

# cobblestone®

## From Cricket Media



**I know, I  
feel like we  
are in 1869.**

# CONTINENTAL ROAD

*Cobblestone: The Transcontinental Railroad* © February 2017



## Teacher's Guide for Cobblestone: *The Transcontinental Railroad*

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## OVERVIEW

*In this magazine, readers will learn about the reasons a transcontinental railroad was necessary and how it came about.*

### **Cobblestone:**

**The Transcontinental Railroad** includes information about the actual construction of the railroad as well as current and future rail travel.

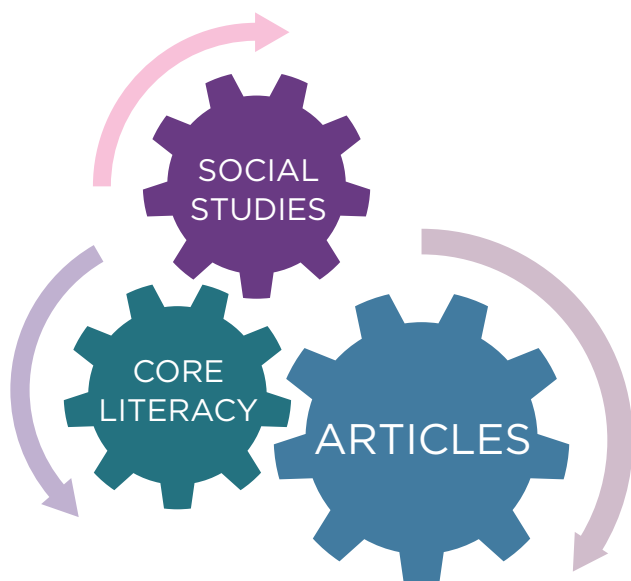
## ESSENTIAL QUESTION:

***Why was the transcontinental railroad an important innovation in United States history?***

We invite you to use this magazine as a flexible teaching tool, ideal for providing interdisciplinary instruction of social studies and science content as well as core literacy concepts. Find practical advice for teaching individual articles or use a mini-unit that helps your students make cross-text connections as they integrate ideas and information.

### **READ INDIVIDUAL ARTICLES** PAGES 4 - 14

Each article in this magazine is well-suited for teaching literacy concepts and content area knowledge. For each individual article in this guide, you'll find the following:



### **TEACH A MINI-UNIT** PAGES 16 - 18

Magazine articles can easily be grouped to make cross-text connections and comparisons. Our Mini-Unit allows students to read and discuss multiple articles and integrate ideas and information (CCSS.Reading.9). Discussing multiple articles (CCSS.Reading.9) prepares students to write texts to share and publish in a variety of ways (CCSS.Writing.2).

**Essential Question:** Why was the transcontinental railroad an important innovation in United States history?

MAGAZINE ARTICLES	CORE CONTENT CONCEPT	LITERACY SKILLS	CORRESPONDING CCSS ANCHOR STANDARDS
<b>All Aboard!</b> Expository Nonfiction	Innovations in transportation represent examples of historical change.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Analyze Text Structure</li> <li>Interpret Visual Information</li> </ul>	<i>Reading 1, 2, 3, 5 &amp; 7</i> <i>Writing 3</i>
<b>The Time Was Right</b> Expository Nonfiction	Economic factors influence spatial patterns of change for individuals and societies.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Determine Author's Purpose</li> <li>Evaluate Evidence</li> <li>Present an Opinion</li> </ul>	<i>Reading 1, 2, 3, 6 &amp; 8</i> <i>Speaking &amp; Listening 4 &amp; 6</i>
<b>The Evolution of Steam Locomotion</b> Timeline	Innovations in transportation represent examples of historical change.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Determine Author's Purpose</li> <li>Interpret Visual Information</li> <li>Research and Write an Essay</li> </ul>	<i>Reading 1, 2, 3, 6 &amp; 7</i> <i>Writing 2</i>
<b>The Race Is Set</b> Expository Nonfiction	Laws are among the tools that governments use to effect change.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Evaluate Word Choice</li> <li>Analyze an Argument</li> <li>Debate a Topic</li> </ul>	<i>Reading 1, 2, 3, 5, 7 &amp; 8</i> <i>Speaking &amp; Listening 1, 3 &amp; 6</i>
<b>Making It Happen: The Men Behind the Railroad</b> Expository Nonfiction	Individuals can shape significant historical change.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Analyze Text Structure</li> <li>Compare Texts</li> <li>Write an Argument</li> </ul>	<i>Reading 1, 2, 3, 5 &amp; 9</i> <i>Writing 1</i>
<b>Scandal</b> Expository Nonfiction	Motivations of individuals may conflict with their responsibilities toward society.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Determine Author's Purpose</li> <li>Interpret Visual Information</li> <li>Give a Speech</li> </ul>	<i>Reading 1, 2, 3, 6 &amp; 7</i> <i>Speaking &amp; Listening 4 &amp; 6</i>
<b>Working on the Railroad</b> Expository Nonfiction	Cultural patterns and economic decisions influence environments and the daily lives of people.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Analyze Text Structure</li> <li>Analyze Text Features</li> <li>Write a Letter</li> </ul>	<i>Reading 1, 2, 3 &amp; 5</i> <i>Writing 3</i>
<b>Building the Line</b> Expository Nonfiction	Technological progress requires economic commitment.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Evaluate Word Choice</li> <li>Evaluate Evidence</li> <li>Conduct a Survey</li> </ul>	<i>Reading 1, 2, 3, 5 &amp; 7</i> <i>Speaking &amp; Listening 1</i>
<b>Time to Standardize</b> Expository Nonfiction	Cultural patterns and economic decisions influence environments and the daily lives of people.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Determine Author's Purpose</li> <li>Interpret Visual Information</li> <li>Write a News Article</li> </ul>	<i>Reading 1, 2, 3, 6 &amp; 7</i> <i>Writing 2</i>
<b>America's Rail System Today</b> Expository Nonfiction	Technological innovation can shape human movement and settlement patterns.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Analyze Text Structure</li> <li>Analyze an Argument</li> <li>Conduct an Interview</li> </ul>	<i>Reading 1, 2, 3, 5 &amp; 7</i> <i>Speaking &amp; Listening 6</i>
<b>Fast-Tracking High-Speed Rail</b> Interview	Technological innovation can shape human movement and settlement patterns.	<ul style="list-style-type: none"> <li>Close Reading</li> <li>Analyze Text Structure</li> <li>Interpret Visual Information</li> <li>Write a Scene</li> </ul>	<i>Reading 1, 2, 3, 5 &amp; 7</i> <i>Writing 3</i>

**Comparing Texts:** *Reading 9*

**Mini-Unit:** *Reading 1, 2 & 3*



Building the transcontinental railroad involved two companies and support of the federal government, which moved Plains Indians out of the railroad's path.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Innovations in transportation represent examples of historical change.

## CROSS-CURRICULAR EXTENSION

**Math** Calculate how much time it took to travel by train on the Transcontinental Railroad from San Francisco, California to Omaha, Nebraska in 1870.

## KEY VOCABULARY

**simultaneous (p. 2)** happening at the same time

**tie (p. 2)** one of the heavy pieces of wood to which the rails of a railroad are fastened

## PREPARE TO READ

Take an imaginary journey back in time with your class. What might have happened if the railroad hadn't connected the coasts? How might Native Americans, westward movement and national expansion evolved differently? Ponder these and other questions about how the railroad shaped the nation.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- What role did the federal government play in the construction of the railroad? Cite specific details from the text to support your answer. *CCSS Reading 1*
- What is the main idea of each section of text? What do they suggest as a main idea or theme for the entire text? *CCSS Reading 2*
- Analyze the title in relation to the text. Did the railroad truly welcome all aboard? Use details from the text to support your answer. *CCSS Reading 3*

### Craft and Structure

- **Analyze Text Structure** What is the overall structure of the article? How does this structure impact the flow of the information given? Why might the author have used it? *CCSS Reading 5*
- **Interpret Visual Information** Write a short description of the image. Which portion of the text does it refer to? Why might the editors have chosen to highlight that portion over other portions? *CCSS Reading 7*

## WRITING

**Write a Narrative** Write a journal entry about a train ride you took. Why was it important or special? Be sure to include sensory details as well as your feelings.



# ARTICLE: The Time Was Right

Magazine pages 4 - 6, Expository Nonfiction



The invention of the steam locomotive and the discovery of gold in California led many to hope for a transcontinental railroad, but the divisive politics of the time, mostly surrounding slavery, stalled the plans until after southern states seceded from the Union.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Economic factors influence spatial patterns of change for individuals and societies.

## CROSS-CURRICULAR EXTENSION

**Science** How does gold mining affect the environment? Research and write an explanation of what you learn.

## KEY VOCABULARY

**cautious (p. 4)** careful about avoiding danger or risk

**locomotive (p. 4)** the vehicle that produces the power that pulls a train

**radiate (p. 4)** to go out in a direct line from a central point or area

## PREPARE TO READ

Show pictures of the earliest steam engines and discuss how they work. Conduct experiments to show the power of steam. A simple one involves boiling water with a balloon over the mouth of the container. The steam will blow up the balloon.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Why did the government view the transcontinental railroad as a good economic choice? Use details from the text to support your answer. *CCSS Reading 1*
- Chart details in the text that support or oppose the title as the main idea for this article. (See chart on page 20.) *CCSS Reading 2*
- How is the need for cross-country travel introduced in the text? What events increased its importance? *CCSS Reading 3*

### Craft and Structure

- **Determine Author's Purpose** What is the author's purpose in writing this text? Write a paragraph to explain how you determined the purpose. Include specific details from the text. *CCSS Info Text 6*
- **Evaluate Evidence** How does the author support the idea that the cross-country trip was difficult? Is the evidence sufficient? *CCSS Info Text 8*

## SPEAKING AND LISTENING

**Present an Opinion** Which route was the best way to get to the west coast before the railroad? Create a one-minute presentation supporting your choice with details from the text and other sources. Include multimedia components to strengthen your presentation.



Between 1712 and 1831, the steam engine progressed from its invention to operation in a locomotive on a passenger route.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Innovations in transportation represent examples of historical change.

## CROSS-CURRICULAR EXTENSION

**English Language Arts** Read the story of *Tom Thumb* and write an explanation of why the name might have been used for the locomotive.

## KEY VOCABULARY

**demonstration (p. 7)** an act of showing someone how something is used or done

**haul (p. 7)** to carry (someone or something) in a vehicle

## PREPARE TO READ

Introduce the concept of the Industrial Revolution and use images to show some of the innovations that occurred during that period. Explain that steam power was one of the inventions that made industrialization possible.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Make a chart of each person mentioned. Include their countries of origin and contributions to the development of steam power. (See chart on page 21.)  
*CCSS Reading 1*
- What is the main theme of this timeline? *CCSS Reading 2*
- How did each item on the timeline build on the ideas of past items? *CCSS Reading 3*

### Craft and Structure

- **Determine Author's Purpose** What is the purpose of the text and how did that purpose lead to the style the author used to present the information?  
*CCSS Reading 6*
- **Interpret Visual Information** What is the purpose of each image that accompanies the text? How do they add to your understanding of the information given? *CCSS Reading 7*

## WRITING

**Research and Write an Essay** Research one of the items on the timeline and write an essay explaining why it was important to the evolution of steam locomotion.

# ARTICLE: The Race Is Set

Magazine pages 8 - 11, Expository Nonfiction



President Lincoln signed the Pacific Railway Act and set a race to produce track into motion. The Union Pacific Railroad built westward from the Missouri River while the Central Pacific went east from Sacramento. When the two met at Promontory Summit in Utah, the first transcontinental railroad was complete.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Laws are among the tools that governments use to effect change.

## CROSS-CURRICULAR EXTENSION

**Math** What percentage of track did each company lay? What was the average amount of track each laid per mile?

## KEY VOCABULARY

**deadlock (p. 8)** to be unable to end a disagreement

**obstruct (p. 8)** to slow or block the movement, progress, or action of (something or someone)

**terrain (p. 9)** land of a particular kind

**vague (p. 10)** not clear in meaning

## PREPARE TO READ

Show students a map of railroads in the United States in 1860. Point out that there were many locations without a railroad passing through. Ask students to hypothesize how the expansion of railroads impacted people's way of life.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Why might the government have selected two companies to build the railroad instead of one? Support your answer with details from the text. *CCSS Reading 1*
- Which sentence in the text comes closest to presenting the main idea? *CCSS Reading 2*
- How does the author explain the need for a revised Pacific Railway Act? Cite the text to support your answer. *CCSS Info Text 3 & 8*

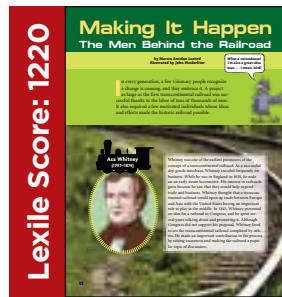
### Craft and Structure

- **Evaluate Word Choice** The author uses a number of terms that refer to economic or financial elements. List and define these terms and then determine how their use impacts the tone of the text. *CCSS Info text 4*
- **Analyze an Argument** How does the author support the statement that the company that worked fastest earned the most? Cite details from the text to show her argument. *CCSS Reading 8*

## SPEAKING AND LISTENING

**Debate a Topic** Was it a good idea to have the speed of construction be related to the amount of money a company earned? Debate this with a partner. Once you have come to a conclusion, select a new partner and conduct the debate from the opposite position.





It takes physical and financial support for a project as complex as the transcontinental railroad to reach completion. A number of visionaries and financiers were involved in seeing the railroad project through to its completion.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Individuals can shape significant historical change.

## CROSS-CURRICULAR EXTENSION

**Engineering** What is the role of a civil engineer? How does this type of engineering differ from other types? Why was it important to have civil engineers involved in construction of the railroad?

## KEY VOCABULARY

**contraband (p. 14)** things that are brought into or out of a country illegally

**daunting (p. 13)** tending to make people afraid or less confident

**smuggle (p. 14)** to move (someone or something) from one country into another illegally and secretly

## PREPARE TO READ

Ask students to write a list of character traits of people who are leaders. Ask students to hypothesize if they think any of these traits were important for the transcontinental railroad project to reach completion. Have students revisit their answers as they read.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Using the list of traits from the Prepare to Read activity and evidence from the text, categorize each individual or group according to his traits. *CCSS Reading 1*
- What is the main idea of each section of the article? Write a summary of the article using these main ideas. *CCSS Reading 2*
- Select one person or group mentioned and complete a diagram to explain how individuals, ideas, and events influenced him and vice versa. (See the Influence Diagram on page 22.) *CCSS Info Text 3*

### Craft and Structure

- Analyze Text Structure** How is the information in the article organized? Would a more common structure have worked for this information? Why or why not? *CCSS Reading 5*
- Compare Texts** Compare the texts that mention the same person to see if new information is given and if any of it is contradictory. *CCSS Reading 9*

## WRITING

**Write an Argument** Did Thomas Durant play an important role in the construction of the transcontinental railroad? Write an essay to persuade your teacher of your position. Use details from the article to support your argument. Be sure to evaluate any counterarguments.

Lexile Score: 1160



The directors of the Union Pacific Railroad Company set up a second company in order to grant it contracts for work and take the money that wasn't spent as profit. When this scandal was unearthed, Congress was implicated, leading some to question the need for regulations.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Motivations of individuals may conflict with their responsibilities toward society.

## CROSS-CURRICULAR EXTENSION

### Family and Consumer Science

Discuss proper behavior, or manners, for a variety of situations, including a job interview. Explain why knowledge of proper behavior is important.

## KEY VOCABULARY

**censure (p. 17)** to officially criticize (someone or something) strongly and publicly

**improper (p. 17)** not following rules of acceptable behavior

**questionable (p. 17)** likely to be bad

## PREPARE TO READ

Define scandal. Present newspaper headlines for other famous scandals involving public officials. Discuss what made the behaviors involved scandalous and what the outcomes were.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Outline the money-making scheme involved in creating the Credit Mobilier Company. What can you infer about the company's directors? *CCSS Reading 1*
- Which sentence in the first paragraph best captures the main idea of the article? Cite details from the text to support your answer. *CCSS Reading 2*
- Sometimes the press acts as a political check outside of our checks-and-balances system. How does the article demonstrate that idea? *CCSS Reading 3*

### Craft and Structure

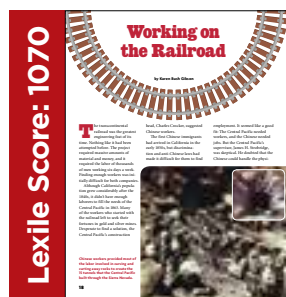
- Determine Author's Purpose** How does the author support the statements made in the first paragraph? What do these suggest about the purpose for writing the text? *CCSS Info Text 6*
- Interpret Visual Information** Analyze the political cartoon on page 17 and write a caption explaining how it fits with the article. *CCSS Reading 7*

## WRITING

**Give a Speech** Imagine you are a member of Congress at the time the scandal was reported. Present a speech expressing your feelings and what actions you believe Congress should take to avoid similar scandals in the future.

# ARTICLE: Working on the Railroad

Magazine pages 18 - 21, Expository Nonfiction



It took a lot of people, most of whom were immigrants, to build the transcontinental railroad. They battled challenging terrain and weather to accomplish the task.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Cultural patterns and economic decisions influence environments and the daily lives of people.

## CROSS-CURRICULAR EXTENSION

**Science** Study the chemical properties of the explosives used to carve tunnels through the mountains to learn why they are so volatile.

## KEY VOCABULARY

**buffer (p. 20)** a protective barrier

**grueling (p. 19)** requiring great effort

**masonry (p. 20)** the stone, brick, or concrete used to build things

**slaughter (p. 21)** to kill (an animal) for food

## PREPARE TO READ

Build a toy railroad that includes tunnels and bridges with your class. As you work, ask questions about what it would be like to build the real thing. Have students consider the equipment they would need and the hardships they might face.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- What impact do you think discrimination against the Chinese had on their employment by the railroad? Use details from the text to support your answer. *CCSS Reading 1*
- The text contains themes about the difficulty of the labor and the difficulty of finding labor. Which paragraphs support each theme? Are there other themes? *CCSS Reading 2*
- Use the chart on page 23 to compare the work on each railroad. *CCSS Reading 3*

### Craft and Structure

- **Analyze Text Structure** How does the section on weather fit into the overall structure of the text and help develop the theme of hardship? *CCSS Reading 5*
- **Analyze Text Features** Read the captions and the “Did You Know?” that accompany the article. How do they relate to the main text? *CCSS Reading 5*

## WRITING

**Write a Letter** Pretend you are working on the railroad. Decide where you are from and which railroad you work for and then write a letter home to explain what your job is like to your family. Use details from the text and your imagination.

# ARTICLE: Building the Line

Magazine pages 22 - 23, Expository Nonfiction



Railroad tracks were laid in a step-by-step process that began with the surveying of appropriate sites and ended with metal spikes being hammered into the rails. Everything necessary for the project and crews had to be shipped to them from the East Coast.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Technological progress requires economic commitment.

## CROSS-CURRICULAR EXTENSION

**Engineering** Compare the process of building a railroad to the process of laying a road.

## KEY VOCABULARY

**anticipate (p. 22)** to think of (something that will or might happen in the future)

**embankment (p. 23)** a raised bank or wall that is built to carry a roadway or hold back water

## PREPARE TO READ

Set up a simple assembly line with your students. The line could make something as simple as a cheese sandwich. Ask the students to consider what it would take to assemble a railroad. Explain that the procedures were similar to an assembly line except that the crews moved rather than the product.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- What can you infer about the natural resources available in the construction areas? Use details from the text to support your answer. *CCSS Reading 1*
- Write a paragraph explaining how details can help you determine the main idea of this text. Quote the details you use. *CCSS Reading 2*
- Write step-by-step instructions for building a railroad. *CCSS Reading 3*

### Craft and Structure

- **Evaluate Word Choice** Which words describe specific track-building jobs and equipment? Define these terms. *CCSS Reading 4*
- **Evaluate Evidence** How does the author support the statement quoted at the start of the article? Is the evidence both relevant and sufficient? *CCSS Reading 8*

## SPEAKING AND LISTENING

**Conduct a Survey** Survey other students to determine which railroad building job is the most desirable. Chart your results and share them.



Time zones were developed to help standardize railroad clocks, making travel easier.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Subject** Cultural patterns and economic decisions influence environments and the daily lives of people.

## CROSS-CURRICULAR EXTENSION

**Science** Study time zones and practice determining the time in one time zone based on the time in another. Extend this to include travel so you are determining the time you'd arrive locally.

## KEY VOCABULARY

**belt (p. 28)** a region that has a lot of a particular thing

**increment (p. 29)** the amount or degree by which something changes

**standardize (p. 27)** to change things so that they are similar and consistent and agree with rules about what is proper and acceptable

## PREPARE TO READ

Ask what would happen if each teacher in the school used a clock that was not synced to the clock in the principal's office. Then explain that every town used to have its own clock, so no one really knew what time it was everywhere. Invite students to predict how railroads impacted time-keeping practices.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Read the first section of the text. Write your predictions for what the rest of the article will focus on. *CCSS Reading 1*
- Determine the main idea of each section of the article. How does each main idea relate to the overall main idea? *CCSS Reading 2*
- How is the need for government support introduced and elaborated in the text? *CCSS Reading 3*

### Craft and Structure

- **Determine Author's Purpose** List opinions the author presents. Use those opinions to determine the author's purpose in writing this article. *CCSS Reading 6*
- **Interpret Visual Information** Study the maps on pages 28 and 29. Write a paragraph to explain how they differ. Do you agree with the changes that were made? *CCSS Reading 7*

## WRITING

**Write a Newspaper Article** Write a newspaper article explaining the change to standard railroad time. Consider carefully what rail customers need to know. Use a strong headline and hook to make sure your article will be read.

# ARTICLE: America's Rail System Today

Magazine pages 33 - 36, Expository Nonfiction



America's current rail system carries more people and cargo than airplanes and has a better safety rating than driving, but improvements and upgrades are still needed.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Technological innovation can shape human movement and settlement patterns.

## CROSS-CURRICULAR EXTENSION

**Art** Use information from the article to create an advertising poster for a railroad company based on one of these themes: safety, environmental concerns, or ease of travel.

## KEY VOCABULARY

**hassle (p. 34)** something that is annoying or that causes trouble

**mediocre (p. 35)** not very good

**segment (p. 34)** one of the parts into which something can be divided

## PREPARE TO READ

Show students images from a passenger train ride. Ask students how they think riding on a train might compare to using other forms of modern transportation.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Using details from the text to support your answer, what can you infer about areas that may not be served by railroads? *CCSS Reading 1*
- How does the author integrate the main idea into the rest of the text? Cite details from the text to support your answer. *CCSS Reading 2*
- How do the quotes from individuals involved in rail travel help to elaborate on or present ideas in the article? Write one to two sentences for each quote. *CCSS Reading 3*

### Craft and Structure

- Analyze Text Structure** Why did the author include material from interviews in this article? How did it shape your understanding of the article? *CCSS Reading 5*
- Analyze an Argument** Trace the argument that rail travel is better than air travel and determine whether the evidence is convincing. *CCSS Reading 8*

## SPEAKING AND LISTENING

**Conduct an Interview** Train travel has served an important role in many people's lives. Some people left home for the first time by rail while others use trains daily to commute to work. Interview one or two family members or friends to learn how trains have impacted them.





Andy Kunz of the US High Speed Rail Association explains the many benefits of building high-speed rail in the United States.

## ESSENTIAL QUESTION

**Why was the transcontinental railroad an important innovation in United States history?**

## CORE CONTENT CONCEPT

**Social Studies** Technological innovation can shape human movement and settlement patterns.

## CROSS-CURRICULAR EXTENSION

**Science** Learn how high-speed rail engines work and how they have changed since first developed.

## KEY VOCABULARY

**congestion** (p. 38) too full or crowded with something (such as vehicles or people)

**crisis** (p. 38) a difficult or dangerous situation that needs serious attention

**streamline** (p. 39) to make (something) simpler, more effective, or more productive

## PREPARE TO READ

Present a chart of travel times between cities that have high-speed rail. Use train, plane, and road times. Ask students which mode of transportation they would use and why. Ask where they would go if high-speed rail were available in their area.

## CLOSE READING AND TEXT ANALYSIS

### Key Ideas

- Will freight trains travel on high-speed tracks? Use details from the text to support your conclusion. *CCSS Reading 1*
- Is Mr. Kunz's purpose the same as the main idea of this article? If not, how do they differ? *CCSS Reading 2*
- What role does politics play in the process of getting high-speed rail built in the United States? How does Mr. Kunz explain this role? *CCSS Reading 3*

### Craft and Structure

- Analyze Text Structure** How does the question-and-answer structure of an interview help make the information comprehensible? How would a more narrative style impact your understanding of the information? *CCSS Info Text 5*
- Interpret Visual Information** Study the map that accompanies the text. What would be the effect of trying to convey this information in words? *CCSS Reading 7*

## WRITING

**Write a Scene** Write a scene in which Andy Kunz is presenting his argument to Congress but an oil executive or other member of the opposition is also speaking. Present both arguments and include questions congressmen might ask.

## CROSS-TEXT CONNECTIONS

**SYNTHESIZE:** Guide students to compare articles they read. Help students find the connections between pieces of information in multiple articles. Use prompts, such as the following examples, to have students work together to **Integrate Ideas and Information** (CCSS.Reading.9).

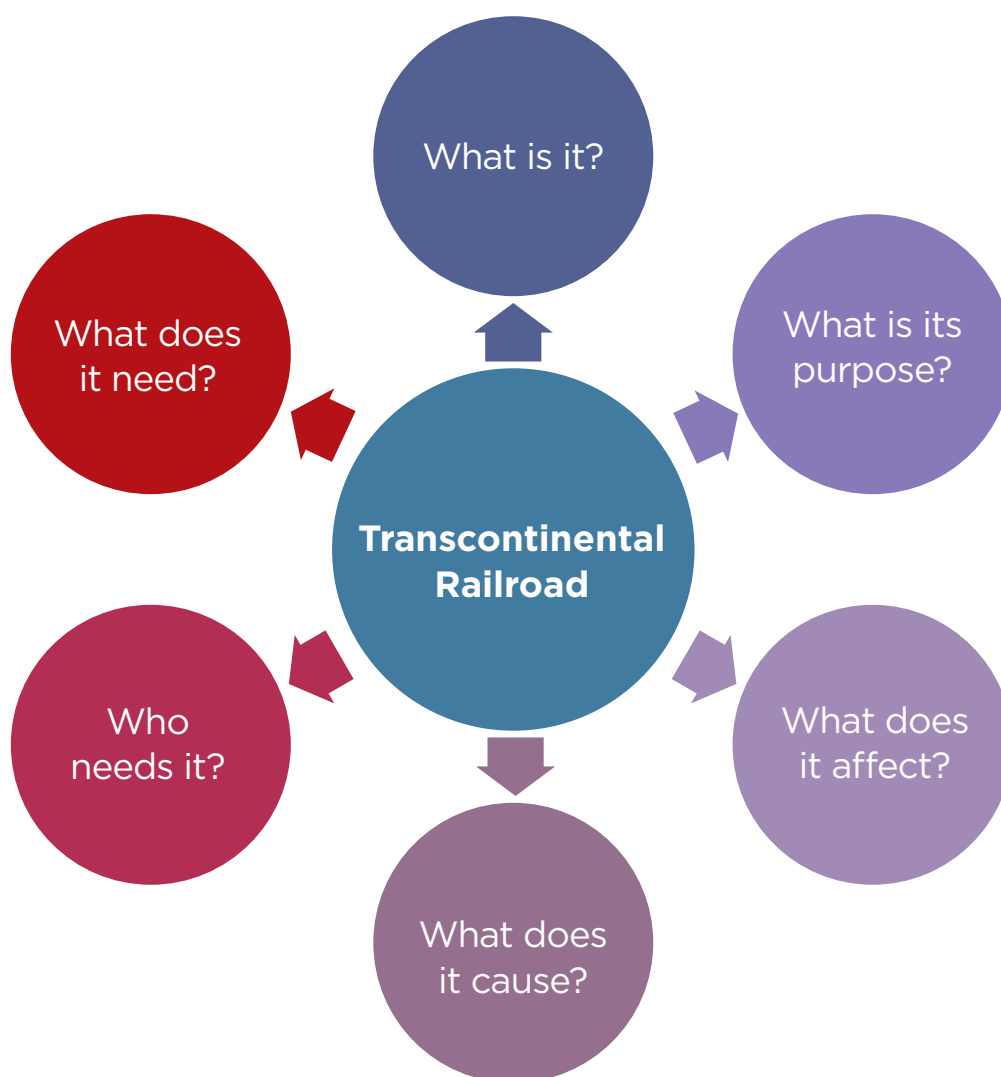
- Read several articles and write two paragraphs explaining the role greed played in the need for the transcontinental railroad and in the steps and methods used in its construction.
- Gather information from “The Race Is Set” and “Time to Standardize” and write a paragraph explaining how standardization helped rail travel.
- “All Aboard!” suggests that the time was right for train travel. Use details from many articles to write an essay supporting this idea. Include political, economic, social, and technological factors.
- How has rail travel evolved since the first steam locomotive? Read “The Evolution of Steam Locomotion,” “America’s Rail System Today,” and “Fast-Tracking High-Speed Rail” to help you formulate your answer.
- Individuals have always supported rail travel. Compare Andy Kunz and the people quoted in “America’s Rail System Today” to the pioneers of the transcontinental railroad mentioned in articles from “The Race Is Set” through “Building the Line.” Use whichever method you prefer—chart, comparative sentences, or diagram—to make your comparison.
- Study “All Aboard!,” “Scandal,” and “Working on the Railroad” to learn about the social impacts of building the transcontinental railroad. List impacts for each group mentioned.

## EXPLORATORY LEARNING - FLEXIBLE MINI-UNIT DESIGN

In this mini-unit, your students will design board games about the transcontinental railroad. The railroad physically united the nation and allowed for further economic development of the West, but it also led to corruption and the reservation system. The board games will allow students to explore all of these topics and look at other topics in the issue.

**ENGAGE**
**READ FOR A  
PURPOSE**
**APPLY**

**ENGAGE:** Engage students in the topic of the transcontinental railroad by asking students to consider why it was an important innovation in US history. Look at the concept map below and encourage students to hypothesize about the answers to each question to access their prior knowledge. Tell students they will verify their hypotheses by reading the issue. Encourage them to take notes on the answers.



## READ FOR A PURPOSE

**INTRODUCE THE ACTIVITY: Track Facts:** Show the students boards for a few board games. Some board games focus on physical territories while others follow a life journey or a number sequence. Also point out some of the conventions of board games, like spots where you lose a turn or gain a bonus card. Tell the students they will be designing their own games using facts about the transcontinental railroad. Use the concept map on the previous page to refresh their memories of what the railroad is. Decide whether they will be allowed to incorporate information about local rail service as part of any modern questions that demonstrate the transcontinental railroad's legacy. Explain that they will have free reign on how their games should be organized and designed and set a minimum number of questions to be included.

Separate the class into small groups of three or four students and inform them that they will play each other's creations. Have the groups consider how they'd like to structure their games. Options include focusing on people, physical locations, a timeline, and any others they may come up with. Also ask them to consider how they will know who won. Winners of some games arrive at the finish line first while other games use an amount of points, money, or cards to determine the winner.

**RETURN TO THE TEXT:** Explain to students that before they can develop their games, they must gather information in order to help determine the game structure and write the questions. Encourage students to explore the entire issue together and take notes as they decide how they'll structure their game boards and what material they might include. They can also use the article pages to help them focus, but remind them that they must create their own questions.

**APPLY: TRACK FACTS** Now that students have revisited the text and gathered information to help them write their questions, they are ready to create their board games!

### STEP 1: Finalize Game Design

Once students have gathered the information they need, have them finalize their game design. This will help them focus on the questions that will fit and on how to best present those questions. Have the students consider how the pieces will move from start to finish on the boards and begin work on the directions for playing.

#### Options for moving pieces:

- Dice
- Spinner
- Cards
- Notes on board
- Notes in directions (For example, move ahead two spaces for each correct answer.)

### STEP 2: Plan the Board

Ask students to plan their boards. Give the students blank pieces of paper to use for drawing a rough draft of their game boards. Show them the poster board that is available for their final products so they have a sense of size and plan with scale in mind. Remind students to include the conventional game features that add an element of luck and fun and to be creative. Review the plans with each group before they proceed to the next step. Show students the Train Car Template on the next page. Explain that these cars can be used to make question cards or as spaces on their boards.

### STEP 3: Write Questions and Directions

Have students write the questions that will form the major portion of their games. Remind them that answers must be in the issue (or common knowledge for their region) and that they should address the essential question in some way. Also have them complete the directions.

### STEP 4: Test

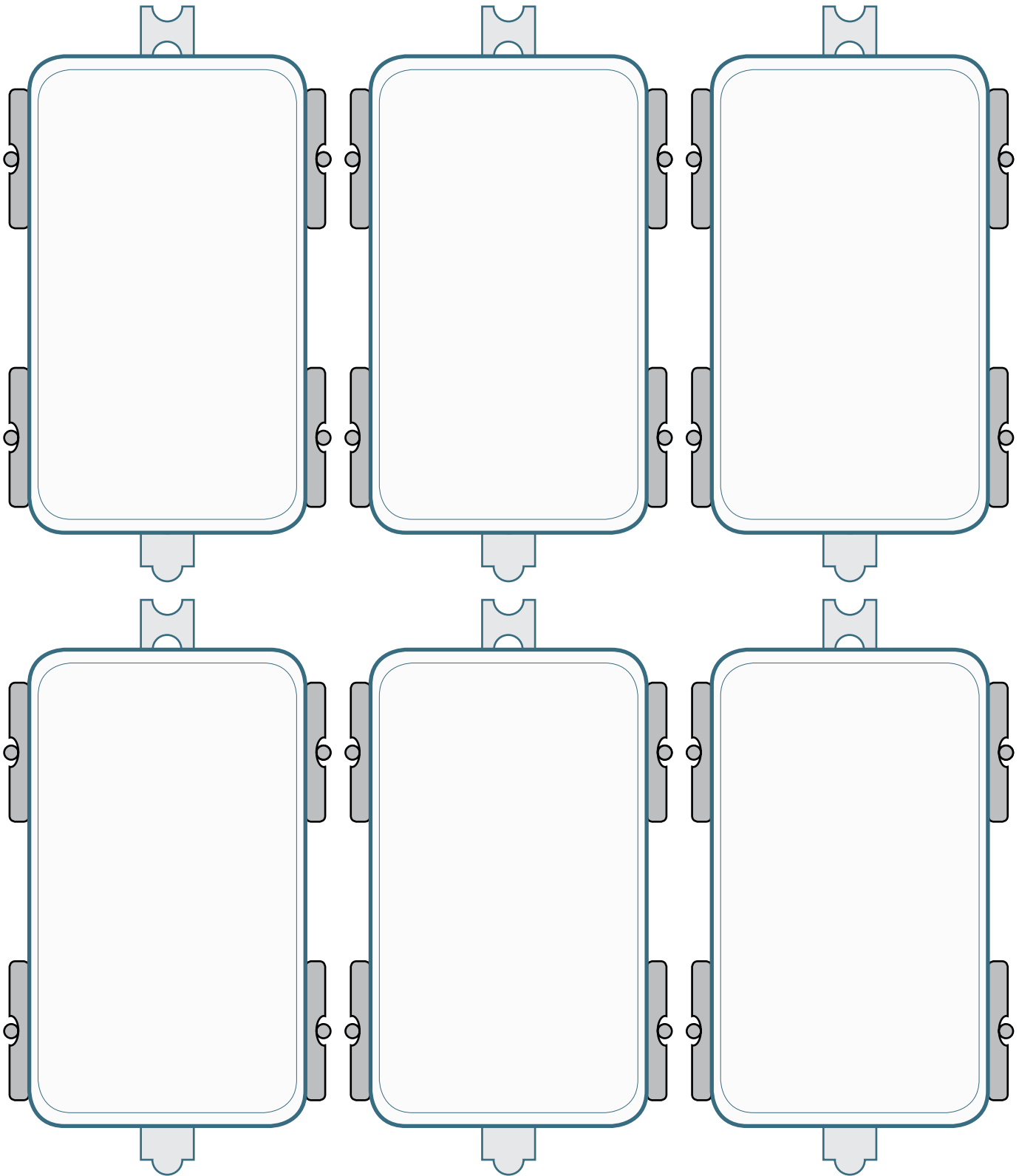
Distribute poster board and art supplies. Have students draw their game boards in pencil first so they can make any necessary adjustments before adding color, text, and final details. Have each group test the game they made in order to finalize the directions.

### STEP 5: Play

Have groups trade their games. One person from each group can act as judge for the game they made. Students can also rate each other's games on ease of play, theme, and how fun they are.

NAME: \_\_\_\_\_

## TRAIN CAR TEMPLATE







NAME: \_\_\_\_\_

**TITLE AS MAIN IDEA**

SUPPORT	OPPOSE





NAME: \_\_\_\_\_

**INNOVATIONS IN STEAM LOCOMOTION**

PERSON	COUNTRY	INNOVATION

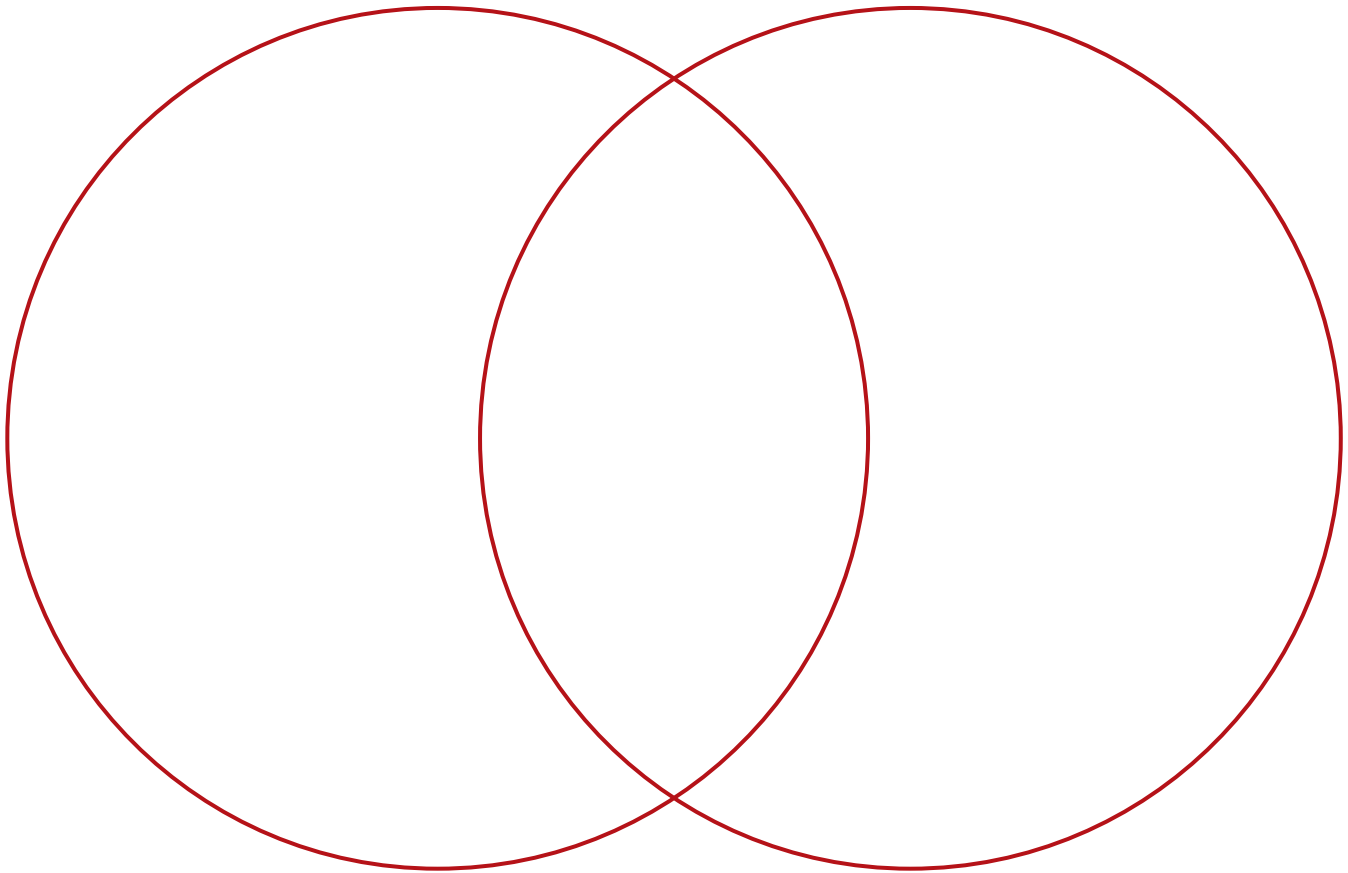




NAME: \_\_\_\_\_

## INFLUENCE DIAGRAM

Write the name in the middle, influences on the left, and things or people influenced on the right.





NAME: \_\_\_\_\_

## RAILROAD WORK CHART

RAILROAD	WORKER DESCRIPTION	HAZARDS FACED	INNOVATIONS OR SOLUTIONS
UNION PACIFIC			
CENTRAL PACIFIC			



## Meeting State and National Standards: Core Instructional Concepts

The articles in this magazine provide a wealth of opportunities for meeting state and national instructional standards. The following pages contain charts listing Core Instructional Concepts for each of three curricular areas: English Language Arts, Science, and Social Studies.

### USING THE STANDARDS CHARTS

#### ELA

Corresponding CCSS anchor standards have been listed next to each item on the Core Instructional Concepts chart. To customize the chart, add your own grade, state, or district standards in the last column. Match the concepts and standards from the chart to the activities on each page of the Teacher's Guide to complete your lesson plans.

#### SOCIAL STUDIES

Content Concepts in each Article Guide are based on Dimension 2 of the CS Framework for Social Studies: Applying Disciplinary Concepts and Tools. Use the last column in the accompanying chart to correlate these concepts to your state or district standards.

#### SCIENCE

Content Concepts in each Article Guide are drawn from the Three Dimensions of the Next Generation Science Standards. You will also find connections to these concepts within individual close-reading questions.

#### MATH

Content Opportunities for math activities are provided in the Cross-Curricular extensions on each Article Guide page.

## CORE INSTRUCTIONAL CONCEPTS: READING, LITERATURE, AND LANGUAGE ARTS

SKILLS AND CONCEPTS	CCSS ANCHOR STANDARD	CORRESPONDING STANDARD
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### KEY IDEAS AND DETAILS

<b>Read closely to determine what a text says explicitly.</b>	Reading 1	
<b>Make logical inferences</b> to determine what the text communicates implicitly.	Reading 1	
<b>Cite specific textual evidence to support conclusions</b> drawn from the text.	Reading 1	
<b>Determine central ideas or themes</b> of a text and analyze their development.	Reading 2	
<b>Summarize key supporting details and ideas.</b>	Reading 2	
Analyze how <b>individuals, events, and ideas develop and interact</b> over the course of a text.	Reading 3	

### CRAFT AND STRUCTURE

<b>Interpret words and phrases</b> as they are used in a text.	Reading 4	
<b>Determine technical, connotative, and figurative meanings.</b>	Reading 4	
Analyze how specific <b>word choices</b> shape meaning or tone.	Reading 4	
Analyze the <b>structure of texts</b> (sequence, cause/effect, compare/contrast, problem/solution)	Reading 5	
Recognize the <b>genre, key elements, and characteristics</b> of literary texts.	Reading 5	
Assess how <b>point of view or purpose</b> shapes the content and style of a text.	Reading 6	
Analyze how an <b>author's style and tone</b> affects meaning.	Reading 6	

### INTEGRATION OF KNOWLEDGE AND IDEAS

<b>Integrate and evaluate content</b> presented in diverse media and formats.	Reading 7	
<b>Identify and evaluate the argument and claims</b> in a text.	Reading 8	
<b>Analyze how two or more texts address similar themes or topics.</b>	Reading 9	

### WRITING

Write <b>arguments</b> to support claims, using valid reasoning and relevant and sufficient evidence.	Writing 1	
Write <b>informative/explanatory texts</b> to examine and convey complex ideas and information clearly and accurately.	Writing 2	
Write <b>narratives</b> to develop real or imagined experiences or events.	Writing 3	
<b>Draw evidence</b> from literary or informational texts to support analysis, reflection, and research.	Writing 9	
Conduct short as well as more sustained <b>research projects</b> .	Writing 10	





# CORE INSTRUCTIONAL CONCEPTS: SOCIAL STUDIES

## C3 INQUIRY ARC DIMENSION 2: APPLYING DISCIPLINARY CONCEPTS AND TOOLS

## STATE OR DISTRICT STANDARD

### CIVICS

Analyze the <b>origins, functions, and structure of different governments</b> and the <b>origins and purposes of laws</b> and key constitutional provisions.	
Summarize core <b>civic virtues and democratic principles</b> .	
Evaluate <b>policies</b> intended to address social issues.	

### ECONOMICS

Evaluate the <b>benefits and costs of individual economic choices</b> .	
Analyze <b>economic incentives</b> , including those that cause people and businesses to specialize and trade.	
Explain the <b>importance of resources</b> (i.e. labor, human capital, physical capital, natural resources) in <b>methods of economic production</b> .	
<b>Explain</b> the <b>functions of money</b> in a market economy.	
<b>Explain</b> the importance of <b>competition</b> in a market economy.	
Apply economic concepts (i.e. interest rate, inflation, supply and demand) and theories of <b>how individual and government actions affect the production of goods and services</b> .	
<b>Analyze economic patterns</b> , including activity and interactions between and within nations.	

### GEOGRAPHY

<b>Construct and use maps</b> and other graphic representations (i.e. images, photographs, etc.) of different places.	
<b>Explain cultural influences</b> on the way people live and modify and adapt to their environments.	
<b>Analyze places, including their physical, cultural and environmental characteristics</b> and how they change over time.	
Analyze <b>movement of people, goods, and ideas</b> .	
<b>Analyze regions, including how they relate to one another</b> and the world as a whole from a political, economic, historical, and geographic perspective.	

### HISTORY

Interpret historical context to <b>understand relationships among historical events or developments</b> .	
Evaluate historical events and developments to identify them as <b>examples of historical change and/or continuity</b> .	
<b>Analyze perspectives</b> , including factors that influence why and how individuals and groups develop different ones.	
<b>Evaluate historical sources</b> , including their reliability, relevancy, utility, and limitations.	
<b>Analyze causes and effects</b> , both intended and unintended, of historical developments.	



# CORE INSTRUCTIONAL CONCEPTS: SCIENCE

## DIMENSION 1: SCIENTIFIC AND ENGINEERING PRACTICES

Dimension 1 focuses on the practice of science, and how knowledge is continually adapted based on new findings. The eight practices of the K-12 Science and Engineering Curriculum are as follows:

- Asking questions (for science) and defining problems (for engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (for science) and designing solutions (for engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

## DIMENSION 2: CROSSCUTTING CONCEPTS

Dimension 2 provides an organizational schema for integrating and interrelating knowledge from different science domains. The eight NGSS Crosscutting Concepts are as follows:

- Patterns
- Similarity and Diversity
- Cause and Effect
- Scale, Proportion, and Quantity
- Systems and System Models
- Energy and Matter
- Structure and Function
- Stability and Change

## DIMENSION 3: DIMENSIONS AND DISCIPLINARY CORE IDEAS

Dimension 3 presents a contained set of Disciplinary Core Ideas to support deeper understanding and application of content. The following chart details Core Ideas for curriculum, instructional content, and assessments within four domains.

LIFE SCIENCE	PHYSICAL SCIENCE	EARTH SCIENCE	SPACE SYSTEMS
<ul style="list-style-type: none"><li>• Structure and Function of Living Things</li><li>• Life Cycles and Stages</li><li>• Reproduction &amp; Inherited Traits</li><li>• Animals</li><li>• Plants</li></ul>	<ul style="list-style-type: none"><li>• Forces and Interactions</li><li>• Energy</li><li>• Light</li><li>• Sound</li><li>• Electricity/Magnetism</li><li>• Matter</li><li>• Waves</li><li>• Heat</li><li>• Chemistry</li><li>• Information Processing</li></ul>	<ul style="list-style-type: none"><li>• Weather</li><li>• Climate</li><li>• Rocks &amp; Soil</li><li>• Erosion and Weathering</li><li>• Landforms</li><li>• Water</li><li>• Oceans</li><li>• History of Earth</li><li>• Plate Tectonics</li><li>• Volcanoes, Earthquakes, and Tsunamis</li></ul>	<ul style="list-style-type: none"><li>• Solar System</li><li>• Planets</li><li>• Moon</li><li>• Sun</li></ul>

