LESSON 17 TEACHER’S GUIDE

Innovations from Ancient China

by Ira Shull

Fountas-Pinnell Level Y

Informational Text

Selection Summary

From fireworks to wheelbarrows—ancient China is responsible for these and many of the innovations that we use today. This book takes readers through the history of ancient China and how their innovative inventors helped shaped the world we live in.

Characteristics of the Text

<table>
<thead>
<tr>
<th>Genre</th>
<th>Informational Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Structure</td>
<td>Third-person narrative with some direct address to the reader</td>
</tr>
<tr>
<td></td>
<td>Introduction followed by 8 chapters with headings</td>
</tr>
<tr>
<td></td>
<td>Events in chronological order</td>
</tr>
<tr>
<td>Content</td>
<td>Early Chinese dynasties</td>
</tr>
<tr>
<td></td>
<td>Trading goods and ideas</td>
</tr>
<tr>
<td></td>
<td>Inventions and innovations: gun powder, paper, seismograph</td>
</tr>
<tr>
<td>Themes and Ideas</td>
<td>The innovations of the Chinese were ahead of their time.</td>
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<tr>
<td></td>
<td>Philosophical ideas shaped the society.</td>
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<tr>
<td></td>
<td>Many devices that we use today are a direct result of ancient Chinese innovations.</td>
</tr>
<tr>
<td>Language and Literary Features</td>
<td>Parenthetical pronunciation guides for Chinese names</td>
</tr>
<tr>
<td></td>
<td>Dates for dynasties and innovations</td>
</tr>
<tr>
<td>Sentence Complexity</td>
<td>A mixture of simple and complex sentences</td>
</tr>
<tr>
<td></td>
<td>Mid-sentence phrases enclosed by commas</td>
</tr>
<tr>
<td></td>
<td>Multiple items in a series</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Many names of ancient Chinese dynasties: Shang, Zhou, Qin</td>
</tr>
<tr>
<td></td>
<td>Challenging words such as lodestone defined in context</td>
</tr>
<tr>
<td>Words</td>
<td>Many multisyllable words: innovations, excavated, philosophy, archaeological</td>
</tr>
<tr>
<td>Illustrations</td>
<td>Illustrations, maps, and photos</td>
</tr>
<tr>
<td>Book and Print Features</td>
<td>Fifteen pages of text</td>
</tr>
<tr>
<td></td>
<td>Glossary of terms, sidebars</td>
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</tbody>
</table>

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Innovations from Ancient China by Ira Shull

Build Background
Help students use their knowledge of different inventions to visualize the selection. Build interest by asking questions such as the following: Have you ever thought about how common tools such as the compass, the wheelbarrow, and paper came to be? How many years ago do you think these things were invented? Read the title and author and talk about the cover photograph. Tell students that this selection is informational, so it will include facts about ancient China.

Introduce the Text
Guide students through the text, noting important ideas, and helping with unfamiliar language and vocabulary so they can read the text successfully. Here are some suggestions:

Page 2: Have students look at the table of contents. Point out the word dynasty. Suggested language: The word dynasty is important in the history of ancient China. When a country is ruled by a dynasty, power is passed down from one generation to the next in the same family. How do you think being ruled by a dynasty would affect a country and its people?

Pages 4–5: Direct students’ attention to the map on page 4. Read the first sentence of the second paragraph on page 5. Ask: What geographic obstacles would make it difficult to unite ancient China?

Page 8: Have students look at the photograph of the Great Wall and read the caption. Ask: Does it surprise you that the Great Wall is—even in our day—the largest human-made structure in the world? Why or why not?

Page 13: Have students read the heading on page 13. Ask: What kind of event makes the earth ‘shake, rattle, and roll’? Scientists today still have trouble predicting earthquakes, but the ancient Chinese tried to do just that. They invented a seismograph. How do you think it worked?

Now turn back to the beginning of the selection and read to find out about the innovations of the ancient Chinese people.

Expand Your Vocabulary

alchemy – an early form of chemistry that attempted to change base metals into other forms, p. 10

concoction – a creation that is made by mixing several different things together, p. 10

calligraphy – the art of beautiful handwriting, p. 12

pictographs – pictures used as a symbol in ancient writing systems, p. 12

seismograph – an instrument that detects earthquakes and measures their power, p. 13
Read
Have students read silently while you listen to individual students read aloud. Support their understanding of the text as needed.

Remind students to use the Question Strategy and to ask questions about a selection before they read, as they read, and after they read.

Discuss and Revisit the Text

Personal Response
Invite students to share their personal responses to the selection.
Suggested language: What inventions created by the ancient Chinese people do you use today?

Ways of Thinking
As you discuss the text, help students understand these points:

<table>
<thead>
<tr>
<th>Thinking Within the Text</th>
<th>Thinking Beyond the Text</th>
<th>Thinking About the Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The rulers of ancient China passed power down through their families.</td>
<td>• The philosophy and beliefs of a powerful ruler shape the way the government runs.</td>
<td>• The maps help the reader to visualize the areas of China that are mentioned in the text.</td>
</tr>
<tr>
<td>• Scientists and researchers have learned many things about ancient Chinese dynasties.</td>
<td>• Many of the devices that we use today are a direct result of ancient Chinese inventions.</td>
<td>• The glossary of terms provides meanings to important vocabulary in the text.</td>
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<tr>
<td>• The Chinese began trade with India along the Silk Road, a trade route that would eventually stretch into Europe.</td>
<td>• Trade with China is still important to the rest of the world.</td>
<td>• The author uses additional sidebars to provide extra information for the reader.</td>
</tr>
</tbody>
</table>


Choices for Further Support

• Fluency Invite students to choose a passage from the text to read aloud. Remind students to slow down when they come to words or phrases that might be unfamiliar or more challenging.

• Comprehension Based on your observations of the students’ reading and discussion, revisit parts of the text to clarify or extend comprehension. Remind students to go back to the text to support their ideas.

• Phonics/Word Work Provide practice as needed with words and word parts, using examples from the text. Remind students that many words have different forms with related but different meanings. For instance, the noun *alchemy* names an old kind of science. A person who practiced alchemy was called an *alchemist*. Have students identify the word that names people who work in the field of archaeology.
Writing about Reading

Critical Thinking
Have students complete the Critical Thinking questions on BLM 17.9.

Responding
Have students complete the activities at the back of the book, using their Reader’s Notebook. Use the instruction below as needed to reinforce or extend understanding of the comprehension skill.

Target Comprehension Skill

Fact and Opinion Remind students that they need to decide whether an idea in the text can be proved or is a feeling or belief of the author. Model how to add details to the Graphic Organizer, using a “Think Aloud” like the one below:

Think Aloud
On page 13, the author says, “Some ideas are so simple and effective that there’s no reason to change them!” This is an opinion of the author. It cannot be proved. Include this opinion on the chart. On this same page, the author says that China is near an earthquake zone. This is a fact that can be proved. List this fact in on the chart.

Practice the Skill
Have students share an example of another text that includes facts and opinions.

Writing Prompt: Thinking Beyond the Text
Have students write a response to the prompt on page 6. Remind them that when they think beyond the text, they use their personal knowledge to reach new understandings.

Assessment Prompts
- What is the main purpose of this selection?
- What are two innovations from ancient China that we still use today?
- What words on page 12 help you to figure out what the word pictographs means?
English Language Development

Critical Thinking

1. Think within the text: What is a bureaucracy?

A bureaucracy is a type of government arranged into levels.

2. Think within the text: How large is the Great Wall of China?

The Great Wall of China is about 1,500 miles long and 25 feet high.

3. Think beyond the text: The Chinese were responsible for developing gunpowder, as well as many other innovations. List facts about these innovations and your opinion about their importance.

Fireworks entertain us, and the compass has evolved into the global positioning system. These innovations have become very important and are still used today.

4. Think about the text: The Silk Road connected China to the West. Why was that connection important?

It allowed for the trading of goods and ideas between the East and West.

Making Connections: What do you think was one of the most important innovations from ancient China? How does it still influence us today?

Write your answer in your Reader’s Notebook.

Grade 6
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Innovations of Ancient China

Thinking Beyond the Text

Think about the questions below. Then write your answer in two or three paragraphs.

Remember that when you think beyond the text, you use your personal knowledge to reach new understandings.

What kind of invention or innovation do you think the ancient Chinese would develop based on what the world needs now? Imagine and describe something new—or an important change to something that already exists—that would make the world a better place for a long time to come.

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Critical Thinking

Read and answer the questions.

1. **Think within the text**  What is a bureaucracy?

2. **Think within the text**  How large is the Great Wall of China?

3. **Think beyond the text**  The Chinese were responsible for developing gunpowder, as well as many other innovations. List facts about these innovations and your opinion about their importance.

4. **Think about the text**  The Silk Road connected China to the West. Why was that connection important?

**Making Connections**  What do you think was one of the most important innovations from ancient China? How does it still influence us today?

Write your answer in your Reader’s Notebook.
By the 900s, paper had reached India, Egypt, Syria, and Morocco. It took almost another 200 years for it to reach Europe. By the 1400s, the use of the moveable-type printing press (another innovation from China) made paper even more valuable.

Like paper, gunpowder also spread to other cultures via the Silk Road. For many centuries following its discovery, gunpowder remained almost exclusively in the hands of the Chinese.

From fireworks, the Chinese developed early types of bombs and cannons. Later, they developed early versions of firearms.