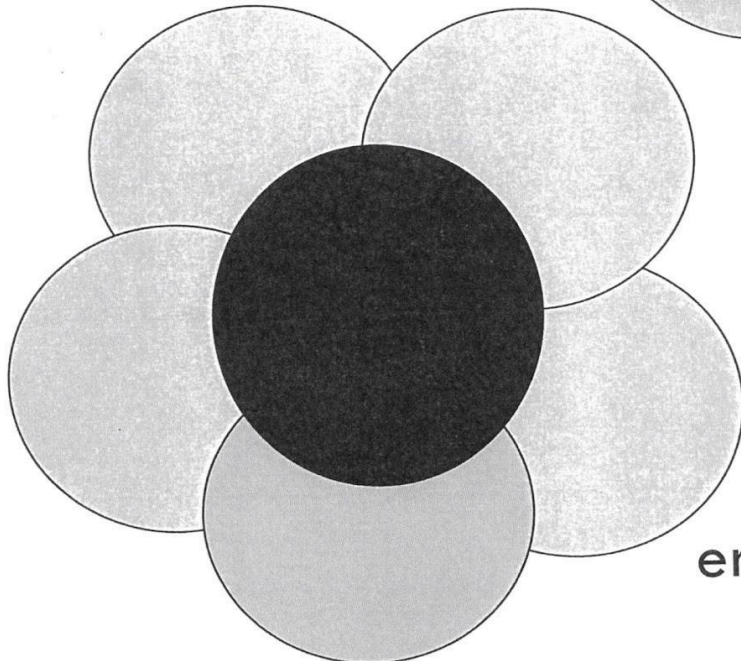
Flowers for Testing



marble



tape



eraser

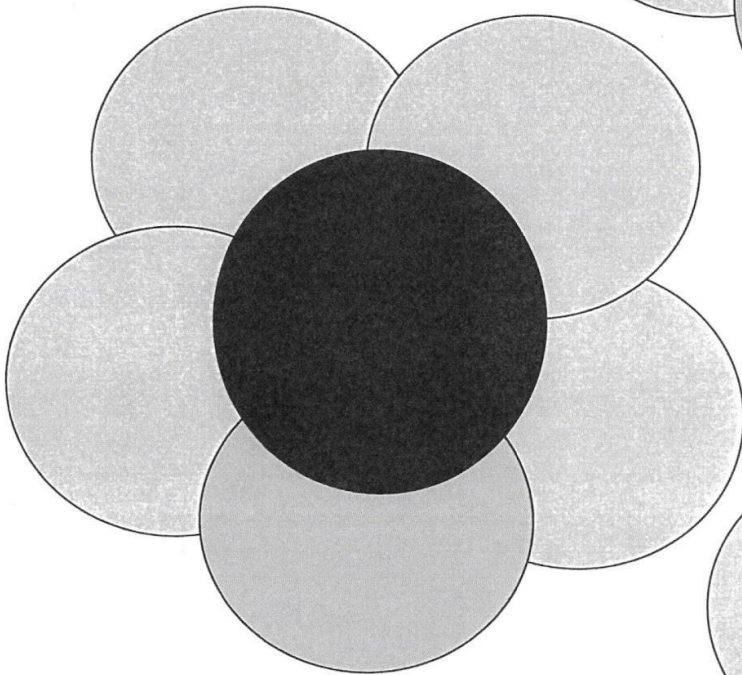
Name: _____ Date: _____

A

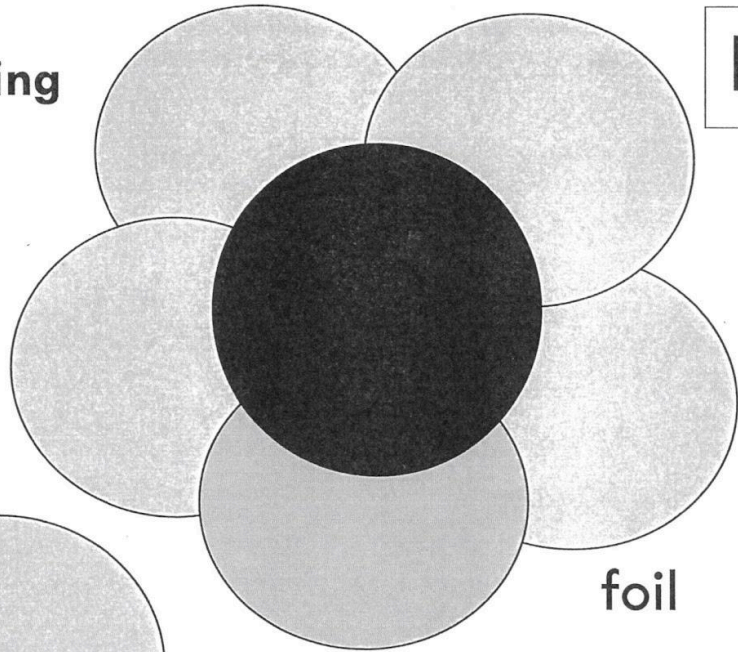
B

Flowers for Testing

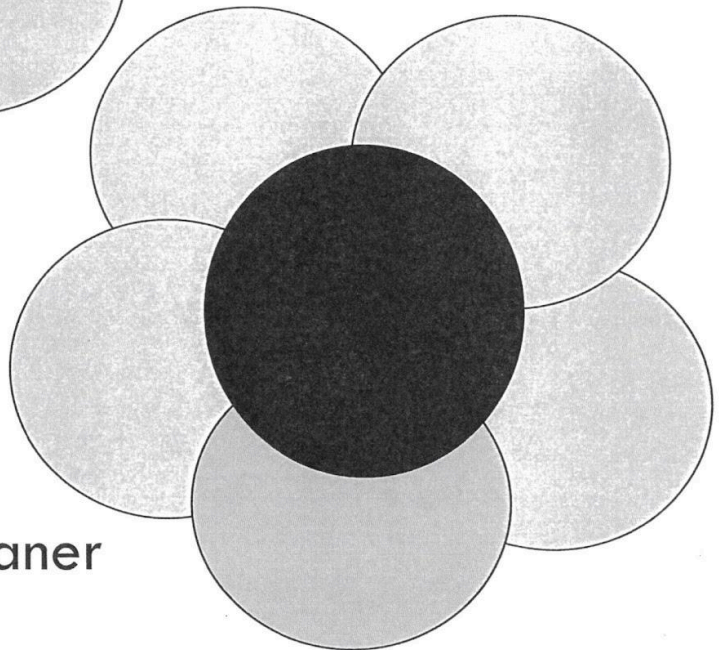
pompom



foil



pipe cleaner



Name: _____ Date: _____







Evaluating Pollination Materials

Directions: Record how much pollen each material picked up and dropped off using a scale of 0 to 5, where:

0 = no pollen

3 = some pollen

5 = a lot of pollen

object/material	How much pollen does it pick up?	How much pollen does it drop off?	Total
marble  glass			
tape  adhesive tape			
eraser  rubber			
foil  aluminum foil			
pompom  wool			
pipe cleaner  chenille			
other:			

1. Which material picks up and drops off the **most** pollen? _____

2. What properties does this material have that make it work this way?







3. Which material picks up and drops off the **least** pollen? _____

4. Why do you think that this material picks up the least amount?

Name: _____ Date: _____

Evaluating Pollination Materials

B

Material	Does it pick up pollen? <small>(circle ONE answer)</small>	Does it drop off pollen? <small>(circle ONE answer)</small>	How much pollen does it drop off? <small>(circle ONE answer)</small>
marble  glass	Yes No	Yes No	No pollen Some pollen A lot of pollen
tape  adhesive tape	Yes No	Yes No	No pollen Some pollen A lot of pollen
eraser  rubber	Yes No	<small>glass</small> Yes No	No pollen Some pollen A lot of pollen
foil  aluminum foil	Yes No	Yes No	No pollen Some pollen A lot of pollen
pompom  wool	Yes No	Yes No	No pollen Some pollen A lot of pollen
pipe cleaner  chenille	Yes No	Yes No	No pollen Some pollen A lot of pollen
other:	Yes No	Yes No	No pollen Some pollen A lot of pollen

Unit 4: The Power of Pollinators

WEEK 6 Lesson 3

Science and Engineering
Properties of Materials for Designing Hand Pollinators

Big Idea	Pollination is a result of animal behavior.
Guiding Question	How does pollination happen?
Weekly Question	Why is pollination important to people and other animals?
Content Objectives	<p>I can conclude that materials that have properties similar to insects’ legs or bodies work the best for picking up and depositing pollen. (2-PS1-2, 2-LS2-3(MA))</p> <p>I can collect and share data with other scientists to determine how well a material might pick up and deposit pollen. (2-PS1-2, Practices 3 and 4)</p>
Language Objective	I can report information I have gathered and participate in discussions with my peers. (SL.3.2.a)
Materials and Preparation	<ul style="list-style-type: none"> ● investigation materials from Lesson 2, one set for each pair Organize the materials so that children can easily pick up and carry them (on trays, for example), or arrange the materials in workspaces ahead of the lesson. ● sticky notes ● Science and Engineering packets ● writing tools ● Evaluating Materials for Hand Pollinators chart, from Lesson 2, with the Properties column filled in Transcribe children’s additions from sticky notes onto the chart.
Opening 2 minutes	<p><i>Today you will have a few more minutes to finish up the investigation of materials you started yesterday.</i></p> <p>Refer to the Evaluating Pollination Materials chart.</p> <p><i>Think about what we are trying to find out: What properties of materials are most important for picking up and depositing pollen?</i></p>

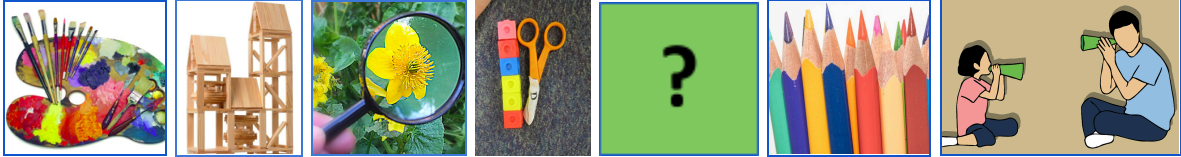
	<p>Review, as needed, the procedure for testing materials. <i>As you make new discoveries, you can write them on sticky notes and add them to our chart [indicate the Observations column].</i></p> <p><i>Once you have finished testing each of the materials, review the data you gathered about the properties of each one. Use this information and work with your partner to record your findings in your Science and Engineering packets. [Show the page.]</i></p>
<p>Investigation 18 minutes</p>	<p>Distribute materials and send children to work. Circulate to support them in continuing their investigation from Lesson 1. Remind children to use the Three Tap Method to deposit the pollen.</p> <p>As children finish the investigation, support them to refer to their data to answer the questions, What materials work best for picking up and depositing pollen? and What are their properties? Encourage children to help each other in recording their findings in their packets.</p>
<p>Discussion 10 minutes</p>	<p>Referring to the Evaluating Materials for Hand Pollinators chart, facilitate a discussion about children’s observations and discoveries about each material. Ask the following questions.</p> <p><i>Did this material pick up pollen? What are the properties of that material that made it work or not? Could it deposit, or drop off, the pollen that it picked up? What are the properties of that material that made it work or not? How much pollen did this material deposit?</i></p> <p>Record children’s ideas in the Observations column of the chart.</p> <p>Continue the discussion to compare materials.</p> <p><i>Which material or materials deposited the most pollen? Which material or materials deposited the least pollen?</i></p> <p>Note: Responses will vary based on the results of the investigations, but most effective materials are likely to include the pompom and pipe cleaner. These two materials have similar properties (fuzzy, lots of surface area) which allow pollen to both stick to them and to drop off easily. As the discussion ensues, encourage children to add to or modify their ideas. The richer the exchange of ideas, the more children will have to work with as they design hand pollinators for a variety of flowers in the coming weeks. If children recognize varying results, encourage them to ask questions to figure out why the results varied.</p>
<p>Closing</p>	<p><i>Testing materials, making observations, discussing data with others, and correcting conclusions based on others’ data is what</i></p>

	<p><i>agricultural engineers do all the time. Today we learned that the pipe cleaner and the pompom are made of materials with the best properties to pick up and deposit pollen.</i></p> <p><i>Now that we have this information, we are ready to start designing hand pollinators. We'll do that next week!</i></p>
Standards and Practices	<p>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> <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>Are children analyzing and interpreting the data they collected?</p> <p>Are children using the data collected to support their arguments?</p> <p>Do children reflect on mistakes based on class conversations?</p>

Notes

Unit 4: The Power of Pollinators

WEEK 6 Studios



Pollinator/Pollination Projects

In all studios, children continue exploring unit themes and begin contributing to the Pollinator Project, according to the class Project Plan.



In these last weeks of the school year, studios are flexible and open in order for children to access and productively use any materials and processes explored thus far, for work of their own design, as well as for the Pollinator Project.


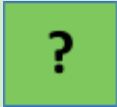
Studios run for two days this week to allow for three Engineering Lessons.



<p>Big Ideas</p>	<p>Organisms in an ecosystem are interdependent.</p> <p>Animals, including humans, benefit from and depend on pollination.</p>
<p>Weekly Question</p>	<p>Why is pollination important to people and other animals?</p>
<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● Pollinator Project Plan, from Text Talk, Day 1 ● crayons, for Matching Crayons routine ● Planning Prompts, one for each pair of children ● Planning sheet, one for each child or small group ● new studios prompts <p>Cut apart and replace studios prompts. Note that these prompts are for Weeks 6 and 7.</p> <ul style="list-style-type: none"> ● Unit 4 Observation Sheet <p>Ensure that as many unit resources as possible are available at the Research Studio and accessible throughout the classroom.</p> <p>Review the Project Plan, and consider how the project might take shape in various ways, with various materials. Prepare materials that will support a variety of ideas. Some ideas include:</p> <ul style="list-style-type: none"> ● drawing plans for gardens that include pollinator-friendly plants and other practices that support pollination ● writing procedures for how their hand pollinators work ● writing poems about pollinators and/or flowers

	<ul style="list-style-type: none"> ● acting out garden scenes from the perspectives of gardener, pollinator, and plants ● writing and performing a play about the process of pollination, the loss of pollinators, or interactions among pollinators or gardeners ● creating collages or other multimedia artwork using seed catalogs and other art techniques explored through the year ● drawing maps of pollinator routes from home to plants ● representing cycles of growth and change of plants and/or pollinators ● composing music that evokes pollinators’ activities ● painting a mural to share as a design proposal for the community garden
<p>Opening</p>	<p><i>This week we’re beginning our Pollinator Project. We have started outlining our Project Plan, so you might refer to this when you plan your work in Studios.</i></p> <p><i>Let’s take a few minutes to plan how we will use Studios time. There are lots of possibilities to think about, and we have just two days this week to get started on our ideas.</i></p> <p>Supply some ideas about how children might pursue Studios work (above). Demonstrate, to the extent that is useful, materials and tools available in each studio. Distribute crayons.</p> <p><i>First, find your crayon partner, and talk together about your ideas for using your time well during Studios to communicate your ideas about the importance of pollinators. Today you’ll mostly have time to plan, gather materials, and set up your work. You can continue your work tomorrow and next week.</i></p> <p><i>Here are some questions to help you plan your work.</i></p> <p>Distribute Planning Prompts to each pair of children.</p> <p>Allow time for children to exchange ideas about work that interests them. Encourage them to identify a partner or small group to work with. As children are ready, distribute Planning Sheets to individuals and/or pairs/small groups to record their emerging plans. Have a few children share their plans aloud to the group. Support any children who are still unsure of how to proceed, perhaps suggesting classmates to work with, an area to work in, materials to start with, or specific ideas to pursue.</p>

	<p><i>Even though your project may use materials from more than one studio, each project will be based in one studio so that things don't get confusing. Think about which studio you think you'll spend the most time in.</i></p> <p>Dismiss children to begin to organize their work according to their plans.</p>
<p>Facilitation</p>	<p>Assist the children in planning, setting up, and getting started with their self-defined projects.</p> <p>Encourage children to situate themselves in one studio, to support organization within and among projects, even as they may use materials and resources from—and collaborate with children in—other studios.</p> <p>As work proceeds, facilitate and foster cross-pollination of ideas by suggesting that groups take a break to look at each other's work, ask questions, and be inspired by their classmates' efforts.</p> <p>Support children if they struggle to come to group consensus about next steps. Refer them to the Planning Prompts, to the Weeks 6 and 7 Studios Prompts, and to their Planning sheets.</p> <p>Have children keep their Planning sheets with materials they collect and any work they have begun.</p> <p>Use the boxes below to record the work children are pursuing, and use these to plan for subsequent sessions in studios.</p>

<p style="text-align: center;">Art</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	
<p style="text-align: center;">Building</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	

<p>Discovery</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	
<p>Research</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	

<p>Math</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	
<p>Writing and Storytelling</p> 	<p>Project(s): _____</p>
<p>Current state of the project</p>	
<p>Questions to prompt further work</p>	
<p>Needed resources, materials, collaboration</p>	

Standards	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.
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Additional Notes

While you are working, think about:

What is our idea about the importance of pollinators?

How do these materials help communicate this idea? Do we need other materials?

What do we want our audience to do or think after seeing our project?

While you are working, think about:

What is our idea about the importance of pollinators?

How do these materials help communicate this idea? Do we need other materials?

What do we want our audience to do or think after seeing our project?

While you are working, think about:

What is our idea about the importance of pollinators?

How do these materials help communicate this idea? Do we need other materials?

What do we want our audience to do or think after seeing our project?

While you are working, think about:

What is our idea about the importance of pollinators?

How do these materials help communicate this idea? Do we need other materials?

What do we want our audience to do or think after seeing our project?

Discovery Studio

While you are working, think about:

How well does this hand pollinator work?

What information will someone need to understand when and why to use this hand pollinator?

What could we call it?

Pollinator Project Planning

What message do I want to communicate about the importance of pollinators and pollination?

Who is my audience?

What will I create or do to communicate this idea?

Who will I work with?

What materials will we need?

What resources will we need?

How will we get feedback?

How will we know when our work is finished?

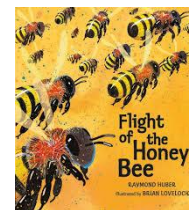
Name(s) _____

Pollinator Project Planning		Still working	Done
Message			
Audience			
Project			
Materials	<ol style="list-style-type: none">1.2.3.4.5.6.		
Other resources	<ol style="list-style-type: none">1.2.3.		

Feedback			
Next steps	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		
Presentation Ideas			

Unit 4: The Power of Pollinators

WEEK 6 Day 1



Writing Argument
Deconstruction and Joint Construction: Reasons

Content Objectives	<p>I can discuss how reasons support the thesis of a text. (R.10.2.a)</p> <p>I can research to generate reasons. (W.1.2.a, W.1.2.b)</p> <p>I can write reasons to support a thesis that appeal to a specific audience. (W.3.2, W.2)</p>
Language Objective	<p>I can discuss with my peers whether a reason supports a thesis and is appropriate for a specific audience. (SL.1.2)</p>
Vocabulary	<p>appeal: to be interesting</p> <p>argument: a genre of writing whose purpose is to convince someone to do something or about something</p> <p>convince: to persuade</p> <p>reason: why the audience should do or think something</p> <p>thesis: the part of the argument that states what the writer or speaker is trying to convince someone to do or think</p>
Materials and Preparation	<ul style="list-style-type: none"> ● chart paper <p>Prepare the following “Monarch Larva Monitoring Project” chart.</p>

	<div data-bbox="487 210 1372 703" data-label="Diagram"> </div> <ul style="list-style-type: none"> ● <i>Flight of the Honey Bee</i> chart, from Week 5, Day 3 ● Thesis chart, from Week 5, Day 5 ● Audience: Local Gardeners chart, from Week 5, Day 4 ● writing tools ● sticky notes, 4 for each child ● clipboards or other writing surfaces ● research materials, available for children’s reference: <ul style="list-style-type: none"> ○ <i>What If There Were No Bees?</i> ○ <i>What is Pollination?</i>, with page 28 flagged ○ <i>Amazing Bees</i>, with page 40 flagged ○ <i>Flight of the Honey Bee</i>, with “Save the Bees!” flagged ○ brochures: “Your School and Pollinators,” “Attracting Native Pollinators to Your Farm,” “Three Steps You can Take to Bring Back the Pollinators” ○ “Pollinator Plants: Northeast Region” ○ “Pollinator Conservation” ● chart paper and marker <p>At the top of the paper, write “Reasons.”</p> ● Argument Observation Tools, from Week 5, Day 5
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| **Opening** 1 minute | *Last time, you wrote possible thesis statements for your arguments. Today you are going to start researching **reasons** to support your thesis.* |
| **Deconstruction** 8 minutes | *Just like the thesis, the reasons in an argument are chosen carefully, to **appeal**, or to be interesting, to a specific audience. Let’s take a look at the arguments in *Flight of the Honey Bee* and the “*Monarch Larva Monitoring Project*” brochure to see which reasons are used.* Review the Reasons portions of the *Flight of the Honey Bee* and “*Monarch* |

	<p>Larva Monitoring Project” charts. Identify the audience for each text. [The book is written for children, and the brochure is written for adults.] Discuss how the reasons chosen by the authors appeal to their specific audiences.</p>
<p>Joint Construction 20 minutes</p>	<p>Review the possible thesis statements.</p> <p><i>To convince local gardeners to plant to attract pollinators, you need to choose reasons to support your argument. These reasons need to appeal to local/community gardeners. Take a minute to put yourself in their shoes. What is important to them? Let’s review the notes we wrote about local gardeners in our chart. Is there anything else we should add?</i></p> <p>Give children time to think, and then harvest their ideas. Record additional ideas on the chart.</p> <p><i>Think about reasons local gardeners should plant for pollinators. Consider what you already know about plants and pollinators. You can also do research to learn more. I marked pages in our texts and chose brochures that might include helpful information. [Show the books and brochures.] We also have some new resources that might be helpful to you. [Show “Pollinator Plants: Northeast Region” and “Pollinator Conservation.”]</i></p> <p><i>You will each get four sticky notes, but you don’t need to use all of them. Write one reason on each note. You do not need to write complete sentences on the sticky notes; just jot your ideas. As you write, remember to think of reasons that support the thesis and appeal to the audience.</i></p> <p>Distribute clipboards, writing tools, and sticky notes, and have each child write up to four reasons to support the thesis.</p> <p>Gather the children back together to share their reasons. Have each child read their reasons, and quickly group the sticky notes by common ideas.</p> <p>As a class, decide on the reasons that best support the thesis and appeal to the audience. Respectfully eliminate reasons that do not relate to the topic or appeal to the audience, discussing with the children why these reasons are not a good fit. Choose the strongest reasons, and make sure that each reason is a different point.</p> <p>Stick the chosen reasons on the Reasons chart, making edits and revisions as necessary. (The reasons will be reorganized before the Day 2 lesson.)</p>

<p>Closing 1 minute</p>	<p><i>Today you wrote reasons to support your thesis. Tomorrow we will research to find evidence to support these reasons.</i></p>
<p>Standards</p>	<p>R.10.2.a Describe how reasons support specific points the author makes in a text. W.3.2 Use a combination of drawing and writing to communicate a topic with a beginning, middle (including details), and an end. W.1.2.a Investigate questions by participating in shared research and writing projects. W.2 Develop, strengthen, and produce polished writing by using a collaborative process that includes the age-appropriate use of technology. W.1.2.b Gather information from provided sources and/or recall information from experiences in order to answer questions. 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>Ongoing assessment</p>	<p>As children work, circulate and take notes on the Argument Observation Tool, focusing on the following questions: How well do children understand their audience? Do children’s reasons support the thesis? Are the reasons appealing to the audience?</p>

<p>Notes</p>

Pollinator Conservation



Brown-belted bumble bee (*Bombus griseocollis*), metallic green sweat bee (*Agapostemon splendens*) exiting ground nest, "Pesticide Free" garden, and pollinator habitat with sign.

The Importance of Pollinators

Pollinators are essential to our world. Bees, butterflies, hummingbirds, moths, wasps, flies, beetles, even a few bats are some of the animals that move pollen between flowers, enabling them to produce seeds.

The ecological service these pollinating animals provide is necessary for the reproduction of over 85% of the world's flowering plants. The resulting seeds and fruits provide food for countless other animals ranging from songbirds to grizzly bears.

Pollinators are also essential to human life. More than $\frac{2}{3}$ of the world's crop species, whose fruits and seeds together provide over 30% of the foods and beverages that we consume, require the presence of a pollinator. The United States alone grows more than 100 crop plants that need pollinators. Without pollinators, there would be no apples, pumpkins, blueberries, or many other fruits and vegetables. Only wind-pollinated crops such as corn and wheat would remain.

Bees are the primary pollinator for most wildflowers and crops in temperate North America. Worldwide, there are an estimated 20,000 species of bees, with over 3,600 species native to the United States and Canada. The non-native European honey bee (*Apis mellifera*) is the most common domesticated pollinator in the United States. However, native pollinators are often adapted for specific plants, resulting in more efficient pollination and the production of larger and more abundant fruits and seeds.

Pollinators at Risk

In many areas pollinators are in decline. The loss of honey bees due to pests, diseases, and other factors has been widely publicized in recent years.

While the loss of honey bees is alarming, many of our wild native bees are also disappearing. For example, in the mid-1990s, the yellow-banded bumble bee (*Bombus terricola*) was the most abundant bumble bee in northern Wisconsin. Ten years later it made up less than 1% of the state's bumble bees. In Oregon, Franklin's bumble bee (*B. franklini*) has likely gone extinct during the same period.

Pollinators are a keystone species group; the persistence of a large number of other species depends upon them. As pollinators disappear, the effect on the health and viability of crops and native plant communities can be disastrous.



Our Bring Back the Pollinators campaign is based on four principles: grow pollinator-friendly flowers, protect bee nests and butterfly host plants, avoid pesticides, and spread the word.

You can participate by taking the Pollinator Protection Pledge and registering your habitat on our nationwide map of pollinator corridors.

www.bringbackthepollinators.org

Four Principles To Help Pollinators

Protecting, enhancing, or providing habitat is the best way to conserve pollinators. Whether you tend a small flower box in the city or maintain a large rural garden, there are practical steps you can take to improve the health, abundance, and diversity of your local pollinators.

1. Create a Diversity of Bloom

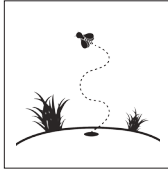
Bees, butterflies, and other beneficial insects need abundant nectar and pollen sources throughout the growing season. Select native plants wherever possible. Cultivate a landscape with a diversity of flowering plants that are known to provide abundant pollen and nectar for pollinators.



Try to provide blooming plants from early spring to fall, with at least three species of flower in bloom each season. Note that some ornamental plants have been selected for traits that are attractive to people, rather than pollinators. Avoid pollenless cultivars and double-petaled varieties of ornamental flowers.

2. Protect Nests and Egg-Laying Sites

Native bees use untidy areas of the garden to nest such as open sandy ground, brush piles, and old tree stumps and snags. Consider leaving some of these for wildlife habitat. Supplement nesting opportunities with mason bee houses or bundles of hollow plant stems.



Butterflies often need specific host plants to feed on during their caterpillar stage. For example the caterpillars of monarch butterflies feed exclusively on the leaves of various milkweeds. Protect or plant the host plants of butterflies native to your area.

3. Don't Use Pesticides

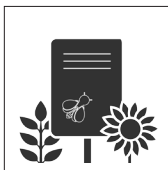
Pesticides can be important tools for protecting crops and controlling invasive species, however most lawn and garden pest problems can be solved without such chemicals. Keep in mind that even “organic-approved” insecticides can harm pollinators and other wildlife.



Herbicides, while usually not directly lethal to insects, can reduce plant diversity, including the diversity of weedy, noninvasive wildflowers that provide essential pollen and nectar for bees, butterflies, and hummingbirds.

4. Spread the Word

Let your friends and neighbors know you're providing habitat with a pollinator habitat sign. Talking to your community will encourage more people to join this important effort, helping even more pollinators! You can also sign the Pollinator Protection Pledge at www.bringbackthepollinators.org.



Bees at a Glance

- ⇒ Unlike honey bees which form large social units, the majority of our native bees live as solitary individuals, with each female constructing her own nest. She collects nectar and pollen to provision it with food for her offspring. The only native bees to form social colonies are bumble bees and a few species of sweat bees.
- ⇒ Most native bees are usually very gentle and unlikely to sting unless grabbed or stepped on. Only honey bees, bumble bees, and a few of the social wasps such as yellowjackets (which are not significant pollinators) are likely to sting when their nests are disturbed.
- ⇒ The economic value of pollinator-dependent crops in the United States was estimated to be between \$18–\$27 billion in 2003. If this calculation is expanded to include indirect products, such as the milk and beef from cattle fed on alfalfa, pollinators may be responsible for more than twice this dollar amount.



Solitary small carpenter bee (*Ceratina* sp.) nesting in blackberry cane.



Gentle cellophane bees (*Colletes* sp.) nest in the ground—often in lawns!

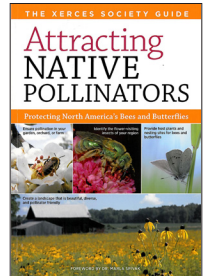


Mining bees (*Andrena* sp.) are important pollinators of apples and other crops.

Learn More

Attracting Native Pollinators

Our best-selling book highlights the role of native pollinators in natural ecosystems, gardens, and farms. This comprehensive guide includes information about pollinator ecology, detailed profiles of over 30 common bee genera, and habitat designs for multiple landscapes with over 50 pages of fully illustrated regional plant lists. Available in bookstores everywhere, and through www.xerces.org/books.



The Xerces Pollinator Conservation Resource Center

Our Pollinator Conservation Resource Center includes regional information on pollinator plants, habitat conservation guides, nest management instructions, bee identification and monitoring resources, and directories of native pollinator plant nurseries. www.xerces.org/pollinator-resource-center

Pollinator Plant Lists

Regional lists of plants that are attractive to native bees, bumble bees, honey bees, and other pollinators, that are well-suited for small-scale plantings in gardens, on business and school campuses, in urban greenspaces, and in farm field borders. <http://www.xerces.org/pollinator-conservation/plant-lists>

Acknowledgements

PHOTO CREDITS: Brown-belted bumble bee by Rich Hatfield, The Xerces Society; metallic green sweat bee by Drew Marold*; “Pesticide Free Zone” garden by Anuj Rajbhandari*; pollinator habitat by Sara Morris, The Xerces Society; small carpenter bee and mining bee by Nancy Lee Adamson, The Xerces Society; and cellophane bee by Rob Cruickshank*. *Via flickr.com under Creative Commons license. ARTWORK CREDITS: Ground nest icon by Kaitlyn Rich, based on Grass icon by Bryn Mackenzie and Bee icon by Juan Sebastian Rickenmann. From The Noun Project: Flower designed by Adam Zubin. Spray Bottle designed by Julieta Felix. Habitat sign designed by Margo Conner. Leafy plant icon designed by Nestor Arellano.

Unit 4: The Power of Pollinators

WEEK 6 Day 2

Writing Argument

Deconstruction and Joint Construction: Collecting Evidence

Content Objectives	I can research to gather evidence to support reasons in an argument. (W.3.2, W.2, W.1.2.a, W.1.2.b)
Language Objective	I can recount key pieces of evidence from a text. (SL.2.2.a)
Vocabulary	<p>argument: a genre of writing whose purpose is to convince someone to do something or about something</p> <p>audience: an individual or group for whom a piece of writing is composed</p> <p>convince: to persuade</p> <p>evidence: facts and details used to support reasons in an argument</p> <p>reason: why the audience should do or think something</p> <p>thesis: the part of the argument that states what the writer or speaker is trying to convince someone to do or think</p>
Materials and Preparation	<ul style="list-style-type: none">● Argument Stages slides, from Week 5, Day 2● Reasons chart, from Day 1 <p>Before the lesson, rearrange the sticky notes so that they form two columns.</p> <ul style="list-style-type: none">○ The first column will include reasons not based in research evidence. (These reasons can still be included in their arguments, but the unit resources do not have information from which they can draw evidence.)○ The second column will include reasons for which the children will be able to research evidence. These reasons include<ul style="list-style-type: none">■ Pollinators are in trouble.■ Pollinators provide food and drinks.■ Plants need pollinators to reproduce.■ Pollinators are an important part of an ecosystem. <ul style="list-style-type: none">● writing tools

Writing U4 W6 D2

	<ul style="list-style-type: none"> ● Gathering Evidence sheets, one copy for each child ● research materials, available for children’s reference: <ul style="list-style-type: none"> ○ <i>What If There Were No Bees?</i>, with pages 8-13 and 16 flagged ○ brochures: “Your School and Pollinators,” “Attracting Native Pollinators to Your Farm,” “Three Steps You can Take to Bring Back the Pollinators” ○ brochure excerpts ○ “Pollinator Conservation” ● Argument Observation Tools, from Week 5, Day 5
<p>Opening 1 minute</p>	<p><i>You have now planned possible thesis statements and reasons for your arguments. Some arguments also contain evidence to provide more details about their reasons and to make their arguments stronger.</i></p>
<p>Deconstruction 5 minutes</p> <p>slide 2</p>	<p><i>We’ve read this argument letter from Mommy to Ramón a few times.</i></p>
<p>slide 7</p>	<p><i>Mommy gives Ramón several reasons why he should hold her hand when crossing the street. If she just said “Sometimes you don’t notice the cars are coming,” Ramón might have responded, “Yes I do!” Her reason would not have been as convincing. Instead, she provides evidence to support her reason. She gives a specific example of when Ramón ran into the road without looking.</i></p>
<p>Joint Construction 20 minutes</p>	<p>Show the Gathering Evidence sheet.</p> <p><i>This is the sheet you used to research and gather evidence when we wrote our argument letter together. You will use this sheet again as you research evidence to support your reasons.</i></p> <p><i>The audience is written here, at the top, to remind you who you are writing to.</i></p> <p><i>On this line you will write one of the reasons from this chart. [Refer to the Reasons chart.] I organized the reasons into two columns. The reasons on the left can be used in your arguments, but the texts that we have won’t help you provide evidence to support them. The reasons on the right are the ones we will focus on today. Read the reasons in that column. Think about one that appeals to you and that you would want to research.</i></p>

	<p>Distribute writing tools and Gathering Evidence sheets. As a class, negotiate who will research each reason, with the goal of providing evidence for each reason in the right-hand column of the chart. Have children write the reason they will research on their sheets. Group together children who are researching the same reason.</p> <p><i>Here are some of the resources I've gathered for our research. [Show the research materials.] Together with your group, think about how to provide evidence, or more details, to support this reason. Think about which resources might be most helpful to you. Then write these sources in the "Evidence Source" boxes. After your group comes up with a plan for where to gather information, you may begin your research. Write any evidence you find from a source in the box labeled "Evidence."</i></p> <p>Send children to work in groups. Circulate to support their work, guiding them to resources and helping them think through the types of evidence that could support their reasons. Choose one group to share their work.</p>
<p>Closing 4 minutes</p>	<p>Gather the children back together and have one group share their process for identifying sources of evidence and locating evidence in the source.</p> <p><i>If your group needs more time to gather evidence, you can continue your work next week during Writing. Next week you will use what you've written and researched as a class to write your own arguments.</i></p> <p>After the lesson, collect children's Gathering Evidence sheets, both to analyze for assessment purposes and to copy. Copy each sheet and plan to organize them so that all children have access to each other's research as they begin to write.</p>
<p>Standards</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>W.1.2.a Investigate questions by participating in shared research and writing projects.</p> <p>W.2 Develop, strengthen, and produce polished writing by using a collaborative process that includes the age-appropriate use of technology.</p> <p>W.1.2.b Gather information from provided sources and/or recall information from experiences in order to answer questions.</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>As children work, circulate and take notes, focusing on the following questions.</p>

	<p>What sources of evidence do children choose? What types of evidence do children identify? How comfortable are they with the process of finding evidence? How much support do they need? What support will children need as they continue to gather evidence?</p>
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Notes

Name: _____

Gathering Evidence

Audience: community gardeners
Reason:

Evidence Source:
Evidence:

Evidence Source:
Evidence:

Evidence Source:
Evidence:

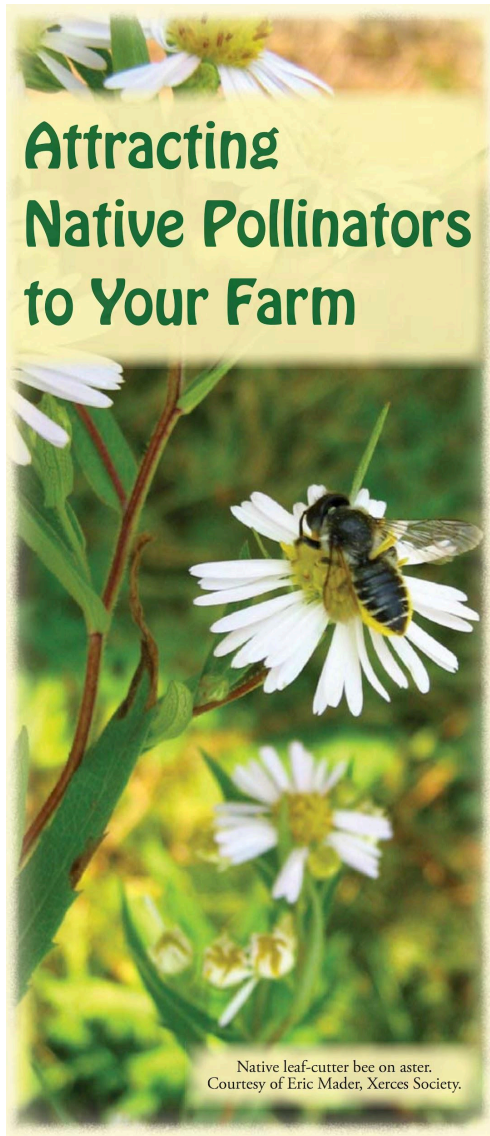
brochure excerpts



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.

Writing U4 W6 D2

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

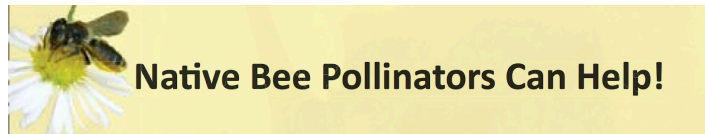


Attracting Native Pollinators to Your Farm

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.

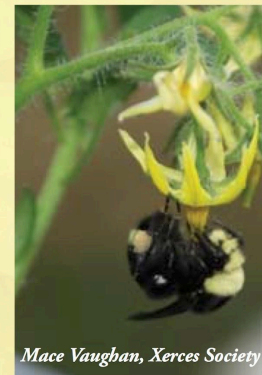


Native Bee Pollinators Can Help!

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

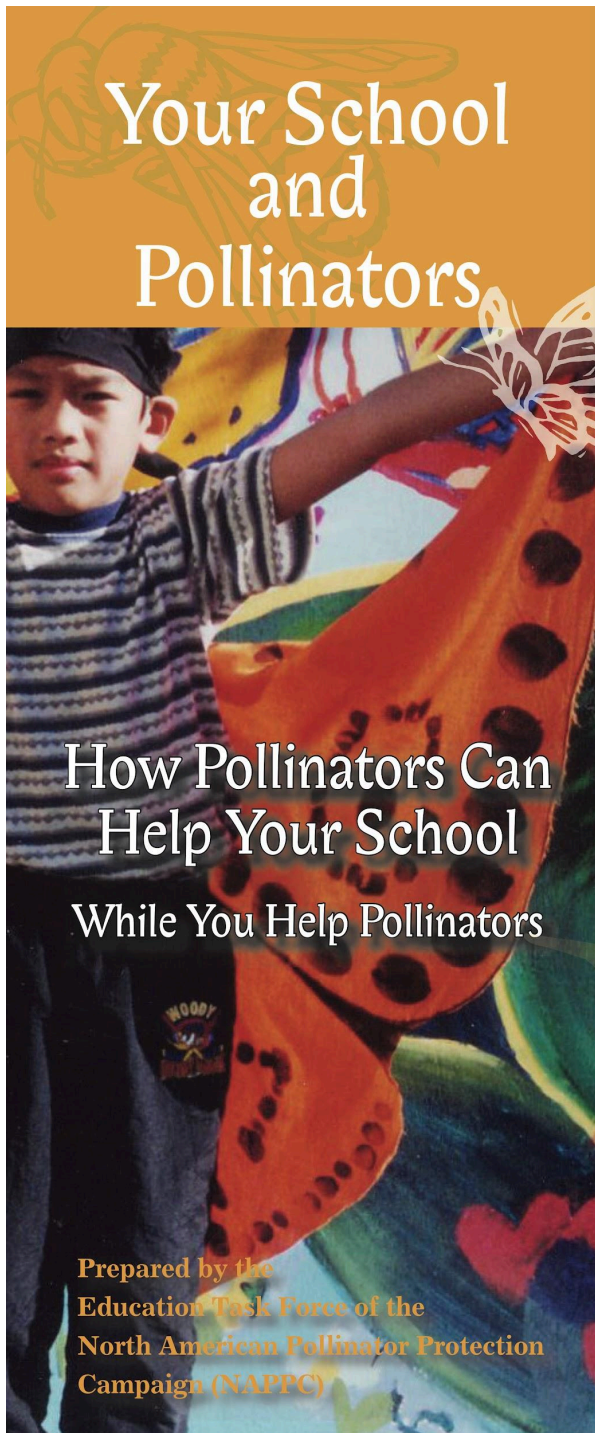
Native bees can provide the following benefits:

- 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.



Mace Vaughan, Xerces Society

Buzz pollination results in more abundant and larger fruit production.



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.

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.

Unit 4: The Power of Pollinators

WEEK 6 Day 3

Writing Argument
Deconstruction and Individual Construction: Media

Content Objective	I can choose the most effective medium for my argument. (W.2.1, W.2.4)												
Language Objective	I can describe the features of a medium and its benefit for a specific audience. (SL.2.1)												
Vocabulary	<p>argument: a genre of writing whose purpose is to convince someone to do something or about something</p> <p>audience: an individual or group for whom a piece of writing is composed</p> <p>genre: a type of writing</p> <p>medium: a form of communication</p>												
Materials and Preparation	<ul style="list-style-type: none"> ● samples of children’s writing in different media from the year, for example: <ul style="list-style-type: none"> ○ personal recount books ○ class argument letter ○ procedures ○ explanation posters ○ autobiographical poems ○ report brochures ● chart paper and marker <p>Prepare the following Media chart.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="3" style="padding: 5px;">Media</th> </tr> <tr> <th style="width: 15%;"></th> <th style="width: 40%; padding: 5px;">Features</th> <th style="width: 45%; padding: 5px;">Benefits for local gardeners</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">bookmark</td> <td style="width: 40%;"></td> <td style="width: 45%;"></td> </tr> <tr> <td style="padding: 5px;">brochure</td> <td></td> <td></td> </tr> </tbody> </table>	Media				Features	Benefits for local gardeners	bookmark			brochure		
Media													
	Features	Benefits for local gardeners											
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	<table border="1" data-bbox="500 205 1360 470"> <tr> <td data-bbox="500 205 678 268">flyer</td> <td data-bbox="678 205 1019 268"></td> <td data-bbox="1019 205 1360 268"></td> </tr> <tr> <td data-bbox="500 268 678 331">letter</td> <td data-bbox="678 268 1019 331"></td> <td data-bbox="1019 268 1360 331"></td> </tr> <tr> <td data-bbox="500 331 678 394">poem</td> <td data-bbox="678 331 1019 394"></td> <td data-bbox="1019 331 1360 394"></td> </tr> <tr> <td data-bbox="500 394 678 470">poster</td> <td data-bbox="678 394 1019 470"></td> <td data-bbox="1019 394 1360 470"></td> </tr> </table> <ul style="list-style-type: none"> ● sample bookmarks Copy and cut apart the bookmarks, enough so that each pair can have one. ● media mentor texts (each pair will analyze one): <ul style="list-style-type: none"> ○ brochures: “Attracting Native Pollinators to Your Farm” and “Toronto Community Gardens” ○ flyer: “Free Fun Fridays,” 2 copies ○ letters: letters to Superintendent Chang, from Ellison Parks and Haley classrooms ○ poem: “The Mosquito’s Song,” 2 copies ○ posters: Parts of a Flower, 10 Good Reasons to Eat Locally Grown, Massachusetts Native Plants and Pollinators ○ writing tools ● sticky notes, two for each pair of children ● Argument Planning sheet, one copy for each child 	flyer			letter			poem			poster		
flyer													
letter													
poem													
poster													
<p>Opening 1 minute</p>	<p><i>Today you will begin planning for writing your arguments.</i></p>												
<p>Deconstruction 23 minutes</p>	<p>Display examples of children’s writing in different media. <i>This year you have written in different genres, using different media. In Unit 1, you wrote personal recount books, and together we wrote an argument letter. In Unit 2 you wrote procedures in different media, and you worked in pairs to write reports in captions and explanation posters. In Unit 3 you wrote autobiographical poems and biography books. You just finished writing report brochures.</i></p> <p><i>Now that you have experience with a variety of media, you will be able to choose which medium will be most effective for the argument you write to local gardeners.</i></p> <p>Show the Media chart. <i>Today you will meet in pairs to analyze and discuss a particular medium. You will think about its features and how it could be a good choice for communicating to local gardeners. Let’s first try this together with a new medium: bookmarks.</i></p>												

	<p>Distribute the bookmarks to pairs. <i>Look at the bookmark and think about its features: its size, how it's used, how much text and how many images it has.</i></p> <p>Give children several minutes to observe and think. Then harvest their ideas and record them on the chart.</p> <p><i>Now think about your audience: local gardeners. How might a bookmark be useful to them?</i></p> <p>Harvest the children's ideas and record them on the chart.</p> <p><i>Now it's your turn. With your partner, you will look at one medium from this chart. On one sticky note, write down its features. On the other sticky note, write down how it might be useful for local gardeners.</i></p> <p>Distribute one media mentor text and two sticky notes to each pair.</p> <p>Send the children to work in pairs, and circulate to support their work. After about eight minutes, bring the group back together. Have each pair share and add their sticky notes to the chart.</p>
<p>Individual Construction 5 minutes</p>	<p><i>Now you will choose a medium. You might consider a medium that you really enjoyed and want to try again, or one that you would like more practice with. Consider the text and images required for each medium.</i></p> <p><i>Review our Media chart. Think about each medium. Which do you think will be the most effective for you as you write your argument to local gardeners?</i></p> <p>Show the Argument Planning sheet. <i>Tomorrow you will finish filling in this sheet. For today, you will just fill in which medium you are choosing for your argument.</i></p> <p>Give children time to write in their chosen media.</p>
<p>Closing 1 minute</p>	<p><i>Today you analyzed different media and chose one medium for your argument. Tomorrow you will complete your planning.</i></p>
<p>Standards</p>	<p>W.2.1. Write opinion pieces that introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.</p> <p>W.2.4. Produce writing in which the development and organization are appropriate to task, purpose, and audience.</p> <p>SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger</p>

	groups.
Ongoing assessment	<p>As children work, circulate and take notes, focusing on the following questions.</p> <ul style="list-style-type: none">What features of each medium do children notice?How do they interpret each medium as being useful/not useful to their audience? <p>After the lesson, collect children’s Argument Planning sheets.</p> <p>Which media do children choose? Why?</p>

Notes

 <p>U.S. Department of Agriculture</p> <h1>BIGLEAF MAPLE</h1> <p><i>Acer macrophyllum</i></p> <p>This large, northwestern Pacific coast maple can grow up to 100 feet and live up to 200 years!</p> <p>Bigleaf Maple spring flowers are a favorite for bees, and the same tree can simultaneously produce both male and female flowers.</p>  <p>Yellow-faced Bumble Bee <i>Bombus vosnesenskii</i></p> <p>Bigleaf Maple is often draped in lichen, ferns, and mosses and is an important source of food for mice, deer, and other forest wildlife.</p>  <p>It produces valuable wood and maple syrup.</p>	 <p>U.S. Department of Agriculture</p> <h1>CRAB APPLE</h1> <p><i>Malus species</i></p> <p>Blue Orchard Mason Bee <i>Osmia lignaria</i></p>  <p>The crab apple is the only native apple to the U.S.</p> <p>It is the ancestor rootstock for over 7,000 varieties of domestic food apples grown in the U.S.</p> <p>They are used for cross-pollinating commercial apple trees in orchards.</p> <p>Apples' beautiful flowers and delicious fruit have made them a favorite in many diets of bees and people!</p> 
<p>Partners:  POLLINATOR PARTNERSHIP</p>	<p>Partners:  POLLINATOR PARTNERSHIP</p>
 <p>Forest Service National Headquarters May 2016</p>	 <p>Forest Service National Headquarters May 2016</p>

BEES NEED TREES!

Trees Give Bees:

Pollen (protein) - to eat and to feed larva

Nectar (carbohydrate) - to eat for quick energy and to convert to honey

Resin - bees make into propolis to keep the hive clean and insulated

Habitat - hollow cavities to shelter bee hives

Bees Give Trees:

Pollination! Bees fertilize flowers so trees can make seeds that grow into new trees

Trees with light pollen (like pine, oak, & nuts) use the wind to share massive amounts of pollen with each other (and cause us to sneeze!)

Fruit trees have heavy pollen (that doesn't produce allergies) and need pollinators like bees to help their pollen move from tree to tree.

Without them,
what would we eat?

Some bee-pollinated fruit trees include: oranges, almonds, apples, Brazil nut, papaya, coconut, mango, avocado, crabapple, cherry, lemon, and grapefruit

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Your Ticket to FREE Summer Fun!

100 VENUES! 10 FRIDAYS!

FRIDAY JUNE 28

Lyric Stage Company of Boston
Cape Ann Museum
Clark Art Institute
MIT Museum
Nichols House Museum
Norman Rockwell Museum
Plimoth Plantation
The Mount: Edith Wharton's Home
Wenham Museum
Worcester Art Museum

FRIDAY JULY 05

Amelia Park Children's Museum
Cape Cod Maritime Museum
Children's Museum in Easton
Edward Gorey House
Falmouth Museums on the Green
Jacob's Pillow
Museum of Printing
Pilgrim Hall Museum
The Old Manse, The Trustees
The Telephone Museum

FRIDAY JULY 12

Museum of Fine Arts, Boston
Charles River Watershed Association
Chesterwood
Children's Museum of Greater Fall River
Gloucester Stage Company
Mahaiwe Performing Arts Center
New England Quilt Museum
The Patriots Hall of Fame
Smith College Museum of Art
Springfield Museums

FRIDAY JULY 19

Boston Children's Museum
The Arnold Arboretum of Harvard University
Battleship Cove
Cape Cod Children's Museum
Nantucket Maria Mitchell Association
New England Historic Genealogical Society
Peabody Essex Museum
Sandwich Glass Museum
Spellman Museum of Stamps & Postal History
The Eric Carle Museum of Picture Book Art

FRIDAY JULY 26

Isabella Stewart Gardner Museum
Edward M. Kennedy Institute for the U.S. Senate
Cape Cod Museum of Art
Commonwealth Museum
Commonwealth Shakespeare Company
Fitchburg Art Museum
Historic Deerfield
Larz Anderson Auto Museum
The Gardens at Elm Bank (Mass Hort)
Ventfort Hall Mansion & Gilded Age Museum

FRIDAY AUGUST 02

Franklin Park Zoo
Boston Symphony Orchestra at Tanglewood
Chatham Shark Center
Children's Museum at Holyoke
Concord Museum
International Volleyball Hall of Fame
Lynn Museum
Museum of Russian Icons
Naumkeag, The Trustees
Old State House

FRIDAY AUGUST 09

Boston Harbor Islands National and State Park
Davis Museum at Wellesley College
Gore Place
Hancock Shaker Village
JFK Hyannis Museum
Museum of the National Center of Afro-American Artists
New Bedford Whaling Museum
Old Colony History Museum
Worcester Historical Museum
The Greenway Carousel

FRIDAY AUGUST 16

John F. Kennedy Presidential Library & Museum
Berkshire Theatre Group
Cahoon Museum of American Art
Discovery Museum
Fruitlands Museum, The Trustees
Fuller Craft Museum
Harvard Museums of Science & Culture
Paragon Carousel
Provincetown Art Association and Museum
USS Constitution Museum

FRIDAY AUGUST 23

The Institute of Contemporary Art/Boston
Berkshire Museum
Boston Athenæum
Buttonwood Park Zoo
Emily Dickinson Museum
Fort Devens Museum
Freedom Trail® Foundation
Heritage Museums & Gardens
Museum of African American History
The Mary Baker Eddy Library & Mapparium

FRIDAY AUGUST 30

Old Sturbridge Village
Cape Cod Museum of Natural History
Griffin Museum of Photography
Hull Lifesaving Museum
Mass Audubon's Ipswich River Wildlife Sanctuary
MASS MoCA
Museum of the First Corps of Cadets
Osterville Historical Museum
Capron Park Zoo
EcoTarium



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#FreeFunFridays
 @highlandstreetfoundation

Please visit HighlandStreet.org or
call 617.969.8900 for more information

WCVB 
The Boston Globe

Dear Dr. Chang,

We need a bookshelf for outside. It has to have a clear door so we can see through it. And we have a cover over it so the rain won't get the books wet. We want a bookshelf outside so we can read during recess and for people who are hurt at recess we could do extra reading to get better.

We need a bookshelf if you can give it to us.

Sincerely Room 204 Grade 2
Allison Parks.

Superintendent Tommy Chang
2300 Washington Street
Roxbury, MA 02119

November 7, 2017

Dear Dr. Chang,

We would like the heat in our classroom fixed in room 2A at the Haley Pilot School. Our classroom is so cold that we can't focus or learn. Above our meeting area rug, we can see that there is a missing ceiling tile. Cold air comes in through the hole. When you are cold, you are only able to think about how cold you are. It's too cold in our room, so people are interrupting lessons.

Our classroom is colder than the others in the school. On the Build BPS website, our school report says that our heat is a minor problem. In 2A, it is actually a major problem. We have been in other classrooms, and every other class has two heaters, but we only have one! In our kindergarten and first grade classrooms the last two years we were warmer.

There are some problems in the classroom that make it colder. Our class is in a big room, so we need more than one heater to have warm air. We can also see the missing ceiling tile and feel cold air when we're sitting on the rug.

It is cold in our classroom all year long. In 2A we need to wear coats and sweaters during class. We are always interfering with the learning because we are cold and we need to get up and get our jackets. The students who were in 2A last year told us that they were cold even in the spring!

We will be wearing our coats in the classroom all year. Last year's students wore their coats even in the spring, and we are already wearing our coats in the room now. It's warmer outside than it is inside. We take our coats off outside at recess and gym, but need to put them back on when we're in our classroom.

We're cold, so can you please fix our heat!

Sincerely,
2A Students from the Haley Pilot School

The Mosquito's Song Peggy B. Leavitt

I sing. You slap.
I mean no harm.

There is no cause
for your alarm.

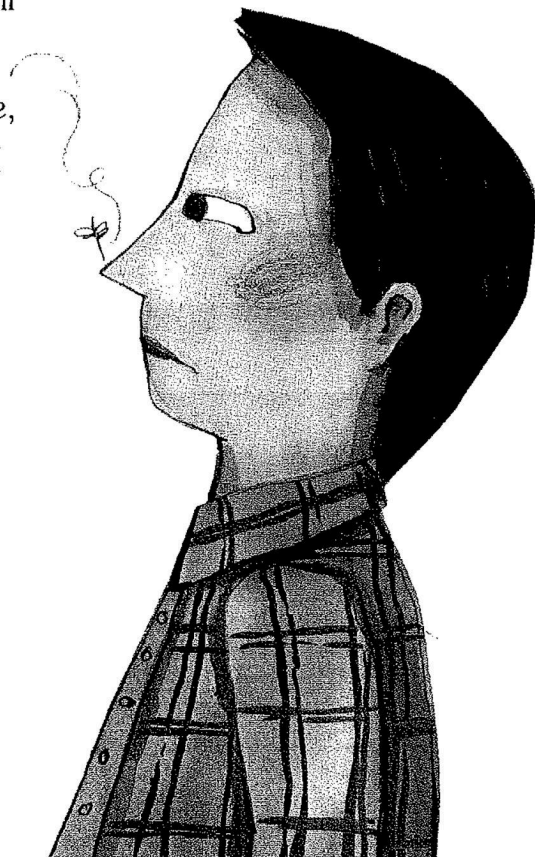
A little drop
is all I ask.

It really is
a simple task.

So please
hold still

at this
juncture,
while I
make
a tiny

P
U
N
C
T
U
R
E
!



From *Dirty Laundry Pile: Poems in Different Voices*, Paul B. Janeczko and Melissa Sweet

Writing U4 W6 D3

Name: _____

Date: _____

Argument Planner

Audience: community gardeners

Medium:

book bookmark flyer letter poster poem

Why I chose this medium:

I will communicate with...

mostly pictures

mostly words

both

Thesis: _____

Reason:

Reason:

Reason:



Evidence:

Evidence:

Evidence:

Reinforcement of the Thesis:

Unit 4: The Power of Pollinators

WEEK 6 Day 4

Writing Argument

Individual Construction: Planning and Writing

Content Objectives	I can plan for an effective argument. (W.3.2, W.2) I can research evidence to support my argument. (W.1.2.a, W.1.2.b)
Language Objective	I can answer questions about my writing plan. (SL.2.2.b)
Vocabulary	argument: a genre of writing whose purpose is to convince someone to do something or about something convince: to persuade medium: a form of communication evidence: facts and details used to support reasons in an argument reason: why the audience should do or think something reinforcement: saying again, in a new way thesis: the part of the argument that states what the writer or speaker is trying to convince someone to do or think
Materials and Preparation	<ul style="list-style-type: none">● Thesis chart, from Week 5, Day 5● Reasons chart, from Day 1● copies of children’s Gathering Evidence sheets, from Day 2● writing tools● Gathering Evidence sheets, blank copies Review the completed Gathering Evidence sheets. Make enough additional copies so that several children can gather evidence for reasons that have not yet been researched.● Argument Planners, from Day 3● research materials, from Day 2● Argument Observation Tools, from Week 5, Day 5● paper appropriate for each medium: notebooks, brochure pages, blank paper, etc.● argument mentor texts, for children’s reference

<p>Opening 1 minute</p>	<p><i>Yesterday you began planning for your arguments by choosing which medium you will use. Today you will plan for your thesis, reasons, and evidence, and then begin writing.</i></p>
<p>Individual Construction 23 minutes</p>	<p>Show and walk through the Argument Planner and refer to the Thesis chart.</p> <p><i>The first part of your argument that you will plan today is the thesis. You can choose a thesis from this chart, or you can write your own. Write your thesis here, on this line.</i></p> <p><i>Next you will plan your reasons. What do you think will be the most effective reasons to convince local gardeners to plant local plants?</i></p> <p>Refer to the Reasons chart.</p> <p><i>Choose three reasons that you would like to include in your argument and write them here, in these boxes.</i></p> <p><i>The last part you will plan today is your evidence. For some of our reasons, you will be able to find evidence in our texts. Others may be more difficult. You do not need to provide evidence for each reason, but you should have evidence for at least one. Decide which reasons you can provide evidence for.</i></p> <p><i>I copied your Gathering Evidence sheets so that everyone in the class can use your research. First check the papers to see if you can use your classmates' research. If not, take a blank Gathering Evidence sheet and do your own research.</i></p> <p><i>Fill in evidence on this part of the Argument Planner.</i></p> <p><i>The last part of the Argument Planner is the reinforcement of the thesis. In this section, write your thesis again, but in a new way.</i></p> <p>Send the children to plan and research their arguments. Circulate to support their work and to assess using the Argument Observation Tool. As children finish planning, guide them to begin writing, using the paper appropriate for their chosen medium.</p> <p>Choose several children to share their plans.</p>
<p>Closing 6 minutes</p>	<p>Have children share their plans. Use the following questions to guide the discussion.</p> <ul style="list-style-type: none"> ● How did you choose your thesis? ● Which reasons did you choose? Why? ● For which reasons will you provide evidence? How did you choose?

	<p>How did you find this evidence?</p> <ul style="list-style-type: none"> ● How will you restate the thesis? ● What are your next steps? <p><i>Today you completed your planning and began writing. Tomorrow you will continue to write your arguments in the medium you choose.</i></p>
Standards	<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>W.2 Develop, strengthen, and produce polished writing by using a collaborative process that includes the age-appropriate use of technology.</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>SL.2.2.b Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.</p>
Ongoing assessment	<p>During the lesson, use the Argument Observation Tool to assess the children’s individual writing.</p> <p>After the lesson, collect children’s Argument Planning sheets. Note any trends and next steps.</p>

Notes

brochure pages

Unit 4: The Power of Pollinators

WEEK 6 Day 5

Writing Argument

Individual Construction

Content Objective	I can use research notes to write an effective argument. (W.3.2, W.2, W.1.2.a, W.1.2.b)
Language Objective	I can write using English conventions. (L.1)
Vocabulary	argument: a genre of writing whose purpose is to convince someone to do something or about something medium: a form of communication
Materials and Preparation	<p>Before the lesson, plan to group children according to the media they are writing in.</p> <ul style="list-style-type: none">● Gathering Evidence sheets, blank copies Review the completed Gathering Evidence sheets. Make enough additional copies so that several children can gather evidence for reasons that have not yet been researched.● writing tools● writing paper appropriate for children’s choice of media: notebooks, brochure pages, blank paper, etc.● Thesis chart, from Week 5, Day 5● Reasons chart, from Day 1● copies of children’s Gathering Evidence sheets, from Day 2● Argument Planners, from Day 3● research materials, from Day 2● Argument Observation Tools, from Week 5, Day 5● argument mentor texts, for children’s reference● media mentor texts, for children’s reference● Argument Letter slides, from Unit 1, Week 6, Day 4, for children’s reference (parts of a letter on slide 15)
Opening	<i>Today you will work on writing your arguments. People who are</i>

<p>2 minutes</p>	<p><i>writing in the same medium can sit together to help each other.</i></p> <p>Show the different types of writing paper. <i>In your groups, your first task will be to choose which paper is best for your medium.</i></p>
<p>Individual Construction 27 minutes</p>	<p>Send children to write in their groups, according to the media they chose. Guide them to choose the appropriate paper. As they write, circulate to support their work. Guide children to include the aspects of argument outlined on the Argument Observation Tool.</p>
<p>Closing 1 minute</p>	<p><i>Next we will talk about adding adjectives to make your arguments even stronger.</i></p>
<p>Standards</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. W.2 Develop, strengthen, and produce polished writing by using a collaborative process that includes the age-appropriate use of technology. 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. L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p>
<p>Ongoing assessment</p>	<p>During the lesson, use the Argument Observation Tool to assess the children’s individual writing.</p> <p>After the lesson, review children’s work. To what extent does the children’s writing reflect the information included in the research notes?</p>

Notes