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Introduction:
Discovering Scientists
Overview

What is this unit about?
In this unit, students will read two texts: “Watching in the Wild” by Charnan Simon1 and Snowflake Bentley by Jacqueline Briggs Martin2. Both texts introduce students to fascinating scientists who made important discoveries and shared their discoveries with the world. The first text, “Watching in the Wild,” is about Jane Goodall, a scientist who devotes her life to studying chimpanzees in the wild. Although Jane no longer spends time in the wild, she continues to share her discoveries and her passion for chimpanzees through books and lectures. The second text, Snowflake Bentley, is about a scientist whose passion for snowflakes led to years of work analyzing snow crystals and led to the discovery of how to capture their images before they melt. Through the study of these two texts, students are supported to engage in discussions in which they draw on textual evidence to identify the important discoveries made by both scientists, learn about the topics being studied, and compare traits shared by the two scientists that helped them find success in their respective fields.

This short unit can easily be nestled into a larger unit of study on topics such as scientists, discoveries, dedication, and perseverance.

What content and concepts will students learn?
Students will learn about:

• Jane Goodall, Wilson Bentley, and each of their discoveries.
• chimpanzees and snowflakes.
• traits that Goodall and Bentley shared that helped them be successful, including patience, passion, and persistence.

What practices will students use?
Students are supported to develop practices and habits such as how to:

• comprehend and analyze texts with assistance.
• work from moments in one text and across two texts to develop ideas and compare scientists and their work.
• read and talk about texts several times as a means to enhance their comprehension.
• participate in routines such as sharing their ideas in pairs and trios and participating in whole group discussions.
• use specific examples from the text to support their ideas.

How long will it take to engage students in the unit?
This unit spans approximately 8-10 instructional days, assuming 25- to 30-minute classes. The tasks in the unit are designed to be implemented sequentially in order to support students to achieve the instructional goals. As such, the pacing of the lessons will depend on the time students need to achieve these goals.

1 Simon, C. (2013, October). Watching in the wild. Click, 16(8), 12+.
# Unit Outline

## Overarching Questions
- What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
- What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life’s work?

<table>
<thead>
<tr>
<th>TEXT 1</th>
<th>TEXT 2</th>
</tr>
</thead>
</table>
| **“Watching in the Wild”**  
by Charnan Simon | **Snowflake Bentley**  
by Jacqueline Briggs Martin |

### 1.1 Comprehension
- What do you learn about Jane Goodall?
- What do you learn about chimpanzees?
- What places are hard or confusing for you?

### 1.2 Furthering Comprehension
What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.

### 1.3 Analysis
- What are the features of an explanation?
- Write several sentences in which you explain the trait that best describes Jane.

### 2.1 Comprehension
- What do you learn about Wilson Bentley?
- What do you learn about snowflakes?
- What places are hard or confusing for you?

### 2.2 Furthering Comprehension
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

### 2.3 Interpretation
- Write several sentences in which you explain the trait that best describes Wilson.
- How are Jane and Wilson similar?

## Writing Across Texts
Based on what you’ve learned about Jane Goodall and Wilson Bentley, choose the one trait that you believe is most important for scientists to be successful in making important discoveries. Use evidence from both texts to explain why you believe that trait is most important.

---

3 The questions guiding the work of the unit have been carefully and collaboratively crafted to support student engagement with the texts under study and student achievement of the learning goals of the unit. Changing the language of a question may alter the intellectual rigor and/or change the lesson’s or unit’s intention and purpose.
## Materials by Task

<table>
<thead>
<tr>
<th>Task</th>
<th>Materials</th>
</tr>
</thead>
</table>
| 1.1  | • “Watching in the Wild” by Charnan Simon  
• Comprehension Talk Questions for “Watching in the Wild”  
• Handout: Comprehension of “Watching in the Wild”  
• Chart: Important Information About Jane and Chimpanzees  
• Chart paper and markers |
| 1.2  | • “Watching in the Wild” by Charnan Simon  
• Chart from Task 1.1: Important Information About Jane and Chimpanzees  
• Handout: Describing Jane (two-page handout that includes the graphic organizer titled, Traits that Describe Jane)  
• Chart paper and markers |
| 1.3  | • “Watching in the Wild” by Charnan Simon  
• Graphic organizer: Traits that Describe Jane  
• Handout: Writing Explanations  
• Chart paper and markers |
| 2.1  | • Snowflake Bentley by Jacqueline Briggs Martin  
• Comprehension Talk Questions for Snowflake Bentley  
• Handout: Comprehension of Snowflake Bentley  
• Chart: Important Information About Wilson and Snowflakes  
• Chart paper and markers |
| 2.2  | • Snowflake Bentley by Jacqueline Briggs Martin  
• Chart from Task 2.1: Important Information About Wilson and Snowflakes  
• Handout: Describing Wilson (two-page handout that includes the graphic organizer titled, Traits that Describe Wilson)  
• Chart paper and markers |
| 2.3  | • Snowflake Bentley by Jacqueline Briggs Martin  
• Handout: Writing about Wilson  
• Graphic organizer: Traits that Describe Wilson  
• Graphic organizer: Traits that Describe Jane  
• Chart: Jane and Wilson: Similarities  
• Sentence strips  
• Chart paper and markers |
| Writing Across Texts | • “Watching in the Wild” by Charnan Simon  
• Snowflake Bentley by Jacqueline Briggs Martin  
• Handout: Writing Across Texts  
• Graphic organizer: Traits that Describe Jane  
• Graphic organizer: Traits that Describe Wilson  
• Chart: Jane and Wilson: Similarities  
• Handout: Gr. 1: Decision Tree Scoring Guide  
• Chart paper and markers  
• Student paper and pencil |
# Text 1: “Watching in the Wild” by Charnan Simon

## Overarching Questions
- What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
- What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life’s work?

<table>
<thead>
<tr>
<th>TEXT 1</th>
<th>“ Watching in the Wild”</th>
<th>TEXT 2</th>
<th>Snowflake Bentley</th>
</tr>
</thead>
</table>
| 1.1 Comprehension | - What do you learn about Jane Goodall?  
- What do you learn about chimpanzees?  
- What places are hard or confusing for you? | 2.1 Comprehension | - What do you learn about Wilson Bentley?  
- What do you learn about snowflakes?  
- What places are hard or confusing for you? |
| 1.2 Furthering Comprehension | What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify. | 2.2 Furthering Comprehension | What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify. |
| 1.3 Analysis | - What are the features of an explanation?  
- Write several sentences in which you explain the trait that best describes Jane. | 2.3 Interpretation | - Write several sentences in which you explain the trait that best describes Wilson.  
- How are Jane and Wilson similar? |

## Writing Across Texts
Based on what you’ve learned about Jane Goodall and Wilson Bentley, choose the one trait that you believe is most important for scientists to be successful in making important discoveries. Use evidence from both texts to explain why you believe that trait is most important.
Comprehension

- What do you learn about Jane Goodall?
- What do you learn about chimpanzees?
- What places are hard or confusing for you?

Situating the Task

<table>
<thead>
<tr>
<th>1.1 Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you learn about Jane Goodall?</td>
</tr>
<tr>
<td>What do you learn about chimpanzees?</td>
</tr>
<tr>
<td>What places are hard or confusing for you?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2 Furthering Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>What traits would you use to describe Jane Goodall?</td>
</tr>
<tr>
<td>Draw on evidence about Goodall and her discoveries to support the traits you identify.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3 Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the features of an explanation?</td>
</tr>
<tr>
<td>Write several sentences in which you explain the trait that best describes Jane.</td>
</tr>
</tbody>
</table>

Duration

2 class sessions

Why This Task Now?

This first task asks students to listen to a read aloud of “Watching in the Wild” and participate in a text discussion to (a) understand what Simon says about Jane Goodall and her work with chimpanzees and (b) identify places in the text that they are finding difficult or confusing. This is the first of several readings students will do of this text. This task has two purposes.

- The purpose of “a” is for students to get the gist of what Simon says about Goodall and her work with chimpanzees so they have a foundation from which to build for later tasks.
- The purpose of “b” is for students to identify places that prevent them from fully understanding what Simon says and for teachers to learn what aspects of the text students are finding difficult.

Materials

- “Watching in the Wild” by Charnan Simon
- Comprehension Talk Questions for “Watching in the Wild”
- Handout: Comprehension of “Watching in the Wild”
- Chart: Important Information About Jane and Chimpanzees
- Chart paper and markers
Teaching Approach

Setting Up the Unit: Whole Group (3-5 minutes)
Purpose: To introduce students to the Discovering Scientists unit, including the unit’s texts and overarching questions.

- Introduce students to the Discovering Scientists unit. Let them know that they will spend the next two weeks reading and writing about two scientists and their discoveries.
- Tell students they will read, discuss, think about, and write about two texts about scientists who made important contributions to the world.
  - The first text, “Watching in the Wild,” is about Jane Goodall, a scientist who devotes her life to studying wild chimpanzees and sharing her discoveries. It’s important to note that as of this writing, Jane is still alive, and although she doesn’t spend as much time in the wild, she continues to share her passion with the world by delivering lectures and presentations and writing books.
  - The second text, Snowflake Bentley, is about Wilson Bentley, a scientist whose passion for snowflakes led to the discovery of a method for capturing the images of snowflakes before they melt.
- Share the two overarching questions that guide the work in the unit:
  - What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
  - What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life’s work?

Teacher Note
“Watching in the Wild” is placed first in this unit for two reasons:

- “Watching in the Wild” is a shorter informational text with less challenging language and a focus on only one person, Jane Goodall, and her work with chimpanzees. The second unit text, Snowflake Bentley, is more challenging as the language is more complex, and the text includes Wilson’s relationships with his family and his interactions with other people, in addition to his important work with snowflakes.
- The text structure for “Watching in the Wild” is less challenging, with basic sentence structures and no additional text features. The structure of Snowflake Bentley includes sidebars that can be confusing to young readers.

Setting Up the Task: Whole Group (3-5 minutes)
Purpose: To provide students with clear directions and expectations for the comprehension task on “Watching in the Wild.”

- Provide students with the handout titled Comprehension of “Watching in the Wild” found on page 21.
Review the “Purpose” and “Task” sections with students, giving them an opportunity to ask questions and clarify expectations.

Engaging Students in a Discussion of the Text: Whole Group (15-20 minutes)

Purpose: To provide support for students’ comprehension of “Watching in the Wild” by engaging them in a text-based discussion.

Teacher Notes

- We have provided Comprehension Talk Questions for the entire text (see page 22). These text-based questions guide students through the reading of the text, asking them to pause periodically to discuss what’s going on, what they’re learning about Goodall and chimpanzees, and how what they’re learning connects to what they’ve already read in the text. We recommend that you use the questions as written. These questions have been carefully crafted to support students’ understanding of the text and prepare them for the work that follows. Moving away from the questions may prevent students from fully getting the gist of the text and being prepared to tackle later tasks.
- During the whole group reading and discussion, you might consider having students read portions of the text aloud, rather than reading the entire text yourself. If you decide to have students share in the reading, continue to pause at the designated stopping points and ask the Comprehension Talk Questions.

Tell students that you will begin reading “Watching in the Wild” aloud as they follow along on their copies and participate in a text-based discussion. Let them know that you will stop reading occasionally so that they can discuss what they are learning about Jane and chimpanzees.

Remind students of the two things they should be marking while reading:

1. Underline or highlight places where they are learning something important about Jane Goodall and chimpanzees.
2. Mark with a question mark (“?”) places where they are confused or unsure of what the author is trying to say.

Begin reading aloud using the Comprehension Talk Questions (found on page 22) to guide the reading and discussion. As you read, mark the text in the same way that students will mark their copies.

Each time you pause in the reading to pose questions, ask students to quickly share

1. important information they’ve learned so far about Jane and chimpanzees.
2. places where they are confused or unsure of what the author is trying to say. Tell students to hold their questions and confusion for now since some may become clear further in the text, others may become unimportant, and others may need further unpacking later.

Modeling Thinking and Process: Whole Group (5-7 minutes)

Purpose: To model for students how to make meaning of places where they were confused before they are asked to do this in pairs.

- Once you’ve finished reading the text with students, tell them you are going to model how to untangle places in the text where they were confused about what the author was trying to say.
- Display an enlarged copy of the text.
- Begin by asking students to volunteer one place in the beginning of the text that they marked with a “?”.
- Model untangling that place and restating the information in your own words. Do such things as
  - talking ideas out with a student volunteer who understood the moment.
  - looking up words in the dictionary or on the Internet.
  - rereading the lines or paragraphs before and after the moment to see what insight they provide.
- Then ask students to share any other methods they could use to help understand places in the text where they may be confused or unsure of what the author is trying to say.
- Wrap up your model by asking students to summarize what you did to untangle confusing moments. Use this to determine whether students are ready to do this with a partner.

Differentiation

You might need to go through the process above several times with different kinds of moments (e.g., those that require looking up words in the dictionary, those that can be untangled using context clues, etc.) before students are able to do this work with a partner. Each time you do this, ask students to do more of the thinking. For example, instead of modeling how to untangle a confusing moment and restate it in your own words, ask students to do this with a specific moment in pairs or trios and share out the results of their work.

Monitoring Student Thinking: Pair Work (10 minutes)

Purpose: To provide a supportive environment with high accountability for students to share the important information they learned about Jane Goodall and chimpanzees and to untangle confusing moments.

- Ask students to take about 10 minutes to work on Part 2 of the Comprehension of “Watching in the Wild” task sheet.
- Circulate around the room to listen in on students’ conversations. Identify students who are doing a good job identifying important information about Jane Goodall and chimpanzees and untangling places where they are confused or unsure of what the author is trying to say.
- Monitor students’ ideas during the pair work. Make mental notes of students’ misunderstandings about the text and places where they struggled. Use this knowledge to determine points that might need to be clarified during the upcoming whole group discussion.

Differentiation

If you find that some students are struggling with the task, bring them together in small groups or as a whole group to revisit the text using the process outlined above under “Modeling Thinking and Process: Whole Group.”
Guiding Students to Consensus: Whole Group (10 minutes)

**Purpose:** To enable students to reach a common understanding about the important information Simon provides about Jane Goodall and chimpanzees and to determine what students find difficult about the text.

- Bring students together as a whole group.
- Create a chart entitled *Important Information About Jane and Chimpanzees.* (See the Learning Target below for one way to structure the chart.)
- Begin by having students share the important information they learned about Jane and chimpanzees. Have students cite line numbers to support what they share.
- There are different ways to have students share the important information they marked about Jane and chimpanzees.
  - If students struggled with the task, you might begin by having students share the important moments they marked while reading, mark them on an enlarged copy of the text, and think with students to sort through those moments to determine which ones are most important.
  - If students did well with the task, you might invite them to share the important information about Jane and chimpanzees in any order, making sure that all students have an opportunity to contribute their ideas.
  - Another option is to continue working with the enlarged copy of the text and move through it as a whole group, inviting students to share what they learned for chunks of the text.
- Record students’ responses on the *Important Information About Jane and Chimpanzees* chart.

**Learning Target**

Below are some examples of what students might say is important information about Jane Goodall and chimpanzees. The point of this work is for students to develop an overall/gist-level understanding of what Simon says about Jane and chimpanzees as opposed to grasping all the details about them. Students will work more closely with the text in Task 1.2.

<table>
<thead>
<tr>
<th>Jane Goodall</th>
<th>Chimpanzees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has studied chimpanzees in Africa for 40 years. (Lines 1-3)</td>
<td>Chimpanzees are shy. (Lines 14-15)</td>
</tr>
<tr>
<td>She didn’t give up when chimps stayed away from her. Instead, she kept her distance, wore camouflage, and watched them through binoculars. (Lines 16-22)</td>
<td>Chimpanzees communicate with each other (Lines 11-12), eat fruit (Lines 13 and 24), drink from streams (Lines 24-25), and make nests in the treetops each night. (Lines 30-35)</td>
</tr>
<tr>
<td>Jane observed the chimps for hours and took notes on how they lived and interacted with each other. (Lines 21-34)</td>
<td>Chimpanzees have personalities. (Lines 45-46)</td>
</tr>
<tr>
<td>The chimps got used to Jane and let her come closer. (Lines 36-37)</td>
<td>Chimpanzees are affectionate and take care of each other. (Lines 25-28, 32-34, 40, 57-58)</td>
</tr>
<tr>
<td>Jane gave the chimps names and noticed their different personalities. This was different than how scientists at the time studied animals; today many scientists name animals. (Lines 37-48)</td>
<td>Like humans, chimps use tools. (Lines 49-60)</td>
</tr>
</tbody>
</table>
Jane Goodall

- Jane discovered that chimpanzees, like humans, use tools. (Lines 49-60)
- Jane wrote books to share her discoveries. (Lines 61-62)
- Jane’s discoveries have changed the way scientists think about animals and humans. (Lines 3-5, 66-67)

Chimpanzees

- Chimpanzees are very much like people. (Lines 62-66)

• Next, invite a few students to share moments that got in the way of their understanding of what the author is trying to say, how they untangled those moments, and what they now understand those moments to mean. After one person shares, ask if there are others who marked the same moments and what they now understand about those moments.
• If students have areas of difficulty or confusion that they could not untangle, invite others to help or consider jumping in to provide guidance and clarity quickly and/or directing students to available resources to quickly locate what is needed.
• Finally, ask students what they found most interesting or surprising about the content of the text.
Comprehension of “Watching in the Wild”

Purpose
Today you will read Charnan Simon’s “Watching in the Wild” for the first time. The purpose is for you to get the gist (or develop a basic understanding) of what Simon is saying about Jane Goodall and chimpanzees.

This task also asks you to mark places where you are confused or unsure of what Simon is trying to say. When you’re finished reading, you’ll work with a partner to figure out the meaning of those places.

Task
Part 1: As you read “Watching in the Wild,” please do two things.

• Underline places where you learn something important about Jane Goodall and about chimpanzees.
• Mark with a question mark (“?”) places where you are confused about what Simon is trying to say. Don’t mark every unknown word. Instead, mark the places where you are having trouble figuring out what the author is writing.

Part 2: After we finish reading, “Watching in the Wild,” work with your partner to:

• share places where you learned something important about Jane Goodall and about chimpanzees.
• share places you marked with a “?” Try to figure out the meaning of each confusing place and put it in your own words. To do this, you might talk your ideas out with your partner, look up words in the dictionary or on the Internet, or reread the sentences before and after the confusing part to see if that helps to unlock the meaning.
### Comprehension Talk Questions for “Watching in the Wild”

As you read “Watching in the Wild,” engage students in a discussion of the text by asking them to respond to the questions below. These questions are designed to stop the reading periodically so students can build meaning and make connections among the ideas in the text.

It might be helpful to occasionally ask students for a recap of what you’ve read so far in the text. It is important that all students are keeping up with the big ideas in the text and building meaning and making connections across the text.

### Teacher Note

Some teachers find it helpful to prepare the discussion questions and notes on the corresponding pages of the text. Questions can be handwritten on the page or prepared on sticky notes.

<table>
<thead>
<tr>
<th>Lines</th>
<th>Say and/or Ask</th>
<th>Elicit</th>
<th>Notes/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>We will begin our unit by reading the first text, “Watching in the Wild” by Charnan Simon.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>What does this introduction set up for us?</td>
<td>We are going to read about Jane Goodall and her work with chimpanzees in Africa.</td>
<td></td>
</tr>
<tr>
<td>6-10</td>
<td>What did we learn in this section?</td>
<td>Jane’s plan was to go to Africa and sit and observe chimpanzees.</td>
<td></td>
</tr>
<tr>
<td>11-16 (Stop after “Jane was discouraged.”)</td>
<td>How were things going for Jane when she first got to Africa? Follow up: How was Jane feeling about what was happening? Follow up: What did we learn about chimpanzees in this section?</td>
<td>Jane was having trouble observing the chimpanzees because they ran away every time she got close. They communicate by calling to each other, and they eat fruit.</td>
<td>If students are unable to explain the meaning of discouraged, provide a student-friendly explanation, “If people are discouraged, they aren’t as hopeful or excited about something as they once were.”</td>
</tr>
<tr>
<td>16-22 (Begin with, “But she didn’t give up.”)</td>
<td>What did Jane do? Follow up: How did Jane handle her problem?</td>
<td>She didn’t give up. She spent all day observing the chimpanzees from far away. She dressed so she blended in with the jungle and observed from a distance.</td>
<td></td>
</tr>
<tr>
<td>Lines</td>
<td>Say and/or Ask</td>
<td>Elicit</td>
<td>Notes/Options</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>23-28</td>
<td>What do we learn about chimpanzees in this section?</td>
<td>They are very affectionate. They hug and kiss each other, and babies ride on their mothers’ backs and sit on their laps. She loved it!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What does Jane think of the experience so far?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-35</td>
<td>What do we learn about Jane in this section?</td>
<td>Jane took notes on everything she noticed about chimpanzees.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: And what does Jane learn about chimpanzees?</td>
<td>They are pretty smart. They make nests and pillows for sleeping.</td>
<td></td>
</tr>
<tr>
<td>36-48</td>
<td>Now, what do we learn about Jane and chimpanzees?</td>
<td>The chimpanzees started to get used to Jane. She even came up with names for them. At the time, scientists thought animals should be given numbers. Now it is common to give animals names.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What did other scientists think about naming animals?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49-60</td>
<td>What did we learn about chimpanzees in this section?</td>
<td>They are extremely intelligent and are able to use items as tools. They use grass stems to eat, leaves as a Kleenex, and crumpled leaves as sponges. She was really excited because up until this time scientists thought that people were the only ones to use items as tools.</td>
<td>Students might not remember that David Greybeard was a name Jane gave to one of the chimpanzees. If that is the case, ask a student to clear up the confusion.</td>
</tr>
<tr>
<td></td>
<td>Follow up: What did Jane think of these discoveries?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61-69</td>
<td>What does this last section tell us about Jane?</td>
<td>Jane wrote a lot of books to share her discoveries about chimpanzees. Chimps are more like people than any other living creatures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What line in this section best summarizes what Jane learned about chimpanzees from her work?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Furthering Comprehension

• What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.

Situating the Task

<table>
<thead>
<tr>
<th>TEXT 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Watching in the Wild”</td>
</tr>
<tr>
<td>by Charnan Simon</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.1 Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What do you learn about Jane Goodall?</td>
</tr>
<tr>
<td>• What do you learn about chimpanzees?</td>
</tr>
<tr>
<td>• What places are hard or confusing for you?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2 Furthering Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.</td>
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</tbody>
</table>

<table>
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<tr>
<th>1.3 Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What are the features of an explanation?</td>
</tr>
<tr>
<td>• Write several sentences in which you explain the trait that best describes Jane.</td>
</tr>
</tbody>
</table>

Duration

1 class session

Why This Task Now?

Now that students have read the text to understand the important information Simon provides about Jane Goodall and her work with chimpanzees, they are ready to use that information to come up with traits that describe Jane. The purposes of this task are for students to

• learn about character traits;
• use what they learned about Goodall and her discoveries to come up with traits that describe her;
• use textual evidence to support their ideas; and
• acquire academic vocabulary for familiar concepts.

This task scaffolds students to the Writing Across Texts task.

Materials

• “Watching in the Wild” by Charnan Simon
• Chart from Task 1.1: Important Information About Jane and Chimpanzees
• Handout: Describing Jane (two-page handout that includes the graphic organizer titled, Traits that Describe Jane)
• Chart paper and markers
Teaching Approach

Connecting to the Previous Lesson: Whole Group (5 minutes)
Purpose: To refresh students' memories about what they learned about Jane Goodall and chimpanzees from reading “Watching in the Wild.”

• Ask several students to share important information they learned about Goodall and chimpanzees from their first reading of “Watching in the Wild.” Have students explain why they consider the information important.
• Then ask students to share what they remember about the discoveries Jane made and how she made the discoveries she did. In other words, what things did she do to make the discoveries that she made? How did she study the chimpanzees? Add new information to the Important Information About Jane and Chimpanzees chart from Task 1.1.

Teacher Note
Use this conversation to gauge how much students remember from yesterday's reading of “Watching in the Wild.” If they don’t remember much, consider reading the text aloud again, this time asking students to pay attention to the things Jane did to study chimpanzees.

Setting Up the Task: Whole Group (3-5 minutes)
Purpose: To provide students with clear directions and expectations for the next task on “Watching in the Wild.”

• Provide students with the Describing Jane handout and Traits that Describe Jane graphic organizer (found on pages 29-30).

Describing Jane

Purpose: We learned from our first reading of “Watching in the Wild” that Jane Goodall made many observations about chimpanzees. The purpose of today's task is for you to use what you've learned about Jane and her discoveries to come up with words that describe Jane's character or personality.

Task: With a partner, read the Important Information About Jane and Chimpanzees chart. As you read the chart together, ask yourselves:
• What does the information on this chart say about Jane?
• What traits would I use to describe Jane?
• Complete the Traits that Describe Jane graphic organizer:
  • In the left column, list traits that describe Jane.
  • In the right column, list evidence that supports each trait. This evidence should come from the Important Information About Jane and Chimpanzees chart and “Watching in the Wild.”

• Review the “Purpose” and “Task” sections with students, giving them an opportunity to ask questions and clarify expectations.
Modeling Thinking and Process: Whole Group (5 minutes)

**Purpose:** To model for students the process of coming up with a word to describe Jane’s character before being asked to do this work with a partner.

- Display or create on chart paper a copy of the Traits that Describe Jane graphic organizer.
- Explain to students that they are going to use the Important Information About Jane and Chimpanzees chart and the text to come up with words that describe Jane. Explain that the words they will come up with are called traits. Tell students that traits describe actions, attitudes, and personalities. They can also describe people’s physical characteristics, but that is not a focus for this task.
- Model for students looking across the information in the Important Information About Jane and Chimpanzees chart to come up with a word that describes Jane. Select a word that won’t be obvious to students.
  - For example, you might use the word “passionate.” Tell students that someone who is passionate about something really likes it or has really strong feelings about it. Say you find Jane passionate because she devoted her life to studying chimpanzees.
  - Write the word “passionate” in the left column of the Traits that Describe Jane graphic organizer.
  - Then ask students to help you come up with evidence and line numbers from Important Information About Jane and Chimpanzees and “Watching in the Wild” to support the word. Add that information to the right column of the chart. (See the Learning Target below for evidence to support the word “passionate.”)
- Ask students to review the Important Information About Jane and Chimpanzees chart again to help you come up with another trait to describe Jane along with the evidence to support that trait. Once again, add the trait and evidence to the Traits that Describe Jane graphic organizer.
- Wrap up the model by asking students to summarize what they need to do and think about to come up with traits and evidence to describe Jane. Use this to determine whether students are ready to continue the work in pairs, or if they could benefit from another model.

Monitoring Student Thinking: Pair Work (7-10 minutes)

**Purpose:** To provide students the opportunity to work with a partner to come up with additional traits to describe Jane along with the evidence to support those traits.

- Ask students to complete the Traits that Describe Jane graphic organizer.
- Circulate around the room to monitor students’ progress. Be on the lookout for students who are having difficulty coming up with traits that describe Jane.
- Make mental notes of pairs who have particularly interesting or insightful traits based on textual evidence.
Differentiation

If you find that students are struggling to complete the task with their partners, convene the class and work as a whole group using the process described above under the heading “Modeling Thinking and Process: Whole Group.”

Guiding Students to Consensus: Whole Group (7-10 minutes)

**Purpose:** To provide students the opportunity to share the traits they came up with and to reinforce the importance of using textual evidence to support their ideas.

- Display the **Traits that Describe Jane** graphic organizer.
- Invite pairs to share the traits they came up with along with the evidence to support those traits.
  - Each time a pair offers a trait, ask them to share the textual evidence that supports the trait.
  - Then ask if there are other pairs who came up with the same or a similar word. Invite those students to share any additional textual evidence they gathered for support.
  - Finally, ask the class whether the textual evidence provided by the pairs supports the trait. If the class agrees, add the trait along with the textual evidence to a class version of the **Traits that Describe Jane** graphic organizer.
- Once all traits and evidence have been shared, view the complete **Traits that Describe Jane** graphic organizer with students and highlight the words that are supported by several pieces of evidence from across the text. Tell students that these are strong word choices to describe Jane because there is a lot of evidence from across the entire text to support these words.

Teacher Notes

- Students may have difficulty coming up with one-word traits to describe Jane. For that reason, this task provides a great opportunity to introduce students to academic vocabulary that reflects concepts with which they are familiar. For example, you may find that students label evidence that shows Jane is persistent as “tries really hard” or “never gives up.” You’ll want to take this opportunity to introduce students to more precise and academic vocabulary—in this instance, the word “persistent”—to capture what they’ve written. In the Learning Target below, we have highlighted words that can replace the words and phrases that students are likely to provide.
- Additionally, you may find that students miss traits that are reflected in the **Important Information About Jane and Chimpanzees** chart or “Watching in the Wild.” You will want to note and name those traits for students if they don’t name them during their pair work or in the whole group discussion.
**Learning Target**

Below are examples of traits with supporting evidence that students might come up with to describe Goodall. Don’t worry that some of the evidence supports more than one trait, or if students have different traits than what’s below. What’s important is that students are able to explain how the evidence supports a particular trait.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>Lines 9-10: “Then she would sit quietly . . .”</td>
</tr>
<tr>
<td></td>
<td>Lines 18-22: “Every day . . . hour after hour after hour.”</td>
</tr>
<tr>
<td></td>
<td>Lines 68-69: “And it all started with one woman...and watch carefully.”</td>
</tr>
<tr>
<td>Persistent</td>
<td>Lines 1-3: “Jane Goodall knows…Gombe National Park in Africa.”</td>
</tr>
<tr>
<td>(never gave up)</td>
<td>Lines 16-22: “But she didn’t give up…hour after hour after hour.”</td>
</tr>
<tr>
<td>Passionate</td>
<td>Lines 1-3: “For more than 40 years…”</td>
</tr>
<tr>
<td>(really loves</td>
<td>Lines 8-10: “She would travel...watch them go about their lives.”</td>
</tr>
<tr>
<td>chimpanzees)</td>
<td>Lines 16-22: “But she didn’t give up...hour after hour after hour.”</td>
</tr>
<tr>
<td></td>
<td>Lines 23-25: “Other people might have been bored...drinking from streams.”</td>
</tr>
<tr>
<td></td>
<td>Line 34-35: “When the chimps left their nests...”</td>
</tr>
<tr>
<td></td>
<td>Lines 61-62: “Over the next 40 years, Jane wrote books about her exciting discoveries.”</td>
</tr>
<tr>
<td>Observant</td>
<td>Lines 1-3: “Jane Goodall knows...Gombe National Park in Africa.”</td>
</tr>
<tr>
<td>(watches)</td>
<td>Lines 20-22: “Using binoculars, she sat and looked...”</td>
</tr>
<tr>
<td></td>
<td>Lines 23-28: “She loved watching...sat cradled in their laps.”</td>
</tr>
<tr>
<td></td>
<td>Lines 29-34: “Jane took notes...handful of leaves.”</td>
</tr>
<tr>
<td></td>
<td>Lines 68-69: “And it all started with one woman...and watch carefully.”</td>
</tr>
<tr>
<td>Pioneer</td>
<td>Lines 3-5: “What she has seen has changed the way scientists...”</td>
</tr>
<tr>
<td>(had new ideas)</td>
<td>Lines 6-8: “It was 1960...chimpanzees in the wild.”</td>
</tr>
<tr>
<td></td>
<td>Lines 43-48: “At the time, scientists thought...they study in the wild.”</td>
</tr>
<tr>
<td></td>
<td>Lines 55-56: “Until then...used tools.”</td>
</tr>
<tr>
<td></td>
<td>Lines 66-69: “Studying them has helped scientists...and watch carefully.”</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>Lines 36-37: “Slowly, the chimpanzees...”</td>
</tr>
<tr>
<td>(trusting)</td>
<td></td>
</tr>
</tbody>
</table>

**Facilitating Metacognitive Work: Whole Group StepBack (3 minutes)**

**Purpose:** To make visible for students what they learned from this task.

- Ask students to reflect on the task they just engaged in by discussing their responses to the following questions:
  - What did you learn from today’s work?
    - What did you learn about coming up with traits to describe people?
    - What did you learn about providing evidence to support your ideas?
  - What did you find most difficult about today’s work?
  - When do you think you can use what you learned in the future?
**Describing Jane**

**Purpose**
We learned from our first reading of “Watching in the Wild” that Jane Goodall made many discoveries about chimpanzees. The purpose of today’s task is for you to use what we’ve learned about Jane and her discoveries to come up with words that describe Jane’s character or personality.

**Task**
With a partner, read the *Important Information About Jane and Chimpanzees* chart. As you read the chart together, ask yourselves:

- What does the information on this chart say about Jane?
- What traits would I use to describe Jane?

Complete the *Traits that Describe Jane* graphic organizer.

- In the left column, write traits that describe Jane Goodall.
- In the right column, list evidence that supports each trait. Your evidence should come from the *Important Information About Jane and Chimpanzees* chart and “Watching in the Wild.”
### Traits that Describe Jane

<table>
<thead>
<tr>
<th>Trait</th>
<th>Evidence to Support the Trait</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Analysis

- What are the features of an explanation?
- Write several sentences in which you explain the trait that best describes Jane.

Situating the Task

1.1 Comprehension
- What do you learn about Jane Goodall?
- What do you learn about chimpanzees?
- What places are hard or confusing for you?

1.2 Furthering Comprehension
What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.

1.3 Analysis
- What are the features of an explanation?
- Write several sentences in which you explain the trait that best describes Jane.

Duration
1-2 class sessions

Why This Task Now?
Now that students have come up with traits and gathered evidence to support those traits, they are ready to use that information to write an explanation that expresses their understanding of Goodall. The purposes of this third task are for students to
- weigh the evidence for each trait in order to come up with the trait that they think best describes Jane;
- recognize the features of an explanation; and
- practice using those features in their own writing.

This task scaffolds students to the Writing Across Texts task.

Materials
- “Watching in the Wild” by Charnan Simon
- Graphic organizer: Traits that Describe Jane
- Handout: Writing Explanations
- Chart paper and markers
Teaching Approach

Connecting to the Previous Lesson: Whole Group (3-5 minutes)
Purpose: To refresh students’ memories of the work they did previously to identify and support traits to describe Goodall.

- Ask several students to define what we mean when we talk about traits.
- Then ask them to share some of the traits that they think best describe Jane. Guide them to provide evidence to support the traits they select.

Setting Up the Task: Whole Group (3-5 minutes)
Purpose: To provide students with clear directions and expectations for the next task on “Watching in the Wild.”

- Provide students with the handout titled Writing Explanations (found on page 35).

Modeling Writing an Effective Explanation: Whole Group (5-7 minutes)
Purpose: To support students to identify a trait that they believe best describes Jane, to learn the features of an explanation, and to model how to write an explanation that incorporates those features.

- Tell students that you are going to model selecting a trait and then writing an explanation for your chosen character trait. (Note: The model we’ve provided here uses the word “passionate.”)
- Begin by scanning the Traits that Describe Jane graphic organizer, and thinking aloud your responses to the following questions:
  - Which traits have the most evidence?
  - Which trait do I think best describes Jane? Why?
- Once you identify a word, explain why you selected that word.
- Then tell students that now that you have selected a word, you’re ready to write your explanation.
- Explain to students that there are three features of an explanation: (1) names a topic, (2) provides evidence to support the topic, and (3) provides a concluding sentence that sums up your ideas about the topic.
Tell students that you’re going to write several sentences explaining why you think a trait that describes Jane is “passionate.”

On the board or piece of chart paper write, “I think the trait that best describes Jane Goodall is passionate.” Explain to students that is the topic of your explanation.

Next, tell students you are going to provide evidence from “Watching in the Wild” to support your topic.

Have students help you identify the evidence that supports the word “passionate.” Direct students’ attention to the Traits that Describe Jane graphic organizer.

Craft the evidence students provide into several sentences and add them after your topic sentence. For example: Jane has spent over 40 years watching chimpanzees and she was never bored. Jane would sit for many hours just watching them and taking notes on what they do. Jane is so passionate about her discoveries that she has written over forty books to share her work with the world.

Finally, tell students that you are going to wrap up your explanation by providing a concluding sentence that sums up your explanation. Add the following sentence to your explanation: Jane Goodall is so passionate about chimpanzees that she has dedicated her life to studying them and sharing her love of chimpanzees with the world.

To reinforce the three features of an explanation, have several students restate and explain the three features: names a topic, provides evidence to support the topic, and provides a concluding sentence that sums up your ideas about the topic. As they share their responses, chart the information. Keep this chart visible for students as they write their own explanations in this task, in Task 2.3, and as part of the Writing Across Texts task.

**Monitoring Student Thinking: Pair and Individual Work** (10-15 minutes)

**Purpose:** To provide students with a supportive environment to identify the trait they think best describes Jane and to write an explanation of their chosen trait.

- Ask students to work through the steps on the Writing Explanations task sheet.
- Circulate around the room to monitor students’ progress. Be on the lookout for students who are having difficulty identifying a trait or writing an explanation for their chosen trait. Additionally, make mental notes of students who have fully developed explanations.

**Differentiation**

- Some classes might find it useful to engage in a whole group discussion between steps 2 and 3. If that’s the case, convene the class after step 2 and invite students to share the trait they selected and why they think that trait best describes Jane. After each student shares, have the student say what he or she did or thought about to come up with that trait. Hearing other students’ thinking will be beneficial for those students who may be struggling.
- If you notice students struggling to write the explanation, pull them together in a small group. Ask a student to restate the features of an explanation. Then have several students share which trait they chose, and together write an explanation for that trait. Support students to do as much of the mental work as possible.
Facilitating Student Sensemaking: Whole Group (7-10 minutes)

**Purpose:** To provide students with an opportunity to share their explanations about Jane and to continue to refine their understanding of the features of an explanation.

- Convene the whole group.
- Invite students to share their explanations one at a time. Ask others to listen for the three features of an explanation. After each student shares, have the class state
  - the topic of the explanation,
  - the evidence the writer provided to support the topic, and
  - the concluding sentence.
- Additionally, ask students to notice the differences in the explanations about the same trait. Help them to recognize that effective explanations include all three features, but they don’t all have to sound identical.

**Differentiation**

If your students have had previous experience with peer review or you feel that they are ready to take on peer review after writing their explanations, ask students to share their writing with a partner. After each student shares his/her explanation, partners should identify the three features of the explanation by answering the following questions:

- What was the topic of the explanation?
- Which evidence did the writer provide to support the topic?
- What was the concluding sentence?

**Teacher Note**

Collect students’ explanations. Review their work to (a) gauge their understanding of the text, (b) determine what support students need in order to write explanations, and (c) identify student samples that may serve as models of effective explanations for Task 2.3.

Facilitating Metacognitive Work: Whole Group StepBack (3 minutes)

**Purpose:** To make visible for students what they learned from this task.

- Ask students to reflect on the task they just engaged in by discussing their responses to the following questions:
  - What did you learn about writing explanations from engaging in today’s work?
  - How can you use what you’ve learned today when you are writing explanations about other topics?
Writing Explanations

Purpose
In the last task, you worked with a partner to come up with many traits that describe Jane Goodall. Today, you are going to select the one trait that you think best describes Jane. Then you’ll write a few sentences to explain why you think this trait best describes her. You’ll use the evidence you’ve already collected to support your explanation.

Task
1. Review the Traits that Describe Jane graphic organizer. As you review the organizer, ask yourself:
   • Which traits have the most evidence?
   • Which trait do I think best describes Jane? Why?

2. When you’ve selected your trait, share it with a partner. Explain to your partner why you think this word best describes Jane. Be sure to use evidence from the text and Traits that Describe Jane graphic organizer to support your trait.

3. Write a few sentences explaining why you believe this trait best describes Jane. Remember to include the three features of an explanation:
   a. Names the topic: States the trait that you believe best describes Jane.
   b. Provides evidence to support the topic: Gives evidence from “Watching in the Wild” to support why you believe this word best describes Jane.
   c. Ends with a concluding sentence that sums up your ideas about the topic: Restates why you believe this trait best describes Jane.
Overarching Questions
- What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
- What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life's work?

<table>
<thead>
<tr>
<th>TEXT 1</th>
<th>TEXT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Comprehension</td>
<td>2.1 Comprehension</td>
</tr>
<tr>
<td>- What do you learn about Jane Goodall?</td>
<td>- What do you learn about Wilson Bentley?</td>
</tr>
<tr>
<td>- What do you learn about chimpanzees?</td>
<td>- What do you learn about snowflakes?</td>
</tr>
<tr>
<td>- What places are hard or confusing for you?</td>
<td>- What places are hard or confusing for you?</td>
</tr>
</tbody>
</table>

1.2 Furthering Comprehension
What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.

1.3 Analysis
- What are the features of an explanation?
- Write several sentences in which you explain the trait that best describes Jane.

2.2 Furthering Comprehension
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

2.3 Interpretation
- Write several sentences in which you explain the trait that best describes Wilson.
- How are Jane and Wilson similar?

Writing Across Texts
Based on what you’ve learned about Jane Goodall and Wilson Bentley, choose the one trait that you believe is most important for scientists to be successful in making important discoveries. Use evidence from both texts to explain why you believe that trait is most important.
Comprehension

- What do you learn about Wilson Bentley?
- What do you learn about snowflakes?
- What places are hard or confusing for you?

Situating the Task

TEXT 2
Snowflake Bentley
by Jacqueline Briggs Martin

2.1 Comprehension
- What do you learn about Wilson Bentley?
- What do you learn about snowflakes?
- What places are hard or confusing for you?

2.2 Furthering Comprehension
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

2.3 Interpretation
- Write several sentences in which you explain the trait that best describes Wilson.
- How are Jane and Wilson similar?

Duration
1-2 class sessions

Why This Task Now?
This first task asks students to listen to a read aloud of Snowflake Bentley and participate in a text discussion to (a) understand what Martin says about Wilson Bentley and his work with snowflakes and (b) identify places in the text that they are finding difficult or confusing. This is the first of several readings students will do of this text. This task has two purposes.

- The purpose of “a” is for students to get the gist of what Martin says about Wilson Bentley and his work with snowflakes so they have a foundation from which to build for later tasks.
- The purpose of “b” is for students to identify places that prevent them from fully understanding what Martin says and for teachers to learn what aspects of the text students are finding difficult.

Materials
- Snowflake Bentley by Jacqueline Briggs Martin
- Comprehension Talk Questions for Snowflake Bentley
- Handout: Comprehension of Snowflake Bentley
- Chart: Important Information About Wilson and Snowflakes
- Chart paper and markers
**Teaching Approach**

**Connecting to Previous Text: Whole Group (3-5 minutes)**

**Purpose:** To introduce the second unit text, *Snowflake Bentley*, and remind students of the unit’s overarching questions.

- Remind students of the overarching questions for the unit:
  - What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
  - What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life’s work?
- Let students know they will continue their study of these questions about Goodall and Bentley and the work they did, and the traits they share by reading the second text *Snowflake Bentley* written by Jacqueline Briggs Martin.

**Teacher Note**

*Snowflake Bentley* is placed second in this unit for three reasons:

1. *Snowflake Bentley* is a longer text with more challenging vocabulary and more complex sentences than “Watching in the Wild.”
2. *Snowflake Bentley* requires students to keep track of Wilson’s relationships with his family and his interactions with other people, in addition to his important work with snowflakes. “Watching in the Wild” focuses primarily on Jane’s interaction with chimpanzees, and as such, is easier for students to comprehend.
3. *Snowflake Bentley* has a more complex structure than “Watching the Wild.” *Snowflake Bentley* includes sidebars, which can be confusing to young readers as they interrupt the main information in the text.

**Setting Up the Task: Whole Group (3-5 minutes)**

**Purpose:** To provide students with clear directions and expectations for the comprehension task on *Snowflake Bentley*.

- Provide students with the handout titled *Comprehension of Snowflake Bentley* found on page 44.
• Review the “Purpose” and “Task” sections with students, giving them an opportunity to ask questions and clarify expectations.

**Teacher Note**
If students have their own copies of *Snowflake Bentley*, we recommend that you have them mark the text in a similar way to how they marked “Watching in the Wild.” That would mean students would (a) identify where they learned information about Wilson Bentley and snowflakes, and (b) put a question mark next to places where they are confused about what Martin is saying. Students can use sticky notes for their markings if they cannot write in their books.

**Engaging Students in a Discussion of the Text: Whole Group** *(15-20 minutes)*
**Purpose:** To provide support for students’ comprehension of *Snowflake Bentley* by engaging them in a text-based discussion.

**Teacher Notes**
• We have provided Comprehension Talk Questions for the entire text (see pages 45-49). These text-based questions guide students through the reading of the text, and ask them to pause periodically to discuss what’s going on, what they’re learning about Bentley and snowflakes, and how what they’re learning connects to what they’ve already read in the text. We recommend that you use the questions as written. These questions have been carefully crafted to support students’ understanding of the people and events in the text and prepare them for the work that follows. Moving away from the questions may prevent students from fully getting the gist of the text and being prepared to tackle later tasks.
• If students have their own copies of *Snowflake Bentley*, you might consider having students read portions of the text aloud, rather than reading the entire text yourself. If you decide to have students share in the reading, continue to pause at the designated stopping points and ask the Comprehension Talk Questions.

• Tell students that you will begin reading *Snowflake Bentley* aloud and participate in a text-based discussion where you will stop reading occasionally so that they can discuss what they are learning about Wilson Bentley, snowflakes, and the events in the text.
• Remind students of the two things they should be thinking about while reading:
  1. Important information they are learning about Wilson Bentley and about snowflakes.
  2. Places where they are confused or unsure of what the author is trying to say.
• Display an enlarged copy of the text or gather students in a tight circle so they can see the text as you read aloud.
• Begin reading aloud using the Comprehension Talk Questions (found on pages 45-49) to guide the reading and discussion.
• Each time you pause in the reading to pose questions, ask students to quickly share
  1. What they’ve learned so far about Wilson Bentley and snowflakes.
  2. Places where they are confused or unsure of what the author is trying to say. Keep track of those places so that the class can revisit them after reading.

  o If students offer moments that can be cleared up quickly or that are important for them to understand in order to continue the reading, take a moment to help students work through those moments before continuing to read aloud.
Teacher Note
If students have their own copies of the text, we recommend that they engage in a pair discussion in which they (a) share the important information they learned about Wilson Bentley and snowflakes and (b) untangle difficult or confusing moments together before moving to the whole group discussion below. You can use the process outlined in Task 1.1 to guide students’ pair work.

Guiding Students to Consensus: Whole Group (10 minutes)
Purpose: To enable students to reach a common understanding about the important information Martin provides about Wilson Bentley and snowflakes, and to determine what students find difficult about the text.

• Bring students together as a whole group.
• Create a chart entitled Important Information About Wilson and Snowflakes. (See the Learning Target below for one way to structure the chart.)
• Begin by having students share what they learned about Wilson Bentley and snowflakes. Have students cite evidence from the text to support what they say. There are different ways to have students share what they learned.
  o Invite students to share what they learned in any order, making sure that all students have an opportunity to contribute their ideas. Each time a student shares, find that place in the text so that all students can refer to it. Add the line number to the chart.
  o Display an enlarged copy of the text and move through it as a whole group, inviting students to share what they learned for those pages of the text.
• Record students’ responses in the first column on the Important Information About Wilson and Snowflakes chart. Be sure to provide page numbers to support what students say.

Learning Target
Below are some examples of what students might say is important information about Wilson Bentley and snowflakes. The point of this work is for students to develop an overall/gist-level understanding of what Martin says about Wilson and snowflakes as opposed to grasping all the details about them. Students will work more closely with the text in Task 2.2.

Important Information About Wilson and Snowflakes

<table>
<thead>
<tr>
<th>Wilson Bentley</th>
<th>Snowflakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loved snow more than anything else. (Page 1)</td>
<td>Also called icy crystals. (Page 6)</td>
</tr>
<tr>
<td>Liked doing and sharing beautiful things with his brother and mother. (Pages 4-5)</td>
<td>Most crystals have six branches that are alike. No two snowflakes are alike. (Page 8)</td>
</tr>
<tr>
<td>Was home schooled and read an entire set of encyclopedias. (Page 5)</td>
<td>Each snowflake begins as a speck. Little bits of water attach to the speck to form the branches. Many things, including cold, wind, and moisture, affect the way the branches grow. Wilson said that’s why no two snowflakes are alike. (Page 18)</td>
</tr>
</tbody>
</table>
### Wilson Bentley

- Instead of playing with other kids, Wilson spent his time studying snow and other forms of moisture. (Pages 6-7)
- Thought snowflakes were beautiful and wanted to find a way to share their beauty with the world. (Pages 8, 9, 10, 11)
- Wilson got a special camera so he could photograph snowflakes. (Pages 11-13)
- Many people, including his own family, thought his fascination with snowflakes was foolish. (Pages 11 and 16)
- At first, Wilson’s pictures didn’t work, but he didn’t give up. He tried a new experiment and found a way to photograph snowflakes. He learned a new technique, “etching,” that made the snow crystals show more clearly in the photographs. (Pages 14-15)
- Said his photographs would be his gift to the world. (Page 16)
- Wilson spent hours waiting for the right crystal. (Page 19)
- Wilson enjoyed sharing his pictures with friends and family. (Pages 21 and 22)
- Wilson’s work inspired many people. Through, speeches, magazines, and a book, Wilson shared his knowledge of snowflakes. He is still considered to be the expert on snow. (Pages 23-24)
- He didn’t do the work for money. He spent more than he made. (Pages 24-25)
- A monument and museum honoring Wilson were built in his hometown. (Page 28)

### Snowflakes

- Instead of playing with other kids, Wilson spent his time studying snow and other forms of moisture. (Pages 6-7)
- Thought snowflakes were beautiful and wanted to find a way to share their beauty with the world. (Pages 8, 9, 10, 11)
- Wilson got a special camera so he could photograph snowflakes. (Pages 11-13)
- Many people, including his own family, thought his fascination with snowflakes was foolish. (Pages 11 and 16)
- At first, Wilson’s pictures didn’t work, but he didn’t give up. He tried a new experiment and found a way to photograph snowflakes. He learned a new technique, “etching,” that made the snow crystals show more clearly in the photographs. (Pages 14-15)
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- He didn’t do the work for money. He spent more than he made. (Pages 24-25)
- A monument and museum honoring Wilson were built in his hometown. (Page 28)

**TASK 2.1**

- Next, invite students to share moments where they were confused or unsure of what the author was trying to say. Turn to each place and ask the student if s/he is still confused by the moment or if it was cleared up during the whole group discussion.
- If the student is still confused by the moment, ask if there are others who understand it. If no one does, ask students to work in pairs or as a whole group to untangle that moment and restate it in their own words. Repeat this process until all confusing moments are untangled.
- Once all moments are untangled, ask students what more they learned about figuring out the meaning of confusing places in a text.
- Finally, ask students what they found most interesting or surprising about the content of the text.
Comprehension of *Snowflake Bentley*

**Purpose**
Today we will read Jacqueline Briggs Martin’s book *Snowflake Bentley* for the first time. The purpose of this reading is for you to get the gist of what the author is saying about Wilson Bentley and his work with snowflakes.

**Task**
As we read *Snowflake Bentley*, please do two things:

- Listen for places where you learn something important about Wilson Bentley and about snowflakes.
- Pay attention to places in the text where you are confused about what the author is trying to say.

Be prepared to share what you learn and where you’re confused during our whole group discussion.
**Comprehension Talk Questions for Snowflake Bentley**

As you read *Snowflake Bentley*, engage students in a discussion of the text by asking them to respond to the questions below. These questions are designed to stop the reading periodically so students can build meaning and make connections among the ideas in the text. It might be helpful to occasionally ask students for a recap of what you’ve read so far in the text. It is important that all students are keeping up with the ideas in the text and building meaning and making connections across the text.

When engaging in the discussion, please have students respond to the questions before showing the illustrations. The goal is for students to build meaning from the words and not the pictures. With that in mind, please remember to show the pictures once meaning has been built so that students can appreciate the illustrations in this story.

The page numbers mentioned in the Comprehension Talk Questions below align with page 1 being the picture of the farmer carrying a lantern. For your convenience, you may wish to write in page numbers throughout your copy of the book.

---

**Teacher Note**

Some teachers find it helpful to prepare the discussion questions and notes on the corresponding pages of the text. Questions may be handwritten on the page or prepared on sticky notes, or you may photocopy the Text Discussion Lesson Plans and cut and paste pages to correspond with the text.

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<table>
<thead>
<tr>
<th>Pages</th>
<th>Say and/or Ask</th>
<th>Elicit</th>
<th>Notes/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>We will continue our unit by reading the second text, <em>Snowflake Bentley</em>. In this text, we’ll learn about a scientist named Wilson Bentley and his discoveries about snowflakes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning of page 2</td>
<td>What did we learn so far about Wilson Bentley? Follow up: What information did we learn from the sidebar?</td>
<td>He was a little boy who loved snow. Wilson lived in Vermont, a part of the country that has a lot of snow.</td>
<td>Pause to draw attention to the sidebar on the page. Tell students, “The author does something interesting here and throughout the text—she puts information in these sidebars. Here’s what is included in this sidebar.” (Read the information and then continue reading the text on the page.)</td>
</tr>
</tbody>
</table>
### TASK 2.1

<table>
<thead>
<tr>
<th>Pages</th>
<th>Say and/or Ask</th>
<th>Elicit</th>
<th>Notes/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of page 5</td>
<td>What did we find out now?</td>
<td>Wilson liked sharing things with his family members, but he couldn’t share snowflakes.</td>
<td>You might need to explain the meaning of encyclopedias. Tell students, “Encyclopedias are a large set of books that give information on a lot of different topics.”</td>
</tr>
<tr>
<td></td>
<td>Follow up: What does it mean that he couldn’t share snowflakes?</td>
<td>They would melt before he could show them to anyone.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What did we learn from the sidebar on this page?</td>
<td>Wilson was home schooled and read an entire set of encyclopedias.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: Now that you know what encyclopedias are, what does it tell us about Wilson that he read an entire set?</td>
<td>He must have really wanted to learn lots of things.</td>
<td></td>
</tr>
<tr>
<td>End of page 6</td>
<td>Now, what did we learn about Wilson?</td>
<td>Wilson was different from the other kids. While they were playing, he was looking at things under a microscope, especially snow.</td>
<td>You might need to clear up the term “icy crystals.” If students aren’t able to determine the meaning, tell them the author is using the term to describe a snowflake.</td>
</tr>
<tr>
<td></td>
<td>Follow up: What does the author mean by icy crystals?</td>
<td>They are the snowflakes.</td>
<td></td>
</tr>
<tr>
<td>End of page 7</td>
<td>The author includes another sidebar. What did we learn from this sidebar?</td>
<td>Wilson studied all forms of moisture, kept records of the weather, and did experiments with raindrops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: How does this information add to what we already know about Wilson?</td>
<td>He loves weather and learning more about it.</td>
<td></td>
</tr>
<tr>
<td>End of page 8</td>
<td>What did we find out about snowflakes in this section?</td>
<td>Snowflakes were all very different and made up of very detailed patterns. No two snowflakes are alike.</td>
<td>Clear up the meaning of intricate by telling students that something that is intricate is complicated or made up of a lot of details.</td>
</tr>
<tr>
<td></td>
<td>Follow up: What additional information do we learn about snowflakes, or crystals, from reading the sidebar?</td>
<td>Most have 6 branches, all alike.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What is Wilson’s problem?</td>
<td>The snowflakes always melt before he can finish drawing them, so there is no record of their beauty.</td>
<td></td>
</tr>
<tr>
<td>Pages</td>
<td>Say and/or Ask</td>
<td>Elicit</td>
<td>Notes/Options</td>
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<td>---------------------------------------------------</td>
</tr>
<tr>
<td>End of page 9</td>
<td>What was Wilson up to in this section?</td>
<td>He drew a hundred snow crystals every winter for three years.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: How does this connect with what we know about Wilson?</td>
<td>He was fascinated by snow crystals.</td>
<td></td>
</tr>
<tr>
<td>End of page 13</td>
<td>Now, what do we learn about Wilson?</td>
<td>Wilson wanted a special camera that had its own microscope so he could take pictures of snowflakes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What did his family think of his idea?</td>
<td>Although his father thought fussing with snow was foolish, they still bought the camera for him.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What do we learn from the information in the sidebar on page 12?</td>
<td>We learn details about how the camera actually works.</td>
<td></td>
</tr>
<tr>
<td>End of page 14</td>
<td>How did things work out for Wilson and his new camera?</td>
<td>At first, things didn’t go well. He still wasn’t able to take pictures of snowflakes, but he didn’t quit. He kept trying until he figured out a way.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: What does this tell us about Wilson?</td>
<td>He was determined to find a solution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: How does the information in the sidebar connect with what we read on the page?</td>
<td>It tells us how Wilson was able to capture the images of the snowflake.</td>
<td></td>
</tr>
<tr>
<td>End of page 15</td>
<td>What did we find out in this sidebar?</td>
<td>Wilson learned new ways to make his pictures even better.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow up: It says, “This etching meant extra hours of work . . . Willie didn’t mind.”</td>
<td>He is very patient and determined to get the best pictures of snowflakes.</td>
<td></td>
</tr>
</tbody>
</table>
### TASK 2.1

<table>
<thead>
<tr>
<th>Pages</th>
<th>Say and/or Ask</th>
<th>Elicit</th>
<th>Notes/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of page 18</td>
<td>What do we learn now about Wilson’s study of snowflakes? Follow up: What do we learn from the sidebar on page 18?</td>
<td>He is continuing to study and learn more about snowflakes. We learn how snowflakes are formed—they begin as a speck, then molecules of water attach to the speck to form the branches. The cold, wind, and moisture all affect the way the crystal branches grow. That’s why no two snowflakes are alike. They laugh about it. Because they are surrounded by so much snow, they don’t understand the big deal.</td>
<td>It is not important that students understand the specifics of how snowflakes are formed. The focus of the unit tasks is on Wilson’s traits rather than the scientific details of snowflakes.</td>
</tr>
<tr>
<td>End of page 19</td>
<td>There are a lot of details on this page about what Wilson had to do to take a picture. What point is the author making?</td>
<td>Wilson was really dedicated and patient. Although it often took hours, and there were so many things that could go wrong, he never gave up.</td>
<td></td>
</tr>
<tr>
<td>End of page 22</td>
<td>What new information do we learn about Wilson on these two pages? Follow up: What do we learn about Wilson from the information in the sidebar?</td>
<td>Wilson loved taking pictures in all seasons, but snow crystal pictures were his favorite, and he loved sharing them with friends and relatives. Wilson lived close to his nieces and nephews and enjoyed spending time with them.</td>
<td></td>
</tr>
<tr>
<td>End of page 24</td>
<td>What did we learn from these two pages? Follow up: What point is the author making? Follow up: How does the information in the sidebar on page 24 add to what we just talked about?</td>
<td>Many places were buying Wilson’s photographs, and other scientists were so impressed with his work that they raised money so he could put his photographs in a book. Wilson’s work influenced a lot of people. Wilson’s work still inspires and teaches people.</td>
<td></td>
</tr>
<tr>
<td>Pages</td>
<td>Say and/or Ask</td>
<td>Elicit</td>
<td>Notes/Options</td>
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</tr>
<tr>
<td>End of page 25</td>
<td>There is only one sentence on this page, but it tells us something interesting about Wilson. What point is the author making?</td>
<td>Wilson didn’t take photographs for the money, He did it because he loved it. (He spent more money perfecting his work than the money he gained from selling his photographs.)</td>
<td></td>
</tr>
<tr>
<td>End of page 28</td>
<td>What’s the big idea on this final page?</td>
<td>After Wilson’s death, people acknowledged his contributions by building a monument and setting up a museum.</td>
<td>It reinforces the idea that Wilson Bentley made a tremendous contribution to the world with his work on snowflakes and the ability to capture their images.</td>
</tr>
<tr>
<td>End of page 30</td>
<td>How does this quote by Wilson Bentley connect with what we learned about him from reading this text?</td>
<td>He thinks sharing the beauty of snowflakes with others, especially those who wouldn’t have the opportunity otherwise, is very important. It’s every bit as important as the work others do.</td>
<td></td>
</tr>
</tbody>
</table>
Furthering Comprehension

What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

Situating the Task

**TEXT 2**  
*Snowflake Bentley*  
by Jacqueline Briggs Martin

<table>
<thead>
<tr>
<th>TASK 2.2</th>
<th>Furthering Comprehension</th>
</tr>
</thead>
</table>
| 2.1 Comprehension | What do you learn about Wilson Bentley?  
What do you learn about snowflakes?  
What places are hard or confusing for you? |
| 2.2 Furthering Comprehension | What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify. |
| 2.3 Interpretation | Write several sentences in which you explain the trait that best describes Wilson.  
How are Jane and Wilson similar? |

**Duration**  
1 class session

**Why This Task Now?**  
Now that students have read the text to understand the important information Martin provides about Wilson Bentley and his work with snowflakes, they are ready to use that information to come up with traits that describe Wilson. The purposes of this task are for students to

- use what they learned about Bentley and his work with snowflakes to come up with traits that describe him;  
- use textual evidence to support their ideas; and  
- acquire academic vocabulary for familiar concepts.

This task scaffolds students to the Writing Across Texts task.

**Materials**

- *Snowflake Bentley* by Jacqueline Briggs Martin  
- Chart from Task 2.1: **Important Information About Wilson and Snowflakes**  
- Handout: **Describing Wilson** (two-page handout that includes the graphic organizer titled, **Traits that Describe Wilson**)  
- Chart paper and markers
Teaching Approach

Connecting to the Previous Lesson: Whole Group (5 minutes)
Purpose: To refresh students’ memories about what they learned about Wilson Bentley and snowflakes from reading Snowflake Bentley.

- Ask several students to share important information they learned about Bentley and Snowflakes from their first reading of Snowflake Bentley. Have students explain why they consider the information important.
- Then ask students to share what they remember about Bentley’s discoveries and how he made the discoveries he did. In other words, what things did he do to study and capture the beauty of snowflakes? Add new information to the Important Information About Wilson and Snowflakes chart from Task 2.1.

Teacher Note
Use this conversation to gauge how much students remember from yesterday’s reading of Snowflake Bentley. If they don’t remember much, consider reading the text aloud again, this time asking students to pay attention to the things Wilson did to study and photograph snowflakes.

Setting Up the Task: Whole Group (3-5 minutes)
Purpose: To provide students with clear directions and expectations for the next task on Snowflake Bentley.

- Provide students with the Describing Wilson handout and Traits that Describe Wilson graphic organizer (found on pages 55-56).

- Provide students with the Describing Wilson handout and Traits that Describe Wilson graphic organizer (found on pages 55-56).

- Review the “Purpose” and “Task” sections with students, giving them an opportunity to ask questions and clarify expectations.
- Remind students that they did similar work when they came up with traits to describe Jane.
- Invite students to share what they did and thought about to come up with traits to describe Jane.
Differentiation

Use this conversation to determine whether students need the process of coming up with traits modeled for them, or if they can move directly to doing this work with a partner. If students need the process modeled for them, follow the process you used when you modeled coming up with traits to describe Goodall:

- Display or create on chart paper a copy of the Traits that Describe Wilson graphic organizer.
- Model looking across the information in the Important Information About Wilson and Snowflakes chart to come up with a word that describes Wilson. Select a word that won’t be obvious to students. (See Learning Target below for possible words.)
- Write your chosen trait in the left column of the Traits that Describe Wilson graphic organizer.
- Then ask students to help you come up with evidence and page numbers from Important Information About Wilson and Snowflakes and Snowflake Bentley to support the word. Add that information to the right column of the chart.
- Wrap up the model by asking students to summarize what they need to do and think about to come up with traits and evidence to describe Wilson. Use this to determine whether students are ready to continue the work in pairs, or if they could benefit from a second model.

Monitoring Student Thinking: Pair Work (7-10 minutes)

Purpose: To provide students the opportunity to work with a partner to come up with additional traits along with the evidence to describe Wilson.

- Ask students to complete the Traits that Describe Wilson graphic organizer.
- Circulate around the room to monitor students’ progress. Be on the lookout for students who are having difficulty coming up with traits that describe Wilson.
- Make mental notes of pairs who have particularly interesting or insightful traits based on textual evidence.

Differentiation

If you find that students are struggling to complete the task with their partners, convene the class and work as a whole group using the process described above in the “Differentiation” note.

Guiding Students to Consensus: Whole Group (7-10 minutes)

Purpose: To provide students the opportunity to share the traits they came up with and to reinforce the importance of using textual evidence to support their ideas.

- Display the Traits that Describe Wilson graphic organizer.
- Invite pairs to share the traits they came up with along with the evidence to support those traits.
  - Each time a pair offers a trait, ask them to share the textual evidence that supports the trait.
  - Then ask if there are other pairs who came up with the same or a similar trait. Invite those students to share any additional textual evidence they gathered for support.
  - Finally, ask the class whether the textual evidence provided by pairs supports the trait. If the class agrees, add the trait along with the textual evidence to a class version of the Traits that Describe Wilson graphic organizer.
Once all traits and evidence have been shared, view the complete Traits that Describe Wilson graphic organizer with students and highlight the words that are supported by several pieces of evidence from across the text. Tell students that these are strong word choices to describe Wilson because there is a lot of evidence from across the entire text to support these words.

**Teacher Notes**
- Students may have difficulty coming up with one-word traits to describe Wilson. For that reason, this task provides a great opportunity to introduce students to academic vocabulary that reflects concepts with which they are familiar. Rename—or invite students to rename—descriptions of Wilson with more precise or academic words. In the Learning Target below, we have highlighted words that can replace the words and phrases that students are likely to provide.
- Additionally, you may find that students miss traits that are reflected in the Important Information About Wilson and Snowflakes chart or Snowflake Bentley. You will want to note and name those traits for students if they don’t name them during their pair work or in the whole group discussion.

**Learning Target**
Below are examples of traits with supporting evidence that students might come up with to describe Bentley. Don’t worry that some of the evidence supports more than one trait, or if students have different traits than what’s below. What’s important is that students are able to explain how the evidence supports a particular trait.

### Traits that Describe Wilson

<table>
<thead>
<tr>
<th>Trait</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>Page 8: “For three winters…before he could finish.”</td>
</tr>
<tr>
<td></td>
<td>Page 15: “This etching meant extra hours…Willie didn’t mind.”</td>
</tr>
<tr>
<td></td>
<td>Page 17</td>
</tr>
<tr>
<td></td>
<td>Page 19: “When he found…notice the cold.”</td>
</tr>
<tr>
<td>Persistent/determined (never gave up)</td>
<td>Page 7: “He kept a record…”</td>
</tr>
<tr>
<td></td>
<td>Page 8: “Willie decided he must find a way…snow crystals”</td>
</tr>
<tr>
<td></td>
<td>Page 9</td>
</tr>
<tr>
<td></td>
<td>Page 14: “Even so…another season of snow.”</td>
</tr>
<tr>
<td></td>
<td>Page 19</td>
</tr>
<tr>
<td></td>
<td>Page 26: “Willie walked six miles…more pictures.”</td>
</tr>
<tr>
<td>Passionate (really loves snowflakes)</td>
<td>Pages 1, 2, 3</td>
</tr>
<tr>
<td></td>
<td>Page 6: “Best of all…catching single snowflakes.”</td>
</tr>
<tr>
<td></td>
<td>Page 8: “Willie decided…wonderful designs.”</td>
</tr>
<tr>
<td></td>
<td>Page 9</td>
</tr>
<tr>
<td></td>
<td>Page 11: “Willie’s mother knew…he had seen.”</td>
</tr>
<tr>
<td></td>
<td>Page 14: “Now everyone…he said.”</td>
</tr>
<tr>
<td></td>
<td>Page 16: “Willie said…gift to the world.”</td>
</tr>
<tr>
<td></td>
<td>Page 22</td>
</tr>
<tr>
<td></td>
<td>Page 24: “He wrote about snow…neighborhood skywatchers.”</td>
</tr>
<tr>
<td></td>
<td>Page 26: “Willie walked six miles…more pictures.”</td>
</tr>
</tbody>
</table>
Facilitating Metacognitive Work: Whole Group StepBack (5-7 minutes)  
**Purpose:** To make visible for students what they learned from this task and what they found easy and difficult about it.

- Ask students to reflect on the task they just engaged in by discussing their responses to the following questions:
  - What did you learn from today’s work?
  - How was the work of coming up with traits to describe Wilson similar to and different from coming up with traits to describe Jane? Which person or text was easier to do this for? Why?
  - What questions do you still have about coming up with traits to describe people?
Describing Wilson

Purpose
We learned from our first reading of *Snowflake Bentley* that Wilson Bentley spent much of his life studying snowflakes. The purpose of today’s task is for you to use what we’ve learned about Wilson and his study of snowflakes to come up with traits that describe him. You did similar work with Jane Goodall so this task should feel familiar to you.

Task
With a partner, read the *Important Information About Wilson and Snowflakes* chart. As you read the chart together, ask yourselves:

• What does the information on this chart say about Wilson?
• What traits would I use to describe Wilson?

Complete the *Traits that Describe Wilson* graphic organizer.

• In the left column, write traits that describe Wilson Bentley.
• In the right column, list evidence that supports each trait. Your evidence should come from the *Important Information About Wilson and Snowflakes* chart and *Snowflake Bentley*.
## Traits that Describe Wilson

<table>
<thead>
<tr>
<th>Trait</th>
<th>Evidence to Support the Trait</th>
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Interpretation

• Write several sentences in which you explain the trait that best describes Wilson.
• How are Jane and Wilson similar?

Situating the Task

2.1 Comprehension
• What do you learn about Wilson Bentley?
• What do you learn about snowflakes?
• What places are hard or confusing for you?

2.2 Furthering Comprehension
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

2.3 Interpretation
• Write several sentences in which you explain the trait that best describes Wilson.
• How are Jane and Wilson similar?

Duration
2 class sessions

Why This Task Now?
Now that students have come up with traits and gathered evidence to support those traits, they are ready to use that information to write an explanation that expresses their understanding of Wilson and then to examine how Jane and Wilson are similar. The purposes of this third task are for students to

• weigh the evidence for each trait in order to come up with the trait that they think best describes Wilson;
• apply what they’ve learned about writing explanations to explain the trait that they think best describes Wilson; and
• compare Jane’s and Wilson’s traits to determine the traits the two scientists have in common.

This task scaffolds students to the Writing Across Texts task.

Materials
• Snowflake Bentley by Jacqueline Briggs Martin
• Handout: Writing About Wilson
• Graphic organizer: Traits that Describe Wilson
• Graphic organizer: Traits that Describe Jane
• Chart: Jane and Wilson: Similarities
• Sentence strips
• Chart paper and markers
**Teaching Approach**

**Connecting to the Previous Lesson: Whole Group (3-5 minutes)**

**Purpose:** To refresh students’ memories of the work they did previously to identify and support traits to describe Bentley.

- Ask several students to share some of the traits that they think best describe Wilson. Guide students to provide evidence to support the traits they select.

**Setting Up the Task: Whole Group (3-5 minutes)**

**Purposes:** To provide students with clear directions and expectations for the next task; to refresh students’ memories about how to select traits that best describe someone; and to refresh their memories about the features of explanations.

- Provide students with the handout titled *Writing About Wilson* (found on page 62).

  - Review the “Purpose” and “Part A” with students, giving them an opportunity to ask questions and clarify expectations.
  - Remind students that they did similar work with the first text, “Watching in the Wild.”
  - Invite students to share what they did and thought about to determine which trait best describes Jane.
  - Then ask students to talk about what they did and thought about to write an explanation.
  - Finally, ask students to look at the features of an explanation that are listed on the *Writing About Wilson* handout. Have them state what each of the features will be for this writing task. For example:
    - Names the topic: States the trait that you believe best describes Wilson.
    - Provides evidence to support the topic: Gives evidence from *Snowflake Bentley* to support why you believe this word best describes Wilson.
    - Ends with a concluding sentence that sums up your ideas about the topic: Restates why you believe this trait best describes Wilson.
Differentiation

- Use this conversation to determine whether students would benefit from a model for how to determine which trait best describes Wilson and/or for how to write an explanation of a trait.
- Another way to help students with writing an explanation is to show them successful explanations from Task 1.3 and ask them to identify the sentences that:
  - Name the topic.
  - Provide evidence to support the topic.
  - Conclude and sum up the ideas about the topic.

Monitoring Student Thinking: Individual Work (10-15 minutes)

**Purpose:** To provide students with a supportive environment to identify the trait they think best describes Wilson and to write an explanation of their chosen trait.

- Ask students to complete Part A of the Writing About Wilson handout.
- Circulate around the room to monitor students’ progress. Be on the lookout for students who are having difficulty selecting a trait or writing an explanation for their chosen trait.
- Make mental notes of students who are doing a good job of writing explanations for their trait.

Differentiation

- Some classes might find it useful to engage in a whole group discussion between steps 1 and 2. If that’s the case, convene the class after step 1 and invite students to share the trait they selected and why they think that trait best describes Wilson. After each student shares, have the student say what he or she did or thought about to come up with that trait. Hearing other students’ thinking will be beneficial for those students who may be struggling.
- If you notice students struggling to write the explanation, pull them together in a small group. Ask a student to restate the features of an explanation. Then have several students share which trait they chose, and together, write an explanation for that trait. Support students to do as much of the mental work as possible.

Facilitating Student Sensemaking: Whole Group (7-10 minutes)

**Purpose:** To provide students with an opportunity to share their explanations about Wilson and to continue to refine their understanding of the features of an explanation.

- Convene the whole group.
- Invite students to share their explanations one at a time. Ask others to listen for the three features of an explanation. After each student shares, have the class state
  - the topic of the explanation,
  - the evidence the writer provided to support the topic, and
  - the concluding sentence.
- Once again, ask students to notice the differences in the explanations about the same trait. Help them to recognize that effective explanations include all three features, but they don’t have to sound identical.
Setting Up Part B of the Task: Whole Group (3-5 minutes)

**Purpose:** To provide students with clear directions and expectations for the next task on Snowflake Bentley.

- Review Part B of the *Writing About Wilson* handout with students.

### Modeling Thinking and Process: Whole Group (10 minutes)

**Purpose:** To support students with how to compare the two scientists to determine and then write a sentence about a trait they have in common.

- Create a chart that you title **Jane and Wilson: Similarities**.
- Display the class versions of the *Traits that Describe Jane* organizer from Task 1.2 and the *Traits that Describe Wilson* organizer from Task 2.2. Tell students that together, you are going to look across the charts to see how Jane and Wilson are similar.
- Begin by asking students to help you scan the two organizers to come up with a trait that the two scientists have in common.
- Once a trait is identified, ask students what evidence they have for that trait. Remind them that their evidence should come from the two graphic organizers, *Traits that Describe Jane* and *Traits that Describe Wilson*, and the two texts. (See the Learning Target for the organizers in Task 1.2 and Task 2.2 for evidence.)
  - For example, students might notice that one way Jane and Wilson are similar is that they are both patient. The evidence they could use to support this trait is that they both spent many hours researching and conducting experiments—some of which didn’t go as planned—but they never became frustrated. Evidence that supports Jane being patient include lines 9-10, 18-22, and 68-69. Evidence that supports Wilson being patient includes pages 8, 15, 17, and 19.
- Now that students have a common trait with supporting evidence that the two scientists share, ask them to help you use that information to write a sentence explaining how both Jane and Wilson are patient. A sample sentence might be: Both Jane and Wilson are patient because they spent hours observing and researching their topics but never became frustrated.
- When you come up with a sentence, write it on a sentence strip and add it to the **Jane and Wilson: Similarities** chart.
- Wrap up this work by asking students to summarize what they did and thought about to come up with a trait that Goodall and Bentley share and then write a sentence about that trait. Use this to determine whether students would benefit working through another common trait, or if they are ready to continue this work in pairs.
Monitoring Student Thinking: Pair Work (10 minutes)
Purpose: To provide students the opportunity to work with a partner to compare Jane and Wilson to determine and then write a sentence about a trait they have in common.

- Provide students with sentence strips. Then ask them to work on Part B of the Writing About Wilson handout.
- Circulate around the room to monitor students’ progress. Be on the lookout for students who are having difficulty selecting a common trait or writing a sentence for their chosen trait.
- Make mental notes of students who have particularly insightful ideas about a trait that both Wilson and Jane share.

Differentiation
Since students have had experience writing explanations, they should be able to write a sentence explaining how Jane and Wilson are similar. However, if you think your students might need more support with this task, provide them with the following sentence stem:
Both Jane and Wilson are ___________________ because ___________________.

Facilitating Student Sensemaking: Whole Group (7-10 minutes)
Purpose: To provide students with an opportunity to share their sentences about a trait Jane and Wilson share and to reinforce the importance of using evidence from texts to support ideas.

- Convene the whole group.
- Invite students who had particularly interesting sentences to share them with the group. Then have them add their sentence strips to the Jane and Wilson: Similarities chart. When applicable, revise sentences with students that have content or grammatical errors.
- Conclude the discussion by reinforcing the idea that although Jane and Wilson studied different things, they shared some traits that helped them become successful scientists.

Learning Target
Below are some sample sentences that show how Jane and Wilson are similar.

Patient: Both Jane and Wilson were patient because they spent hours observing and researching their topics but never became frustrated.

Passionate: Both Jane and Wilson were passionate because they loved what they were doing and wanted to share what they learned with the world.

Persistent: Both Jane and Wilson were persistent because they never gave up when they faced challenges.

Observant: Both Jane and Wilson were observant because they both spent a lot of time watching their subjects.

Facilitating Metacognitive Work: Whole Group StepBack (3 minutes)
Purpose: To make visible for students what they learned from this task.

- Ask students to reflect on the task they just engaged in by discussing their responses to the following questions:
  - What did you learn about comparing things from doing today’s work?
  - What did you find easy and hard about this work?
  - How can you use what you learned today?
Writing About Wilson

Purpose
Now that you have come up with traits to describe Wilson, you are ready to write about the one trait that best describes him. You did something similar with Jane’s traits, so Part A of this task should feel familiar to you. Then you’ll compare Wilson and Jane to see how they are similar.

Task
Part A
1. Review the Traits that Describe Wilson graphic organizer. As you review the organizer, ask yourself:
   - Which traits have the most evidence?
   - Which trait do I think best describes Wilson? Why?
2. Write a few sentences explaining why you believe this trait best describes Wilson. Remember to include the three features of an explanation:
   - Names the topic
   - Provides evidence to support the topic
   - Ends with a concluding sentence that sums up your ideas about the topic

Part B
With a partner, look at the Traits that Describe Wilson and the Traits that Describe Jane graphic organizers. Identify one trait that Jane and Wilson have in common. Then answer the following question on your sentence strip:

   How are Jane and Wilson similar? Make sure to provide evidence to support your ideas.
# Writing Across Texts

**Overarching Questions**
- What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?
- What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life's work?

<table>
<thead>
<tr>
<th>TEXT 1</th>
<th>TEXT 2</th>
</tr>
</thead>
</table>
| **“Watching in the Wild”**  
by Charnan Simon | **Snowflake Bentley**  
by Jacqueline Briggs Martin |
| **1.1 Comprehension**  
- What do you learn about Jane Goodall?  
- What do you learn about chimpanzees?  
- What places are hard or confusing for you? | **2.1 Comprehension**  
- What do you learn about Wilson Bentley?  
- What do you learn about snowflakes?  
- What places are hard or confusing for you? |
| **1.2 Furthering Comprehension**  
What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify. | **2.2 Furthering Comprehension**  
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify. |
| **1.3 Analysis**  
- What are the features of an explanation?  
- Write several sentences in which you explain the trait that best describes Jane. | **2.3 Interpretation**  
- Write several sentences in which you explain the trait that best describes Wilson.  
- How are Jane and Wilson similar? |

**Writing Across Texts**

Based on what you’ve learned about Jane Goodall and Wilson Bentley, choose the one trait that you believe is most important for scientists to be successful in making important discoveries. Use evidence from both texts to explain why you believe that trait is most important.
Writing Across Texts

Based on what you’ve learned about Jane Goodall and Wilson Bentley, choose the one trait that you believe is most important for scientists to be successful in making important discoveries. Use evidence from both texts to explain why you believe that trait is most important.

Situating the Task

<table>
<thead>
<tr>
<th>Overarching Questions</th>
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<tbody>
<tr>
<td>• What do you learn about Jane Goodall and Wilson Bentley and their work from reading these two texts?</td>
</tr>
<tr>
<td>• What traits do Jane Goodall and Wilson Bentley share and how do these traits influence their life’s work?</td>
</tr>
</tbody>
</table>

**TEXT 1**
“Watching in the Wild” by Charnan Simon

1.1 Comprehension
• What do you learn about Jane Goodall?
• What do you learn about chimpanzees?
• What places are hard or confusing for you?

1.2 Furthering Comprehension
What traits would you use to describe Jane Goodall? Draw on evidence about Goodall and her discoveries to support the traits you identify.

1.3 Analysis
• What are the features of an explanation?
• Write several sentences in which you explain the trait that best describes Jane.

**TEXT 2**
Snowflake Bentley by Jacqueline Briggs Martin

2.1 Comprehension
• What do you learn about Wilson Bentley?
• What do you learn about snowflakes?
• What places are hard or confusing for you?

2.2 Furthering Comprehension
What traits would you use to describe Wilson Bentley? Draw on evidence about Bentley and his work with snowflakes to support the traits you identify.

2.3 Interpretation
• Write several sentences in which you explain the trait that best describes Wilson.
• How are Jane and Wilson similar?

Why This Task Now?
This final task builds from the work students have done with both texts to understand the traits that made Goodall and Bentley successful scientists. The purposes of this task are for students to

• synthesize their understanding of the traits Goodall and Bentley share to come up with one trait they think would be important for all scientists.
• apply what they’ve learned about writing effective explanations, especially using textual evidence to support their ideas.

Materials
• “Watching in the Wild” by Charnan Simon
• Snowflake Bentley by Jacqueline Briggs Martin
• Handout: Writing Across Texts
• Graphic organizer: Traits that Describe Jane
• Graphic organizer: Traits that Describe Wilson
• Chart: Jane and Wilson: Similarities
• Handout: Gr. 1: Decision Tree Scoring Guide
• Chart paper and markers
• Student paper and pencil
Teaching Approach

Setting Up the Task: Whole Group (5-7 minutes)

Purpose: To provide students with clear directions and expectations for their final task.

- Provide students with the handout titled, Writing Across Texts (found on page 70).

- Review the handout with students, giving them an opportunity to ask questions and clarify expectations.

- Tell students that they have many resources to help them with this task, including the
  - Traits that Describe Wilson and the Traits that Describe Jane graphic organizers
  - Jane and Wilson: Similarities chart
  - “Watching in the Wild” and Snowflake Bentley

- Remind students that the trait they come up with should be based on what they know about the traits that made both Jane and Wilson successful.

Teacher Note

There are several ways to engage students in this task depending on students’ proficiency with writing effective explanations and their understanding of traits that made Goodall and Bentley successful. See the “Differentiation” box below for ways to support students with various aspects of the task.

Monitoring Student Thinking: Individual Work (15-20 minutes)

Purpose: To enable students to work independently to complete the final task.

- Give students about five minutes to come up with the one trait they believe is most important for scientists to be successful in making important discoveries. Encourage students to bounce their ideas off their peers. (See the “Differentiation” box below for how to help students choose a trait.)

- As students are deciding on a trait, confer with them individually or in small groups to monitor their progress. Consider whether to pull students together as a whole group to share their traits.

- Then have students continue with the task independently by writing a response where they use evidence from both texts to explain why they believe the trait they chose is most important.

- Be on the lookout for individual or groups of students who are struggling with this final task. As needed, bring groups of students together and engage in mini-lessons designed to support students to overcome difficulties. Below are some ways to support students with various aspects of this assignment.
**Differentiation**

**Support for Choosing a Trait**

- Review with students the Traits that Describe Jane and the Traits that Describe Wilson graphic organizers and the Jane and Wilson: Similarities chart.
- Ask students to identify all the traits that Jane and Wilson have in common. List them on chart paper or the board.
- Then ask students: Which one of these traits do you think is most important for scientists? Why?

**Support for Explaining Ideas Using Evidence**

- Once students have selected a trait, have them explain why they believe this particular trait is most important. Have them refer to the Traits that Describe Jane and the Traits that Describe Wilson graphic organizers for evidence of how those traits helped Jane and Wilson be successful.
- Support students to use evidence through questioning. For example, you might say something like, “You said it’s important for scientists to be persistent, and we can see on the Traits that Describe Jane organizer that she was persistent. How was Jane persistent? How did being persistent help her in her study of chimpanzees?”
- Invite many students to share. This gives many students a chance to explain their thinking orally before being asked to write, and it provides others in the class with multiple models of explanations.

**Support for Writing Explanations**

- **One option:** Review the Writing Across Texts handout. Have them state what each of the features will be for this writing task. For example:
  - Names the topic: States the trait that you believe is most important for scientists to be successful in making important discoveries.
  - Provides evidence to support the topic: Gives evidence from “Watching in the Wild” and Snowflake Bentley to support how that trait helped Jane and Wilson be successful.
  - Ends with a concluding sentence that sums up your ideas about the topic: Restates why you believe this trait is most important for scientists to be successful in making important discoveries.
- **A second option:** Once students have selected a trait and identified evidence, have them begin by providing a sentence that introduces their trait. Then help them develop their evidence into supporting sentences. Finally, help them provide a concluding sentence that sums up their topic.
- **A third option:** Alternatively, select a trait that students are unlikely to select for their explanation. Write an explanation based on that trait and share your explanation with students. Ask students to identify your topic sentence, the evidence you used to support your topic, and your concluding sentence.
Providing Clear Expectations: Whole Group (5 minutes)

**Purpose:** To provide students with clear expectations for how their Writing Across Texts task will be scored.

- Provide each student with the handout titled *Gr. 1 Decision Tree Scoring Guide* (found on page 71).

- Review the scoring guide with students, giving them an opportunity to ask questions and clarify expectations. Remind students that these explanations are drafts, and so the scoring guide, along with your feedback, will help them revise their writing.

- Since this Decision Tree Scoring Guide may look very different from what students are used to, take a moment to explain how it works.
  - Begin by letting students know three key things: (1) the scoring guide is read from left to right, (2) each box presents a yes/no question, and (3) open arrows represent “yes” and lined arrows represent “no.” Point out the key in the upper right corner that shows students the difference between the “yes” and “no” arrows.
  - To use the Decision Tree Scoring Guide, begin with the first box in the upper left corner. If the answer to that question is yes, follow the “yes” arrow to the next box and repeat the process with the next question. If the answer is no, follow the “no” arrow to drop down to the 0 score point.

- Talk with students about how they can use this scoring guide to review their own writing once they’ve completed it.

**Important**

The Decision Tree Scoring Guide is designed to assess students’ understanding of the texts and their proficiency with writing effective explanations. As such, the scoring guide does not assess style or use of conventions. If you want to assess those aspects of students’ writing, please adjust the instruction and scoring accordingly. You can find two annotated and scored samples of student work on page 72 and page 74.

The Decision Tree Scoring Guide prioritizes what is most important to what is least important in a piece of writing. The most important thing—in this case, did students complete the task that was assigned to them?—is placed first. If students do not complete the task as assigned, they do not earn any points. The least important thing—in this case, does the explanation have a concluding statement?—is placed last, on the far right. We placed incorporating evidence from “Watching in the Wild” and *Snowflake Bentley* second because a big part of the unit entails supporting students to draw on evidence from the text to support their ideas.
The scoring guide is most useful when it is accompanied by written or oral feedback that helps students revise their drafts with purpose and direction. When providing feedback to a student, be sure to anchor it in specific moments in the draft that relate to the criteria on the scoring guide. Point out moments where the writing successfully meets the criteria, as well as places where the writing could be revised to be more effective. Additionally, include concrete suggestions for how a student might revise his/her draft, but don’t do the revisions for the student or take away ownership of the writing.

Facilitating Student Sensemaking: Whole Group (7-10 minutes)

Purpose: To provide students with an opportunity to share their explanations about the one trait they think is most important for scientists and to continue to refine their understanding of the features of an explanation.

• Convene the whole group.
• Invite students to share their explanations one at a time. Ask others to listen for the three features of an explanation. After each student shares, have the class state
  o the topic of the explanation,
  o the evidence the writer provided to support the topic, and
  o the concluding sentence.
• Encourage students who chose the same trait to discuss how their explanations are similar and different from their peers’ explanations.

Facilitating Retrospective Work: Whole Group (5 minutes)

Purpose: To provide an opportunity for students to reflect on what they learned by engaging in a final discussion about the work of the unit.

• Facilitate a discussion in which students share their responses to the questions below:
  o What were the most important things you learned over the course of this unit? Why were they important?
  o How will you use what you learned?
  o What more are you interested in learning about?
Purpose
We read, wrote about, and talked about texts about two scientists: Jane Goodall and Wilson Bentley. We learned about what they studied and the traits that made them successful scientists. We also learned about the features of an explanation. The purpose of this task is for you to use what you learned to write an explanation about the one trait that you think is most important for scientists.

Task
Write several sentences to explain the one trait that you think is most important for scientists to be successful in making important discoveries. Select a trait based on what you know about the traits that made Jane Goodall and Wilson Bentley successful. Be sure to use evidence from both texts to explain how this trait helped Goodall and Bentley. As you plan and write your explanation, keep in mind the features of an effective explanation:

1. Names the topic
2. Provides evidence to support the topic
3. Ends with a concluding sentence that sums up your ideas about the topic

Remember to reread the texts, review the sentence strips we came up with in the last task, and review the Traits that Describe Wilson and the Traits that Describe Jane graphic organizers to help you identify a trait and evidence to support that trait.
Is the response an explanation of one trait that is most important in helping scientists make important discoveries?

Does the explanation include evidence from one text to support or explain the selected trait?

Does the explanation name the topic?

Does the explanation include evidence from the second text to support or explain the selected trait?

Does the explanation include a concluding statement?

Decision Tree Scoring Guide

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Writing Across Texts: Annotated Student Sample 1

Did you no scintists hav to be pashint? Well they do and its the most important trait to help them make diskvres.

Wilson Bently was pashint. He wated for ours to find the prfikt snow flak and he did. Jane Goodal was pashint. She spnt many yers and ours siting and wachng chimpns to learn bout them. Wilson and Jane are both pashint and it mad them good scintists and helpd mak importnt diskvres.

Provides evidence: The writer provides evidence from "Snowflake Bentley" to support how Bentley was patient—he spent hours waiting to find the perfect snowflake and his patience paid off.

Provides evidence: The writer provides evidence from "Watching in the Wild" to support how Goodall was patient—she spent many years and hours observing chimpanzees to learn about them.

Names the topic: The writer identifies patience as the one trait that is most important in helping scintists make discoveries.

Provides a concluding statement: The writer concludes the explanation by restating that both Jane and Wilson were patient and explaining that this trait enabled them to be successful ("good") scintists and make important discoveries.
Is the response an explanation of one trait that is most important in helping scientists make important discoveries?

Does the explanation include evidence from the second text to support or explain the selected trait?

Does the explanation include a concluding statement?

Does the explanation include evidence from one text to support or explain the selected trait?

Does the explanation name the topic?

Scored sample

yes

no

0

1

2

3
Writing Across Texts: Annotated Student Sample 2

Sintsts hav to be prsistnt and nevr give up that help mak
dskvres. Jane was prsistnt she nevr give up wen chimps
hid from her. Wilsn was prsistnt to, thats why its good to
be prsistnt.

Names the topic: The writer identifies persistent as the one trait that is most important in helping scientists make discoveries.

Provides evidence: The writer provides evidence from “Watching in the Wild” to support how Goodall was persistent—she never gave up even when the chimpanzees were hiding from her.

Provides evidence: The writer states that Wilson Bentley was persistent but does not provide support for that statement.

Provides a concluding statement: The writer states that it’s good to be persistent but does not connect that to how it is an important trait in helping scientists make discoveries.
Is the response an explanation of one trait that is most important in helping scientists make important discoveries?

Does the explanation name the topic?

Does the explanation include evidence from one text to support or explain the selected trait?

Does the explanation include evidence from the second text to support or explain the selected trait?

Does the explanation include a concluding statement?
Appendix

Discovering Scientists
What is our approach to vocabulary instruction?

There are at least three different contexts to consider when thinking about vocabulary instruction: during shared reading, during independent reading, and during other times in the ELA block/period/week.

During a First Reading When the Focus is Comprehension and the Context is Shared Reading

At some point, in all of our units, you will be guided to lead students in a close reading of at least a portion of text, or in some cases a whole text, in a guided reading context. You are encouraged to identify words in the text that may be unfamiliar to your students and that are essential to comprehension of the text, and to provide a short, student-friendly definition for each of these words during the reading (Collins COBUILD English Learner’s Dictionary, 2012). The idea here is to provide just enough information (when it is needed and not before) about the new words so that students maintain the flow of ideas and can continue their focus on understanding the central ideas in the text. You will need to analyze the text carefully in advance to identify such words. In some cases, these words have been pointed out in the unit, but you may need to add to the words we have identified and write or find your own student-friendly definition. Coxhead has identified a list of 570 academic word families that consist of words that occur with frequency across a number of academic content areas in academic texts. This list can be a resource in deciding which words are most worthy of attention (Coxhead, A., 2000).

During a First Reading When the Focus is Comprehension and the Context is Independent Reading

When reading texts independently, students are likely to encounter a range of words with which they are unfamiliar. They may or may not be able to discern which of these words are essential to understanding the text and which are not. In this situation we recommend that students use one of three approaches to figure out the meaning of the word:

1) Analyze the word to see if students are familiar with the meaning of any part of it or another form of it (e.g., decide versus decision);
2) Look for context clues, such as definitions within the sentence/paragraph; or
3) If these approaches fail, continue reading to see if they can make sense of the passage without this particular word.

During Language Arts Instruction at Other Times During the ELA Block/Period/Week

Vocabulary is a critically important part of supporting students to understand what they read. The vocabulary work within these units is not meant to replace a district’s robust vocabulary instructional program, but rather to be an important part of it. Typical vocabulary instruction that asks students to look up words in a dictionary and use them in a sentence has been demonstrated to be ineffective and, at its worst, may turn students off and diminish an interest in learning new words (Snow, Lawrence, & White, 2009). More powerful approaches include providing repeated exposure to a word in varied contexts; providing

opportunities and encouragement to use the word in speaking and writing; encountering the word in the context of motivating texts (rather than in a word list); providing explicit instruction in the word’s meaning (such as through student-friendly definitions); and through explicit instruction in using word-learning strategies, such as morphological analysis, cognate use, and learning multiple meanings (Snow, Lawrence, & White, 2009).


Additional Comments
You should decide if talking about a particular word or phrase before reading a text would better support your students to establish essential prior knowledge. There are times when this is useful and necessary, e.g., for English learners and for students with special needs. However, as a rule, we encourage you not to front load vocabulary and instead to give student-friendly definitions right within the text as it is needed for comprehension. We also discourage asking students to provide definitions of unfamiliar words encountered during shared reading. Guessing is likely to distract from comprehension rather than enhance it.

Research suggests that it takes many repetitions with a new word before it truly becomes part of a student’s repertoire (Beck & McKeown, 2002). Students will have many and varied opportunities to incorporate these new words into their spoken vocabulary and writing as a result of repeated use by you, the teacher, and by fellow students throughout the sequence of lessons in these units. You may also want to utilize techniques such as building a word wall on which you post new vocabulary words and to which your students contribute as they discover new words during their reading. Finally, verbally marking when students use any of the newly acquired words in their speaking or writing will encourage other students to show off their newly acquired vocabulary.

How does the unit provide support for English learners?

Support for English learners is provided within the lessons in a number of ways. Students learn new information in manageable segments, which are sequenced to build on existing knowledge of language and genre and explicitly relate to the overarching questions and core concepts of the unit. Students revisit new learning a number of times. For example, students read texts multiple times, each time with a new purpose and using a scaffold appropriate to the purpose and the text.

In this way of working, the first time students read a text it is for literal comprehension and to make overall sense of the text. It is only after students have comprehended a text’s basic plot, characters, ideas, or claims that they read the text again for a new purpose. Given their basic comprehension, students are more ready to analyze the development of the text’s characters, themes, ideas, or claims.

Talk is an essential part of this unit and students’ development of spoken academic language is fostered through routines of discussion. Please see “Accountable Talk® Moves and Functions in ELA” in the Instructional Resources section of the Appendix. The tool offers practical guidelines and exemplars on how to promote and deepen students’ talking to learn and to expand their thinking with powerful facilitation moves. Students are given multiple opportunities to practice using the language in purposeful ways with effective feedback. To help English learners, as well as other students, students are often asked to share in pairs or trios before being invited to share with the larger group. This allows students to practice and gain confidence sharing their responses with one or two students before doing so with the whole group.

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A number of texts, such as journal and newspaper articles, book chapters, children’s books, and poems, may be mentioned in this IFL Unit. Because of copyright considerations, these resources could not be included in the unit. A comprehensive reference citation has been included in this section of the unit.

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Notes

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Instructional Resources

Reader/Writer Notebook

What is the Reader/Writer Notebook?
It is a notebook with loose-leaf paper that can be added, rearranged, or temporarily removed. Loose-leaf holed paper between pressboard covers, held together with rings would suffice.

Students are asked to use a Reader/Writer Notebook throughout this unit.

What are two main purposes of the notebook?
It gives the writer a place for thinking and trying out different voices and techniques.
It also serves as a central notebook to store handouts, other papers, and calendars used in English language arts.

What are other specific uses of the notebook?
It is our classroom tool for thinking, recording ideas, generating writing ideas, and trying out new voices.

We use it for quick writes, two-column notes, WriteAbouts, WriteLikes, criteria charts, class notes, brainstorming, etc.

• It is a place for writers to work through writing problems and brainstorm.
• It is a place where we can go back to reread and/or select pieces for revision.
• It is a place where we can go back to reflect on how we have grown as readers and writers.

How may students set up their own Reader/Writer Notebooks?
Either on the cover or the first page of the notebook, ask students to write their name, class period, and the date they began using their notebook. They might also personalize their notebooks with decorations, pictures, nicknames, etc.

On the top of the second page of the notebook, ask students to write, “Table of Contents.”
On the first line of the Table of Contents page, ask students to write: “date,” “topic,” and “page number.”

Beginning with the Table of Contents, ask students to number the first 30 pages; students may number the rest of the pages when they get to page 30.

Students can now begin using the Reader/Writer Notebook on page 6 (pages 2-5 will be set aside for the table of contents).

Note: Because the Reader/Writer Notebook is a place for students to think and try out different writing and reading ideas, encourage them to write and collect ideas in their notebooks as a habit of practice that extends beyond the times related to specific assignments for class.
Reader/Writer Notebook Suggested Feedback System

Since the Reader/Writer Notebook is expressive writing (writing for the writer), it is important to lower the students’ level of anxiety relative to grammar and usage errors. Randy Bomer, author of *Time for Meaning: Crafting Literate Lives in Middle and High School* (1995), suggests that teachers also use a Reader/Writer Notebook. This helps to deepen the idea of a writers’ community in the classroom and allows teachers to give students ideas for their notebooks by sharing from time to time from their notebooks.

Bomer has also devised a method of feedback based on the following criteria:

1. **Volume**
   - A. One entry from each class, including one long selection.
   - B. Five for homework, including two long selections.

2. **Variety**

3. **Thoughtfulness**

4. **Habits of Thought–Intention for Writing**
   - Specifically:
     - A. description
     - B. precise dialogue
     - C. movement between facts and ideas

5. **Playful Experimentation with Language**
   - He then uses a class rotation system, collecting every student’s notebook once every two weeks. He writes brief comments and the score from the class rubric on sticky notes and places them in each notebook.
Pedagogical Rituals and Routines

When we ask students to engage in inquiry units and lessons, we ask them to use the following key Pedagogical Rituals and Routines. These rituals and routines, derived from research on cognitive apprenticeship, are designed to engage all students as learners in collaborative problem-solving, writing to learn, making thinking visible, using routines for note-taking/making and tracking learning, text-based norms for interpretive discussions and writings, ongoing assessment and revision, and metacognitive reflection and articulation as regular patterns in learning. These cyclical apprenticeship rituals and routines build community when used with authentic tasks through collaboration, coaching, the sharing of solutions, multiple occasions for practice, and the articulation of reflections (Brown, Collins, & Duguid, 1989).

The key English language arts pedagogical routines that support students’ learning are:

- **quick writes** composed by individual learners in response to questions and tasks for any and all of the design features of lessons and units;
- **pair/trio sharing** of individual quick writes to establish academic conversations in a safe environment with high accountability to the task and the group members;
- **charting** of the pair/trio sharing by members of the group to represent the work of the group to the entire class;
- **gallery walks** for members of the class to read and take notes on the pair/trio work in preparation for a whole class discussion of the task;
- **whole group discussions** of the questions or tasks that prompted the scaffold of quick writes, pair/trio share, charting, and gallery walks to deepen understandings and address lingering questions;
- **model** of a total performance in order to help learners understand the essence of an activity and develop a mental picture of what the real thing looks like;
- **Reader/Writer Notebook** in which learners compose quick writes, take notes, make notes, compose observations for writings, respond to questions and tasks, and track their learning; and
- **StepBacks** in which learners metacognitively reflect through quick writes, pair/trio shares, charting, gallery walks, discussions, and writing assignments on the content and pedagogy of their learning to develop and track their understandings and habits of thinking.
# Accountable Talk® Moves and Functions in ELA

<table>
<thead>
<tr>
<th>TEACHER MOVE</th>
<th>FUNCTION</th>
<th>EXAMPLE</th>
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<tbody>
<tr>
<td><strong>TO ENSURE PURPOSEFUL, COHERENT, AND PRODUCTIVE GROUP DISCUSSION</strong></td>
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<tr>
<td>1. Marking</td>
<td>Direct attention to the value and importance of a student’s contribution.</td>
<td>“I hear you saying _____. Let’s keep this idea in mind.”</td>
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<td>2. Challenging Students</td>
<td>Redirect a question back to the students or use a student’s contributions as a source for a further challenge or inquiry.</td>
<td>“What do YOU think?” “What surprised you about what you just heard about the text’s ____?”</td>
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<tr>
<td>3. Modeling</td>
<td>Make one’s thinking public and demonstrate a total performance in order to help learners understand the essence of the activity and to develop a mental picture of what the real thing looks like.</td>
<td>“Here’s what good readers do…”</td>
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<tr>
<td><strong>TO SUPPORT ACCOUNTABILITY TO ACCURATE KNOWLEDGE</strong></td>
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<td>4. Pressing for Accuracy</td>
<td>Hold students accountable for the accuracy, credibility, and clarity of their contributions.</td>
<td>“Where can we find that…?” “What is your basis for that conclusion?” “Who said that?”</td>
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<td>5. Building on Prior Knowledge</td>
<td>Tie a current contribution back to knowledge accumulated by the class at a previous time.</td>
<td>“How does this connect…?” “How do we define ____ in this context?” “What else comes to mind given our discussion about ____________?”</td>
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<tr>
<td><strong>TO SUPPORT ACCOUNTABILITY TO RIGOROUS THINKING</strong></td>
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<tr>
<td>6. Pressing for Reasoning</td>
<td>Elicit evidence and establish what contribution a student’s utterance is intended to make within the group’s larger enterprise.</td>
<td>“Why do you think that…?” “What evidence from the text supports your claim? How does this idea contrast with ____?”</td>
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<td>7. Expanding Reasoning</td>
<td>Open up extra time and space in the conversation for student reasoning.</td>
<td>“Take your time… say more.” “Given what we just read and discussed, what would you now say about ____?”</td>
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<tr>
<td>8. Recapping</td>
<td>Make public in a concise, coherent way, the group’s developed, shared understanding of the content or text under discussion.</td>
<td>“What have we discovered?” “So far, we have discussed the following … What else do we need to address?”</td>
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<tr>
<td><strong>TO SUPPORT ACCOUNTABILITY TO THE LEARNING COMMUNITY</strong></td>
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<tr>
<td>9. Keeping the Channels Open</td>
<td>Ensure that students can hear each other, and remind them that they must hear what others have said.</td>
<td>“Please say back what ____ just said.”</td>
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<tr>
<td>10. Keeping Everyone Together</td>
<td>Ensure that everyone not only heard, but also understood, what a speaker said.</td>
<td>“Do you agree or disagree with what ______ just said? Explain your thinking.”</td>
</tr>
<tr>
<td>11. Linking Contributions</td>
<td>Make explicit the relationship between a new contribution and what has gone before.</td>
<td>“Who wants to add on to …?” “What do you notice is missing?”</td>
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<tr>
<td>12. Verifying and Clarifying</td>
<td>Revoice a student’s contribution, thereby helping both speakers and listeners to engage more profitably in the conversation.</td>
<td>“So, are you saying…?”</td>
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</table>
In an inquiry-based discussion, readers discuss their responses to an interpretive question about a text(s). An interpretive question stems from a genuine inquiry about a text, is thought-provoking, and can sustain multiple and varied responses supported by textual evidence.

The purposes of the discussion are to help readers to:

- “try out” their answers and explanations anchored with specific moments from the text;
- accept alternative views/interpretations of the same text (not about reaching consensus or proclaiming a winner);
- rethink what they think about the text; and
- understand that readers can have different, valid interpretations of the same text.

Preparing for the Discussion:

- The discussion lead, usually the teacher, explains inquiry to readers, models some responses, and describes the teacher’s and the students’ roles during the discussion.
- Allow enough time for the discussion given the text complexity.
- The discussion usually follows the second or third reading of a text.
- Individually, students WriteAbout the interpretive question and mine the text for evidence supporting their responses.
- Students are seated so they can see, talk to, and listen to each other.

Features of the Inquiry-Based Discussion:

- A central inquiry/question that can sustain multiple responses related to interpreting the ideas of one text or across texts focuses the talk.
- The facilitator prompts students to “say more” and to anchor their talk in the text.
- Initial student talk is exploratory and can be halting as participants “try out” and modify their answers and explanations.
- Participants return often to cite or reread the text, texts, or their notes.
- There is usually genuine talk related to the question by over 60% of the group.
- Participants listen to each other using the ideas of others in their answers.
- At the end of the discussion, there is time for each participant to jot down what they are thinking about the text given the discussion.
- The teacher takes the long view on students’ discussions, expecting the students to get better as they have more experience.
Facilitator’s Role:

- The teacher facilitator is not a direct teacher or a presenter. The facilitator does not talk too much, does not repeat the talkers’ responses, and does not verbally compliment or negate responses.
- When teachers step out of their role as guides and into their role as participants or teachers, they limit participation (Vygotsky, 1986; Alvermann, et al., 1996).
- As teacher facilitator, you elicit what readers are thinking and validating with evidence, but you are not telling them your interpretation.
- The teacher facilitator:
  - Uses questions to get others talking;
  - Encourages everyone—not just some—to participate;
  - Presses for clarification and evidence from the text;
  - Keeps the conversation on track during the time frame provided;
  - Encourages readers to listen to and learn from each other by not repeating their responses;
  - Reminds them, only if and when necessary, of the guiding question under discussion;
  - Asks each discussant to validate answers with explanations anchored in evidence from the text;
  - Summarizes a flow of three or four responses or questions further to raise rigor of discussion—not to do the mental work for students;
  - Asks participants to step back and reflect on what they learned from the discussion: Would they now change their first quick write response and, if so, what would they change and why?; and
  - Asks the idea tracker to recap the intellectual work of the discussion.

- The facilitator asks readers to step back and reflect on the discussion: If they didn’t participate successfully, what needs to improve and who has responsibility for the improvement?