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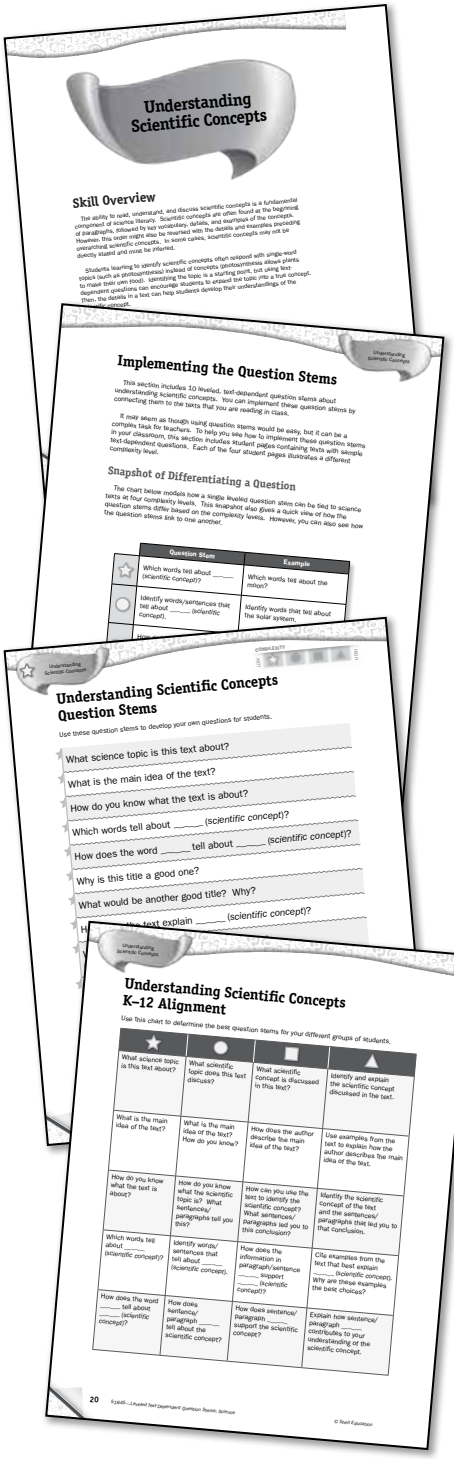
How to Use This Book

Skill Overview—Each skill is defined on the first page of its section. This explains what the skill is and how to introduce it to students.

Complexity—The text-dependent question stems in this book are differentiated to four complexity levels. The levels roughly correlate to four grade ranges as follows:

- grades K–1
- grades 2–4
- grades 5–8
- grades 9–12



Implementing the Question Stems—The second page of each section contains an example question stem differentiated to all four complexity levels. This is a great way for teachers to see a model of how the leveled text-dependent questions can be used with their students.

Question Stems—Each of the 12 sections includes 10 question stems differentiated to four complexity levels for a total of 480 questions in the book. Along with a chart showing the 10 question stems, each complexity level also includes a leveled passage with sample text-dependent questions.

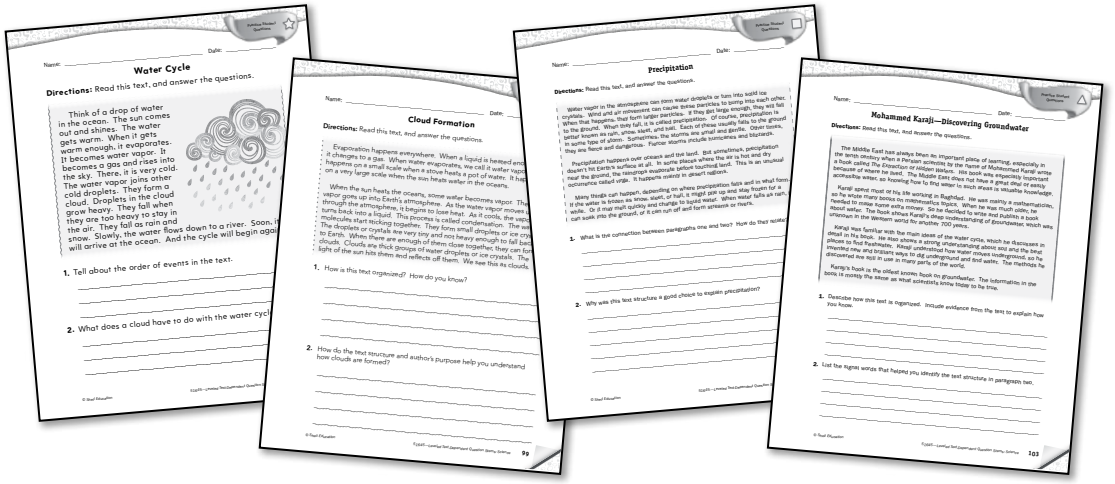
K–12 Alignment—The final two pages in each section include the leveled text-dependent question stems in one chart. This allows teachers to use these two pages to differentiate the text-dependent questions for their students.

Analyzing Text Structures

Skill Overview

Text structures are how authors organize information in texts. When students learn to identify the organizational patterns in texts, they can structure their own thinking using the same patterns, which will help them better understand the information.

There are five text structures typically used in scientific texts: sequence, description, cause/effect, compare/contrast, and problem/solution. Sequence texts are organized chronologically or in a series of steps. Descriptive texts provide details to explain or describe ideas and concepts. Cause/effect texts present events and identify the causes or effects of those events. The compare/contrast structure identifies similarities and differences between ideas. Finally, the problem/solution structure introduces problems and describes possible solutions. Each of these text structures has key features and signal words that students can use to identify them.



Implementing the Question Stems

This section includes 10 leveled, text-dependent question stems about analyzing text structures. You can implement these question stems by connecting them to the texts that you are reading in class.

It may seem as though using question stems would be easy, but it can be a complex task for teachers. To help you see how to implement these question stems in your classroom, this section includes student pages containing texts with sample text-dependent questions. Each of the four student pages illustrates a different complexity level.

Snapshot of Differentiating a Question

The chart below models how a single leveled question stem can be tied to science texts at four complexity levels. This snapshot also gives a quick view of how the question stems differ based on the complexity levels. However, you can also see how the question stems link to one another.

	Question Stem	Example
☆	How does the order of the text help you learn about _____ (*scientific concept*)?	How does the order of the text help you learn about rain?
○	How does the order in which the text is arranged help you understand _____ (*scientific concept*)?	How does the order in which the text is arranged help you understand the water cycle?
□	How does the sequence in which the text is arranged help clarify _____ (*scientific concept*)?	How does the sequence in which the text is arranged help clarify factors that affect weather?
△	Explain how the sequence in which the text is arranged clarifies your understanding of _____ (*scientific concept*).	Explain how the sequence in which the text is arranged clarifies your understanding of atmospheric pressure.

Analyzing Text Structures Question Stems

Use these question stems to develop your own questions for students.

How is the text organized?

Tell about the order of events in the text.

What words help you know the text is _____ (*text structure*)?

How do the headings help group things in the text?

How does the order of the text help you learn about _____ (*scientific concept*)?

How are sentences _____ and _____ connected?

Was _____ (*text structure*) a good way to help you learn about _____ (*scientific concept*)? Why or why not?

What hints are there about how the text is laid out?

What does _____ (*scientific concept*) have to do with _____ (*scientific concept*)?

How did the author help you learn about _____ (*scientific concept*)?

Name: _____ Date: _____

Water Cycle

Directions: Read this text, and answer the questions.

Think of a drop of water in the ocean. The sun comes out and shines. The water gets warm. When it gets warm enough, it evaporates. It becomes water vapor. It becomes a gas and rises into the sky. There, it is very cold. The water vapor joins other cold droplets. They form a cloud. Droplets in the cloud grow heavy. They fall when they are too heavy to stay in the air. They fall as rain and snow. Slowly, the water flows down to a river. Soon, it will arrive at the ocean. And the cycle will begin again.

1. Tell about the order of events in the text.

_____

_____

_____

2. What does a cloud have to do with the water cycle?

_____

_____

_____

Analyzing Text Structures Question Stems

Use these question stems to develop your own questions for students.

How is this text organized? How do you know?

Tell how paragraph _____ is organized.

What signal words help you know the text is _____ (*text structure*)?

How do the headings help you understand the text structure?

How does the order in which the text is arranged help you understand _____ (*scientific concept*)?

What is the connection between paragraphs _____ and _____?

Was this text structure a good choice to explain _____ (*scientific concept*)? Why or why not?

What hints are given about the text's structure in the opening sentence?

How are _____ (*scientific concept*) and _____ (*scientific concept*) connected?

How do the text structure and author's purpose help you understand _____ (*scientific concept*)?

Name: _____ Date: _____

Cloud Formation

Directions: Read this text, and answer the questions.

Evaporation happens everywhere. When a liquid is heated enough, it changes to a gas. When water evaporates, we call it water vapor. It happens on a small scale when a stove heats a pot of water. It happens on a very large scale when the sun heats water in the oceans.

When the sun heats the oceans, some water becomes vapor. The vapor goes up into Earth's atmosphere. As the water vapor moves up through the atmosphere, it begins to lose heat. As it cools, the vapor turns back into a liquid. This process is called condensation. The water molecules start sticking together. They form small droplets or ice crystals. The droplets or crystals are very tiny and not heavy enough to fall back to Earth. When there are enough of them close together, they can form clouds. Clouds are thick groups of water droplets or ice crystals. The light of the sun hits them and reflects off them. We see this as clouds.

1. How is this text organized? How do you know?

_____

_____

_____

_____

2. How do the text structure and author's purpose help you understand how clouds are formed?

_____

_____

_____

_____

Analyzing Text Structures Question Stems

Use these question stems to develop your own questions for students.

How is this text organized? Use examples from the text to show how you know.

Describe how paragraph _____ is organized.

What signal words help you recognize the text structure in paragraph _____?

How do the headings support the text's structure?

How does the sequence in which the text is arranged help clarify _____ (*scientific concept*)?

What is the connection between paragraphs _____ and _____? How do they relate?

Why was this text structure a good/poor choice to explain _____ (*scientific concept*)?

How does the opening sentence provide clues about the text's structure?

Describe the relationship between _____ (*scientific concept*) and _____ (*scientific concept*).

How do the text structure and the author's purpose work together to help you understand _____ (*scientific concept*)?

Name: _____ Date: _____

Precipitation

Directions: Read this text, and answer the questions.

Water vapor in the atmosphere can form water droplets or turn into solid ice crystals. Wind and air movement can cause these particles to bump into each other. When that happens, they form larger particles. If they get large enough, they will fall to the ground. When they fall, it is called precipitation. Of course, precipitation is better known as rain, snow, sleet, and hail. Each of these usually falls to the ground in some type of storm. Sometimes, the storms are small and gentle. Other times, they are fierce and dangerous. Fiercer storms include hurricanes and blizzards.

Precipitation happens over oceans and the land. But sometimes, precipitation doesn't hit Earth's surface at all. In some places where the air is hot and dry near the ground, the raindrops evaporate before touching land. This is an unusual occurrence called *virga*. It happens mainly in desert regions.

Many things can happen, depending on where precipitation falls and in what form. If the water is frozen as snow, sleet, or hail, it might pile up and stay frozen for a while. Or it may melt quickly and change to liquid water. When water falls as rain, it can soak into the ground, or it can run off and form streams or rivers.

1. What is the connection between paragraphs one and two? How do they relate?

_____

_____

_____

_____

2. Why was this text structure a good choice to explain precipitation?

_____

_____

_____

_____

_____

Analyzing Text Structures Question Stems

Use these question stems to develop your own questions for students.

Describe how this text is organized. Include evidence from the text to explain how you know.

Describe how paragraph _____ is organized, and explain how you determined this.

List the signal words that helped you identify the text structure in paragraph _____.

Evaluate and explain how the headings communicate the text's structure.

Explain how the sequence in which the text is arranged clarifies your understanding of _____ (*scientific concept*).

Analyze and describe the relationship between paragraphs _____ and _____.

In what ways does the text structure support the explanation of _____ (*scientific concept*)?

Explain how the opening sentence/paragraph provides clues about the text's structure.

Analyze and describe the relationship between _____ (*scientific concept*) and _____ (*scientific concept*) in the text.

In what ways do the text structure and the author's purpose work together? How do the two contribute to your understanding of _____ (*scientific concept*)?

Name: _____ Date: _____

Mohammed Karaji—Discovering Groundwater

Directions: Read this text, and answer the questions.

The Middle East has always been an important place of learning, especially in the tenth century when a Persian scientist by the name of Mohammed Karaji wrote a book called *The Extraction of Hidden Waters*. His book was especially important because of where he lived. The Middle East does not have a great deal of easily accessible water, so knowing how to find water in such areas is valuable knowledge.

Karaji spent most of his life working in Baghdad. He was mainly a mathematician, so he wrote many books on mathematics topics. When he was much older, he needed to make some extra money. So he decided to write and publish a book about water. The book shows Karaji's deep understanding of groundwater, which was unknown in the Western world for another 700 years.

Karaji was familiar with the main ideas of the water cycle, which he discusses in detail in his book. He also shows a strong understanding about soil and the best places to find freshwater. Karaji understood how water moves underground, so he invented new and brilliant ways to dig underground and find water. The methods he discovered are still in use in many parts of the world.

Karaji's book is the oldest known book on groundwater. The information in the book is mostly the same as what scientists know today to be true.

1. Describe how this text is organized. Include evidence from the text to explain how you know.

_____

_____

_____

_____

2. List the signal words that helped you identify the text structure in paragraph two.

_____

_____

_____

_____