

Name: _____

The Transcontinental Railroad

*The Chinese Experience from
Golden Mountain to Golden Spike*



STORYPATH®

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PORTFOLIO

The Transcontinental Railroad

Episode 1

- 1. Iron Horse5
- 2. Working Together on the Setting6
- 3. Obstacle and Solution7

Episode 2

- 4. Land of the Golden Mountain8
- 5. Why Do People Emigrate?12
- 6. Handbill Guide13
- 7. Chinese Traditions.14
- 8. Making the Character.....15
- 9. Farewell Letter16

Episode 3

- 10. Life after the Civil War.....17

Episode 4

- 11. Hock Sun's Story18

Episode 5

- 12. Letter Home20

Episode 6

- 13. Do the Math22
- 14. Reflection on the Ten-Mile Race23
- 15. Word Bank.....24

- Glossary.....25



IRON HORSE

Now for ourselves we want to see this “iron horse” snorting and puffing through one or more of the many passes of the Sierra Nevada Mountains, and he rushes on, on, beneath the shadows of our densely timbered forests, or darts across or down our beautiful and fertile valleys. . . . We want a Railroad.

What care we if this or that political party make a hobby, jump astride it, and seek to ride into power upon it; all we say is—give us the Railroad, give it to us somebody—give it to us anybody—give it to us everybody. It is the RAILROAD that we want; and we will not quarrel about the source from whence it comes. We don’t care who gives it, who pays for it, or whether it pays for itself—to use that is the lesser important, altogether. Give us the Railroad, gentleman senators and congressmen, and give it to us at once. No shirking, no shuffling, no log-rolling delay, no quibbling, no subterfuges, nor substitutes. We want the Railroad. Yes, we THE PEOPLE want it, and must have it. And please not forget that we want it without delay! Progress prays for it—Commerce waits for it—Peace or War demands it. Then why not give it?

Source: “The Iron Horse.” *Hutchings’s Illustrated California Magazine*. Vol. 1. San Francisco: Hutchings and Rosenfield, 1857.

1. Why do you think the author wrote the article?

2. Why do you think the author uses the term *iron horse* to describe the train?

3. Why does the author capitalize certain words?

4. If you lived in 1859, do you think you would be in favor of building a railroad across the United States? Why or why not?

Note: The term *Congressmen* is a reminder that at that time only men served in Congress. Women didn’t even have the right to vote.



WORKING TOGETHER ON THE SETTING

Directions: As a group, discuss each of the questions below. Individually respond to each of the following questions.

☐ What geographic features will your group make? List them.

☐ It is important that everyone in the group does his or her fair share. What will each person make?

☐ Each item that is made has to fit together. How will you work together so this happens?

☐ Being a good listener is important in a group. How will you know if you are listening carefully to each other?

☐ What if you disagree with a member of your group? How will you handle the disagreement?

When you are done with the setting, read your responses above and decide how successful you were in working together. Grade yourself by giving a score on your performance in the box at the left.

3: Consistently demonstrated this behavior.

2: Mostly demonstrated this behavior

1: Inconsistently demonstrated this behavior or had to be reminded about the behavior expectations



DATE _____

OBSTACLE AND SOLUTION

Directions: Draw a picture of an obstacle that will be a challenge to railroad builders. Or take a photo of an obstacle in the setting you constructed. Copy the photo and place it in the box below. Explain why it will be an obstacle to building a railroad through the Sierra Nevada.

Picture/Photo	Writing

If you were a railroad builder, what solution would you have to overcome the obstacle?
Write or draw a solution.

Assessment: Drawing or photograph reflects an obstacle for building the railroad, and explanation conveys information clearly and accurately about the obstacle in relation to the building of the railroad. The solution is plausible to the obstacle and railroad building.



LAND OF THE GOLDEN MOUNTAIN

Time: Winter of 1865

Place: Small village in the Pearl River Delta, Kwangtung (Canton) Province, China

Hock Sun rolled over on his mat and bumped into his younger sister on one side and his younger brother on the other side. At age 16, he didn't like sharing a bed with them, but their home was small and there was little space for laying out the mat for sleeping. He shivered in the cold night, having only one thin blanket to share with his sister and brother. His empty stomach caused him to awake with pains in his belly and with his heart pounding. This winter seemed colder than usual, and there was worry that the rice crops would fail again this year. This was not his first night to awake under such circumstances; this seemed to happen every night in this dark winter. He was miserable—cold and hungry and unsettled by a nightmare as he tried to get more room for himself on the mat.

He knew his father was worried about the future. Last year the crops flooded, and it seemed that might happen again this year. Everyone in the village was hungry, and his mother tried each day to make the little food they had stretch among the five mouths to feed. He could tell she was frightened, afraid that he and his sister and brother would not have enough to eat. Some of the older people in the village had died because they did not have enough food. It was a scary time.

Yesterday, Sun had overheard his father talking to a village elder about rumors of bandits coming into surrounding villages to steal food and other goods. His father shook his head sadly, and Sun could tell by the slump of his shoulders that he was discouraged. Usually his father was happy about working in the fields and teaching his sons about growing and harvesting rice. The Pearl River Delta was usually a good place for rice-growing, but the flooding had destroyed the rice crops and everywhere people were anxious about the future. Now with the threat of bandits not only stealing food but also killing those who resisted, he remembered the nightmare that had awakened him. In his dream his mother was yelling, "Hide quickly and take this bag of rice with you." He remembered looking around for a place to hide, and there seemed to be no place to go. All the building doors were closed, and when he pushed on one in his dream, it wouldn't open. Again he could hear his mother yelling, but he couldn't understand what she said, just the panic in her voice. That's when he woke up. He shivered and tried to go back to sleep, but his mind kept going to this question: What is going to happen



to him? Would he starve to death or be captured and killed by bandits? The future seemed very bleak. Eventually he fell back to an unsettled sleep just as the rooster was starting to crow.

Early the next morning he was prodded awake by his father to go to work in the fields. As he wiped the sleep from his eyes, he still felt the effects of the nightmare of the previous night. He got up hungry and tired, and the look in his father's eyes only confirmed his own feeling of despair.

As they walked together to the fields, Sun screwed up the courage to ask his father about Gum San, or "Land of the Golden Mountain." Many men in the village had left for Gum San during the Taiping Rebellion, hoping for a better life on the Golden Mountain rather than being killed by the army or starved from famine in the region. He had no idea where this Golden Mountain was, but the village men seemed eager to leave. They felt if they were strong and worked hard, they could make lots of money and return to China wealthy. So far no one had returned, but some families received money every once in a while, and they let everyone else in the village know that their relative was a wealthy and prosperous man in the Land of the Golden Mountain.

"Father, where is the Land of the Golden Mountain?" asked Sun.

His father replied, "It's a long way away across the ocean, the Pacific Ocean, in a country called the United States. People say that there is gold on the streets that you can just pick up, but I don't believe that."

Taking a deep breath, Sun said, "I think the Land of the Golden Mountain is better than this village. I'm tired of being hungry and scared; I want to go to this place."

Sun's father walked on to the fields but did not say a word. Sun was afraid that he had spoken hastily and had not shown the proper respect to his father. He wondered if his father was angry because he said what he thought. And yet, he was tired of always being hungry, tired of being frightened of bandits, tired of seeing the anxiousness in his mother's eyes. He was young and strong. He knew he could work hard and he could send money back to his family and then maybe his mother wouldn't look so anxious all the time. Also, he wouldn't have to be crowded on the mat with his brother and sister; surely there would be more room in the Land of the Golden Mountain. All day he and father worked in the



field. But his father was silent all day, and Sun had a sinking feeling that he had offended his father. Life was hard enough that he did not want his father angry with him too.

As they both walked back to the village in the evening, neither father nor son spoke. The silence was deafening. Sun didn't know what to do so he remained silent. At dinner there was no conversation. Fortunately, the mealtime didn't last long because there wasn't much to eat. After dinner, as his mother and sister were washing up, his father went outside to smoke his pipe. Sun went out and sat next to his father but didn't say a word. After a while his father said, "I cannot bear the thought of you going to the Land of the Golden Mountain. I fear if you leave, you will never return, and as the older son, you have an important role in our family."

Sun was surprised by his father's statement because he never spoke about his feelings. Sun's throat was dry, and he wasn't sure what to say. After putting his thoughts into words earlier in the day, however, he felt more than ever committed to going to the Land of the Golden Mountain. He'd finally had the courage to say to his father that he wanted to leave. He hadn't anticipated, though, that his father would be so emotional about his leaving. What could he say? He decided not to say anything. Later that night as he lay on his mat, he kept hearing his father's voice: "I cannot bear the thought of you going to the Land of the Golden Mountain."

Neither father nor son talked about Sun's desire to go the Land of the Golden Mountain until much later in the spring. A flash flood washed away the dikes that control the water in the rice paddy, destroying the young seedlings. His father surveyed the damage and Sun noticed a tear silently slip from this father's eye as he contemplated his future. Sun decided that it was time to tell his father that he was going to Gum San. There was no future for him here, just more famine, bandits, and government threats to take away the family farm because the taxes couldn't be paid. He could not bear to see his family starve, and he knew he could work hard on Golden Mountain and send some of that gold home to his family. He simply must go.

On the day of his departure, a number of young men were leaving from the village with Sun. All the villagers gathered on the edge of the village as the young men walked down the road on their way to Kwangtung (Canton). In Kwangtung, Sun would use the credit ticket system to get passage on ship to San Francisco. Brokers advanced the cost of passage



and workers repaid the loan, plus interest, out of their earnings. Sun was sure the \$40 cost of passage would soon be paid off, especially since the broker promised to find him a good job when he got to California.

As Sun walked down the dusty road, he turned for one last look at his beloved family and village. His mother and father stood together; his younger brother and sister were there too. He thought he saw his mother brush aside a tear. He thought to himself, “What have I done? Am I crazy to be going to Golden Mountain? Will I ever see my home again?”

When he arrived in Kwangtung, he made his way to the ship. The ship would be sailing in the morning, and he was anxious to get out of the crowded, noisy city and be on his way. He found a bed for the night near the wharf and drifted off to sleep, hearing the screech of seagulls in the distance.

The next morning was sunny and bright. The smells from the wharf wafted over Sun, making him want to plug his nose—decay with fishy, salty, and smoky smells mixed together, and other smells he didn’t even want to identify. He already missed the smell of his mother’s fire as she made tea in the morning and the loamy smell of the soil from the fields. He was already homesick. Sun pushed his way out of the crowded room where he had spent the night and headed to the ship. He was anxious; he knew once he was on the ship there was no turning back.

The next few days were a blur. Sun was so seasick that he could hardly think straight. The men were crammed together below deck with barely room to move. Almost everyone was seasick and throwing up. The smells from the wharf paled by comparison—his stomach was unsettled, his head pounded, he felt dizzy, and he wished he could just fall asleep and not wake up until he reached Golden Mountain. Ha! He thought he was so brave and adventurous, but deep inside he was scared and doubtful about his decision to go to Golden Mountain. The groans and smells from all the men crammed together below deck made the trip miserable, and he had many more days before reaching San Francisco. Some of the other villagers on the ship were next to him, but they were as miserable as he was, and no one wanted to talk. What a gloomy place! He felt like he was in jail. The sailors would only let them onto the deck for a short time and even with the fresh air, he still felt seasick. He wanted to cry, but of course he didn’t want anyone to see him. If he could get off the ship and make it back to his village, he would. But of course, he was now committed to going to Golden Mountain. . . .



WHY DO PEOPLE EMIGRATE?

Immigration has always been about “pushes” and “pulls.” The pushes are the events that cause people to leave their homes to settle in new places. The pulls are the events that attract people to move to new homes. In this Storypath, we are going to explore the pushes and pulls that caused people to travel from China to the United States in the 1860s.

Pushes Why did Chinese men leave (emigrate from) China?	Pulls Why did Chinese men come (immigrate) to the United States?



HANDBILL GUIDE

A well-written handbill can attract attention and encourage people to work on the railroad. It is like an advertisement. Use the guide below to help you organize your handbill.

Why would workers want to come to the Sierra Nevada and work on the railroad?

Record two or three ideas that you can write about.

Make a list of words that vividly describe the Sierra Nevada. Look at the word bank for ideas.

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<hr/>	<hr/>
<hr/>	<hr/>

Make a list of words that vividly describe the job. Look at the word bank for ideas.

(Remember you want workers to come!)

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Draft the handbill. Write short phrases or sentences. Think about organization:

- What should be stated first?
- What size should the words be? (Think about writing the most important words in a larger font than less important words.)
- How can you attract attention to those words?

Edit the handbill. With a classmate, edit your handbill using the questions below as a guide.

- ☐ Does the information make sense?
- ☐ Is the handbill clear and accurate?
- ☐ Does it attract attention?
- ☐ Is it easy to read?
- ☐ Will it encourage people to come to work on the railroad?
- ☐ Are all the words spelled correctly?

Make the final copy.

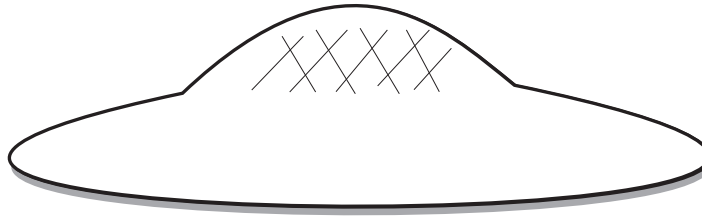


CHINESE TRADITIONS

Clothing: Pants and shirts were loose fitting. Shirts had a narrow collar that stood up. Heavier clothing was worn in the winter.

Hairstyle: The *queue* is a man's hairstyle in which the hair is worn long and gathered up into a ponytail or braid. Chinese workers would often roll their hair under their hats while others let it hang down their backs.

Split bamboo hat: Typical hats had a wide brim and were raised in the center. They shaded the face in the hot sun and allowed the air to circulate around the head.



Tea: The Chinese workers drank tea all day long. A worker was assigned the job of keeping tea available throughout the workday and carrying the tea to the workers. Chinese workers stayed healthier than other workers because the water was boiled for tea. Boiling the water for the tea killed bacteria, making the tea water safe to drink. Other workers drank water from streams or lakes without boiling the water and, as a result, were often sick.

Diet: Dried oysters, abalone, cuttlefish, dried bamboo sprouts, dried mushrooms, dried fruits, vegetables such as bamboo sprouts, pork, poultry, noodles, rice, salted cabbage, dried seaweed, sweet rice crackers, sugar, dried fruit, Chinese bacon, peanut oil, and tea were ordered from Chinese merchants in San Francisco.



MAKING THE CHARACTER

Step 1: Make the head.

Draw a circle about 2 inches in diameter. The circle does not have to be perfectly round. Cut out the circle.

Step 2: Make the torso.

Draw a rectangle approximately $2\frac{1}{2}$ inches by 4 inches. Cut out the rectangle.

Step 3: Make the arms and legs.

Draw two rectangles about 4 inches by $\frac{3}{4}$ inches. Then draw two more rectangles that are a little longer for the legs. Cut out the rectangles.

Step 4: Make clothing.

Position the head, arms, and legs on the torso and glue them. Then place the body on the fabric or paper and trace around it to make clothing. Remember that the character needs to be dressed like the Chinese workers were dressed at the time.

Step 5: Paste down the figure.

Glue the body on construction paper, and then glue the clothing and other items to the body.

Step 6: Add details.

Add details such as hair, feet, hands, facial features, and a hat. Remember to make the hairstyles look like the hairstyles of that time.

Step 7: Add the tools or materials.

Research the tools and materials the worker uses to do his job. You should be able to draw or find pictures of at least four examples.

Assessment: Directions are followed for making a realistic character. The clothing is suitable for the job role, and details are included. Tools and materials are appropriate to the time and job. The character is carefully constructed.



FAREWELL LETTER

Step 1: Make a Family Tree

- ☐ Character's name: _____
- ☐ On a sheet of paper, draw a family tree showing close relatives and how your character fits in.
- ☐ Draw a circle around the name of the person you will write to.
- ☐ What is that person's name? _____

You are in the middle of the voyage from Kwangtung to San Francisco, California. To pass time on the ship, you decide to write a farewell letter to someone back in China.

Step 2: Write a Farewell Letter

- ☐ The year you are writing: 1865
- ☐ Salutation: Dear _____,
- ☐ **Paragraph 1**
 - ☐ Describe what it's like to be on the ship: any challenges (cramped conditions, expensive tickets, seasickness, . . .) and any comforts (met a friend, sharing food, a family member, something special you brought with you, or a parting gift).
- ☐ **Paragraph 2**
 - ☐ Explain why you wanted to leave China (pushes) and why you wanted to go to California (pulls). You should use language that shows your hopes and dreams.
- ☐ **Paragraph 3**
 - ☐ Share the challenges you are facing now and/or the challenges you are thinking you will have to face. (What is your character worried about as he thinks about arriving in California?)
- ☐ **Paragraph 4**
 - ☐ Conclude with any last messages for the person to whom you are writing or for that person to give to someone else—feelings, goodbyes, questions, and so forth.
- ☐ **Closing:** Sign your letter!

Scoring Rubric for the Farewell Letter

4	3	2	1
Has all four paragraphs of the letter with at least two paragraphs showing creative detail. The sentences connect, and the information is personal and written with feeling to the family member or friend.	Has three paragraphs of the letter written with good detail, but is missing a part. -or- Has all four paragraphs, but the paragraphs don't have enough detail to make the reader believe that a real person could have written the letter during this time period. There is some extra detail.	Missing two paragraphs of the letter. -or- Has all the paragraphs but they are not developed with any detail. (Short paragraphs that only give one sentence per prompt. Writing is more like a list than a letter). -or- Runs all the paragraphs together. Letter isn't organized into four paragraphs.	Missing three paragraphs of the letter. -or- Writing shows a lack of understanding of the content.



LIFE AFTER THE CIVIL WAR

Next to winning the Civil War and abolishing slavery, building the first transcontinental railroad, from Omaha, Nebraska, to Sacramento, California, was the greatest achievement of the American people in the nineteenth century.

Stephen Ambrose*

Abraham Lincoln's dream of building the railroad was interrupted by the Civil War. He believed that a railroad linking the eastern United States to the west coast of the United States would make a stronger nation. The railroad would connect the East to the West and move people and products back and forth with ease. Traveling in covered wagons over the continent was not efficient, and many people wanted to move west to start a new life.

People traveled by boat or barge where rivers and canals were available, but traveling across the country meant traveling by wagon pulled by horses, mules, or oxen. People also traveled by ship, which was also difficult, time consuming, and costly. Everyday transportation included horseback riding or riding in a horse-drawn buggy or cart. Walking to where you needed to go was most common, so of course people didn't travel very far or very often.

The modern conveniences we have today did not exist in the 1860s. There were no telephones, automobiles, or other conveniences we enjoy today. Electricity wasn't available in people's homes until the 1900s. Many people made their own clothes. If you were fortunate to have a sewing machine, you operated it by "foot power." Fireplaces were the primary means of heating homes. Washing clothes was done by hand. Food was cooked in an open fire or in a stove heated by wood or coal. There were no microwaves or "fast food." Refrigerators were not available for storing food. Thus, food was kept cool in a cellar or icebox, and food was quick to spoil. Home gardens provided fruits and vegetables for families who had the space for the garden. City dwellers had to shop almost every day to get the food they needed.

Computers and electronic toys did not exist, so children played with dolls, balls, and blocks, often made at home. Plastic toys, so common today, were not available until the 1920s. In the late 1800s, swings and seesaws could be found in city parks. Board games such as checkers and chess were popular. Jigsaw puzzles became popular in the 1850s, and card games were played by people of all ages. Yes, life was very different in the 1860s from today.

* Stephen E. Ambrose, *Nothing Like it in the World: The Men Who Built the Transcontinental Railroad, 1863–1869*. (New York: Simon and Schuster, 2000), 349.



HOCK SUN'S STORY

Charlie Crocker hired Hock Sun to work on the mountain. Life has not been easy since Sun's arrival. Here is his story.

We've been working for weeks, but still the headman wants us to work faster. All day long we are urged to keep up the pace. The weather has gotten colder, and I can smell snow in the air. It seemed not long ago that the sun was beating down on us and the sweat rolled down our backs. Digging out this tunnel is backbreaking work, and each day we swing the sledgehammers and it seems only an inch of the hard granite has been chipped away. Crocker decided we should be working 24 hours a day—some work days, others nights. I'm on the day shift. I guess it doesn't make any difference because it's dark in here anyway.

I'm homesick. I miss my village in China. I wonder what my family is doing today. Are they out in the fields? Will they have a good crop this year? Do they have enough to eat? Are they missing me? I miss everyone. I miss our dinners, even when we barely had enough food to keep us alive.

Enough daydreaming. If I'm not careful, rocks will fall on my head. I'll be dead and they'll be shipping my bones home to China, and I'll never see my family again. I'm glad I bought this heavy jacket for the cold weather. My light clothing was fine for the hot days of summer, but I'd be frozen in these mountains without my coat.

We are up before dawn, and with a hot cup of tea and some rice in our bellies, we start to work. The winter days are short, so we are often in the tunnel all day and never see the sun. The rocks in the tunnel are freezing and the water drips through the crevices, making it a damp cold. Sometimes my feet are numb because the ground is freezing, the rocks are freezing, and the air chills me to the bone. Thankfully the tea carrier comes often because that's the only warmth in this cold, dark, dreary place.

I overheard the headman talking about reorganizing the crews. As much as I hate chipping away at the granite in the tunnel, I don't want to work setting blasting charges. That is dangerous work. First you have to drill a hole into the hard rock and then place the blasting powder into the hole. Lastly, you light the powder and move quickly to get out of the way before the blast goes off. It is dangerous work, and you really need to know what you are doing.



I was so glad to get this job, but I wish for an easier life. I know I should be glad just to have a job, but I wonder if I will live to an old age or be killed by a falling rock or fall over the edge of the mountain. There are lots of ways to die up on this mountain, so I better be careful.

You work with Hock Sun and share some of the same concerns.

1. How do you handle the weather when it's blazing hot or freezing cold?
2. Are you homesick?
3. Why is the work so dangerous?
4. What is the hardest part of the job for you?



LETTER HOME

As your character sits down to write this letter, he's not wondering anymore what it will be like when he gets to the Land of the Golden Mountain (California). He might think back to what he was thinking when he first wrote home, when he was still on the boat and hadn't arrived yet. But now he knows what the work is like and what his life is like, and he will be describing that to a loved one back home.

Along with the daily hard work, your character has been through dangerous events where workers' lives were at risk. These events would be big news back home in China.

In your letter, you are to choose one of these events and write a paragraph that goes into detail about the event and shows how your character felt about the event. You will also write about your work on the railroad. Lastly, you will include a paragraph with questions or information that your character wants to share with the person to whom you are writing.

Guidelines

Dear _____,

Paragraph 1: Describe the major event.

- Tell what happened, almost like you're retelling a story.
- How did the crisis start?
- What happened next? (Describe it step-by-step.)
- How did you and your coworkers respond? (What was your plan?)
- How did the plan work?
- In each part, make sure you are using vivid sentences to describe what your character went through so that the readers will feel like they were there.
- Make sure the paragraph describes how your character was feeling at different points during the event.

Example: *You won't believe what happened since I last wrote you. As I told you, life here building the railroad is a lot harder than I thought. I had started getting used to it, but then something terrible happened. . . .*

Now tell your story about the crisis.



Paragraph 2: Describe what is happening in your work on the railroad.

Use these questions below but decide which are most important for you to describe. You may have your own ideas about what you want to tell your family.

- Who are your friends?
- How does your day start? What do you do to get ready for work?
- What is the weather like?
- What do the mountains look like?

Example: *As you know I met Hock Sun on the ship and we have been good friends.*

Paragraph 3: Ask about what is happening at home in China.

- What are some questions you have about what is happening at home?

Example: *It's times like this that make me miss you even more.*

Sincerely,

Scoring Rubric for the Letter Home

4	3	2	1
<p>Has three paragraphs; retelling is vivid. The writer uses lots of descriptions and doesn't hurry the retelling. The reader can picture what happened. The reader understands how the character felt as the event happened.</p> <p>The first paragraph responds to all four questions.</p>	<p>Has three paragraphs; retelling provides some information. Is brief in some details or brief in feelings. Writing is like a list of information, but other paragraphs show clear description of the events.</p> <p>The first paragraph does not respond to all the questions.</p>	<p>Has three paragraphs, but has a very brief retelling of the crisis. Paragraphs are more like lists than descriptions of life and feelings are very briefly described.</p> <p>-or-</p> <p>Paragraphs are descriptive, but half the descriptive information is missing. Writing sounds more like a list than a letter.</p> <p>-or-</p> <p>Runs all the paragraphs together. Letter isn't organized into four paragraphs.</p>	<p>Only one paragraph and is very brief.</p> <p>-or-</p> <p>Each paragraph has very little information.</p>

**DO THE MATH**

1 mile = 5280 feet

1 mile = 3000 railroad ties

1 rail is 30 feet long

The workers worked approximately 11 hours

The railroad workers laid 10 miles of track. How many railroad ties did they use?

The railroad workers laid 10 miles of track. How many rails did they use?

Each rail weighs 520 pounds. How many pounds did the workers handle during the day?

The rails were held in place by 28,160 spikes that were driven into the railroad ties. If the workers worked 11 hours, how many spikes were driven into the rails each hour?



REFLECTION ON THE TEN-MILE RACE

In the three boxes below, draw or locate photos of three events from the ten-mile race. Sequence the events. Write a detailed caption for each event that includes your feelings about the events.



1st Event



2nd Event



3rd Event



WORD BANK

Keep track of the words you learn or words that interest you. Words in your word bank may come from class discussion, research, or any other source during the unit. Next to each word, write a definition of the new word or words that describe the new word. You might even draw a sketch of the word to help you remember its meaning.

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GLOSSARY

bolt (*noun*): a large screw to hold the railroad track to the railroad tie

curvature (*noun*): the amount something bends

elevation (*noun*): The height above sea level; an angle in surveying

fishplate (*noun*): a piece of metal joining two rails

foothills (*noun*): hills at the base of a mountain range

gauge (*noun*): the distance between the two rails of a railroad

grade (*noun*): the slope or incline of a physical feature or landform

grader (*noun*): a worker who leveled the land for laying the railroad tracks

granite (*noun*): an igneous rock that is very hard

handbill (*noun*): a small sheet of paper usually with varying font sizes used for advertising or making announcements in the 1800s

labyrinth (*noun*): a set of connecting passages

pay stub (*noun*): a printed statement of the amount a worker is paid, showing deductions for costs related to the job

portal (*noun*): entrance

queue (*noun*): a long braid of hair worn hanging down the back of the neck; a pigtail; the braid was often wrapped around the head while working

rail spike (*noun*): a large nail that is used to hold the rail to the fishplate and to railroad ties in the track

right of way (*noun*): the legal right to pass along a specific route

roadbed (*noun*): the surface on which the railroad is built

slope (*noun*): slanted ground

snowshed (*noun*): a covering over a railroad track to protect the railroad from heavy snow or avalanches

surveyor (*noun*): a person who measures land to determine boundaries, a travel route, shape, or size

switchback (*noun*): a railroad track having hairpin curves to allow a train to climb a steep grade

tableau (*noun*): “living picture”; making a visual scene

terrain (*noun*): the physical features of land

transcontinental (*adjective*): to cross a continent

trestle (*noun*): a framework used to hold up a railroad bridge

