7A

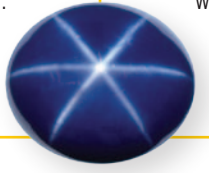
Five Precious Stones

"There is more treasure in books than in all the pirates' loot on Treasure Island."
—Walt Disney

When you think of gems, do you think of sparkling jewels overflowing a treasure chest? Pirates in fact and fantasy are notorious for stealing and hoarding precious gems. But what is a gemstone? What do pirates know that you don't?

Gemstones are extremely beautiful and valuable stones. Gemologists classify five gemstones as precious stones, which are the most valuable.

DIAMOND	RUBY	SAPPHIRE	EMERALD	AMETHYST
Hardness: 10	**Hardness:** 9	**Hardness:** 9	**Hardness:** 8	**Hardness:** 7
				
The word *diamond* comes from the ancient Greek *adamas*, meaning "invincible." That's because diamonds are the hardest of all natural substances. In fact, they are the hardest natural substance on Earth. They alone score 10 on the Mohs scale of mineral hardness. Because of their durability, diamonds are frequently made into cutting and grinding tools.	The name of this precious stone comes from the Latin word *ruber* or *rubrum*, meaning "red." Natural rubies are extremely rare, although artificial ones can be produced. Sometimes when cut, natural rubies show asterism, or a star-shape that shines from within the stone. In 2006 a single ruby sold for $3,800,000.	Sapphires are formed from the same mineral (corundum) as rubies. In addition, sapphires can be made artificially and grown in various sizes for industrial uses. People usually think of sapphires as blue, but they can also be pink, yellow, green, white, and multicolored. Like its sister, the ruby, the sapphire produces asterisms.	Emeralds are exceptionally rare, making them the most valuable gemstone in the world by weight. All emeralds are green, and all have inclusions—materials trapped during the stone's formation. Too many inclusions make emeralds less valuable and affect the stone's hardness. According to legend, the emerald has the power to ward off evil as well as aid poor eyesight!	Amethyst is a violet or purple variety of quartz. It occurs in many locations throughout the world but is only rarely pure enough for use in jewelry. Because it is so easily obtainable, it has become less valuable as a gemstone. Leonardo da Vinci believed that amethyst banishes evil thoughts and elicits intelligence.



So, ye little pirates, take Disney's advice. Learn more about treasure through reading!

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BOOK SHOP
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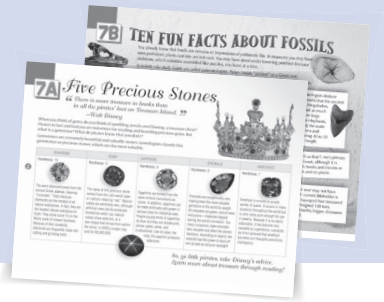
A: Five Precious Stones
B: Ten Fun Facts About Fossils



LITERACY STANDARDS ADDRESSED IN THIS PLAN

RI.4.1 **MAIN FOCUS Key Ideas & Details**
Sessions 1, 2, 3
Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.4.4 **MAIN FOCUS Craft & Structure**
Sessions 2, 3
Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area.*

RI.4.7 **Integration of Knowledge & Ideas**
Session 3
Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

RI.4.9 **MAIN FOCUS Integration of Knowledge & Ideas**
Session 3
Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

RI.4.10 **Range of Reading & Level of Text Complexity**
By the end of year, read and comprehend informational texts, including science texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

L.4.4b **Vocabulary Acquisition & Use**
Session 2
Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word.

SL.4.1c **Comprehension & Collaboration**
Sessions 1, 2
Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

W.4.8* **Research to Build & Present Knowledge**
Sessions 2, 3
Recall information from experiences or gather information from provided sources to answer a question.
*Standard adapted from another grade level

W.4.10 **Range of Writing**
Write routinely over extended time frames and shorter time frames for a range of discipline-specific tasks, purposes, and audiences.

Session 1: Text A

PREVIEWING THE TEXT 5 minutes

Ask students to read the title and scan the article. Encourage them to think about what type of information this article might provide.

Before we read this article closely, let's scan it by looking over the title and the photos. Use what you find to get an idea about what we might learn from this article. . . . Who has an idea to share?

It looks like we will learn about five different types of stones. We might learn where to find jewels and treasures. I think we'll learn about what makes the stones different colors.

READING THE TEXT CLOSELY 5 minutes

Explain the learning focus and ask students to read the first two paragraphs and the box about diamonds. Check to see how well they are applying the focus and understanding the key idea.

LEARNING FOCUS
RI.4.1
Students read closely to find details and examples to explain what the text says explicitly and to make inferences.

KEY IDEA
This text teaches about the characteristics of five precious gemstones.

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VOCABULARY

RI.4.4 Help students use the numerous context clues to determine the meaning of *precious* in the title.

As we read today, we're going to look for details and examples that explain precious stones to us. Let's read the first two paragraphs and the column about diamonds. . . . Who found an important detail as they were reading?

The word diamond *comes from a Greek word that means "invincible."*

That's an interesting detail. Who else would like to share?

Diamonds are the hardest natural substance on Earth. They score a 10 on the Mohs scale of mineral hardness.

As we read, we can also think about ideas that are not directly stated in the text. This is called drawing inferences. One inference I can think of is that diamonds must be sharp as well as hard. What details or examples do you notice that support this?

The text says "diamonds are frequently made into cutting and grinding tools." We can guess from this that they must be sharp.

Now it's your turn. What inferences can you make? Who would like to share one?

I think that diamonds must be expensive because the article says all these gemstones are valuable.

You made a good inference based on information stated in the text. Let's read the rest of the article now. As you read, pause to notice the explicit details in the text, that is, details told to us directly. Then use these to draw your own inferences, or conclusions, about gemstones.

SL.4.1c
DISCUSSION
Collaborative

DISCUSSING THE TEXT 10 minutes

Invite students to share what they learned from the explicit and implicit information in this article. Encourage them to ask questions to clarify or follow up on the information being discussed and to listen closely so they can link their comments to the responses of others.

ELL SUPPORT

RI.4.1 Discussing the Text
Ask questions at students' language proficiency levels and provide the following sentence frames for student responses:
The author says ___.
The text says ___.

Let's continue our discussion about precious stones. Who can share a key detail they found while reading?

Emeralds are green and very rare. They are the most valuable gemstone on Earth by weight.

Who else found an important detail?

Amethysts are a purple quartz, and they're found throughout the world.

What inference can you make that these facts will back up?

Amethysts are more common than emeralds because they are found all around the world. I think this is one reason amethysts must be less valuable gems than emeralds.

You paid close attention to the text and found key details and examples that you used to draw your own inferences. Remember to do this whenever you read informational texts.

RI.4.1
COMPREHENSION
Making Inferences

TEACHER'S CHOICE COMPREHENSION: MAKING INFERENCES

E-RESOURCE **Summative Assessment** **Have students use the blackline master on page 7 to continue making inferences based on information that is told explicitly in "Five Precious Stones." Review students' answers as you evaluate their mastery of the learning focus.**

Session 2: Text B

PREVIEWING THE TEXT 5 minutes

Have students read the title and briefly scan the article. Encourage students to think about what type of information this article might provide.

Today we're going to read an article about a different type of stone. Let's scan the title, text, and illustrations to get a sense of what it's about. . . . What questions do you think this article might answer?

How old are fossils? What different kinds of fossils are there? What are the biggest and smallest fossils?

Some informational texts, like this one, help us learn about the natural history of the world around us. As we read this text, let's focus on the key details and draw our own inferences from them.

READING THE TEXT CLOSELY 5 minutes

Explain the learning focuses for this session. Guide students in explaining the text using both text details and domain-specific words. Check to see how well students are applying the focuses and comprehending the information. Then read to the end.

We're going to continue looking for ideas that are explicitly stated as well as pieces of information we can put together to make inferences. Today we're also going to look at some of the words the author uses and make sure we understand what they mean and how they relate to the topic. Let's begin by reading the title and introduction. . . . What main idea did you learn?

Scientists who study fossils are called paleontologists. They learn a lot of interesting facts from fossils.

Who can tell me one detail the author gives to help explain this idea?

They study the fossils to learn about prehistoric life.

Why do you think the author used the word *paleontologist* instead of just saying *scientist*?

It describes a special kind of scientist who studies ancient and prehistoric things.

Can someone draw an inference from this information?

By studying fossils, paleontologists can learn how plants and animals lived in the past, which will give us clues about how they grew and survived.

Let's read the rest of the article. As you read, it is important to make sure you understand the vocabulary terms so you don't miss any key facts or details.

LEARNING FOCUSES

RI.4.1, RI.4.4

Students read the text to cite details and examples that help them explain what the text says explicitly and draw inferences from the explicit information. They also determine the meaning of general academic and domain-specific words or phrases to help them better understand the topic.

TEACHER'S CHOICE CLOSE READING OPTION

E-RESOURCE **Summative**

Print the online blackline master for independent close reading. Ask students to read Text B and respond to the prompts (summarize author's message, identify critical vocabulary, respond to constructed response questions) before returning for a small-group discussion.

KEY IDEA

Students will learn fun facts about living creatures that turned into stones, otherwise know as fossils.

VOCABULARY

RI.4.4 Help students use context to determine the meaning of the term *prehistoric* in the first paragraph.

SL.4.1c
DISCUSSION
Collaborative

DISCUSSING THE TEXT 10 minutes

Invite students to share what they've learned about the key details and the domain-specific vocabulary in this article. Encourage them to ask and respond to questions that can clarify information and to listen closely to others so they can link their comments to the responses of others.

As we talk together, let's look at the things the author tells us explicitly and put pieces of information together to make inferences. Remember to always ask questions to clarify any pieces of information we are discussing. Who can tell us something the author explicitly states in this article?

Greeks studied fossils in the fourth and fifth centuries B.C.E.

Can someone draw an inference from this detail?

People have always been interested in learning about the past.

Let's think some more about the specific vocabulary the author used to write this article. Let's look at the word *deduce* in the eighth fact. Who has an idea of what this word might mean?

I think it might mean "figure out," because the text says that paleontologists used fossils to deduce how much the shark weighed.

You did a great job using context clues to figure out that *deduce* means "to draw a logical conclusion." What can you infer about the Megalodon now that you know this?

It must have been a huge shark, because scientists compared it to the size of seven large elephants.

Confirm students' good use of the learning focuses and encourage them to keep the focuses in mind whenever they read informational texts.

We've learned that looking closely at explicit details and drawing inferences from them, as well as defining key vocabulary terms, can help us understand what we are reading. Remember to use these strategies whenever you read a text with a lot of interesting details and information in it.

WORD RECOGNITION/ STUDY

L.4.4b Point out that some multisyllabic words are made up of smaller parts. Focus on the word *distinction* in box number 7 and explain that it contains a base word, *distinct*, and a suffix, *-tion*. Explain that the suffix *-tion* means "the state of" or "the act of." Then ask students to define *distinction* (the state of being set apart, or different, from others).

COMPREHENSION SHARE

When you are explaining what the text says, make sure to use the words the author wrote so you are telling exactly what happened.

W.4.8*, RI.4.1
WRITING
Gather Information

TEACHER'S CHOICE CONSTRUCTED RESPONSE: COLLECT TEXT EVIDENCE

E-RESOURCE **Formative/Summative Assessment** **Use the blackline master on page 8 to introduce the constructed response question: *Which buried items do you think are more valuable, gemstones or fossils? Use details from both articles to support your answer.* Have students use self-stick notes to mark places in the text that help them answer the question. Point out that the details they include can come from the illustrations as well as the main text. Review students' self-stick notes as you evaluate their mastery of the learning focus.**

Session 3: Texts A and B

REFLECTING ON THE TEXTS 5 minutes

Ask students to reflect on what they learned about their reading work over the past sessions. Invite them to review and reflect on both articles.

Let's think about what we've learned and practiced in our reading to help us identify key details and examples that explain each text.

We found key details and key facts that the author I told us explicitly, or directly. We drew inferences from the explicit facts we found.

We also worked to define domain-specific vocabulary words and terms to add to our understanding of what we read. Who can remind us what the first article was about?

different types of precious gemstones

How about the second one?

facts about fossils

CROSS-TEXT ANALYSIS 5 minutes

Encourage students to draw on the specific information they identified in each article to compare and contrast the two texts.

Let's think and talk about how the two articles are similar.

Both articles are about different types of stones that have been forming in the ground for a long time. They both mention the role of scientists. Both articles talk about valuable things that were discovered, and they both include historical information.

Now let's discuss how the two articles present different information.

The first article is about precious gemstones, and the second one is about fossils. The article about precious stones talks about specific types of gems, while the one about fossils gives random facts. The first article gives information in a chart. The second one gives information inside little fact boxes with numbers.

When I read two texts on the same topic or similar topics, I use information from both sources to help me understand the topics better. You've done a great job doing this yourself here.

Guide students to synthesize the information from the two articles. The analysis should lead them to make connections and new understandings based on facts from both texts.

Let's think about how the two articles together helped you understand this topic more deeply. Turn and talk with a partner about what you learned from the two texts together. . . . Who will share what they discussed?

We think that the two articles together explain how scientists can discover valuable items buried in the ground. The gems are valuable for jewelry and collections. And the fossils are valuable because they let us learn about life in the past.

You found a great connection between the articles. The articles also helped me think about other things we might be able to learn from things we find buried in the ground.

LEARNING FOCUSES

RI.4.1, RI.4.4, RI.4.9

Students return to the texts to continue to look for details and examples that help them explain what the text says explicitly and draw inferences. They also define general academic and domain-specific words or phrases as they integrate the information presented in the two texts on a similar topic.

VOCABULARY

RI.4.4 Discuss with students that the word *petrified* is an adjective that is frequently used both literally and figuratively. Its Greek root, *petra* or *petros*, means "rock" or "stone." Discuss with students why frightened people are often described as being *petrified*.

RI.4.7
INTEGRATION
Visual Information

INTEGRATING THE LEARNING 10 minutes

Guide students to integrate information from both articles and concisely state the big ideas learned across both texts.

As we read these articles, we identified key details that helped us explain the topics of gemstones and fossils. Then we used that explicit and implicit information to ask and answer questions and to define domain-specific vocabulary words.

There was a lot of information presented visually in both texts. As we continue to think about the big ideas, don't forget to think about how the visual information—such as illustrations, charts, and fact boxes—helped us understand the texts. Now let's think about what we learned from reading both articles together. Share your thoughts and ideas when you are ready.

It is interesting how two things come out of the ground so differently after thousands of years. I would like to know more about how each one is formed.

Have students reflect on the strategies they learned for gaining the key ideas from multiple informational texts.

Let's recap what strategies we used to deepen our understanding of both texts. Who would like to share?

We identified key details that were stated explicitly in both articles. Then we used that information to draw inferences about these topics. We also defined new domain-specific vocabulary words and terms.

You also combined information from both texts to understand the topic more deeply. These strategies will also be helpful when you read other informational texts on your own.

W.4.8*, RI.4.1
WRITING
Respond to Question

TEACHER'S CHOICE CONSTRUCTED RESPONSE: WRITE TO SOURCE

E-RESOURCE **Formative/Summative Assessment** Have students use the blackline master on page 8 to write a response to the question: ***Which buried items do you think are more valuable, gemstones or fossils? Use details from both articles to support your answer.*** Tell students that they can use their self-stick notes to help them write their answer.

Name _____ Date _____

Comprehension: Making Inferences

As you read "Five Precious Stones," you can learn information from the text and also make inferences, or guesses. Use this organizer to make inferences using information that is told to you explicitly, or directly, in the text.

What I Know from the Text	What I Infer

What I Know from the Text	What I Infer

Score: _____

Name _____ Date _____

Constructed Response

Which buried items do you think are more valuable, gemstones or fossils? Use details from both articles to support your answer.

REMEMBER:

- Read the question carefully.
- Draft an opening statement that restates the question and indicates what your answer will be.
- Include several facts and details from the articles to support your answer.
- Draft a closing statement that briefly restates your answer.
- Proofread your work to revise and edit.

Score: _____