

AN EDUCATOR'S GUIDE TO



★ “**Rock-solid** history and science, **high-octane** action, and **vivid** descriptions”

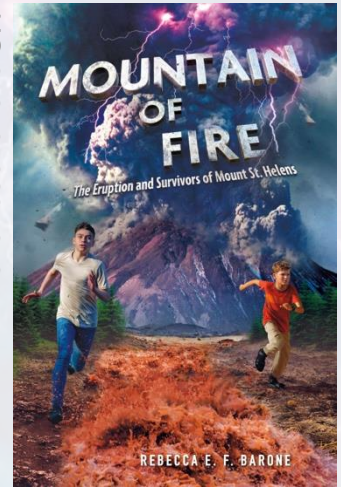
-Kirkus Reviews, starred review

About the book

For weeks, the ground around Mount St. Helens shuddered like a dynamite keg about to explode.

There were legends of previous eruptions: violent fire, treacherous floods, and heat that had scoured the area. But the mountain's shaking and swelling were unlike any volcanic activity ever seen before. Day and night, scientists tried to piece together the mountain's clues—yet nothing could prepare them for the destruction to come.

HC 9781250881656
Ebook 9781250881649



About the author



Rebecca E.F. Barone is an engineer and author. She writes narrative nonfiction books for middle grade readers that are filled with adventure, excitement, and survival. The engaging STEM content is just a great bonus!

This guide was created with Danielle Frimenko, MAT. Danielle is a licensed teacher in Michigan and holds a Master of Arts degree with a concentration in Literacy Education. She has taught in elementary and middle school settings, most recently as a K-8 academic specialist.

About this guide

Mountain of Fire: The Eruption and Survivors of Mount St. Helens is an exciting nonfiction story centered around themes of survival, scientific discovery, teamwork, conservation, and the importance of science literacy.

This guide will help to facilitate meaningful discussion around climate science, distinguishing fact from fiction, cultural oral history, and human response to danger. Students can deepen their thinking about how natural disasters effect their lives and the lives of those around them.

The questions and activities included with this guide have been aligned with Common Core standards for grades 4-6 and can be adaptable for higher grades.

Common Core Standards

Standards from Literature, Informational Reading, Writing, Social Studies, and Science are applicable to this book. Teachers are encouraged to use this story as a multi-disciplinary unit across subjects.



Before you read

- 1) Look at the cover and examine the different elements. What do you notice about the mountain? About the clouds and the explosion? How do you think these will affect the story?
- 2) Read the synopsis on the front flap. Who are the main characters? What problems does it sound like they will face during the story?
- 3) Where is Mount St. Helens? Use a map or your computer to find where the volcano is located.
- 4) Construct a K-W-L chart for use during the reading and discussions of *Mountain of Fire*. Do you think all volcanoes erupt in the same way? Discuss how volcanoes might be different.

Know	Want to Know	Learned

Get ready to read!

This story is filled with sensory detail. Elements of a story where a character or the narrator describes how things feel makes the story seem more real to the reader. Gather 5 sticky notes. Use these to mark pages and paragraphs where you find sensory detail that help you feel the story.



Prologue – Ch 18

As You Read

1.) The first line reads “The morning was calm, quiet.” Compare this to the cover image. Why do you think this first line is important? What predictions can you make, having read this line and having looked at the cover? *RI.4.7, 5.7*

2.) On page 5, the author writes, “*All weekend, the ground trembled and danced. “Sometime” seemed to grow closer every time the earth shook.*” What does “sometime” mean in this context? Why is it important? *RI.4.4, RI.5.4, RI.6.4*

3.) Chapter 3 explains some of the history of Mount St. Helens. Much of what was known about the mountain was passed down through stories. How could this have helped the scientists? Why did these stories sometimes make their jobs more difficult? *RI.4.3, RI.5.3, RI.6.3*

4.) On page 19, Don Mullineaux is quoted as saying “*I’d give them fact, but [the reporters] wanted predictions... To me, they wanted things that scientists could not do.*” Why are the reporters frustrated with the scientists? Why are the scientists frustrated with the reporters? *RI.4.3, RI.5.3, RI.6.2, RI.6.3*

5.) Even before erupting, Mount St. Helens had become a tourist attraction. Describe some of the different people who are interested in the mountain and why they came during dangerous conditions. Write a list of pros and cons to visiting a volcano that might erupt. *RI.4.1, RI.5.1, RI.6.1*



Prologue – Ch 18

As You Read

6.) Scientist Steve Malone describes harmonic tremors at the end of Chapter 8. How are these new earthquakes different from the earthquakes that had been felt on the mountain up to that point? *RI.4.4, RF.4.4c, RI5.4, RF5.4.C*

7.) What words are new to you in reading this chapter, and what do they mean in this context? Here are some words you might consider:

- Seismology (p 5)
- Volcanology/volcanologists (p 6)
- Graben (p 39)
- Harmonic tremors (p 32)
- Lahars (p 14)
- Fumaroles (p 63)

RI.4.4, RI.5.4, RI.6.4, RF.4.4a, RF.5.4a

8.) In Chapter 9, David Johnston thinks back to how another volcano, Mount Bezymianny, erupted. He uses what the scientists learned from that eruption to try and predict how Mount St. Helens might erupt. Have you ever heard about someone else's experiences and used those lessons in your own life? Maybe even a character in a book helped you to understand or solve a problem. Discuss how you've used lessons from someplace or someone else to solve a problem in your own life.

RI.4.3, RI.5.3, RL.4.6, RL.5.6, SL.4.1, SL.5.1



Prologue – Ch 18

As You Read

- 9.) Why is Governor Dixie Lee Ray mad (Chapter 14) when the Boy Scouts are given permission to retrieve camp gear at Spirit Lake. Do you think the Boy Scouts should have been allowed around the volcano? If you were the governor of Washington State, what would you have done? *RI.4.3, RI.5.3*
- 10.) This section ends with a review of what the mountain is like on the night of May 17. What parts of this description make you think an eruption is about to occur? *RI.4.1, RI.4.2, RI.5.1, RI.5.2*

Words in Action

Pretend you are a news reporter on the scene around Mount St. Helens in the days before the eruption. Write a script with questions for one of the scientists and then for Harry Truman. Then, write responses for each person. How are their views of the shaking mountain different? What concerns do they share? *RL.4.6, RL.5.6, W.4.3, W.5.3*

Map Mechanics

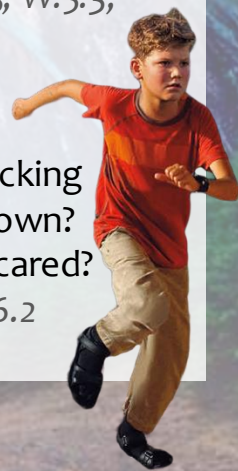
There are two maps in the front of the book, but a lot more places are mentioned! Find these places on a world map: Cascades mountain range (p 13); Seattle, Washington; Hawai'i (p 34); Kīlauea (p 34); Mauna Loa (p 34); Mount Bezymianny (p 41). *RI.4.9, RI.5.9*



Ch 19 – 37

As You Read

- 11.) “Barry Voight was right” is repeated twice on page 65. Find the prediction that Barry Voight made. How does his prediction contrast with the last sentence in Chapter 9? *RI.4.3, RI.5.3, RI.6.3*
- 12.) David Johnston dies in the early moments of the eruption. He was a respected volcanologist, and he had studied many volcanoes before coming to Mount St. Helens. After you’ve read Chapter 20, research his life and write about some of the discoveries he made. *RI.4.9, RI.5.9, RI.6.9, W.4.2, W.4.7, W.5.2, W.5.7, W.6.2, W.6.7*
- 13.) Have you ever been camping? Eric and Adam Smith were camping with their dad, Buzz, when the volcano erupted. Read Chapter 24 and write a paragraph about how your experiences playing, hiking, or camping outside are similar and different to their experiences. *RI.4.1, RI.5.1, RI.6.1, W.4.3, W.5.3, W.6.3*
- 14.) Brian Thomas was injured during the eruption. First his friends left him, and then Buzz Smith left him, too. Do you think it was right that no one stayed with him? What would you have done, if you were with him? How do you think he felt by himself? Write a few paragraphs imagining your experience if you were with an injured friend at the time of the eruption. *W.4.3, W.5.3, W.6.3*
- 15.) In Chapter 27, scientists Mindy Brugman and Carolyn Driedger go into a grocery store where people are panicking about the eruption. How do the scientists calm them down? Have you ever been in a situation where people were scared? What did you do? *RL.4.1, RL.4.2, RL.5.1, RL.5.2, RL.6.1, RL.6.2*



Ch 19 – 37

As You Read

- 16.) Maps at the beginning of the book show where each of the characters were when the mountain erupted. Many of them ended up hiking long distances to safety. Use a paper map or your computer to trace the path each of them walked. *RI.4.7, RI.5.7, RI.6.7*
- 17.) Chapter 37 summarizes the eruption. Are there any words in this chapter that you don't know? Write these down and discuss them with your classmates. See if you can figure out what they mean. *RF.4.4a, RF.5.5a*

Words in Action

Now that you've read about the eruption, look at the pictures online (use the QR code at the front of the book). Pretend that you're writing a news article about the eruption and use the pictures to describe what you've seen. Remember to describe how the eruption changed over the course of the day. *RI.4.7, W.4.2, W.5.2, W.6.2*

Remarkable Research

When scientists arrived at Mount St. Helens, they expected the volcano to act a lot like the volcanoes in Hawai'i. Use books and trusted websites to research how Mount St. Helens and Kīlauea are different. Make a Venn diagram about similarities and differences. *RI.4.9, RI.5.9*



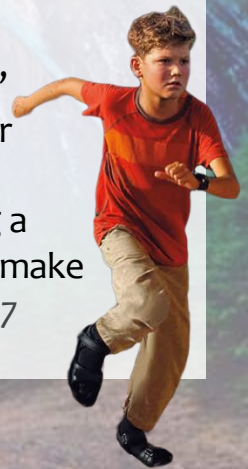
Ch 38 – End

As You Read

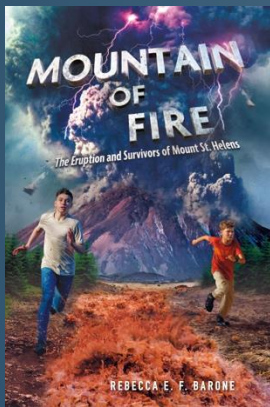
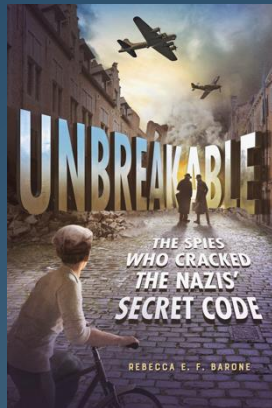
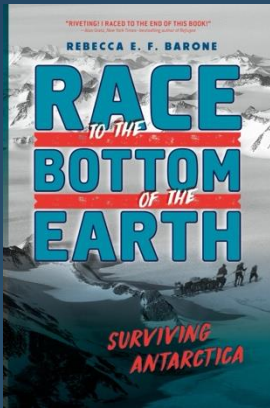
- 18.) On page 137, scientist Steve Malone says “Months are too long, and seconds are too short.” What does he mean when he says this? Do you think he would have said this before the eruption? *RL.4.6, RL.5.6, RL.6.6*
- 19.) Chapter 39 is called Blame Game. Who is trying to blame who in this chapter? After you read it, discuss if you think anyone is responsible for people dying during the eruption. Do you agree with the author? Why? *RI.4.3, RI.5.3, RH.6-8.3, RST.6-8.6*
- 20.) Many animals died during the eruption, so many that life seems to have disappeared on Mount St. Helens. What are some of the first clues that some animals have survived? Discuss what worked best for the scientists to encourage life to thrive on the volcano once more. *L.4.6, L.5.6*
- 21.) This book is called *Mountain of Fire*, and the native people around the mountain originally named it Lawillay-łá (“one who smokes”) and Loowit (“Lady on Fire”). Think about some of the main ideas in this book and come up with your own title. Explain how your title is supported by details in the story. *RI.4.2, RI.5.2*

Words in Action

The Epilogue of this book is called “The Story Science Tells.” Now that you’ve read a science story, it’s time to tell one for yourself! Research a science story – like a natural disaster, a pandemic, or an invention – and tell it as if you were writing a story. Use quotes, sensory details, and descriptions to help make your story come alive. *W.4.2, W.4.7, W.5.2, W.5.7, W.6.2, W.6.7*



Books by Rebecca E.F. Barone

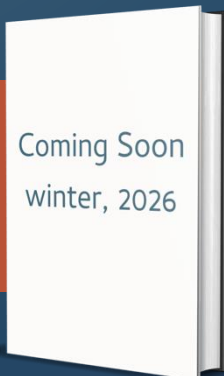


- Amazon Best Book of the Year
- Kirkus Best Book of the Year
- School Library Journal Best Book of the Year
- Booklist Best Book of the Year
- Chicago Public Library Best Book of the Year
- Bank Street Best Book of the Year – Outstanding Merit
- NSTA Best STEM Books
- Missouri and Vermont State Lists
- Junior Library Guild Selections



12 starred reviews

Double Crossed: The WWII
Spies Who Saved D-Day



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