

Lesson 10: Science Talk: How Pollinators Help Plants Grow and Survive



CCSS

- **RI.2.5:** Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- **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.2.3:** 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.



Daily Learning Targets

- I can participate in a Science Talk about how pollinators help plants grow and survive. (RI.2.5, RI.2.7, W.2.7)
- I can reflect on my learning from this unit.

Ongoing Assessment

- During the Science Talk, listen for students to share information they have learned to answer the Unit 2 guiding question: “How do pollinators help plants grow and survive?” and track their progress toward SL.2.1, SL.2.3 using the Speaking and Listening Checklist (see Assessment Overview and Resources).
- After Work Time B, collect students’ Plants and Pollinators research notebook, Part II and use page 13 to document progress toward W.2.7.

Agenda

- 1. Opening**
 - A. Developing Language: Volley for Vocabulary (10 minutes)
- 2. Work Time**
 - A. Engaging the Speaker: Preparing for a Science Talk (20 minutes)
 - B. Science Talk: How Pollinators Help Plants Grow and Survive (20 minutes)
- 3. Closing and Assessment**
 - A. Reflecting on Learning (10 minutes)

Teaching Notes

Purpose of lesson and alignment to standards:

- In this lesson, students' small group research culminates in a Science talk during which students revisit the learning they have done about how pollinators help plants grow and survive, and how this helps us get the fruits, flowers, and vegetables that we enjoy.

How this lesson builds on previous work:

- Lesson 10 signals the closing of the second research cycle for this unit. In Lessons 5–7, the class researched bees and organized their notes to determine which information was most related to the Unit 2 guiding question: “How do pollinators help plants grow and survive?” In Lessons 8–9, students gathered information about other pollinators in small groups.
- This is the third Science Talk students have done this year. Reinforce the value of building off of what other group members are saying to have a more robust conversation.
- Continue building a culture of productive and equitable conversation by helping students prepare their comments for the Science Talk and encouraging the use of Collaborative Conversation sentence starters.

Areas in which students may need additional support:

- In the Opening, some students may have difficulty recalling the meaning of some Vocabulary words. Consider reviewing the related Word Wall cards ahead of time or making them available for students to use during Volley for Vocabulary.
- In Work Time A, some students may find it difficult to review notes in preparation for the Science Talk. Consider allowing students to work with their pollinator research group while preparing for the Science Talk.

Down the road:

- In Lessons 11–14, students will use the information they have gathered about bees and other insect pollinators to create both a shared piece of informational writing about bees and an independent piece of informational writing about their small group insect pollinators.

In advance:

- Prepare the Volley for Vocabulary word ball by writing eight to nine words from the Plants and Pollinators Word Wall on separate index cards and taping these cards to the ball.
- Pre-determine groups of four for the Science Talk in Work Time B, ensuring at least one student from each of the small research groups is in each Science Talk group.
- Pre-distribute Materials for Work Time B in the whole group area.
- Post: Learning targets and applicable anchor charts (see Materials list).

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

- Continue to use the technology tools recommended throughout Modules 1 and 2 to create anchor charts to share with families; to record students as they participate in discussions and protocols to review with students later and to share with families; and for students to listen to and annotate text, record ideas on note-catchers, and word-process writing.

Supporting English Language Learners

Supports guided in part by CA ELD Standards 2.I.A.1 and 2.I.C.10

Important points in the lesson itself

- The basic design of this lesson supports ELLs with opportunities to deepen content knowledge and to practice speaking and listening skills by participating in the Science Talk protocol.
- ELLs may find it challenging to navigate the abundance of resources accumulated throughout the unit to collect information for use during the Science Talk protocol. Make this process more manageable for students by suggesting specific pages of their Plants and Pollinators research notebooks, Part II and specific anchor charts and text features to use as they collect notes.

Levels of support

For lighter support:

- During the Science Talk protocol in Work Time B, encourage students to use Goals 1–4 Conversation Cues with other students to extend and deepen conversations, think with others, and enhance language development.

For heavier support:

- During Work Time A, distribute a partially filled-in copy of page 13 of the Plants and Pollinators research notebook, Part II. This provides students with models for the kind of information they should enter while relieving the volume of writing required.

Universal Design for Learning

- **Multiple Means of Representation (MMR):** To set themselves up for success for the reflection in the Closing, students need to generalize the skills that they learned from previous lessons. Before this discussion, activate prior knowledge by recalling the learning from the previous sessions and the similar reflections that they have already completed.
- **Multiple Means of Action & Expression (MMAE):** In this lesson, students participate in a Science Talk. Continue to support students in setting appropriate goals for their effort and the level of difficulty expected.

- **Multiple Means of Engagement (MME):** While holding high expectations is important, be aware that sometimes these expectations can raise student anxiety. During this lesson, emphasize the importance of process and effort by discussing how even when you try your best, you can sometimes make a mistake, and that is okay.

Vocabulary

Key:

(L): Lesson-Specific Vocabulary

(T): Text-Specific Vocabulary

(W): Vocabulary Used in Writing

Review:

- seed, plant, fruit, flower, pollen, pollination, pollinator, nectar, stamen, stigma, reflect (L)

Materials

- ✓ Plants and Pollinators Word Wall (begun in Unit 1)
- ✓ Word ball (from Unit 1, Lesson 8; one; used by students during the Volley for Vocabulary protocol in the Opening)
- ✓ Science Talk Protocol anchor chart (begun in Unit 1, Lesson 10)
- ✓ Unit 2 Guiding Question anchor chart (begun in Lesson 2)
- ✓ Plants and Pollinators research notebook, Part II (from Lesson 1; pages 13–15; one per student and one to display)
- ✓ Research about Pollinators: Class Notes (completed in Lesson 9; one to display)
- ✓ Plants and Pollinators research notebook, Part II (from Lesson 1; example, for teacher reference)
- ✓ Popsicle sticks (two per student)
- ✓ Collaborative Conversation sentence starters (from Module 1; one per group)
- ✓ Speaking and Listening Checklist (for teacher reference; see Assessment Overview and Resources)
- ✓ What Researchers Do anchor chart (begun in Unit 1, Lesson 2)

Opening

A. Developing Language: Volley for Vocabulary (10 minutes)

- Gather students whole group.
- Direct students' attention to the posted learning targets and read the first one aloud:
 - “***I can participate in a Science Talk about how pollinators help plants grow and survive.***”
- Remind students that talking about a science question with their classmates can help them learn more about science topics. Remind them that they participated in a Science Talk in Unit 1 when they talked about how plants grow and survive.

- Tell students that to get ready for today’s Science talk, they are going to play the Volley for Vocabulary protocol to practice using words from the **Plants and Pollinators Word Wall**. Remind students that they played this game in Unit 1 and review as necessary. (Refer to the Classroom Protocols document for the full version of the protocol.)
- Use the **word ball** to guide students through the protocol. Model any steps of the game as needed. Repeat the game as time permits.

Meeting Students’ Needs

- For students who may need additional support with organizing their thinking for verbal expression: Consider providing the word ball to students ahead of time so they can prepare several sentences for use during the Volley for Vocabulary protocol. (MMAE, MME)

Work Time

A. Engaging the Speaker: Preparing for a Science Talk (20 minutes)

- Direct students’ attention to the Research about Pollinators: Class Notes, remind them that they have been gathering information about how pollinators help plants grow and survive. Remind them that they have their own copy of these notes in their Plants and Pollinators research notebook, Part II.
- Tell students they are going to use the Science Talk protocol to discuss their learning so far. Remind them that they used this protocol in Unit 1, and review as necessary using the **Science Talk Protocol anchor chart**. (Refer to the Classroom Protocols document for the full version of the protocol.)
- Direct students’ attention to the **Unit 2 Guiding Question anchor chart**. Tell students that this guiding question will also be the question that they discuss during today’s Science Talk:
 - “How do pollinators help plants grow and survive?”
- Display page 13 of the **Plants and Pollinators research notebook, Part II** and remind students that it is important to be prepared for the Science Talk. Tell them that this note-catcher is where they will record what they would like to say during the Science Talk.
- Remind students that they prepared in a similar fashion for the Science Talk in Unit 1, Lesson 10 and guide them through the process:
 - Point out that they will use their Plants and Pollinators research notebook, Part II to find ideas they can share to answer the Science Talk question.
 - Ask students which text feature in their Plants and Pollinators research notebook, Part II will help them efficiently find the most useful pages in their notebook (Table of Contents).
 - Think aloud as you model using the Table of Contents to find information to share during the Science Talk. (Note: Refer to the think-aloud in Work Time A of Unit 1, Lesson 10 for additional guidance.)
 - Invite students to begin using their notebook to locate a piece of information that would help them answer the Science Talk question.

- Direct students to give a thumbs-up when they have found a piece of evidence. When students are ready, invite them to Turn and Talk to share their responses.
- Listen to student responses to give positive, specific feedback about the examples they have found.
- Invite students to work with their research group to complete the Science Talk note-catcher using their Plants and Pollinators research notebook, Part II and **Research about Pollinators: Class Notes** as resources.
- Circulate to support students as they prepare for the Science Talk. Refer to the **Plants and Pollinators research notebook, Part II (example, for teacher reference)** as necessary.

Meeting Students' Needs

- For ELLs: (Recalling Language Dives: Practice) Invite students to use language drawn from the Language Dive practice from Lessons 4, 5, and 9.
- For ELLs and students who may need additional support with strategy development: (Partners) Allow students to work in partners to compile information on page 10 of their research notebooks. (MMAE, MME)
- For ELLs and students who may need additional support with comprehension: (Paraphrasing Note-catcher) Discuss each prompt on the note-catcher on page 13 of the Plants and Pollinators research notebook, Part II. Invite students to paraphrase and annotate their note-catchers as needed. (MMR)

Work Time

B. Science Talk: How Pollinators Help Plants Grow and Survive (20 minutes)

- Invite students back to the meeting area and move them into pre-determined groups for the Science Talk.
- Direct students' attention to the posted learning targets and read the first one aloud:

“I can participate in a Science Talk about how pollinators help plants grow and survive.”
- Tell students that they are now ready to participate in the Science Talk to discuss the Unit 2 guiding question: “How do pollinators help plants grow and survive?” Remind students to use the note-catcher on page 13 of their notebooks as they discuss with their classmates.
- Direct students' attention to the Science Talk Protocol anchor chart and review the last three steps:
 - “Student A answers the question and puts a popsicle stick in the middle of the group.”
 - “Using notes and ideas, take turns responding using a sentence starter. Place a popsicle stick in the middle each time you speak.”
 - “Repeat the process with Students B, C, and D answering the question.”
- Display page 14 of the Plants and Pollinators research notebook, Part II and read the discussion norms aloud. Answer clarifying questions.

- Turn and Talk:
“Which of the discussion norms will help your group have the best conversation possible? Why do you think so?” (Responses will vary.)
- Invite students to choose and circle one discussion norm that they will work to follow during the Science Talk.
- Distribute **popsicle sticks** and **Collaborative Conversation sentence starters**. Remind students to place a popsicle stick in the center of the group each time they speak. Tell them that their comments are not limited to the number of sticks they have, but that the sticks are a way to make sure group members have equitable opportunities to participate.
- Invite students to begin their Science Talks. Circulate to support students and use the **Speaking and Listening Checklist** to document students’ progress toward SL.2.1 and SL.2.3.
- After 9–10 minutes, refocus whole group.
- Display page 14 of the Plants and Pollinators research notebook, Part II and focus students on the last two questions:
 - “How well did you use your discussion norm?”
 - “How did using this norm help the group?”
- Ask:
“How did working on your discussion norm goal make a better Science Talk for the group?” (Responses will vary.)
- As time permits, call on students to share out.

Meeting Students' Needs

- For ELLs and students who may need additional support with oral processing: (Pacing Prompts) It may take longer for some students to process language and follow the conversation during the Science Talk. Encourage students to speak up when they would like to hear something repeated. Empower them with questions they can ask to regulate the pace of the conversation. Examples:
“Can you please repeat what you said?”
“Can you please speak more slowly?” (MMR)
- For ELLs: (Modeling Sentence Starters) Model using the Collaborative Conversation sentence starters to respond to others’ ideas. Display the sentence frames in speech bubbles.
- For students who may need additional support with sustained effort: During the Science Talk, support communication and engagement by organizing students with strategic partners to ensure they have a strong, politely helpful peer model to support their efforts at participation in the protocol using their note-catcher. (MME)

Closing and Assessment

A. Reflecting on Learning (10 minutes)

- Give students specific, positive feedback on the research skills they have been using during Unit 2 and on their participation in the Science Talk.
- Direct students' attention to the posted learning targets and read the second one aloud:

“I can reflect on my learning from this unit.”
- Remind students that *reflect* means to think about something deeply and carefully.
- Turn and Talk:

“Why would it be important for us to think back on the learning we have done so far in this unit? (so we can remember the work we have done)”
- If productive, cue students to add on to what a classmate said:

“Who can add on to what your classmate said? I’ll give you time to think.”
- Tell students that today they will reflect on their learning by completing an exit ticket about the research skills they have been applying so far during Unit 1.
- Direct students' attention to the posted **What Researchers Do anchor chart** and briefly review it.
- Display page 15 of the Plants and Pollinators research notebook, Part II.
 - Read the directions aloud and answer clarifying questions.
 - Invite students to circle the skill that has most helped their learning.
 - Direct students to support their choice with a reason or evidence by telling what they have learned by applying this skill. (Example: “I searched for answers to our research question in pictures and shared what I found. I learned that insect pollinators can all move pollen with their bodies.”)
- As time permits, call on students to share out, or consider using a familiar protocol, such as Pinky Partners, for students to share.
- Preview tomorrow’s work: beginning our shared writing about bees!

Meeting Students' Needs

- For ELLs: (Sentence Frames: Heavier Support) Provide sentence frames to support writing and speaking. (Example: I ____ when I ____.)
- For students who may need additional support with comprehension: Scaffold memory and access of prior learning by listing the related learning on chart paper or a white board. (MMR)

There are no new Supporting Materials for this lesson.