

Lesson 6: Whole Group Research: Using Photos to Gather Information about Bees



- **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.2.3:** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- **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).
- **L.2.1e:** Use adjectives and adverbs, and choose between them depending on what is to be modified.



Daily Learning Targets

- I can research information using photographs about bees. (RI.2.5, RI.2.7, W.2.7)
- I can create and label a scientific drawing of a bee. (W.2.7)

Ongoing Assessment

- During the Close Viewing protocol in Work Time A, circulate and observe while students collaborate to observe photos and record notes to track their progress toward RI.2.5 and W.2.7.
- During the Closing, continue to circulate and listen for students to share details about their scientific drawing and what they learned about bees through their research. (W.2.7, SL.2.2)
- After Work Time B, collect students' Plants and Pollinators research notebook, Part II and use page 6 to document progress toward W.2.7.

Agenda

1. Opening

- A. Song and Movement: "It's Pollination Time," Version 1 (10 minutes)

2. Work Time

- A. Close Viewing Protocol: Bee Photographs for Research (15 minutes)
- B. Shared Writing: Research about Bees: Class Notes (15 minutes)
- C. Scientific Drawing of Bees: Shapes (15 minutes)

3. Closing

- A. Sharing Our Work: Scientific Drawings of Bees (5 minutes)

Teaching Notes

Purpose of lesson and alignment to standards:

- In this lesson, students continue to research about bees, using photographs instead of written text.
- During the Opening, students continue working with the song “It’s Pollination Time” to develop their understanding of adjectives and adverbs in context (L.2.1e).
- In Work Time A, students use photographs as a form of visual text to practice closely observing and taking notes about bees and pollination (RI.2.1, RI.2.3).
- In Work Time B, the teacher summarizes student notes and records them on a class notes chart before students write the notes on their own recording form. This step allows student to see a model of effective note-taking and ensures accurate information for writing sessions later in this unit (RI.2.1, RI.2.7, W.2.7). Continue to reinforce that, when taking notes, one only writes down key words or phrases, not full sentences.

How this lesson builds on previous work:

- In Lesson 5, students used the text *What Is Pollination?* to gather information about bees. Students engage in the familiar Close Viewing protocol to practice making close observations of photographs to gather additional information about bees and pollination.
- In Work Time C, students create a second scientific drawing of a bee using a new bee photograph. This photograph will be different from the one they used for scientific drawing in Lesson 5. The purpose of this drawing is to practice the skill of observing the basic shapes visible within a photograph to create their own scientific drawing. Students record their observations and write a sentence to describe their new knowledge about bees.

Areas in which students may need additional support:

- Some students may find it difficult to notice finer details in the bee photographs during Work Time A. Consider using magnifying glasses to help students examine photographs even more closely.

Down the road:

- The Lessons 5–6 whole class research cycle practiced with text about and photos of bees will be repeated in Lessons 7–8 when students work in small groups using text and photos of other insect pollinators.
- Lessons 7–9 continue the work on scientific drawings, with opportunities for students to create new drawings of pollinators focusing on shapes and sizes of pollinator body parts in the photographs being viewed. Then, in Unit 3, students will practice drawing skills while revising scientific drawings for aspects of quality.

In advance:

- Prepare bee photographs #4–7 for Work Time A (in color, if possible) by making enough copies for each pair to have one photograph (see supporting Materials). Distribute photographs as evenly as possible. Pairs will be trading photographs with other pairs and should use all of the photographs of their pollinator by the end of Work Time A.
- Pre-distribute research Materials for Work Time C at student workspaces.

- Preview:
 - The movements that go with the song in the Opening.
 - Bee photographs #4–7 to support student observations and note-taking, and the photo used in Work Time C to identify shapes and body parts to highlight for the modeled drawing.
- Post: Learning targets, “It’s Pollination Time,” Version 1, and applicable anchor charts.

Technology & Multimedia

- 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.
- Consider the use of a document camera while modeling close observation of photographs during Work Time A and to model scientific drawing skills in Work Time C.

Supporting English Language Learners

Supports guided in part by CA ELD Standards 2.I.B.6, 2.I.C.10, 2.II.A.1, 2.II.B.4, and 2.II.B.5

Important points in the lesson itself

- The basic design of this lesson supports ELLs with opportunities to hone their skills as researchers as a shared writing activity before applying the skills independently.
- ELLs may find it challenging to collect notes in partners during Work Time A, especially if they do not fully comprehend each category. Spend additional time explicitly defining and rephrasing each category (see Meetings Students’ Needs column).
- In Work Time C of this lesson, ELLs may participate in Day 2 of an optional Language Dive that guides them through the meaning of a sentence from *What Is Pollination?* The focus of this Language Dive is using adjectives to describe nouns (L.2.1e). Students then apply their understanding of the meaning and structure of this sentence as they take class notes about bees and as they write informational paragraphs for the Unit 2 Assessment. Preview the Language Dive Guide and consider how to invite conversation among students to address the language goals suggested under each sentence strip chunk (see supporting Materials). Refer to the Module 1 Appendix for additional information regarding a consistent Language Dive routine.

Levels of support

For lighter support:

- During Work Time C, invite a student to create sentence frames for other students as they label their drawings.

For heavier support:

- During Work Time A, distribute pre-written sticky notes or sticky notes with sentence frames to model and support student research.

Universal Design for Learning

- **Multiple Means of Representation (MMR):** Similar to Unit 2, this lesson offers a variety of visual anchors to cue students' thinking. Continue to support students by creating additional or individual anchor charts for reference and charting student responses during whole class discussions to aid with comprehension.
- **Multiple Means of Action & Expression (MMAE):** This lesson offers several opportunities for students to engage in discussion with partners. Continue to support those who may need it with expressive language by providing sentence frames to help them organize their thoughts.
- **Multiple Means of Engagement (MME):** Continue to remind students of the goal for their work with their research. Returning to the learning goals lifts their value and relevance to students.

Vocabulary

Key:

(L): Lesson-Specific Vocabulary

(T): Text-Specific Vocabulary

(W): Vocabulary Used in Writing

Review

- adjective, adverb, noun, verb, scientific drawing (L)
- pollination, pollen (T)

Materials

- ✓ "It's Pollination Time," Version 1 (from Lesson 5; one to display)
- ✓ Research about Bees: Class Notes (begun in Lesson 5; added to during Work Time B)
- ✓ Research about Bees: Class Notes (begun in Lesson 5; example, for teacher reference)
- ✓ Close Viewing Protocol anchor chart (begun in Module 2)
- ✓ Bee photographs #4–7 (one per pair and one for teacher modeling)
- ✓ Sticky notes (three to four per student)
- ✓ Plants and Pollinators research notebook, Part II (from Lesson 1; pages 6 and 8; one per student and one for teacher modeling)
- ✓ What Researchers Do anchor chart (begun in Unit 1, Lesson 2)
- ✓ Bee photograph #2 (from lesson 5; enough for a third of the class and one for teacher modeling)
- ✓ Bee photographs #1 (from Lesson 5; enough for a third of the class)
- ✓ Bee photograph #3 (from Lesson 5; enough for a third of the class)
- ✓ Plants and Pollinators research notebook, Part II (from Lesson 1; example, for teacher reference)
- ✓ Scientific Drawing anchor chart (begun in Lesson 5; added to during the Closing; see supporting Materials)

- ✓ Scientific Drawing anchor chart (begun in Lesson 5; example, for teacher reference)
- ✓ Language Dive Guide II: *What Is Pollination?* (from Lesson 5; optional; for ELLs; for teacher reference)
 - Questions We Can Ask during a Language Dive anchor chart (begun in Unit 1, Lesson 8)
 - Language Dive Chunk Chart II: *What Is Pollination?* (from Lesson 5; for ELLs; for teacher reference)
 - Language Dive Sentence Strip Chunks II: *What Is Pollination?* (from Lesson 5; optional; for ELLs; one to display)

Opening

A. Song and Movement: “It’s Pollination Time,” Version 1 (10 minutes)

- Gather students whole group.
- Display “**It’s Pollination Time,**” Version 1.
- Remind students that they learned this song in Lesson 5 and tell them they are going to practice singing it again today.
- Briefly review the definition and examples of adjectives and adverbs in the song.
- Remind students that singing this song helps us think about the ways we can describe pollinators.
- Follow the same routine established in Modules 1 and 2 to sing “It’s Pollination Time,” Version 1:
 - Direct students’ attention to “It’s Pollination Time,” Version 1.
 - Invite students to first listen as you sing the song aloud.
 - Invite students to contribute ideas for gestures/actions for the following phrases:
 - “It’s pollination time” (tap back of wrist to the beat, like tapping a watch)
 - “Heigh ho” (hands straight up)
 - “the bees all know” (index fingers pointing to head)
 - “Buzzing to the garden to help the flowers grow” (move around the space, returning to their spot)
 - “spot flowers to go land” (hand across brow, like viewing something far away)
 - “The bee’s hairy body is caked from bottom to top” (pat body from feet to head)
 - “Bees leave hungrily” (rub tummy)
 - “Those bees wildly zig and zag to every flower they see” (move around the space, returning to their spot)
- If possible, draw images next to the word/phrase to help students remember the motions.
- Give students specific, positive feedback for thinking of fun and engaging motions that go with the song.
- Invite students to sing the song with you one more time, adding in the motions.

Meeting Students' Needs

- For ELLs: (Duets) Gently encourage shy or unconfident students to sing. If students are comfortable, invite them to sing "duets" with more confident students so they can more easily hear themselves as they practice.
- For students who may need additional support with expression: Provide differentiated mentors by seating students who may be more confident reading and singing aloud near students who may not feel as confident. (MMAE, MME)

Work Time

A. Close Viewing Protocol: Bee Photographs for Research (15 minutes)

- Refocus whole group.
- Give students specific, positive feedback on the research they already completed as a class using the text *What Is Pollination?*
- Direct students' attention to the **Research about Bees: Class Notes** and remind them that they've already added these class notes to their Research about Pollinators: Student Notes. Tell them that today they are going to add more information about bees to the class notes and student notes.
- Direct students' attention to the posted learning targets and read the first one aloud:
- "I can research information about bees using photographs."
- Tell students that today they will use the Close Viewing protocol to gather information about bees by looking closely at photographs. Remind them that they used this protocol in Module 2 and review as necessary using the **Close Viewing Protocol anchor chart**. (Refer to the Classroom Protocols document for the full version of the protocol.)
 - Review the three columns on the Research about Bees: Class Notes. Remind students that these columns will help focus their observations and note-taking.
 - Model making an observation about **bee photograph #4** and adding words or phrases to a **sticky note**.
 - Place the sticky notes under the appropriate column on the Research about Pollinators: Class Notes.
 - Transition students to their workspace with their research partner from Lesson 5. Point out the bee photographs #4–7, sticky notes, and **Plants and Pollinators research notebook, Part II** already there.
 - Guide students through the protocol using the bee photographs #4–7, inviting them to trade photos with another pair every 2–3 minutes.
 - Circulate and encourage students to refer to the headings from the **Research about Bees: Student Notes** on page 6 their Plants and Pollinators research notebook, Part II to guide their observations as they discuss the photographs.
 - Circulate to support students in noting words and phrases on their sticky notes based on their observations. Encourage them to stick the note to their Research about Bees: Student Notes in the related column.
- After 8–9 minutes, invite pairs to bring their Research about Bees: Student Notes and sticky notes to the group meeting space while singing "It's Pollination Time," Version 1.

Meeting Students' Needs

- For ELLs and students who may need additional support with written expression: (Sketching) Allow students to sketch on their sticky notes as placeholders for information as they complete the Close Viewing protocol. (MMAE)
- For ELLs and students who may need additional support with comprehension: (Reviewing Headings) When referring to the headings on the Research about Bees: Student Notes, discuss each one explicitly to ensure students understand what information they are looking for. Annotate the notes with simplified language to clarify each heading as necessary. (MMR)

Work Time

B. Shared Writing: Research about Bees: Class Notes (15 minutes)

- Refocus whole group.
- Turn and Talk:

“What is one piece of new information you wrote on your sticky notes after closely viewing the bee photographs?” (Responses will vary.)
- Follow the routine from Work Time B of Lesson 5 for students to share their findings, add relevant notes to the Research about Bees: Class Notes, and add information to their Research about Bees: Student Notes in their notebooks:
 - Students share out their findings with the whole group.
 - Summarize students' findings and add them to the Research about Bees: Class Notes. Refer to the **Research about Bees: Class Notes (example, for teacher reference)** as necessary.
 - Invite students to copy the new class notes onto their Research about Bees: Student Notes on page 6 of their Plants and Pollinators research notebook, Part II.
- Give students specific, positive feedback on their ability to look closely at photographs to find new information about bees.
- If productive, cue students with a challenge:

“Can you figure out why we wrote notes and organized them on our class notes? I'll give you time to think and discuss with a partner.” (Responses will vary, but may include: so we can find the information we researched; so we can write about bees.)
- Invite students to give a partner a fist bump to acknowledge their hard work.

Meeting Students' Needs

- For ELLs and students who may need additional support with comprehension: (Comparing Information) Ask probing questions to support students in deciding if their notes contain similar information to another's notes. Examples:

“What information does Ryan's note give us?”

“What information does Stefi's note give us?”

“Are they about mostly the same thing? Why or why not?” (MMR)

Work Time

C. Scientific Drawing of Bees: Shapes (15 minutes)

- Refocus whole group.
- Direct students' attention to the **What Researchers Do anchor chart** and focus students on:
 - “observe and record”
- Offer students specific, positive feedback on their work of closely observing photographs and recording their notes.
- Direct students' attention to the posted learning targets and read the second one aloud:
“I can create and label a scientific drawing of a bee.”
- Review the definition of the words *scientific drawing* (a detailed and accurate picture that teaches the viewer information about an object).
- Using a total participation technique, invite responses from the group:
“What pollinator will we create a scientific drawing of?” (bee)
“What do we need to add to our scientific drawing?” (labels and a sentence)
- Display **bee photograph #2** and ask:
“What shapes do you see in the photograph?” (circles, ovals)
“What body parts do you see on the bee?” (head, body, legs, wings)
- Tell students that now they will get a chance to create a second scientific drawing using a new bee photo. Today they will focus on basic shapes and only draw what they see in the picture.
- Tell students that to observe closely, today they will draw from a different perspective: turning the photo and our drawing paper upside down. This will help students focus on the overall shapes and free them from worry about making their drawing “perfect.”
- Display page 8 of the Plants and Pollinators research notebook, Part II and read the directions aloud. Remind students that it may help them as writers to draw first and then write.
- Think aloud to model how to complete their scientific drawing of the bee:
“I first want to turn the photograph of the bee upside down. I want to observe the photograph and notice shapes of the body and head, and trace them with my finger. I then want to identify the main body parts in the photograph. My drawing should include all of these major body parts.”
“I want to turn my drawing paper upside down, too, so that it is facing the right direction when I am finished. I want to put my sketch in the large box in the center of the page. I need to make sure that my sketch fills up the entire box. I can begin drawing the basic body shape and head. After I have the basic shape of the body and head, I can then add specific body parts that I can observe (legs, wings, eyes).”
“I want to remember that this is a rough sketch and not a final sketch, so I don’t want to worry about it being perfect. I just want to make sure I get the basic shape of the bee and to include all of the basic body parts that I can see.”
“When I am done with my sketch, I need to turn my drawing paper so that it is no longer upside down. I need to make sure that I add labels for the body, legs, and wings. I should write the word next to the bee part and draw an arrow to show where the part is on the bee.”

“Lastly, I should write a sentence on the line under the drawing, telling something I have learned about bees.”

- Distribute **bee photographs #1–3**, reminding students to choose one of the photographs they have not yet drawn. Invite students to begin sketching and writing.
- Circulate to support students as necessary. Encourage them to use classroom resources (Word Walls, Research about Pollinators: Class Notes, high-frequency word lists, and letter-sound combination charts) as they write their sentence showing new learning about how bees help plants grow and survive. Refer to the **Plants and Pollinators research notebook, Part II (example, for teacher reference)** as necessary.
- When 1 minute remains, signal all students to stop working. Model cleanup, keeping directions clear and brief.

Meeting Students’ Needs

- For ELLs: During or after Work Time C, guide students through Day 2 of the two-day Language Dive. Refer to Day 2 of **Language Dive Guide II: What Is Pollination?** and **Language Dive Chunk Chart II: What Is Pollination?** Display **Language Dive Sentence Strip Chunks II: What Is Pollination?**
- For students who may need additional support with sustained effort: Increase mastery-oriented feedback by providing feedback that is frequent, timely, and specific to individual students. (Example: I see you are looking closely at the photograph and have drawn the bee’s body with great detail. What else do you see in the photograph that you want to include in your drawing?” (MME)

Closing and Assessment

A. Sharing Our Work: Scientific Drawings of Bees (5 minutes)

- Invite students back to the whole group area with their scientific drawing and writing.
- Briefly review the posted learning targets by reading them aloud:
 - “I can research information about bees using photographs.”*
 - “I can create and label a scientific drawing of a bee.”*
- Remind students that today they have used the information they have gathered about bees to make a scientific drawing and to write something they have learned about how bees help plants grow and survive.
- Direct students’ attention to the **Scientific Drawing anchor chart**. Give students specific, positive feedback on their use of careful observation before drawing.
- Using a total participation technique, invite responses from the group:
 - “What new scientific drawing skill did we focus on today?” (shape)*
- Add “identify basic shapes” to the **Scientific Drawing anchor chart**. Refer to the **Scientific Drawing anchor chart (example, for teacher reference)** as necessary.

- Follow the same routine from the Closing of Lesson 5 to guide students through sharing their scientific drawing and writing with a partner.
 - Post and review the following directions:
 1. Describe what you noticed and drew in your scientific drawing.
 2. Read aloud your sentence.
 - Answer clarifying questions.
 - Invite students to turn to an elbow partner and take turns sharing their work.
 - Circulate to support students and listen for them to share what they noticed, drew, and wrote with their partner.
 - After 1–2 minutes, refocus students and give them specific, positive feedback on sharing their work.
- Preview tomorrow’s work: an information sorting game and a new bee drawing.

Meeting Students' Needs

- For ELLs and students who may need additional support with comprehension: (Revisiting the Learning Targets) When revisiting the learning targets, invite students to rephrase them with specific examples. (MMR, MME)