

About the Book

Text Type: Nonfiction/Informational Page Count: 16 Word Count: 747

Book Summary

The Steam Engine will take you on a ride through history to introduce you to one of the world's most important inventions. You will learn how a steam engine works, who invented the early ones, and how steam engines changed the way people and goods were transported. Find out why steam engines have mostly been replaced in modern times, as well as ways that steam is still being used in today's world. Colorful photographs support the text.

About the Lesson

Targeted Reading Strategy

- Summarize

Objectives

- Use the reading strategy of summarizing while reading
- Identify main idea and details
- Identify and use subject and predicate
- Identify and understand syllable patterns

Materials

Green text indicates resources available on the website

- Book—*The Steam Engine* (copy for each student)
- Chalkboard or dry erase board
- Dictionaries
- Main idea and details/summarize, subject and predicate, syllables worksheets
- Discussion cards



Indicates an opportunity for students to mark in the book. (All activities may be demonstrated by projecting book on interactive whiteboard or completed with paper and pencil if books are reused.)

Vocabulary

- Content words:
 Story critical: *boiler (n.), expands (v.), invention (n.), locomotives (n.), pressure (n.), steam engine (n.)*
 Enrichment: *diesel (adj.), explode (v.), power (n.)*

Before Reading

Build Background

- Ask students to brainstorm a list of modes of transportation. Encourage them to think of as many as they can. If time allows, categorize their ideas into human-powered (e.g., bicycle) and machine-powered. Next, quickly discuss the way in which these machines "go."
- If steam engine or steamboat was not mentioned during brainstorming, add them to the list. Ask students if they are familiar with steam power.

Preview the Book

Introduce the Book

- Give students their copy of the book. Guide them to the front and back covers and read the title. Have students discuss what they see on the covers. Encourage them to offer ideas as to what type of book it is (genre, text type, fiction or nonfiction, and so on) and what it might be about.
- Show students the title page. Discuss the information on the page (title of book, author's name).
- Preview the table of contents on page 3. Remind students that the table of contents provides an overview of what the book is about. Ask students what they expect to read about in the book based on what they see in the table of contents. (Accept any answers students can justify.)

Introduce the Comprehension Skill: **Main Idea and details**

- Explain to students that sometimes the amount of information about a topic is so large that it is grouped into sections, each section having its own main idea.
- Have students turn to the table of contents. Read the section titles together. Explain to students that you will be showing them how to identify main ideas in the book from what they read as a strategy for understanding and remembering the content of the book.
- Read page 4 aloud to students. Model identifying the main idea and details.
Think-aloud: I know that the headings of sections sometimes identify the main idea. Each section contains details that support a main idea about the steam engine. This first section is titled "An Invention That Changed the World." In this section, I learned that people used to use animals or their own body to do work, but in the 1700s the steam engine changed everything. I will underline this information. Based on what I've read, I think the main idea of the section is: The invention of the steam engine changed the way people do work.
- Ask students to identify details from the book that support this main idea (people made fewer goods by hand, they used machines instead, and so on).
- Create a main-idea-and-details/summary chart on the board similar to the one on the [main-idea-and-details/summarize worksheet](#). Say: *I can use this chart to help me keep track of the main idea and details of each section of the book. I will use the section heading as a strong clue as to the main idea for that section.* Write the main idea and details for the first section ("An Invention That Changed the World") in the chart on the board.

Introduce the Reading Strategy: **Summarize**

- Explain to students that one way to understand and remember information in a book is to write a summary, or a brief overview, of the most important information in the text. Point out that a summary includes the main idea and one or two supporting details. It often answers the questions *who, what, when, where, and why*. A summary can be of a whole book, or of sections.
- Refer to "An Invention That Changed the World" on the board to model summarizing from the main idea and details.
Think-aloud: To summarize, I decide which information affects the meaning of the section that would be important to remember. To do this, I identify the main idea and important details, and then organize that information into a few sentences. When I look at the main idea and details on the board, a summary of this section might be: The invention of the steam engine changed the world. Before that, people did most of the work with either their bodies or animals. Now machines could do the work.
- Write the summary on the board. Have students identify the main idea and details within the summary. Discuss how you used your own words to create the summary.
- As students read, encourage them to use other reading strategies in addition to the targeted strategy presented in this section.

Introduce the Vocabulary

- Write the words from the glossary in a list on the chalkboard. Point to each word, read it aloud, and ask students to give the thumbs-up signal if they know the word or have heard it before. Circle any words with which most students are unfamiliar.


- Explain to students that good readers can use context clues to help figure out the meaning of an unfamiliar word in the text. However, sometimes they will not find enough context clues to clearly define the unfamiliar word. Model how students can use the glossary or a dictionary to locate a word's meaning.
- Ask students to take turns reading the glossary words and their definitions. After each definition has been read, have them turn to the page and find the sentence containing the word. Read the sentence aloud to confirm the definition.

Set the Purpose

- Have students read *The Steam Engine* to learn about this invention. Remind them to stop after each section to summarize the important information and to record the main idea and details.

During Reading

Student Reading

- **Guide the reading:** Have students read page 5. Encourage those who finish before others to reread the text. When students are ready, discuss the important details they identified.
 - Model identifying the main idea and details of "What Is Steam?"
Think-aloud: As I read the section titled "What Is Steam?" most of the sentences mention something about boiling water and the steam it creates. I will underline the sentences that say, Steam is a gas. People make steam to do work by boiling water. Based on what I've read, I think the main idea of the section is: Steam is a gas that is made by boiling water.
 - Write the main idea on the board. Ask students to identify details that support this main idea (like water in a pot on the stove, makes a cloud above the pot, expands and pushes the parts of the machine, and so on). Write these details on the board.
 - Review how to create a summary from the main idea and details. Refer back to the summary created during the "Introduce the Strategy" activity. Discuss and create the summary as a class, and write it on the board. (*Steam is a gas made by boiling water until it gets very hot. When the steam expands, it pushes on the parts of the machine that make it go.*)
 - **Check for understanding:** Divide students into groups. Assign each group the section titled "The First Real Steam Engines." Have them identify and underline important details in the section. Have students work with their group to identify the main idea from these details. Discuss their responses as a class and write a main idea for the section on the board.
 - Ask students to write a brief summary of the section on a separate piece of paper. Have them share what they wrote.
 - Have students read the remainder of the book. Remind them to think about the important details in the book so they can summarize the information as they read.
-  Have students make a question mark in their book beside any word they do not understand or cannot pronounce. Encourage them to use the strategies they have learned to read each word and figure out its meaning.

After Reading

- Ask students what words, if any, they marked in their book. Use this opportunity to model how they can read these words using decoding strategies and context clues.

Reflect on the Comprehension Skill

- **Discussion:** Discuss how stopping to review the important details helped students remember the facts and better understand the information in the book.
- **Independent practice:** Distribute the [main-idea-and-details/summary worksheet](#). Have students write on their worksheet the main idea and supporting details for either the section of the book titled "The Age of Steam Draws to a Close" or "Modern Uses of Steam." If time allows, discuss their responses.

Reflect on the Reading Strategy

- Review with students the main idea and details they wrote for the sections titled “The Age of Steam Draws to a Close” and “Modern Uses of Steam.”
- **Independent Practice:** Have students write a summary using the information from their section on their [main-idea-and-details/summary worksheet](#). If time allows, discuss their responses.
- **Enduring Understanding:** In this book, you learned many interesting facts about the history of the steam engine. Now that you know this information, what will you think about the next time you see a boiling pot on the stove?

Build Skills

Grammar and Mechanics: **Subject and predicate**

- Explain to students that a sentence has two parts. One part is called the *subject*. It tells the *who* or *what* in the sentence. The other part is called the *predicate*. The predicate tells what action is being done by the subject, or what *is* or *was*. The predicate is the part of the sentence that contains the verb. Remind students that a subject + predicate = a sentence.
- Write the following sentence on the board: *People began to make fewer goods by hand.* Circle the word *People* and tell students that this is the subject (the who). Point out that in this sentence the subject is only one word, but in other sentences the subject may be several words. Ask students to tell what the subject is or was doing (making fewer goods by hand). Underline this phrase and explain that the entire phrase is the predicate.
- ✍️ Direct students to page 5. Read aloud the sentence *Steam takes up more room than liquid water*, and have students point to it. Ask students to circle the subject (*Steam*) and underline the predicate (*takes up more room*).
- ✍️ **Check for understanding:** Ask students to scan pages 7 and 8, and choose a sentence. Have them circle the subject and underline the predicate. Have them share their work with the rest of the group. Confirm or correct students’ answers.
- **Independent practice:** Introduce, explain, and have students complete the [subject-and-predicate worksheet](#). Discuss answers aloud after students finish.

Word Work: **Syllable patterns**

- Write the words *invention*, *hotter*, and *operated* on the board. Ask students to say each word and have them tell the number of syllables in each word. Write the numbers students provide next to the words.
- Review or explain that it is important to know how to divide words into syllables, both for speaking and for reading.
- Review the following syllable rules and provide an example of each. Each syllable is a beat of a word. Every syllable has only one vowel sound. A syllable may or may not have any consonants; when two consonants come between two vowels, the word is divided between the consonants (example: *problem/prob-lem*) and the vowel sounds are usually short. When there is only one consonant between vowels, the word is divided between the first vowel and the consonant (example *began/be-gan*) and the first vowel sound is usually long. A prefix or suffix usually makes a separate syllable (example: *fewer/few-er*). A consonant followed by *le* at the end of a word forms a separate syllable (example: *table/tab-le*).
- ✍️ **Check for understanding:** Write the following words on the board: *engine*, *slowly*, *locomotives*. Ask students to use the inside back cover of their book to write how each word should be divided into syllables. Discuss their responses.
- **Independent practice:** Introduce, explain, and have students complete the [syllable patterns worksheet](#). If time allows, have students discuss their answers.

Build Fluency

Independent Reading

- Allow students to read their book independently. Additionally, allow partners to take turns reading parts of the book to each other.

Home Connection

- Give students their book to take home to read with parents, caregivers, siblings, or friends. Ask them to summarize for someone at home what they thought were the most interesting facts about the steam engine.

Extend the Reading

Informational Writing Connection

Provide print and Internet resources on various prototypes of engines of the future, such as compressed air, hydrogen, solar, ethanol (see *Alternative Fuel Cars*, Level V, and *Electric Cars: History and Future*, Level W). Have individuals or pairs of students choose one type to research further. Have them gather information such as: how it works, dangers involved, realistic uses, surprising facts, and so on. Have students write an informational report and present their findings in small groups. Have students include illustrations that support their findings.

Visit [Writing A-Z](#) for a lesson and leveled materials on informational report writing.

Science Connection

Conduct a simple experiment to demonstrate how steam can do work, such as a covered pot of boiling water and a pinwheel. Once the water boils, crack the lid to release a steady stream of steam (demonstrate only; do not allow students near the pot or steam). Hold the pinwheel over the steam and observe the blades of the pinwheel turn. Have students explain or hypothesize what causes the blades to turn. (When the pressure in steam is released, it transfers its energy to whatever it hits. The transfer of energy from the steam to the object causes it to move. This movement can be used to generate electrical energy, or it can use the steam energy directly as seen in machines such as steam-powered trains, steam engines, and steam shovels).

Skill Review

Discussion cards covering comprehension skills and strategies not explicitly taught with the book are provided as an extension activity. The following is a list of some ways these cards can be used with students:

- Use as discussion starters for literature circles.
- Have students choose one or more cards and write a response, either as an essay or as a journal entry.
- Distribute before reading the book and have students use one of the questions as a purpose for reading.
- Cut apart and use the cards as game cards with a board game.
- Conduct a class discussion as a review before the book quiz.

Assessment

Monitor students to determine if they can:

- identify the main idea and supporting details to better understand the text through discussion and on a worksheet
- accurately use main idea statements and supporting details to write a summary in their own words
- accurately identify subject and predicate in text during discussion and on a worksheet
- correctly recognize and understand syllable patterns during discussion and on a worksheet
- correctly understand and use simple sentences during discussion and on a worksheet
- correctly identify and use antonyms during discussion

Comprehension Checks

- [Book Quiz](#)
- [Retelling Rubric](#)