

Lesson 1: Reading, Writing, and Speaking: *What Is Pollination?*



CCSS

- **RI.2.1:** Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text.
- **RI.2.7:** Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
- **W.2.7:** Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- **SL.2.1:** Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.
- **SL.2.2:** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.



Daily Learning Targets

- I can discuss the process of pollination with a partner. (RI.2.1, RI.2.7, SL.2.2)
- I can write about the process of pollination in my Plants and Pollinators research notebook, Part II. (W.2.7, SL.2.1)

Ongoing Assessment

- During reading aloud to research in Work Time A, listen for students to describe the process of pollination using details in the text. (RI.2.1, RI.2.7)
- After Work Time B, collect students' Plants and Pollinators research notebook, Part II to document progress toward W.2.7.

Agenda

1. Opening

- A. Poster Walk: Revisiting the Module Guiding Question (10 minutes)

2. Work Time

- A. Reading Aloud to Research Pollination: *From Seed to Plant*, Pages 1–12 (20 minutes)
- B. Engaging the Writer: Writing about Pollination (20 minutes)

3. Closing

- A. Viewing the Video: “Pollinate” and Reflecting on Learning (5 minutes)
- B. Introducing the Performance Task (5 minutes)

Teaching Notes

Purpose of lesson and alignment to standards:

- In this lesson, students revisit the module guiding question: “How do we get the fruits, flowers, and vegetables we enjoy?” as they are introduced to the concept of pollination and how pollinators aid in the process of pollination. Students engage in a read-aloud of a portion of the text *From Seed to Plant* by Gail Gibbons and collect information about the process of pollination. (RI.2.1, RI.2.7, SL.2.2)
- This lesson introduces students to the concept of pollination, which connects to Next Generation Science Standard 2LS2-2. Students focus on the following disciplinary core idea: “Plants depend on animals for pollination or to move their seeds around.”
- In Work Time B, students use pictures to orally describe the process of pollination and then document their learning in their Plants and Pollinators research notebook, Part II. (W.2.7, SL.2.1)
- During the Closing, students watch a 2-minute video entitled “Pollinate.” This video synthesizes the learning they have done about pollination throughout the lesson.

How this lesson builds on previous work:

- In Unit 1, students investigated the question “How do plants grow and survive?” as they learned about basic plant parts, what a plant needs to survive, and the basics of seed dispersal. This lesson builds on this understanding and introduces a new concept for how plants grow and survive: pollination.
- In Unit 1, Lesson 9, students used a different portion (pages 12–17) of the text *From Seed to Plant* by Gail Gibbons to learn about seed dispersal. Now they revisit pages 1–12.
- Continue to use Goals 1–4 Conversation Cues to promote productive and equitable conversation.

Areas in which students may need additional support:

- During the Opening, consider having students who may need extra support generating notices and wonders work with a partner.
- During Work Time B, consider pulling a small group of students who may need extra writing support to complete the activity as shared writing rather than independent writing.

Down the road:

- In Lesson 4, students will revisit the concept of pollination through a close read-aloud of the text *What Is Pollination?* by Bobbi Kalman.
- Students will deepen their learning about how pollinators help pollinate plants by studying bees as a whole group in Lessons 5–7 and then studying other insect pollinators in expert groups in Lessons 8–10.

In advance:

- Prepare posters for the Poster Walk protocol by printing them in color, if possible, and placing each picture on a piece of chart paper (see supporting Materials). Under each picture, create a two-column chart with “What I notice” and “What I wonder” written on it. Place the posters around the room.

- Pre-determine groups of four to six students for the Poster Walk protocol in the Opening.
- Post: Learning targets and applicable anchor charts (see Materials list).

Consider using an interactive white board or document camera to display lesson materials.

- Work Time A: “Pollinate:” Video. PBS Learning Media, 2016. Web 2 October 2016. <<http://illinois.pbslearningmedia.org/resource/sesame-nancy-odell-pollinate/nancy-odell-pollinate-sesame-street/>>. (For display. Used by permission.) Supporting English Language Learners
- Supports guided in part by CA ELD Standards 2.I.A.1, 2.I.B.5, 2.I.B.6, and 2.I.B.10

Important points in the lesson itself

- The basic design of this lesson supports ELLs with opportunities to both review content from previous lessons and preview content they will encounter throughout the unit.
- ELLs may find it challenging to follow the process of pollination in details. Consider taking shared class notes during the read-aloud with illustrations. Invite students to refer to the class notes as they complete their writing in Work Time B. Reassure students that they will revisit the process of pollination throughout the unit.

Levels of support

For lighter support:

- During Work Time B, challenge students to use all four words (*pollen*, *pollination*, *pollinate*, and *pollinator*) in their writing.

For heavier support:

- During Opening A, provide students with pre-written notices and wonders on sticky notes they can use to match with the photographs. Also, consider allowing students to use sentence frames or sketch notices and wonders on their sticky notes.
- During Work Time B, consider pulling a small group of students who may need extra writing support to complete the activity as shared writing rather than independent writing.

Universal Design for Learning

- **Multiple Means of Representation (MMR):** To facilitate effective learning during this lesson, ensure that all students have access to the directions for each activity and feel comfortable with the expectations. Vary the ways in which you convey expectations for each activity or task. Consider engaging in a clarifying discussion about the directions and creating a visual display of the steps for each activity.
- **Multiple Means of Action & Expression (MMAE):** Before students begin writing in Work Time B, vary methods for fine motor responses by offering options for drawing utensils and writing tools. Some students may forget their sentence ideas once they begin directing their efforts toward writing. Support strategy development by modeling how to draw lines for

words you intend to write. This helps students recall their original ideas throughout the writing process.

- **Multiple Means of Engagement (MME):** In this lesson, students have opportunities to share ideas and thinking with classmates. Continue to encourage self-regulatory skills by helping students anticipate and manage frustration by modeling what to do if they need help from their partners. Consider offering sentence frames to strategically selected peer models. Offering these supports for engagement promotes a safe learning space for all students.

Vocabulary

Key:

(L): Lesson-Specific Vocabulary

(T): Text-Specific Vocabulary

(W): Vocabulary Used in Writing

New:

- pollination (L)

Materials

- ✓ Module Guiding Questions anchor chart (begun in Unit 1, Lesson 1)
- ✓ Student Questions anchor chart (begun in Unit 1, Lesson 2; added to during the Opening)
- ✓ Poster Walk posters (to display)
- ✓ Directions for Poster Walk (one to display)
- ✓ Sticky notes (two to three per student)
- ✓ *From Seed to Plant* (one to display; for teacher read-aloud)
- ✓ Pinky Partners Protocol anchor chart (begun in Module 1)
- ✓ Pictures Showing the Pollination Process (one to display)
- ✓ Plants and Pollinators research notebook, Part II (page 2; one per student and one to display)
- ✓ Interactive High-Frequency Word Wall (begun in Module 1)
- ✓ Plants and Pollinators Word Wall (begun in Unit 1, Lesson 3)
- ✓ Plants and Pollinators research notebook, Part II (page 2; example, for teacher reference)
- ✓ “Pollinate” (video; play 0:00–1:27; see Technology and Multimedia)

Opening

A. Poster Walk Protocol: Revisiting a Module Guiding Question (10 minutes)

- Gather students whole group.
- Direct students’ attention to the **Module Guiding Questions anchor chart** and read aloud the guiding question:
 - “How do we get the fruits, flowers, and vegetables we enjoy?”

- Remind students that a few lessons ago, they thought of questions they had about how we get fruits, flowers, and vegetables. Direct students' attention to the **Student Questions anchor chart** and read the questions aloud.
- Think-Pair-Share:
 - *“What is one question on this anchor chart that you can answer because of what you have learned so far about plants and their parts?” (Responses will vary, but may include: facts about how plants grow, how seeds help a plant to grow, and the plant life cycle)*
- Invite a few partnerships to pick a question and share out their answer.
- Give students specific, positive feedback about how much they have already learned about how we get the fruits, flowers, and vegetables we enjoy. With excitement, tell them that in the next few weeks as researchers, they are going to learn even more!
- Tell students that there is a secret to how we get the fruits, flowers, and vegetables we enjoy. Today, they are going to find out what that secret is.
- Focus students on the **Poster Walk posters** around the room, which will help them figure out what the secret is. On each poster is a picture and a space to think about what they notice and wonder about the picture.
- Display the **Directions for Poster Walk** and read them aloud.
- Explain that today, they will be in small groups and rotate through the Poster Walk posters to discuss the following question:
 - *“What do you notice and wonder about this photo?”*
- After they have visited each poster with their group, students will receive notices and wonders about a few different pictures on sticky notes.
- Model this as necessary by saying: “I notice that the bee has its whole body on the flower.” Write this idea on a sticky note, and place it in the appropriate column under Picture #1.
- Move students into pre-determined groups and invite each group to stand at one of the Poster Walk posters around the room.
- Invite students to begin the Poster Walk protocol. After each group has visited every poster, invite students back to their workspaces.
- Distribute two to three **sticky notes** to each student, and give them time to generate notices and wonders about specific pictures.
- After about 2–3 minutes, invite students to place the sticky notes under the appropriate pictures.
- Gather students back in the whole group meeting area.
- As time permits, read aloud a few of the notices and wonders.
- Invite any students to share the names of anything they observed in the photographs in their home languages.
- Think-Pair-Share:
 - *“What experience do you or your family have with any of these flowers, animals, and plants in the photographs?” (Responses will vary.)*
- Invite students to make a drumroll and reveal to them that the secret behind how we get some of the fruits, flowers, and vegetables we enjoy are the pictures on these posters. The secret is ... pollinators!

- Tell students that for the next few weeks, they will be learning more about pollination and how pollinators help us get the fruits, flowers, and vegetables we enjoy.

Meeting Students' Needs

- For ELLs: (Recalling Language Dive) Invite students to review the Mini Language Dive they completed of the module guiding question from Unit 1, Lesson 1.
- For ELLs: (Contrasting Vocabulary) Review the meanings of *notice* and *wonder* and the difference between the two verbs.
- For students who may need additional support with fine motor skills: During the Poster Walk protocol, offer dictation by a peer or teacher for students' notices and wonders. (MMAE)

Work Time

A. Reading Aloud to Research Pollination: *From Seed to Plant*, Pages 1–12 (20 minutes)

- Direct students' attention to the posted learning targets and read the first one aloud:

“I can discuss the process of pollination with a partner.”
- Invite students to whisper a response into their hands and ask:

“What scientific word do you hear that we will be focusing on today?” (pollination)
- Tell students they will be learning about the process of pollination by reading part of the book *From Seed to Plant* by Gail Gibbons, and they will discuss what they are learning with a partner.
- Display the cover of *From Seed to Plant*.
- Read pages 1–12 fluently with expression and without interruptions.
- Think-Pair-Share:

“What was the gist of this section of the book?” (It is about how a seed becomes a new plant.)
- Confirm the gist of this section with students, and tell them they will now go back and read specific parts of the text more closely.
- Reread pages 1–3.
- Using a total participation technique, invite responses from the group:

“What did we just learn about seeds on this page?” (They grow into the same plant that it came from.)
- Reread page 4.
- Using a total participation technique, invite responses from the group:

“Where do most seeds begin?” (in flowers)
- Reread page 5. Remind students that they already looked at this page quite closely in Unit 1 and learned about specific parts of the flower:
 - Petal: one of the separate leaves that form the outer part of a flower head. Petals are usually a different color from the plant's other leaves.
 - Stigma: the part of a plant that receives pollen.

- Stamen: the part of a flower that makes pollen.
- Pollen: the fine, yellow powder made by a flowering plant.
- Read page 6. Think aloud to model what you are wondering. Say: “So pollination is when a grain of pollen moves from flower to another flower like itself. But how does it move?”
- Read pages 7–8.
- Using a total participation technique, invite responses from the group:
 - “**Why do bees and other insects go to flowers?**” (to get nectar)
 - “**What happens when they are getting nectar?**” (Pollen gets on their bodies.)
- Read pages 9–10. Say:
 - “**Then, the pollen comes off on another flower like it, and a new seed starts to grow inside that flower.**”
- Read pages 11–12.
- Think-Pair-Share:
 - “**After a fruit grows around the seed, what happens?**” (The fruit breaks open, and seeds fall out. They are ready to become new plants.)
- Invite students to give themselves a pat on the back for the thinking they did to understand the process of pollination.

Meeting Students' Needs

- For ELLs: (Word Families) When reviewing the word *pollination*, ask students about the root word and briefly review words in the same family and relevant affixes. (Examples: *pollen*, *pollinate*)
- Before reading, provide white boards and white board markers as an option for students to record (in drawing or writing) their ideas. This will scaffold active listening. (MMR, MMAE)

Work Time

B. Independent Writing: Plants and Pollinators Research Notebook (20 minutes)

- Tell students you have some pictures that show the process of pollination. Explain to students that they will use these pictures to discuss the process of pollination using what they learned from the book *From Seed to Plant*.
- Tell students that they will use the Pinky Partner protocol to share their thinking. Remind them that they used this protocol in Modules 1 and 2, and review as necessary using the **Pinky Partners Protocol anchor chart**. (Refer to the Classroom Protocols document for the full version of the protocol.)
- Display **Pictures Showing the Pollination Process** and guide students through the protocol using the following prompt:
 - “**How can you use these pictures to describe the pollination process?**” (First, the bee goes to the flower to get nectar. When it is on the flower, pollen rubs off in its body. Then, the bee flies to another flower and the pollen lands on that flower. Last, a seed begins to grow so a new plant can grow.)

- If productive, cue students to listen carefully and seek to understand:
“Who can tell us what your classmate said in your own words?” (Responses will vary.)
- Invite students to sit back in their spots in the meeting area.
- Direct students’ attention to the posted learning targets and read the second one aloud:
“I can write about the process of pollination in my Plants and Pollinators research notebook, Part II.”
- Tell students that they are getting the second part of the Plants and Pollinators research notebook, where they will record new information they learn as researchers.
- Display page 2 in the **Plants and Pollinators research notebook, Part II**. Tell students that they will now write about the process of pollination in their research notebooks. Point out that the same pictures they just looked at (Pictures Showing the Pollination Process) are in their notebooks.
- Transition students back to their workspaces and invite them to begin writing about the process of pollination.
- Circulate and support students by encouraging them to use the **Interactive High-Frequency Word Wall** and the **Plants and Pollinators Word Wall**, and to write all the sounds they hear in words. Refer to the **Plants and Pollinators research notebook, Part II (example, for teacher reference)** as necessary.

Meeting Students’ Needs

- For ELLs: (Sequencing) Briefly review linking words for sequencing events. Record and display them for use during the writing.
- For ELLs: (Sentence Frames: Lighter Support) Invite students to create sentence frames to support writing and speaking. Invite students who need heavier support to use the frames. (Examples: First, the bee _____. Then, _____.)
- For students who may need additional support in organizing ideas for verbal expression: Provide index cards with “first,” “next,” and “last” to guide students as they describe pollination. (MMAE)
- For students who may need additional support with sustained effort: Minimize distractions during independent writing by providing tools such as sound-canceling headphones or individual dividers. (MME)

Closing and Assessment

A. Viewing the Video: “Pollinate” and Reflecting on Learning (5 minutes)

- Invite students back to the whole group meeting area.
- Reread the second learning target:
 - “I can write about the process of pollination in my Plants and Pollinators research notebook, Part II.”
- Tell students you have a fun video that will reinforce what they have learned about pollination today.
- Play “**Pollinate**.”

- Confirm with students that *pollination* means to move or carry pollen to fertilize a flower to produce a seed.
- Using a total participation technique, invite responses from the group:
“What did we learn today about how we get the fruits, flowers, and vegetables we enjoy?”
(We learned that pollination helps us get flowers, and that insects and some animals help pollinate.)
- If productive, cue students to explain why a classmate came up with a particular response:
“Who can explain why your classmate came up with that response?”

Meeting Students' Needs

- For ELLs and students who may need additional support with comprehension: (Viewing Twice) Watch the “Pollinate” video twice. Students will be able to absorb and comprehend more information during the second viewing. Consider offering opportunities for oral processing between the first and second viewing. (MMR)
- For students who may need additional support with auditory processing: Offer a transcript from the video for following along during viewing. (MMR)

Closing and Assessment

B. Introducing the Performance Task (5 minutes)

- Direct students' attention to the Poster Walk posters around the room. Tell students that over the next couple weeks, they will become experts on the different kinds of insects that help pollinate plants.
- Share that then they will present their learning to their families and other members of the school and community about what they have learned about the secret for how we get the fruits, flowers, and vegetables we enjoy. Tell students that they need to learn as much as they can so they can help other people understand pollination and pollinators!