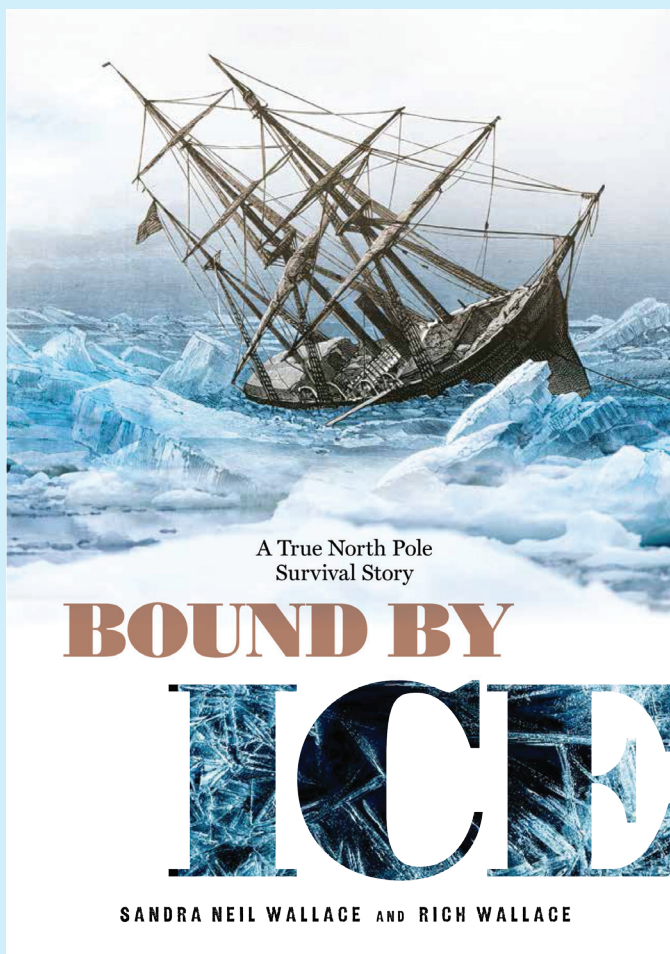


Educator's Guide



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About the Book

In *Bound by Ice*, Sandra Neil Wallace and Rich Wallace unearth a riveting tale from America's "Arctic Fever" days following the Civil War. Using journal entries and original documents, the authors recreate the amazing true story of the *Jeannette* and her attempt to reach the North Pole.

Students will be amazed by the perseverance of the *Jeannette*'s crew as the expedition repeatedly encounters obstacles and calamities—from inaccurate maps and mysterious ailments to unyielding ice and treacherous terrain. This guide is designed to enhance their reading of the book and to encourage them to learn more about the early days of polar exploration.

Common Core abbreviations used in this guide:

RI—Reading: Informational Text

W—Writing

L—Language

SL—Speaking & Listening



On an earlier trip to the Arctic, the *Jeannette* (then called the *Pandora*) was also trapped by ice.

Courtesy of the U.S. Naval Academy Museum, Annapolis, MD

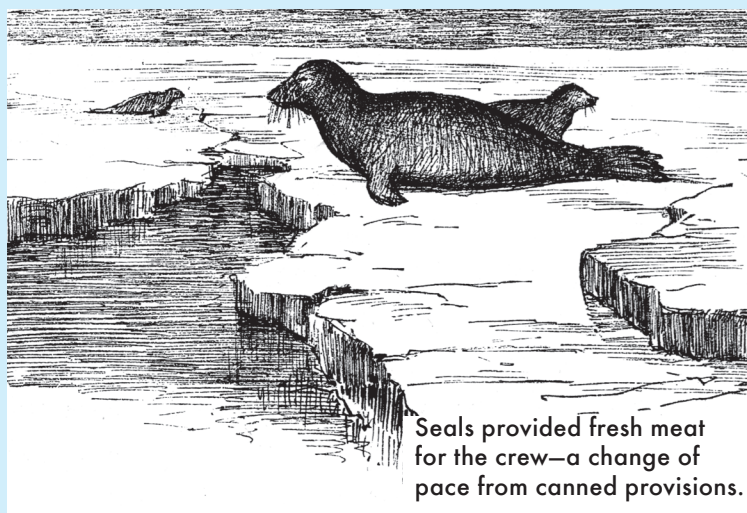
Pre-reading Activity

Look at the map at the beginning of the book. What do you know about this part of the world? Imagine what traveling in the Arctic Ocean in 1879 might have been like. (CCSS Literacy SL 5.1)

Discussion Questions and Research

- Even though the expedition set sail in 1879, the book begins with an incident on June 11, 1881. What happened that day?
[CCSS Literacy RI 5.1]
- George De Long was chosen to be the commander of the *Jeannette*. What was De Long's childhood like? During the Civil War, what was he doing? [CCSS Literacy RI 5.1]
- Who was August Petermann? What role did he play in the *Jeannette*'s voyage? What were his credentials? [CCSS Literacy RI 5.1]
- At the start of chapter 3, De Long says goodbye to his wife Emma as a large crowd watches the *Jeannette* set sail from San Francisco. The authors give a brief description of each crew member. Why was De Long concerned about the navigator, John W. Danenhower? Who was Jerome Collins, and what materials did he bring on the ship? What was Raymond Lee Newcomb's job? Why was De Long so pleased to have George Melville as his chief engineer?
[CCSS Literacy RI 5.1 and 5.3]
- For a voyage of this magnitude, the *Jeannette* had to have sufficient supplies, including coal, food, tools, and more. Once the voyage was underway, the ship stopped in Alaska where "De Long loaded up with forty dogs for pulling sleds, six tons of dried fish to feed those dogs, sealskin clothing for the crew, and other supplies" (page 35). In addition to the original twenty-four crew members, De Long hired two more crew members in Alaska. Who were they? What would their jobs be? [CCSS Literacy RI 5.1]

- What happened on September 5, 1879—less than two months after the *Jeannette* left San Francisco? [CCSS Literacy RI 5.1]
- On September 6, De Long wrote in his journal: “As far as the eye can range is ice, and not only does it look as if it had never broken up and become water, but it also looks as if it never would” (page 41). What is the ice doing to the ship? What are De Long’s plans for the winter? [CCSS Literacy RI 5.1]
- Although the crew can see Herald Island, they cannot reach it. Why? [CCSS Literacy RI 5.1]
- Unsure of how long the *Jeannette* would be trapped in the ice, the crew gets to work adding to their stores. How do they get additional food? [CCSS Literacy RI 5.1]



Voyage of the Jeannette, Volume 1

- While the men on the *Jeannette* had enough food, water for drinking was a concern. Why? How did George Melville, the chief engineer, work to solve their water problem? [CCSS Literacy RI 5.1]
- During their first winter trapped in the ice, Captain De Long was anxious about the movement of the ice floes: “In the back of the captain’s mind, as always, was a nagging awareness that the ship might crash to the bottom of the ocean before summer came”

(page 57). What happens when the ice squeezes the ship? What does the crew have to do to keep the ship from sinking? Describe the conditions the crew endures while making repairs.
[CCSS Literacy RI 5.1]

- In August of 1880, “De Long was bewildered by the massive expanse of ice, which seemed more permanent than anyone had believed” (page 74). How far has the ship traveled in a year? What happened to De Long’s plan of turning back and returning “a leaking ship to the United States” (page 62)? [CCSS Literacy RI 5.1]
- On May 16, 1881, the *Jeannette* drifted toward an island. How long had it been since the crew had seen land? [CCSS Literacy RI 5.1]
- They christened the island Henrietta Island and sent several crew members and dogs to explore it. Describe the journey to the island. What did the crew members find there? What happened on their trip back to the *Jeannette*? [CCSS Literacy RI 5.1]
- What illness affected the entire crew in chapter 13? How did they get sick? [CCSS Literacy RI 5.1]
- In June of 1881, the ice pilot, William Dunbar, told Captain De Long that the *Jeannette* would “either be under the floe or on top of it before to-morrow night” (page 97). How did the crew prepare for the sinking of the ship? What were their plans once the ship was lost? [CCSS Literacy RI 5.1]
- As the crew headed toward the New Siberian Islands, what changes did they have to make to their original plans? Why was traveling more difficult in June than at any other time of year? [CCSS Literacy RI 5.1]
- On July 11, 1881, the crew spotted an island, but it took them over two weeks to reach it. They named it Bennett Island and planned to spend a week there “repairing the boats and filling up on bird stew” (page 111). What did the crew do next? What was their primary method of travel? [CCSS Literacy RI 5.1]

- On September 12, 1881, “they’d reached the southern end of the ice, and before them lay a ninety-mile stretch of raging ocean” (page 119). Three boats—two cutters and a whaleboat—set off for the mainland. How did the boats fare in the ocean? [CCSS Literacy RI 5.1]
- “After ninety-six hours at sea, the whaleboat’s crew finally collapsed on a beach, unsure of where they’d landed. It was September 16” (page 125). George Melville and the nine other members of the whaleboat crew had “survived an impossible ordeal” (page 124). Where were they? What did they find there? What did they believe happened to the two cutters? What were they astonished to learn on October 29? [CCSS Literacy RI 5.1]
- De Long wrote a letter on September 19, 1881. What did the letter say? What were the prospects like for him and the crew from his cutter? Why was traveling more difficult for them than it was for the whaleboat crew? [CCSS Literacy RI 5.1]
- As they trudged onward in search of a settlement, worsening health conditions and a lack of supplies worried De Long’s crew. What did Alexey do to lift their spirits? As the days passed, how did the notes in De Long’s journals reveal that the crew’s chances for survival were diminishing? [CCSS Literacy RI 5.1]
- “[H]unger and deep snow soon made walking almost impossible. More men were breaking down . . .” (page 139). De Long asked William Nindemann to choose a fellow crewman and “make a forced march” (page 139) to find help for the others. Eventually, Nindemann and Louis Noros reached the village of Bulun with help from some Natives. Who else did they meet in Bulun? What became of De Long and the crew members who stayed behind? [CCSS Literacy RI 5.1]
- After the surviving crew members “spent part of the winter in relative comfort” (page 148) in Yakutsk, Melville returned to Bulun to search again for De Long and his party. In late March of 1882, what did they find? What did De Long record on the final page of his journal? [CCSS Literacy RI 5.1]



Thirteen survivors of the *Jeannette* gathered in the Siberian village of Yakutsk for the winter. Shown here, back row, from left: Raymond Newcomb, Herbert Leach; center row: John Lauterbach, George Melville, Aneguin; bottom row: William Nindemann, Frank Mansen. (The others in Yakutsk were Louis Noros, Henry Wilson, Charles Tong Sing, John Danenhower, James Bartlett, and Jack Cole.)

Courtesy of the U.S. Naval Academy Museum, Annapolis, MD

- Melville received a hero's welcome when he arrived in New York City on September 13, 1882. What had he "guarded . . . fiercely for the past six months" (page 160) and presented to De Long's wife, Emma? How did Melville feel about Commander De Long? [CCSS Literacy RI 5.1]
- In the epilogue, the authors reveal that of the thirty-three men who set sail for the North Pole, only twelve survived. What did the expedition accomplish? Why was it so important to De Long that the logbooks survive? [CCSS Literacy RI 5.8]

Curriculum Connections

- Throughout the book, the authors make reference to the two Yup'ik explorers, Alexey and Aneguin. What were some of the rituals they shared with the crew of the *Jeannette*? How were they invaluable to the expedition? [CCSS Literacy SL 5.2]
- The monotony of the food choices had the crew fantasizing about their favorites from home: “De Long craved fried oysters, while Melville and Dr. Ambler laughed about eating an entire duck or a turkey or a goose. Chipp joked that they should all be satisfied with ‘a ten-cent plate of hash’” (page 48). Imagine you were a crew member on the *Jeannette*. Write a diary entry about the foods you would have missed the most. [CCSS Literacy W 5.3]
- Raymond Newcomb was “the ship’s taxidermist and naturalist” (page 50). What does that mean? What type of work did he do? [CCSS Literacy L 5.4 and RI 5.1]
- On June 3, 1880, De Long wrote: “As to there being any warm current reaching to a high latitude, I very much doubt. We have found none. . . . I pronounce a thermometric gate-way to the Pole a delusion and a snare” (page 72). Later in the book, the authors note that “De Long had found that Petermann was wrong about many things: Wrangel Land didn’t extend very far north and certainly didn’t come close to Greenland; the Kuro Siwo current ran out of steam well before reaching the polar region; and there were virtually no sources of drinkable water on the ice” (page 87). Later, when Melville and his crew from the whaleboat reached land, he wrote, “Bitterly we cursed Petermann and all his works which had led us astray” (page 127). How do you think De Long felt about the maps and predictions of the “esteemed geologist” (page 24) August Petermann? Why were Petermann’s maps unhelpful? [CCSS Literacy SL 5.1]
- George Melville once said “[i]f men must die, why not in honorable pursuit of knowledge? Woe, woe, to America when the young blood

of our nation has no sacrifice to make for science” (page 169). What do you think of Melville’s words? Explain in an essay why you agree or disagree with him. [CCSS Literacy W 5.9]

Extra Credit

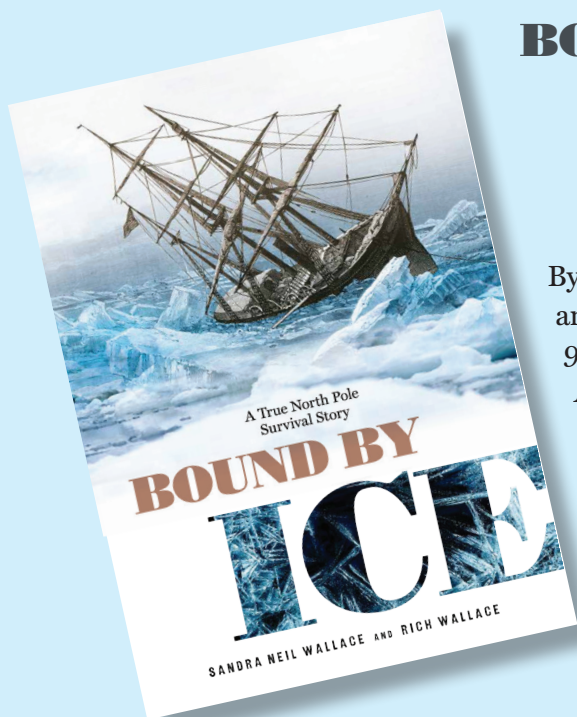
- The authors describe Gordon Bennett Jr., the owner of the *New York Herald* newspaper, as someone who would “publish nearly anything if it would generate a buzz, and he didn’t hesitate to cause newsworthy events, or even to make them up” (page 16). Are you surprised at the stunts Bennett pulled nearly 150 years ago? Think about the news today. How do news outlets generate “buzz” today?
- George Melville called scurvy in his journal “the bane of the Arctic voyager” (page 84). What is scurvy? Why did sailors worry about it? What was the cure for scurvy?
- “De Long found a suitable ship named the *Pandora* in England. . . . The ship was renamed the *Jeannette* . . . [and] De Long piloted it on a six-month trip around South America” (page 26). Find England, South America, and San Francisco on a map or globe. Why do you think the trip took six months? “After traveling eighteen thousand miles, the *Jeannette* reached San Francisco two days after Christmas in 1878” (page 28). What monumental construction project completed in 1914 forever changed how ships traveled from the Atlantic Ocean to the Pacific Ocean?
- At the start of chapter 7, the authors imagine Captain De Long looking ahead to when the ice might finally clear: “Summer seemed a long way off—the sun hadn’t risen above the horizon for more than two months in what seemed like an endless, dark winter” (page 57). This phenomenon is called polar night. Why does it occur? What is the opposite phenomenon that occurs in the summer above the Arctic Circle?

Crewmen struggle ashore at the
newly discovered Bennett Island.

Voyage of the Jeannette, Volume 2:
from a design by M. J. Burns,
engraved by George T. Andrew







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By Sandra Neil Wallace
and Rich Wallace

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