

**Spring 2025**

GRADE 8

**ENGLISH LANGUAGE ARTS/  
LITERACY**

Today you will read excerpts from “Mira on the Ice” and “The Beadwork.” As you read, you will answer questions and write an essay.

*from Mira on the Ice*

*by Evan Griffith*

- 1 Mira momentarily forgot the cold as the barge anchored in the channel near the edge of the ice sheet. Through the haze of smoke belching from the barge’s stacks, she saw the jagged white shore glistening in the morning light.
- 2 “Ready?” said her uncle, who stood beside her on the deck, bundled in faux ice lynx fur. He already knew the answer, but Mira gave it anyway: “Yes.” And again: “Yes.”
- 3 When her uncle and the other scientists climbed into the rowboat, Mira staked her spot among them, ignoring wary looks from the adults who thought a 12-year-old girl had no place on the Survey. She gripped the wooden seat to steady herself as the merchants lowered the rowboat roughly down into the channel. . . .
- 4 When they reached the ice’s edge, two scientists climbed out gingerly, testing the sheet with their spiked boots. Then they dragged the rowboat onto the ice. Mira’s uncle offered her a gloved hand. “Watch your step,” he said. “Stay close. Remember, the East Gale can hit anytime. And . . .” He reached into his pack with a grin. “Lend a hand, won’t you?”
- 5 He placed a small sack in her hands. Inside was a magnifying glass, tweezers, and a few specimen jars with mesh lids. All of the mammals of the Great Ice Sheet—including the ice lynx—were now extinct, Mira knew. But the ice was still home to cold-hardy insects and bugs that the scientists collected for the Academy’s museum.
- 6 Mira couldn’t imagine a more beautiful gift. She had expected to shadow her uncle, not make collections of her own. “Thank you,” she breathed, tying the sack to her pack of emergency gear. . . .
- 7 She lay flat on the ice, peering into a crevice with the magnifying glass. At first, she saw nothing—then, like a secret world coming into focus, there were wriggling ice worms, scuttling blue beetles, delicate crystalline spiders. Hands shaking with joy, Mira plucked the creatures out of the crevice with the tweezers and dropped them into her jars. . . .

- 8 Mira went from crevice to crevice, then, thinking how impressed the scientists would be when they saw how many specimens she was collecting. She imagined what they might say: “You have a bright future ahead of you at the Academy!”
- 9 She was so immersed in the teeming world of ice bugs that she didn’t notice when the wind began to whistle, or when the snow began to stir. It was the panicked shouting among the scientists that finally made her look up, but by then it was too late: The East Gale was already upon them.
- 10 A roaring wave of wind and snow washed everything out of sight and chilled Mira to the bone. She couldn’t see anything, couldn’t hear anything beyond the scream of the gale. She could only stand frozen with fear until she remembered what her uncle had told her to do if they were caught in a storm.
- 11 In the blinding snow she searched her pack for the flare . . . —and it was just as her hand closed around it that she saw the silhouette ahead of her.
- 12 She called out to it, lurched toward it—it had to be her uncle or another scientist—but no. The shape wasn’t right. It wasn’t . . . human.
- 13 The gale swirled fiercely around Mira and soon she found herself in the eye of the storm: a small clearing surrounded by a churning wall of white wind. And there, a stone’s throw away, stood something impossible. Something that shouldn’t—*couldn’t*—exist. But there it was: brilliant white fur, striped with silver; pale blue eyes. . . .
- 14 In an island of quiet in the heart of the East Gale, Mira and the ice lynx stood perfectly still, eye to eye.
- 15 Fear and wonder braided together into a feeling Mira couldn’t name, but there was excitement, too—excitement bordering on dizziness. This was a discovery beyond her wildest dreams. There hadn’t been a sighting of an ice lynx for decades.
- 16 If she could capture the lynx, or alert the scientists . . .
- 17 Looking into the lynx’s unblinking eyes, she was suddenly aware of her pounding heart, her breath, her bristling nerves. She was overcome with the sensation that she wasn’t sure where she ended and the lynx began—like the gale was blurring the boundaries of her body, until she was part of the snow and the wind and the lynx and the bugs and worms, too. As the gale raged around them, Mira hung suspended between one moment and the next, feeling at once big and infinitesimally small.

- 18 Then the muffled crack of a flare, a faint starburst in the sky—but not Mira’s. The lynx crouched, ears pricked and lips curled around icpick teeth. Mira stumbled back, feeling the weight of her body again. The eye of the gale collapsed, and snow whipped between her and the lynx. The creature became a silhouette again, then disappeared entirely.
- 19 The gale died as quickly as it had come. In the space of a few ragged breaths, the snow settled and the world came back into focus. Mira saw scattered scientists dusting snow off their coats—then her uncle, running to her, inspecting her. But the lynx was nowhere to be seen.
- 20 “Thank goodness you’re OK!” her uncle said. “Have you found anything yet?”
- 21 Mira looked behind her, where the lynx had stood; opened her mouth, then closed it. The words would be easy: *Yes! Something impossible! Something incredible!*
- 22 Instead, she shook her head.
- 23 “Ah, well,” said her uncle, patting her on the shoulder. “Collection isn’t as easy as it looks! But you’ll get the hang of it.”
- 24 When he turned away, Mira stood unmoving for a while, feeling like she was slowly waking from a dream. Then she found the nearest crevice, knelt down, and gently emptied the contents of her jars into the ice with sure, steady hands.
- 25 The scientists got back to work, but for the rest of the Survey, Mira only walked across the sheet. She moved slowly now, and softly, reveling in the quiet stillness, learning how much grace it took to step lightly on the ice.

From “Mira on the Ice” by Evan Griffith, *Muse Magazine*, January 2024. Cricket Media, Inc. Used by permission.

1. This question has two parts.

**Part A**

How does meeting the ice lynx affect Mira’s behavior in the excerpt from “Mira on the Ice”?

- A. She realizes the danger she was in and focuses on the task of collecting bugs.
- B. She decides to stop exploring and wonders whether her discovery was real.
- C. She questions her skills in contributing specimens to the collection survey.
- D. She views animals as fellow living creatures rather than as specimens for study.

**Part B**

Which detail from the story **best** supports the answer to Part A?

- A. “If she could capture the lynx, or alert the scientists . . .” (paragraph 16)
- B. “ ‘Collection isn’t as easy as it looks! But you’ll get the hang of it.’ ” (paragraph 23)
- C. “When he turned away, Mira stood unmoving for a while, feeling like she was slowly waking from a dream.” (paragraph 24)
- D. “She moved slowly now . . . learning how much grace it took to step lightly on the ice.” (paragraph 25)

2. This question has two parts.

**Part A**

In the excerpt from “Mira on the Ice,” which statement **best** describes how the difference in point of view between Mira and the reader creates suspense in paragraph 17?

- A. Mira is aware of how dangerous the storm is, but the reader worries she may not get to safety in time.
- B. Mira is excited to interact with the lynx, but the reader is concerned because Mira is inexperienced.
- C. Mira feels a powerful connection with the lynx, but the reader worries that Mira is not fully aware of the danger she is in.
- D. Mira is frightened by the encounter with the lynx, but the reader knows she will make it back to the group.

**Part B**

Which phrases from paragraph 17 **best** support the answer to Part A? Select **two** correct answers.

- A. “Looking into the lynx’s unblinking eyes.”
- B. “she was suddenly aware of her pounding heart, her breath, her bristling nerves”
- C. “she wasn’t sure where she ended and the lynx began”
- D. “Mira hung suspended between one moment and the next.”
- E. “feeling at once big and infinitesimally small”

*from* The Beadwork

*by Zitkala-sa*

- 1 Soon after breakfast mother sometimes began her beadwork. On a bright, clear day, she pulled out the wooden pegs that pinned the skirt of our wigwam<sup>1</sup> to the ground, and rolled the canvas part way up on its frame of slender poles. Then the cool morning breezes swept freely through our dwelling, now and then wafting the perfume of sweet grasses from newly burnt prairie.
- 2 Untying the long tasseled strings that bound a small brown buckskin bag, my mother spread upon a mat beside her bunches of colored beads, just as an artist arranges the paints upon his palette. On a lapboard she smoothed out a double sheet of soft white buckskin; and drawing from a beaded case that hung on the left of her wide belt a long, narrow blade, she trimmed the buckskin into shape. Often she worked upon small moccasins for her small daughter. Then I became intensely interested in her designing. With a proud, beaming face, I watched her work. In imagination, I saw myself walking in a new pair of snugly fitting moccasins. I felt the envious eyes of my playmates upon the pretty red beads decorating my feet.
- 3 Close beside my mother I sat on a rug, with a scrap of buckskin in one hand and an awl in the other. This was the beginning of my practical observation lessons in the art of beadwork. From a skein of finely twisted threads of silvery sinews my mother pulled out a single one. With an awl she pierced the buckskin, and skillfully threaded it with the white sinew. Picking up the tiny beads one by one, she strung them with the point of her thread, always twisting it carefully after every stitch.
- 4 It took many trials before I learned how to knot my sinew thread on the point of my finger, as I saw her do. Then the next difficulty was in keeping my thread stiffly twisted, so that I could easily string my beads upon it. My mother required of me original designs for my lessons in beading. At first I frequently ensnared many a sunny hour into working a long design. Soon I learned from self-inflicted punishment to refrain from drawing complex patterns, for I had to finish whatever I began.
- 5 After some experience I usually drew easy and simple crosses and squares. These were some of the set forms. My original designs were not always symmetrical nor sufficiently characteristic, two faults with which my mother had little patience. The quietness of her oversight made me feel strongly responsible and dependent upon my own judgment. She treated me as a

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<sup>1</sup>wigwam—a type of house historically used by some North American Native communities

dignified little individual as long as I was on my good behavior; and how humiliated I was when some boldness of mine drew forth a rebuke from her!

6 In the choice of colors she left me to my own taste. I was pleased with an outline of yellow upon a background of dark blue, or a combination of red and myrtle-green. There was another of red with a bluish-gray that was more conventionally used. When I became a little familiar with designing and the various pleasing combinations of color, a harder lesson was given me. It was the sewing on, instead of beads, some tinted porcupine quills, moistened and flattened between the nails of the thumb and forefinger. My mother cut off the prickly ends and burned them at once in the center fire. These sharp points were poisonous, and worked into the flesh wherever they lodged. For this reason, my mother said, I should not do much alone in quills until I was as tall as my cousin Warca-Ziwin.

From "The Beadwork" by Zitkala-sa—Public Domain



3. This question has two parts.

**Part A**

Which theme is developed in the excerpt from “The Beadwork”?

- A. Following directions carefully is as important as being creative.
- B. Learning complex skills requires patience and direction.
- C. Mastering a craft is more enjoyable with someone else.
- D. Independent effort is more important than family support.

**Part B**

Which sentence from the story **best** supports the answer to Part A?

- A. “Close beside my mother I sat on a rug, with a scrap of buckskin in one hand and an awl in the other.” (paragraph 3)
- B. “It took many trials before I learned how to knot my sinew thread on the point of my finger, as I saw her do.” (paragraph 4)
- C. “My original designs were not always symmetrical nor sufficiently characteristic, two faults with which my mother had little patience.” (paragraph 5)
- D. “For this reason, my mother said, I should not do much alone in quills until I was as tall as my cousin Warca-Ziwin.” (paragraph 6)

4. This question has two parts.

**Part A**

What does the word ensnared mean as it is used in paragraph 4 of the excerpt from “The Beadwork”?

- A. Unfortunately missed
- B. Often avoided
- C. Deliberately wasted
- D. Accidentally trapped

**Part B**

What does the connotation of ensnared in paragraph 4 suggest about the narrator?

- A. She appreciates the effort that beautiful designs require.
- B. She has learned that there are hidden costs to her work.
- C. She is pleased with the happy hours spent on her designs.
- D. She thinks there is little benefit to creating complex work.

5. This question has two parts.

**Part A**

What do Mira’s actions in paragraphs 7 and 8 of the excerpt from “Mira on the Ice” and the narrator’s actions in paragraph 6 of the excerpt from “The Beadwork” show about each character?

- A. They are both delighted when allowed to work independently.
- B. They both immediately make mistakes.
- C. They are both nervous when learning something new.
- D. They both imagine being praised.

**Part B**

Which sentences from the stories **best** support the answer to Part A? Select one answer from **each** story for a total of **two** correct answers.

- A. “At first, she saw nothing—then, like a secret world coming into focus, there were wriggling ice worms, scuttling blue beetles, delicate crystalline spiders.” (paragraph 7, “Mira on the Ice”)
- B. “Hands shaking with joy, Mira plucked the creatures out of the crevice with the tweezers and dropped them into her jars.” (paragraph 7, “Mira on the Ice”)
- C. “Mira went from crevice to crevice, then, thinking how impressed the scientists would be when they saw how many specimens she was collecting.” (paragraph 8, “Mira on the Ice”)
- D. “I was pleased with an outline of yellow upon a background of dark blue, or a combination of red and myrtle-green.” (paragraph 6, “The Beadwork”)
- E. “There was another of red with a bluish-gray that was more conventionally used.” (paragraph 6, “The Beadwork”)
- F. “For this reason, my mother said, I should not do much alone in quills until I was as tall as my cousin Warca-Ziwin.” (paragraph 6, “The Beadwork”)

6. This question has two parts.

**Part A**

Which statement **best** describes how the text structure of the excerpts from “Mira on the Ice” and “The Beadwork” contribute to their meaning?

- A.** A problem-and-solution structure is used in “Mira on the Ice” to detail Mira’s encounter with the storm, while a descriptive structure is used in “The Beadwork” to emphasize the setting.
- B.** A structure of memory and reflection is used in “Mira on the Ice” to highlight the vivid imagery of the environment, while a problem-and-solution structure is used in “The Beadwork” to show the challenges of beadwork.
- C.** A process structure is used in “Mira on the Ice” to outline Mira’s journey across the ice, while a cause-and-effect structure is used in “The Beadwork” to explain the impact of beadwork on the narrator.
- D.** A sequential structure is used in “Mira on the Ice” to show the outcome of Mira’s learning, while a structure of memory and reflection is used in “The Beadwork” to describe the narrator’s observations while learning beadwork.

**Part B**

Which sentences from the stories **best** support the answer to Part A? Select one answer from **each** story for a total of **two** correct answers.

- A.** “Through the haze of smoke belching from the barge’s stacks, she saw the jagged white shore glistening in the morning light.” (paragraph 1, “Mira on the Ice”)
- B.** “She gripped the wooden seat to steady herself as the merchants lowered the rowboat roughly down into the channel.” (paragraph 3, “Mira on the Ice”)
- C.** “Then she found the nearest crevice, knelt down, and gently emptied the contents of her jars into the ice with sure, steady hands.” (paragraph 24, “Mira on the Ice”)
- D.** “Then the cool morning breezes swept freely through our dwelling, now and then wafting the perfume of sweet grasses from newly burnt prairie.” (paragraph 1, “The Beadwork”)
- E.** “After some experience I usually drew easy and simple crosses and squares.” (paragraph 5, “The Beadwork”)
- F.** “The quietness of her oversight made me feel strongly responsible and dependent upon my own judgment.” (paragraph 5, “The Beadwork”)

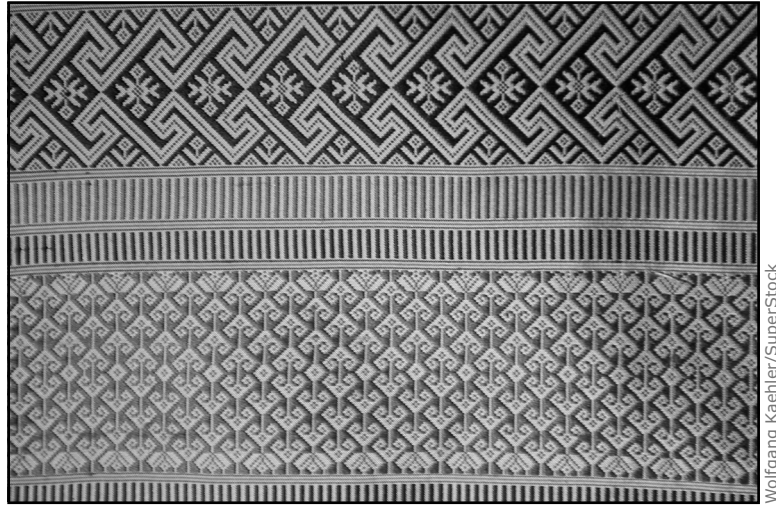
7. You have read the excerpts from “Mira on the Ice” and “The Beadwork.” Both stories depict girls facing challenges while interacting with family members.

Write an essay in which you compare the behaviors of Mira’s uncle in “Mira on the Ice” and the narrator’s mother in “The Beadwork” and explain what their behaviors suggest about them as teachers. Use details from **both** excerpts to support your essay.

Read “Threads of Tradition: Lao Textiles” and answer the questions.

## Threads of Tradition Lao Textiles

by Gloria W. Lannom



- 1 A Lao<sup>1</sup> weaver from Sam Neua sits at her loom creating a beautiful textile. Because of its complicated pattern, she may produce as little as one-half inch of cloth per day. It may take her six months to complete a length of cloth.
- 2 In Laos, weaving is women’s work. Girls are expected to learn to weave just as they must learn to be good cooks, and they start early in life. When they come home from school in the afternoon, they have to sit and weave at the loom set up underneath the house. (Most houses are built on stilts.) Boys, on the other hand, must go fishing for food and collect wood for the cooking fires.
- 3 Lao Neua weavers of Sam Neua in northeastern Laos have long been highly regarded for their beautiful textiles of cotton *warp* (vertical threads) and silk *weft* (horizontal threads). At one time they wove textiles only for their own families, and women dressed only in clothes made of cloth they had woven themselves. Every family developed its own special designs. When not in use, textiles were stored in covered ceramic containers to prevent damage from bugs, strong sunlight, and humidity.

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<sup>1</sup>Lao—a member of the Buddhist people who lives in or close to Laos in Thailand

- 4 From the French occupation of Laos in the first part of the 20th century up to the period following independence in 1954, fewer handmade textiles were produced because the Lao were able to buy cheap, imported, machine-made cloth, thread, and chemical dyes. When the 1970s brought war to Laos, these imported products were not available, and people returned to traditional ways of dyeing and weaving.
- 5 The civil war severely disrupted the lives of the Lao Neua. Many moved to other parts of Laos, and some became refugees in Thailand. They had no time for weaving. This meant that their traditions were in danger of being lost. To survive, they often had to sell heirloom textiles that had been handed down in their families. In recent years, aided by foreign assistance and encouragement, silk weavers have begun “picking up the threads” of their long tradition, and the intricate designs of the fantastic Mom bird and *naga* serpent are reappearing in skillfully woven cloth. Lao textiles are becoming highly sought after in the West.
- 6 Lao weavers use two kinds of looms: the body-tension or back-strap type and the frame or floor loom. In the body-tension loom, the weaver’s body maintains the tension of the warp by means of a strap around the waist, which is attached to the warp threads. In the frame- or floor-loom method, a wooden frame, instead of the weaver’s body, supports the warp and the warp threads are wound around a warp beam.
- 7 Textiles are made into clothing, blankets, and wall hangings. Everyday clothes are usually made of indigo-dyed cotton.
- 8 Lao men wear short-sleeved shirts and *sampot*, or short trousers that resemble old-fashioned Western knickers. Women wear *pha sin* sarongs (skirts)—lengths of cloth one yard wide and two yards long. Sarongs are wrapped around the waist and held in place by a belt of silver or gold metal rings. Either a blouse or a *pha beang*, a shoulder cloth or shawl wound around the chest, worn over the left shoulder and tucked under the right arm, accompanies the *sin*. Luang Prabang<sup>2</sup> women wear long-sleeved blouses, but in the south, the blouses are short or 3/4-sleeve. Both men and women wear sandals.
- 9 Lao in Vientiane and Luang Prabang weave silk *sin* with beautiful borders and *pha beang* shawls using local and imported silk yarns colored with chemical dyes.
- 10 Some women might wear two or more *sin* at a time. The newer one is worn underneath to protect it from being soiled. Younger women favor brighter

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<sup>2</sup>Luang Prabang—a town in northwestern Laos



colors and bolder patterns than older Lao women. Black, yellow, red, green, pink, purple, and orange dyes can be obtained from plants and minerals, but many weavers use chemical dyes because they do not require time and hard work to process them. Also, they resist fading from the sun.

- 11 The women of Luang Prabang wear their long hair in a *chignon* (sheen-YONE), a coiled bun, on one side of the top of their heads, while in Vientiane and the south, the chignon is worn low on the back of the neck. A hairpin keeps the chignon in place.
- 12 Laos is a land where people love jewelry—necklaces, bracelets, rings, earrings, hairpins, chains, neck rings, belts, and clothing fasteners. . . . The beautifully made gold and silver work is decorated with designs such as elephants and flowers.

“Threads of Tradition: Lao Textiles” by Gloria Lannom from FACES. © 2000 Cricket Media.

8. This question has two parts.

**Part A**

The author’s purpose for writing this article is most likely to —

- A. show the types of jewelry worn by Lao people
- B. explain why Lao people wear certain styles of clothing
- C. provide an overview of the role of weaving in Lao culture
- D. describe how Lao textile weaving was affected by conflicts

**Part B**

Which sentence from the article **best** supports the answer to Part A?

- A. “At one time . . . women dressed only in clothes made of cloth they had woven themselves.” (paragraph 3)
- B. “Textiles are made into clothing, blankets, and wall hangings.” (paragraph 7)
- C. “The newer one is worn underneath to protect it from being soiled.” (paragraph 10)
- D. “The . . . gold and silver work is decorated with designs such as elephants and flowers.” (paragraph 12)

9. This question has two parts.

**Part A**

Which word **best** describes the connotation of the word heirloom as it is used in paragraph 5?

- A. Treasured
- B. Helpful
- C. Common
- D. Fragile

**Part B**

Which phrase from paragraph 5 **best** supports the answer to Part A?

- A. "were in danger"
- B. "handed down in their families"
- C. "aided by foreign assistance"
- D. "reappearing in skillfully woven cloth"

10. This question has two parts.

**Part A**

How does the author **most** develop the idea that Lao weaving traditions were nearly lost?

- A. By sharing how Lao people preferred to buy imported goods
- B. By explaining how war affected the lives of the people in Laos
- C. By detailing how outside cultures influenced the people in Laos
- D. By revealing how Lao people used new technologies to produce goods

**Part B**

Which evidence from the article **best** supports the answer to Part A?

- A. "fewer handmade textiles were produced because the Lao were able to buy cheap, imported, machine-made cloth, thread, and chemical dyes" (paragraph 4)
- B. "The civil war severely disrupted the lives of the Lao Neua. Many moved to other parts of Laos, and some became refugees in Thailand." (paragraph 5)
- C. "Lao men wear short-sleeved shirts and *sampot*, or short trousers that resemble old-fashioned Western knickers." (paragraph 8)
- D. "but many weavers use chemical dyes because they do not require time and hard work to process them" (paragraph 10)

Today you will read three passages about codes. You will read excerpts from “Codebreaker Elizebeth Smith Friedman: A Remarkable American Spy Hunter Comes to Light,” “The Code That Couldn’t Be Cracked,” and “Knot Forgotten: Unraveling the Inca Code.” As you review these passages, you will answer questions and write a response.

*from* Codebreaker Elizebeth Smith Friedman: A Remarkable American Spy Hunter Comes to Light

*by Rachel Kehoe*

1 Throughout her career, Elizebeth Friedman would crack hundreds of codes, help establish the first cryptology division for the US War Department, and play a significant role in both world wars. But Friedman never received recognition for her work during her lifetime. She wasn’t allowed to talk about any of it; it was regarded as too sensitive and meant to be kept secret. For decades, her incredible achievements remained hidden—until recently.

**Patterns in Shakespeare?**

2 Friedman was born on August 26, 1892, in Huntington, Indiana. As a child, she loved to read poetry. William Shakespeare was her favorite writer; she was fascinated with how he used patterns in his poems. In 1915, Friedman graduated from college with a degree in English. She spent one year as a high school principal but realized she wanted something different.

3 So, Friedman traveled to Chicago in search of another job. While there, she visited the Newberry Library to see a rare first edition of Shakespeare’s plays. She met George Fabyan, a millionaire businessman and devoted Shakespeare fan. Fabyan was looking for researchers to work on a code-cracking project at his Illinois estate, Riverbank Laboratories. Fabyan believed Francis Bacon, a 16th-century scientist and philosopher, was the true author of Shakespeare’s work. He hired Friedman to find the coded clues that Bacon had concealed in the plays about his identity.

4 Friedman spent months studying codes and ciphers. But as time passed, she became convinced there were no secret messages. She confided her doubts with fellow researcher William Friedman. The two married in 1917. Years later, in 1957, the couple published a book called *The Shakespearean Ciphers Examined* that showed Bacon was not the author of Shakespeare’s work.

### **Secret Messages in World War I**

- 5 When the Friedmans shared their suspicions with Fabyan, he grew upset. It wasn't the answer he was looking for. But even he was starting to lose interest in literary ciphers as the United States was about to enter World War I. He guessed the government would soon need help decoding a different set of secret messages.
- 6 He was right about that. The invention of the radio meant that messages could travel as sound waves. These messages were transmitted in Morse code, a pattern of tones and clicks used to symbolize letters. But they were easy to intercept. To guard their secrets, the US military started encrypting messages. Suddenly, codebreaking became a valuable skill. The only problem was that the United States didn't have any decryption agencies. So, in early 1917, Fabyan asked Elizebeth and William Friedman to establish the country's first codebreaking division.

### **Breaking New Ground**

- 7 At Riverbank, Elizebeth and William were the first to apply mathematics and statistics to codebreaking. They developed several new codebreaking strategies and published them in eight booklets. These methods laid the foundation for modern *cryptology*, the science of secret messages.
- 8 In 1921, the Friedmans went to work as code breakers for the US Army in Washington, DC. Here, they created a complex cipher using pencil and paper. This meant soldiers in the field could send and receive information anywhere. Soon after, Elizebeth Friedman took a break from full-time work to write books and have a family. But requests to decode secret messages continued coming from all over the country. . . .

### **Spy Hunter**

- 9 In 1941, the United States entered World War II. Though unable to serve in the US military because she was a woman, Friedman was asked to set up a codebreaking division in what is now the Central Intelligence Agency (CIA). But there weren't enough cryptologists. . . . So, Friedman hired scientists and mathematicians—anyone who could think analytically—and taught them how to solve codes.
- 10 She was unofficially put in charge of decrypting secret communication from Mexico and South America. It took months, but Friedman and her team finally decoded messages that revealed the location of German spies!
- 11 J. Edgar Hoover, the director of the FBI, wanted to arrest the spies immediately. Friedman preferred to wait and learn more secrets. The FBI

ignored her and ordered a roundup. But some spies managed to escape. The FBI took full credit for breaking up the German spy ring; Friedman received none. She just got back to work.

### **Turning the Tide of War**

- 12 After the experience of World War I, every government recognized the need to invent machines that could encode messages. “All the countries of the world were trying to develop something that nobody else could read,” Friedman said. “They were all playing with machines.”
- 13 The most famous machine was Enigma. The German encryption device could generate billions of different codes.
- 14 It took months, but Friedman and her team broke three separate Enigma machines. Due to the secrecy of their work, she didn’t know that codebreakers in Britain had also decrypted Enigma around the same time. By December 1942, she had broken all of Germany’s new codes, decrypted more than 4,000 messages from enemy spies, and destroyed many underground networks in South America.
- 15 But Friedman’s incredible accomplishments remained hidden until 2008, nearly 30 years after she died. Wanting to keep their codebreaking secrets safe, the government classified her work as “Top Secret Ultra” and asked her to swear an oath promising her silence. Now, after the truth has been revealed, Friedman can finally be celebrated as one of the greatest codebreakers of all time.

From “Codebreaker Elizebeth Smith Friedman: A Remarkable American Spy Hunter Comes to Light” by Rachel Kehoe, Muse Magazine, January 2023. Cricket Media, Inc. Used by permission.

11. This question has two parts.

**Part A**

The author of the excerpt from “Codebreaker Elizebeth Smith Friedman” includes the section “Patterns in Shakespeare?” to —

- A. explain where Friedman first used her unique skills
- B. tell the story of how Friedman met her future husband
- C. describe how important Shakespeare was to a certain businessman
- D. shed light on the hypothesis that another author wrote for Shakespeare

**Part B**

Which detail from the article supports the answer to Part A?

- A. “a millionaire businessman and devoted Shakespeare fan” (paragraph 3)
- B. “concealed in the plays about his identity” (paragraph 3)
- C. “spent months studying codes and ciphers” (paragraph 4)
- D. “showed Bacon was not the author of Shakespeare’s work” (paragraph 4)



12. This question has two parts.

**Part A**

The author of the excerpt from “Codebreaker Elizebeth Smith Friedman” develops the central idea that Friedman did not always receive recognition for her work by —

- A. detailing how she helped the government uncover secret operations
- B. explaining why she wanted to take a break from work to start a family
- C. giving examples of how she involved others in her codebreaking operations
- D. pointing out that much of her work had to be kept secret for security reasons

**Part B**

Which detail from the article **best** supports the answer to Part A?

- A. “set up a codebreaking division” (paragraph 9)
- B. “hired scientists and mathematicians” (paragraph 9)
- C. “wanted to arrest the spies immediately” (paragraph 11)
- D. “to swear an oath promising her silence” (paragraph 15)

## *from* The Code That Couldn't Be Cracked

*by Annie Aboulion*

1 In World War II, a group of US Marines deployed the only military code known in modern history never to be cracked by the enemy. It proved key to US successes in various battles, helping the United States and the Allies to win the war. And it was all thanks to a native language—Navajo.

### **Why Navajo?**

2 After the Japanese attacked Pearl Harbor in Hawaii in December 1941, the US Marines decided they needed a new code to protect their battle communications. They wanted one that the expert Japanese code breakers would never be able to crack.

3 Philip Johnston was working in the Los Angeles water department. He was a white man raised on a Navajo reservation. He thought the complex Navajo language, spoken only in the southwestern United States, would make a perfect code. The Navajo language is tonal. This means changing the pitch of the voice can change the meaning of a sound. Only fluent Navajo speakers could hear—let alone reproduce—these complex speech patterns accurately.

4 Johnston, who had served in World War I, proposed his idea to the US Marine Corps, and the military leaders accepted it. They selected 29 Navajo recruits who were fluent in both English and Navajo to create an unbreakable new code. . . .

### **Creating the Code**

5 The Navajo code talkers didn't just speak their language and call it a day. They crafted a multi-layer code, a riddle that would sound like nonsense even to native Navajo speakers! For each letter of the English alphabet, they picked an English word that starts with that letter, then translated it into Navajo. For example, the Navajo word *wol-la-chee*, which means ant, represented the letter A. Next, to speed things up during the transmitting process, they substituted Navajo words for commonly used combat terms, like types of planes and officer ranks. That way they wouldn't waste precious seconds on the battlefield spelling out those words one letter at a time.

6 With 211 word associations, including the alphabet system, the code talkers practiced and practiced using their code. One of them, Private First Class Chester Nez, recalled in his memoir *Code Talker*, "In the heat of battle, not one of us could afford to be rattled. We studied till we were exhausted, then studied some more."

### **The Navajo Code in Action**

- 7 The code talkers were first put to the test in November 1942 on Japanese-controlled Guadalcanal, one of the Solomon Islands in the South Pacific. Nearly 70 years later, Nez still remembered the first transmission he and his partner, Private First Class Roy Begay, sent on the battlefield. They used portable TBX radios, which required them to work in pairs. Begay cranked the radio’s generator to power it wirelessly while Nez spoke into the radio’s microphone. . . . A code talker on another part of the island received the message. He translated Nez’s coded message into English in his head and wrote down [a] . . . decoded message. . . . A few moments later, Nez and Begay saw an explosion indicating that their fellow Marines received the message and successfully hit the Japanese target. The Navajo code worked!
- 8 More than 400 Navajo code talkers served the United States throughout World War II, and they never missed a beat. During a month-long battle on the Japanese island of Iwo Jima, six code talkers transmitted more than 800 encoded radio messages with zero error!

From “The Code That Couldn’t Be Cracked” by Annie Aboulian, Muse Magazine, January 2023. Cricket Media, Inc. Used by permission.

13. This question has two parts.

**Part A**

Read this sentence from paragraph 8 in the excerpt from “The Code That Couldn’t Be Cracked.”

More than 400 Navajo code talkers served the United States throughout World War II, and they never missed a beat.

The author’s use of figurative language in this sentence shows that the code talkers were —

- A. always on duty during the war
- B. accurate in their transmissions
- C. important in spreading wartime news
- D. the main reason the war was successful

**Part B**

Which detail from paragraph 8 of the article supports the answer to Part A?

- A. “served the United States”
- B. “throughout World War II”
- C. “During a month-long battle”
- D. “with zero error”

14. This question has two parts.

**Part A**

Which claim does the author develop and support with sound reasoning in the excerpt from “The Code That Couldn’t Be Cracked”?

- A. The Navajo language made the perfect code.
- B. The Southwest was the only place the Navajo language was spoken.
- C. The Japanese could not break a code based on the Navajo language.
- D. The Navajo language had tonal elements only fluent speakers could hear.

**Part B**

Which detail from the article **best** supports the claim from Part A?

- A. “They wanted one that the expert Japanese code breakers would never be able to crack.” (paragraph 2)
- B. “He was a white man raised on a Navajo reservation.” (paragraph 3)
- C. “This means changing the pitch of the voice can change the meaning.” (paragraph 3)
- D. “They selected 29 Navajo recruits who were fluent in both English and Navajo.” (paragraph 4)

## *from* Knot Forgotten: Unraveling the Inca Code

by Nick D'Alto

1 For years, scientists have wondered whether intricately knotted strings prepared by the Inca might act as a form of writing and preserve the history of this now once-powerful civilization. Could the knots in the strings represent letters, words, or numbers? Now, scientific codebreakers are examining these strings more closely. They are using modern computers, memories from Inca descendants, and old-fashioned detective work to unravel the Inca code.

### **Knotted Strings**

2 The knotted strings are called *kipu* (pronounced *KEY-poo*). Manny Medrano is a PhD student at Harvard University in Massachusetts and an expert in this ancient form of communication. “Khipu simply means knot in the Andean language of Quechua,” he says. “The strings are sometimes referred to as talking knots.”

3 Each khipu has a thick primary cord, spun from cotton or wool from a llama or alpaca. A series of thinner cords dangle beneath it. Just a few cords can be found on the simplest khipu, while more complex versions might contain hundreds. “Something like a rope mop!” Medrano says with a grin. Each of these hanging cords is tied in a series of neat, precise knots. Originally dyed in vibrant colors, surviving khipus are now faded with age.

### **Khipu Knots and Numbers**

4 “We know the knots on most khipu strings record numbers,” Medrano says. About a century ago, Leslie Leland Rock, a researcher from Columbia University in New York City, rediscovered how khipu knot math works.

5 Each kind of knot stands for a different number. A knot tied like a figure-eight represents one, while the number of turns tied into larger knots signifies that number. “Above these knots,” Medrano says, “single knots mark the number of tens, hundreds, and thousands.” So khipus look something like an abacus. . . .

6 Why so many numbers? The ancient Inca had to run an empire. “This was a vast civilization that generated vast amounts of data it needed to keep track of,” Medrano says. From precise census data for each town, to the contents of storehouses, tax records, and the numbers of fields and streams, the Inca kept track of their information. “It was all counted,” Medrano notes. “The Inca were outstanding data managers.”

7 At the time, specially trained Inca scribes recorded all this information into the khipus, using the knot code. Then relay runners carried the coded messages

along the road system, and back to the Inca capitol. All this work was done to keep Inca rulers well informed. “The khipus made moving and storing data easy,” Medrano says, “much like our spreadsheets today.” Some have called the Inca system sort of a Bronze Age internet for coding and transporting data.

### **Gone with the Spanish**

- 8 That is, until this internet went dark. After the Spanish conquered the Inca empire in the 1530s, khipus remained in use for a time. Then the Spanish replaced them with their own record-keeping systems. They destroyed the khipus to break the Inca’s spirit, and in the process the secrets to deciphering them vanished, too. Today, most surviving khipus are preserved in museum collections.
- 9 To better understand these objects, modern researchers are working to bring ancient Inca khipus into our age. They’ve created computerized databases in which they record the size, location, and other details about each knot on each string. A computer program can then search these “digital khipus” for repeating patterns—much the way human codebreakers try to break a code.
- 10 Even tiny variations among different knots and strings can reveal important new knowledge. For example, “some khipu knots were tied right-to-left, while others were tied left-to-right,” Medrano explains. “Some strings were dyed red, others blue. Some strings faced forwards, others backwards.” To modern eyes, all these yes/no differences suggest a kind of binary system—much like how our computers use ones and zeroes to store information. Could the Inca have been storing extra information in their khipus this way, too?

### **“A Kind of Code”**

- 11 “It would be very tempting to say, ‘Khipus work just like our computers!’ ” Medrano says. “But it’s not that easy. It turns out khipus don’t use a simple binary system.” Still, he says, “there is a kind of code here.”
- 12 Evidence already suggests this code records more than just numbers. “According to Spanish chroniclers, the Inca claimed that the khipus could record the story of a person’s life, or of an entire people,” says Medrano. Now, modern research is beginning to confirm this idea and show that these knotted strings could hold the names of Inca people and places.

From “Knot Forgotten: Unraveling the Inca Code” by Nick D’Alto, Muse Magazine, January 2023. Cricket Media, Inc. Used by permission.

15. This question has two parts.

**Part A**

The author of the excerpt from “Knot Forgotten” connects the use of khipu knots to computers by —

- A. claiming that they both use a binary system
- B. detailing how they both use a digital network
- C. showing how large amounts of data are stored in both of them
- D. explaining that only experts can fully understand both of them

**Part B**

Which detail from the article **best** supports the answer to Part A?

- A. “knot tied like a figure-eight” (paragraph 5)
- B. “precise census data for each town, to the contents of storehouses” (paragraph 6)
- C. “recorded all this information into the khipus, using the knot code” (paragraph 7)
- D. “a Bronze Age internet for coding” (paragraph 7)



16. This question has two parts.

**Part A**

The author of the excerpt from “Knot Forgotten” includes the first sentence of paragraph 8 to —

- A. introduce a new technology used to keep records and data
- B. shift the focus of the article to show how khipu knots disappeared
- C. begin describing that most Inca records are now kept safely in museums
- D. start an explanation of why Spanish explorers wanted to get rid of khipu knots

**Part B**

Which detail from paragraph 8 in the article supports the answer to Part A?

- A. “khipus remained in use for a time”
- B. “the Spanish replaced them with their own record-keeping systems”
- C. “They destroyed the khipus.”
- D. “Today, most surviving khipus are preserved in museum collections.”

17. This question has two parts.

**Part A**

Which skill do the authors of the excerpts from “Codebreaker Elizebeth Smith Friedman” and “The Code That Couldn’t Be Cracked” **both** suggest is needed to successfully use codes?

- A. Desire to teach others
- B. Willingness to practice
- C. Ability to analyze information
- D. Strong knowledge of language

**Part B**

Which details from the articles support the answer to Part A? Select one answer from **each** article for a total of **two** correct answers.

- A. “she was fascinated with how he used patterns in his poems” (paragraph 2, “Codebreaker Elizebeth Smith Friedman”)
- B. “They developed several new codebreaking strategies.” (paragraph 7, “Codebreaker Elizebeth Smith Friedman”)
- C. “She was unofficially put in charge.” (paragraph 10, “Codebreaker Elizebeth Smith Friedman”)
- D. “they needed a new code to protect their battle communications” (paragraph 2, “The Code That Couldn’t Be Cracked”)
- E. “Only fluent Navajo speakers could hear.” (paragraph 3, “The Code That Couldn’t Be Cracked”)
- F. “they wouldn’t waste precious seconds” (paragraph 5, “The Code That Couldn’t Be Cracked”)

18. This question has two parts.

**Part A**

Which central idea can be found in the excerpts from **both** “Codebreaker Elizebeth Smith Friedman” and “Knot Forgotten”?

- A. Different colors could be used to visually distinguish various ideas.
- B. The strategic arrangement of information is the basis for many coding systems.
- C. Countries will invest in those who can crack codes for the safety of their citizens.
- D. Recordkeeping is important for storing and preserving information for a civilization.

**Part B**

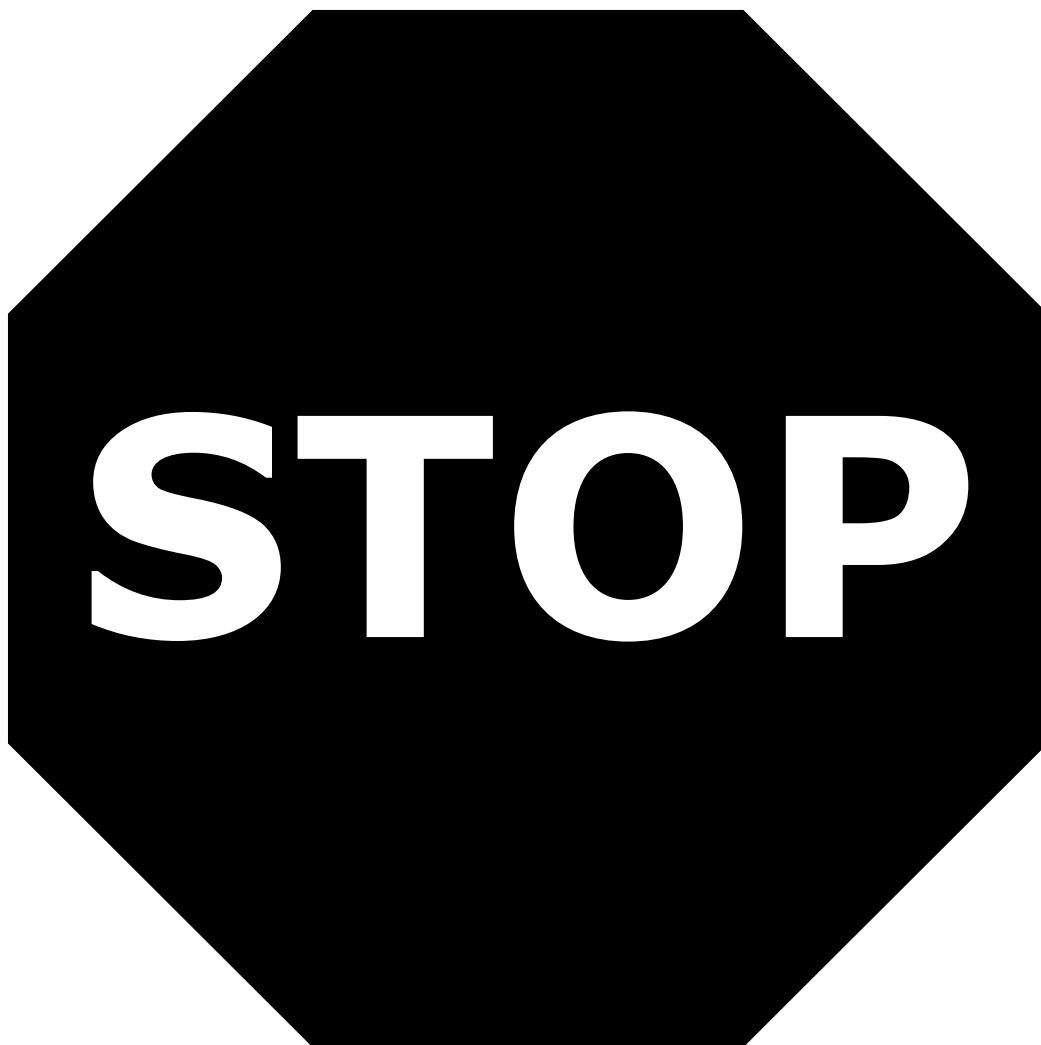
Which details from the articles support the answer to Part A? Select one answer from **each** article for a total of **two** correct answers.

- A. “Fabyan was looking for researchers to work on a code-cracking project at his Illinois estate.” (paragraph 3, “Codebreaker Elizebeth Smith Friedman”)
- B. “the government would soon need help decoding a different set of secret messages” (paragraph 5, “Codebreaker Elizebeth Smith Friedman”)
- C. “These messages were transmitted in Morse code, a pattern of tones and clicks” (paragraph 6, “Codebreaker Elizebeth Smith Friedman”)
- D. “the number of turns tied into larger knots signifies that number” (paragraph 5, “Knot Forgotten”)
- E. “ ‘This was a vast civilization that generated vast amounts of data it needed to keep track of.’ ” (paragraph 6, “Knot Forgotten”)
- F. “Then relay runners carried the coded messages along the road system” (paragraph 7, “Knot Forgotten”)

- 19.** You have read the excerpts from “Codebreaker Elizebeth Smith Friedman,” “The Code That Couldn’t Be Cracked,” and “Knot Forgotten” about different kinds of codes.

Write an essay explaining how each author supports the idea that coding messages is a valuable skill that can help society. Use details from all **three** articles to support your essay.





**Please let your teacher know that you have completed your test.**



