

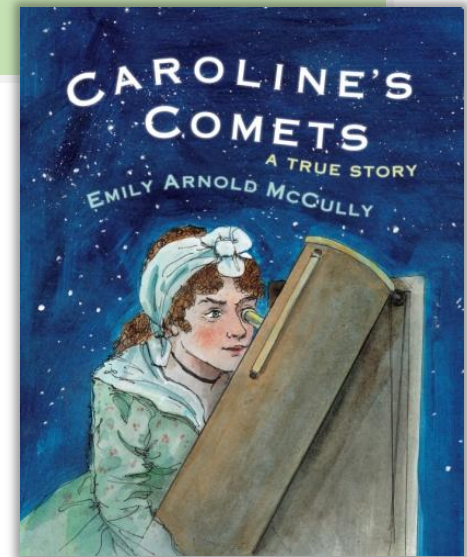
LESSON PLAN

STEM

Caroline's Comets: A True Story

Written and illustrated by Emily Arnold McCully

In 1786, Caroline Herschel became the first woman to discover a comet and the first woman to be paid for scientific research, but it was a challenging journey. Read her inspirational story told through words, actual excerpts from her personal diary, and beautiful illustrations by Caldecott Medalist, Emily Arnold McCully.



9780823436644 • Ages 6–10 • E-book available

Objectives: Students will be able to read for purpose and understanding, identify text type, answer comprehension questions using text support, report on a topic by drawing evidence from literary or informational texts to support analysis, reflection, and research.

Guided Reading Level: S

Grade Level: 4

Interest Level: 2–6

Instructional Standards

Reading Informational Text: RI.3-5.1,2,3,4,5,6,7,8

Reading Foundation Skills: RF.3-5.3,4

Writing: W.3.2,7,8,10/ W.4-5.2,7,8,9,10

Speaking and Listening: SL.3-5.1,2,3,4,6

Language: L.3-5.1,2,3,4,5,6

★ “An engaging introduction to a notable woman in astronomy.”—
Booklist, Starred Review

BEFORE READING

Discuss:

- Cover illustration and the book title. (A true story)
- Text type: fiction or nonfiction?
- Why is it important to think about the text type before reading?
- Nonfiction vs. fiction:
 - Nonfiction texts give us information that is true*
 - Is organized around a specific idea or topic*
 - Teaches facts through reading*
- Not all nonfiction texts look the same. Give examples from prior reading.
 - Narrative Nonfiction** tells a story about a person, event, or place. It is based on research.
 - Expository Nonfiction** explains or informs about a topic.
 - Descriptive Nonfiction** gives the reader a visual of what is being described using rich details and figurative language.
 - Persuasive Nonfiction** is meant to influence how the reader thinks, feels, acts, or makes decisions with regard to a particular idea, issue, or proposal.



- **Nonfiction** books are based on firsthand and secondhand accounts.
- **Primary sources** are original documents and objects that were created at the time of the event.
- **Secondary sources** are accounts or interpretations of events created by someone without firsthand experience.

Take a picture walk through the book.

1. Identify text features:
 - Table of contents
 - Foreword
 - Afterword
 - Illustrations
 - Photographs
 - Captions
 - Italics
 - Diagrams
 - Maps, charts
 - Pronunciation guide
 - Headings
 - Glossary
 - Index
 - Further Reading
 - About the Author
 - Timeline
 - Bold/colored print
2. Why are some of the sentences/paragraphs in italics?

Discuss: The italics are primary sources taken from Herschel's diary.

3. How do primary sources contribute to the authenticity of the book?
4. What do you think this book will be about?
5. What do you already know about Caroline Herschel? Comets?

DURING READING

1. First reading/shared: teacher reads aloud and models as students read along.
2. Second reading/independent: students read silently.

Think about and identify . . .

- Vocabulary words that are challenging. Predict the meaning based on context clues.
- The text type (narrative nonfiction)
- What you want to learn more about
- How the author integrates visual information
- How the journal entries help you to understand, clarify information, and create tone
- The different points of view in the story
- The author's purpose (to entertain, explain, or persuade): Why do you think the author chose to write this book?
- How Emily Arnold McCully uses text features to enhance meaning
- The main idea and details of the story
- The turning point in Caroline's life



AFTER READING**Make Connections**

1. What did you learn about Caroline Herschel? What did you learn about the history of women in America and around the world?
2. Why is this considered to be an “inspirational story”?
3. Explain why *Caroline’s Comets* is a “memoir.” Discuss the difference between memoir and biography.
4. How did specific family members influence Caroline’s accomplishments and successes or setbacks?
5. What did you find interesting? Why?
6. How can you take what you learned and apply it to your own life?
7. How were William and Caroline Herschel true “collaborators” in the world of science?
8. Write an explanatory text on something you accomplished through collaboration.
9. Create a PowerPoint presentation on Caroline Herschel. Include information on what being a woman was like in the late 1700s.

STEM Group Project

1. Research how astronomy has developed as a science throughout history. Include advances and developments in math, engineering, and technology. How is astronomy dependent on math, engineering, and technology today?

Guide written by Marla Conn, reading/literacy specialist and educational consultant

