



Scaffolding Comprehension of Informational Text

Responding to the demands of
Alaska State Standards

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Alaska RTI Conference

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Reading Comprehension:

Before Reading
During Reading
After Reading

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Preview - Before Reading Strategies

- Teach the pronunciation and meaning of critical, unknown **vocabulary** words.
- Teach or activate any necessary **background knowledge**.
- **Preview** the text.
- Establish a clear **purpose** for reading.

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Teach the meaning of critical, unknown vocabulary words.

BIG IDEA: If students understand the meaning of critical vocabulary in the passage, their comprehension will be enhanced.

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Before Reading - Vocabulary

- Vocabulary is related to reading comprehension.
 - “Indeed, one of the most enduring findings in reading research is the extent to which students’ vocabulary knowledge relates to their reading comprehension.” (Osborn & Hiebert, 2004)

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Before Reading - Vocabulary

- “direct vocabulary instruction has an impressive track record of improving students’ background knowledge and comprehension of academic content.” Marzano, 2001, p. 69
- .97 effect size for direct teaching of vocabulary related to content (Stahl & Fairbanks, 1986)

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Before Reading - Vocabulary

- Select words that are **unknown**
- Select words that are **critical** to passage understanding
- Select words that students are likely to use in the **future** (Stahl, 1986)
 - Academic vocabulary found used in many domains
 - Domain-specific, background knowledge words
- Select **difficult words** that need interpretation
 - Words not defined within the text
 - Words with abstract referent
 - Words with an unknown concept

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Selection - Vocabulary

Text: *American Journey* Chapter 11, Section 1
 Publisher: Glencoe Jacksonian Democracy

favorite son	majority	plurality	mudslinging
landslide	nominating convention	tariff	suffrage
nullify	secede		

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Selection - Vocabulary

Text: *My World* Chapter 4, Section 3
 Publisher: Pearson Central America and the Caribbean Today

* carnival	* Santeria	* diaspora	* microcredit
* ecotourism	indigenous	democracy	parliamentary system
dictatorship	free-trade agreements		

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Before Reading - Vocabulary

■ Dictionary Definition

■ **protect** -

to defend or guard from attack, invasion, loss, annoyance, insult, etc.; cover or shield from injury or danger

■ Student-Friendly Explanation

■ **Uses known words.**

■ **Is easy to understand.**

To **protect** someone or something means to prevent them from being harmed or damaged.

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On-line Dictionaries with Student-friendly Explanations

Collins Cobuild Dictionary of American English
<http://www.collinslanguage.com/free-online-cobuild-ESL-dictionary>
dictionary.reverso.net/english/cobuild

Longman's
<http://www.ldoceonline.com>
 (Longman's Dictionary of Contemporary English Online)

Heinle's
<http://www.nhd.heinle17e.com/home.aspx>
 (Heinle's Newbury Dictionary for American English)

Merriam Webster's
<http://www.learnersdictionary.com>

(Pronunciation assistance: www.howjsay.com)

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Before Reading - Vocabulary

Step 1. Introduce the word.

- a) Display the word on the screen.
- b) Read the word and have the students repeat the word.
If the word is difficult to pronounce or unfamiliar have the students repeat the word a number of times or say the parts of the word.

Introduce the word with me.

*This word is protect. What word? protect
Tap and say the parts of the word? pro tect
Again. pro tect*

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Before Reading - Vocabulary

Step 2. Present a student-friendly explanation.

- a) Tell students the explanation. OR
- b) Have them read the explanation with you.

Present the definition with me.

*To **protect** someone or something means to prevent them from being harmed or damaged.*

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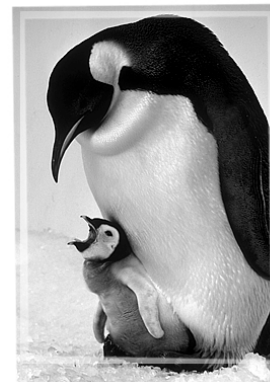
Before Reading - Vocabulary

Step 3. Illustrate the word with examples.

- a. Concrete examples
- b. Visual examples
- c. Verbal examples

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Before Reading - Vocabulary



*This father penguin will **protect** his chick from harm.*

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Before Reading - Vocabulary



This special car seat will **protect** the baby. If there is an accident, he is less likely to be hurt.

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Before Reading - Vocabulary

Step 3. Illustrate the word with examples

- a) Concrete examples
- b) Visual examples
- c) Verbal examples

Present the verbal examples with me.

*The father penguin takes care of the egg after it is laid. He **protects** the egg.*

*Human parents try to **protect** their children.*

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Before Reading - Vocabulary

Step 4. **Check students' understanding.**
Option #1. **Ask deep processing questions.**

Check students' understanding with me.

*What are some ways that human parents can **protect** toddlers at an amusement park?*

Begin by saying:

At an amusement park, parents can protect toddlers by.....

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Before Reading - Vocabulary

Step 4. **Check students' understanding.**
Option #2. **Have students discern between examples and non-examples.**

Check students' understanding with me.

*Tell me **protect** or **not protect**.*

*A parent carefully watches his toddler at the park. **protect***

*A parent reads a book as his toddler plays in the park. Looking up occasionally. **not protect***

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Before Reading - Vocabulary

Step 4. Check students' understanding.
Option #3. Have students generate their own examples.

Check students' understanding with me.

*Make a list of ways that a human parent might **protect** a toddler.*

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Before Reading - Vocabulary



protect
protecting
protection
protector

This mother must **protect** her child. She is **protecting** her frightened child. Her child feels safe during the storm because of her mother's **protection**. Her mother is a great **protector**.

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Before Reading – Background Knowledge

Big Idea: If students have the background knowledge required by a passage, their comprehension will be enhanced.

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Before Reading – Background Knowledge

-what one already knows about a subject. Stevens, 1980
- ...all knowledge learners have when entering a learning environment that is potentially relevant for acquiring new knowledge.

Biemans & Simons, 1996

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Before Reading – Background Knowledge

“Students who lack sufficient background knowledge or are unable to activate it may struggle to access, participate, and progress through the **general curriculum**.” Strangman, Hall, & Meyer, 2004

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Background Knowledge - Why?

Read this paragraph and explain it to your partner.

From a neuroanatomy text (found in *Background Knowledge* by Fisher and Frey)

Improved vascular definition in radiographs of the arterial phase or of the venous phase can be procured by a process of subtraction whereby positive and negative images of the overlying skull are imposed on one another.

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Background Knowledge - Why?

Read this paragraph and explain it to your partner.

(*Background Knowledge* by Fisher and Frey)

How much a reader already knows about the subject is probably the best predictor of reading comprehension. When readers engage with a text for which they have limited background knowledge, the text is much more difficult to understand than one for which they have ample background knowledge. ...research indicates that children continue to spin their wheels when they don't have the background knowledge required to understand much of what they are reading. ^{p2}

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Before Reading – Background Knowledge

BIG IDEA

Even a thin slice of background knowledge is useful.

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Teach Background Knowledge

Preparation

1. What is critical?
2. What information would ease acquisition of new knowledge?
3. What information would reduce cognitive overload?

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Teach Background Knowledge

Anchor Instruction in:

- Supplementary informational Text
- Power-point
- Visuals
- Video

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Environment

- When we study a natural **environment** what should we examine?

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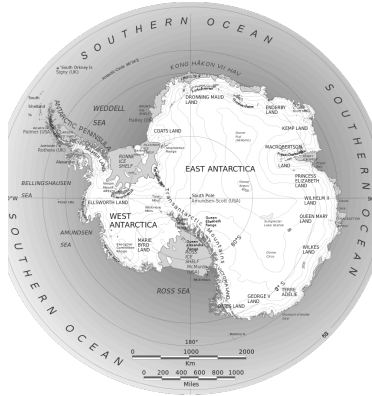


Environment

- When we study a natural **environment** what should we examine?
 - land
 - climate
 - plants
 - animals

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Land – Antarctica



- Twice the size of Australia
- South Pole in Antarctica

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Land – Antarctica



- ice covers all but 2.4% of land
- 90% of ice found on the earth is in Antarctica

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Climate – Antarctica



- coldest place on earth
- winter – temperature drops below -73°C (100°F)
- windiest place on earth

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Climate – Antarctica



precipitation – driest place on earth

desert – Antarctica is considered a desert because it receives very little rain or snow.

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Antarctica - Plants



- plants only in ice-free regions
- lichens and moss

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animals – Antarctica



Seals



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Before Reading – Preview

Big Idea: If students preview a passage, their comprehension will be enhanced.

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Preview - informational Passage

As the student previews, he/she discovers:

- the topics to be **covered**,
- the information that will be **emphasized**,
- how the material is **organized**.
- In addition, background knowledge is **activated**.

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Preview - informational Passage

- Guide students in previewing the chapter and formulating a topical outline using the **text structure**: title, introduction, headings, subheadings, questions.
- Has students preview the selection independently, with his/her partner, or team members.

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Preview - informational Passage

Warm-Up

Before you read a chapter or a section of a chapter in your science, social studies, or health book, Warm-up. Get an idea of the chapter's content by previewing these parts.

BEGINNING

- Title
- Introduction

MIDDLE

- Headings
- Subheadings

END

- Summary
- Questions

Curriculum Associates, *Skills for School Success*

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Preview: Jacksonian Democracy

The Election of 1824

Striking a Bargain
The Adams Presidency

The Election of 1828

Jackson Triumphs

Jackson as President

"Old Hickory"
New Voters
The Spoils System
Electoral Changes

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Preview - During Reading Strategies

- Utilize passage reading procedures that provide adequate reading practice.
- Ask appropriate **questions** during passage reading.
- Have students **generate questions**.
- Teach **text structure strategies** that can be applied to passage reading.

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Comprehension- Informational Text Reading

- **Read**
- **Stop**
- **Respond**
 - answer teacher questions
 - generate questions/answer questions
 - verbally retell content
 - “Paragraph shrinking”
 - mark text /notes in margin
 - take notes (Cornell Notes, Foldables)
 - map/web content

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During Reading – Teacher Asks Questions

BIG IDEA:

Asking students questions during passage reading has proven effectiveness in improving the comprehension of students.

(Morrow & Gambrell, 2001)

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During Reading - Teacher Asks Questions

Curriculum Questions

- Ask questions provided in the curriculum material.
- Adapt or supplement curriculum questions.

The Teacher-Generated Questions

- Divide the material into appropriate segments.
- Develop questions on the content, focusing on the **most important** understanding, reflecting your essential question and/or reading purpose.

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During Reading - Teacher Asks Questions

Guidelines:

1. **Purpose:** Keep the reading purpose in mind as you select, adapt, or write questions.
2. **Text Dependent Questions:** Ask questions that focus on information (evidence) provided in the text.
3. **All Respond:** Everyone thinks.
Everyone writes.
Everyone shares with his/her partner.

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During Reading - Teacher Asks Questions

Guidelines continued:

4. **Think Time:** Provide an adequate amount of thinking time.
For higher order questions, provide up to 6 seconds.

Results: More detailed, logical answers
Greater participation
Number of questions asked increases

5. **Scaffold as needed:**
 - Ask foundation questions before higher order questions
 - Support answers with sentence starters
 - Use optimum active participation strategies

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During Reading - Teacher Asks Questions

Scaffolding with foundation questions:

If a question is a difficult, higher order question, scaffold (support) the students' performance by asking foundation (literal) questions **first**.

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During Reading - Teacher Asks Questions

Scaffolding Questions:

Can penguins fly?

Does the mother or the father penguin sit on the egg to keep it warm?

Does the father penguin stay alone or with a group?

Big Question to be asked:

In what ways are emperor penguins different from other birds you know about?

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During Reading - Teacher Asks Questions

Support student responding by providing **sentence starters** (stems).

In what ways are emperor penguins different from other birds you know about?

Begin by saying:

Emperor penguins are different from other birds in a number of ways. First,

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During Reading - Teacher Asks Questions

Procedure for asking students questions on text material.

1. Have students read a segment of the text.
2. Ask a question.
3. Provide adequate thinking time.
4. Provide a verbal or written sentence starter. Have students share answers with their partners.
5. Call on a student to answer the question.
6. Discuss the answer with the class.

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Student-Generated Questions

Student-Generated Questions based on Headings and Subheadings

1. Read the heading or subheading.
2. Generate one or two questions .
3. Read the section.
4. Answer the question.

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Classifying Rocks

Question	Answer
How do you classify rocks?	Rocks are classified by mineral composition, color, and texture.
How are rocks classified?	

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How Rocks Form

Question	Answer
Igneous rocks How do igneous rocks form?	
Sedimentary rocks How do sedimentary rocks form?	
Metamorphic rocks How do metamorphic rocks form?	

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How Rocks Form

Question	Answer
Igneous rocks	Igneous rocks are formed when magma or lava cools.
Sedimentary rocks	
Metamorphic rocks	

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Student-Generated Questions

Student-Generated Questions based on Headings and Subheadings

Class Option:

1. Class reads the heading/subheading.
2. Students verbally generate questions with their partner.
3. Students suggest questions based on the heading or subheading.
4. Teacher records questions on screen.
5. Class reads section of text (silent reading, partner reading, choral reading, cloze reading).
6. Teacher and students discuss answers to the student-generated questions.

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Student-Generated Questions

Student-Generated Questions based on Headings and Subheadings

Partner Option:

1. Partners read the heading or subheading.
2. The partners write down one to three questions.
3. Partner #1 reads section and Partner #2 follows along.
4. Partners answer their questions in writing or verbally.
5. Partners reverse reading roles.

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Why was Poe labeled a "loner"?	- <u>orphaned by three</u>
	- <u>separated from siblings</u>
	- <u>conflict with foster family</u>
	- <u>unable to gain approval of foster father</u>
What turmoil and grief did Poe face?	- <u>lost job</u>
	- <u>plagued with alcoholism & illness</u>
	- <u>wife died of tuberculosis</u>
Why is Poe considered a literary giant?	- <u>considered first modern writer</u>
	- <u>Poe's stories continue to be read</u>

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During Reading – Text-Structure Comprehension Strategies

The Big Idea:

The ability to identify and take advantage of text organization can contribute to students' comprehension.

(Dickson, Simmons, & Kameenui, 1998)

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During Reading - Text Structure Comprehension Strategies

- Teach students strategies that can be used during reading of informational text.
 - Marking the Text
 - Note-taking
 - Mapping
 - Verbal Rehearsal
- **Informational text strategies** are based on the pattern found in factual paragraphs: topic and critical details.


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During Reading - Students “mark” the text

1. Number the paragraphs
2. Circle the topic and/or topic sentence
3. Underline supportive details

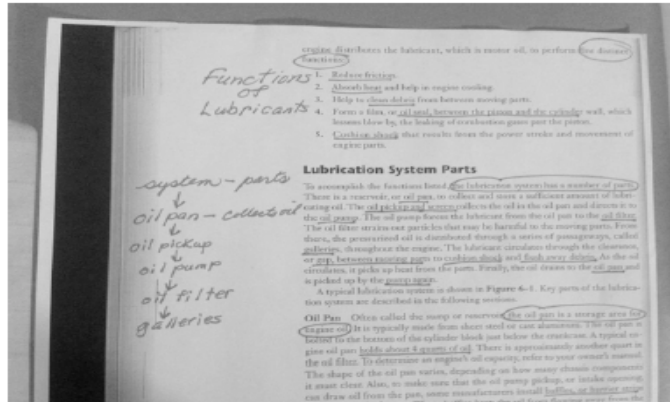
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During Reading - Students write notes in the margins

- Notes in the margin might include:
 - Topic
 - A summary of the critical content
 - Key vocabulary terms and definitions
 - A drawing to illustrate a point
 - Responses to interesting information, ideas, or claims

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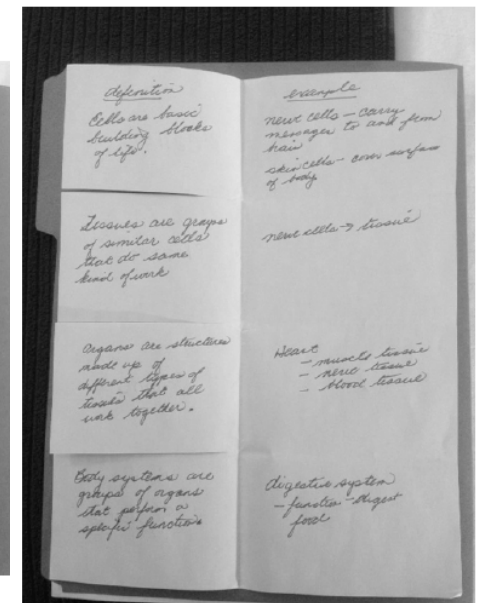
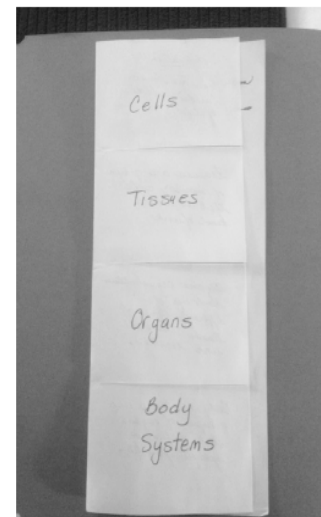
During Reading - Text Structure Comprehension Strategies Cornell Notes

Antarctica	- far south continent
	- South Pole
	- Covered with ice
Weather	- Harsh
	- Below Freezing
	- Windy
Living Things	- Few
	Antarctica, the most southern continent, has very harsh weather and is covered in ice. Few living things survive on Antarctica.

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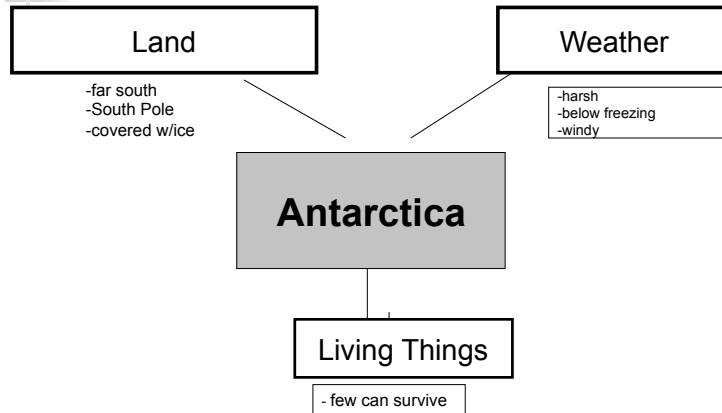
Discovering Cells	
What are cells?	<ul style="list-style-type: none"> all living things are made of cells cells are basic unit of structure and function
Cells and structure	<ul style="list-style-type: none"> structure of living things determined by how cells are put together
Cells and function	<ul style="list-style-type: none"> processes to live, grow, reproduce
Summary	
	All living things made of cells. Cells provide structure of organisms and cells carry out functions that allow organisms to live, grow, and reproduce.

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During Reading - Text Structure Comprehension Strategies Mapping



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During Reading - Text Structure Comprehension Strategies

Paragraph Shrinking

1. **Name the who or what.**
(The main person, animal, or thing.)
2. **Tell the most important thing about the who or what.**
3. **Say the main idea in 10 words or less.**

(Optional: Record your main idea sentence.)

(From the PALS program by Fuchs, Mathes, and Fuchs)

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Strategy – I do it.

The Coldest Continent

Antarctica is not like any other continent. It is as far south as you can go on earth. The South Pole is found there. Ice covers the whole land. In some places the ice is almost three miles thick. Beneath the ice are mountains and valleys.

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Strategy – We do it.

The weather in Antarctica is harsh. It is the coldest place on Earth. The temperature does not get above freezing. It is also one of the windiest places in the world.

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Strategy – You do it.

Not many living things are found in Antarctica. People go there to study for only a short time. Very few animals can live there. Yet many animals live on nearby islands. Seals and penguins swim in the ocean waters. They build nests on the land. Some birds spend their summers in Antarctica. But most of the continent is just ice, snow, and cold air.

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9.1 Early Brain Development
The Developing Child
Application of Paragraph Shrinking

1. *A baby's brain develops rapidly in the first year of life.*
2. *When baby is given quality experiences, brain development accelerates.*
3. *Neural pathways form and control body functions and thinking.*
4. *The brain uses sensory input to build neural pathways.*
5. *Most actions of newborns are instinctive reflexes.*
6. *Baby gains many skills that result for development of brain.*

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Preview - After Reading Strategies

- Have students complete or generate graphic organizers that summarize critical information.
- Have students answer written questions.
- Have students write a summary of the passage content.

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After Reading - Graphic Organizers

Big Idea:

The main effect of graphic organizers appears to be on the improvement of the reader's memory for the content that has been read.

(Harris & Hodges, 1995)

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After Reading - Graphic Organizers

The teacher:

- Provides students with a **graphic organizer** that reflects the structure of the text material
 - Central Idea
 - Hierarchy
 - Compare/Contrast
 - Sequence of Events
 - Cause/Effect
 - Problem/Solution

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After Reading - Graphic Organizers

- After completing the graphic organizer,
 - Use the graphic organizer for additional study, practice, and review.
 - Have students teach the content on the graphic organizer to their partners.
 - Use the graphic organizer as a support during class discussions.

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Answering Written Questions

BIG IDEA:

When answering written questions, students will deeply process the information, enhancing their reading comprehension.


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After Reading - Answering Written Questions

- Teach students to change the question into part of the answer and write the partial answer down.
- For each written question, have students determine if the answer is :
 - In the book OR
 - In my head (Raphael, 1986)
- Provide sentence or paragraph frames to scaffold answers.

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After Reading - Summarize Passage

The Teacher:

- Has students **retell** the passage content using their notes or graphic organizer.
- Teaches students how to **write a summary** using a writing frame or a writing strategy.

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After Reading - Write a Summary

When you summarize, you have to

- Determine what is important.
- Condense information.
- Put it in your own words.
- Become more aware of the content, and the relationships between ideas.

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Writing Frames - informational Text Summary

Antarctica is the coldest continent on the earth. The land is covered with _____ . The temperature stays below _____ and the _____ constantly blow. Because of these conditions, not many _____ things are found on this continent.

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Summary Writing Strategy

Write down the topic of the summary.

- | | |
|------------------|---|
| List | - Make a list of important ideas. |
| Cross-out | - Cross out any unnecessary or weak ideas. |
| Connect | - Connect ideas that could go in one sentence. |
| Number | - Number the ideas in the order that they will appear in the paragraph. |

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List - Make a list of important ideas.

Penguin's birth

- *Male takes care of egg*
- *Female lays egg*
- *Female leaves*
- *Female spends winter at sea*
- *The water is very cold*
- *Male puts egg on his feet under belly*
- *Male stays on egg for two months*
- *Male doesn't eat*
- *Egg hatches*
- *Male must care for baby*

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Cross-out - Cross out any unnecessary or weak ideas.

Connect - Connect ideas that could go in one sentence.

Penguin's birth

Male takes care of egg

Female lays egg

Female leaves

Female spends winter at sea

The water is very cold

Male puts egg on his feet under belly

Male stays on egg for two months

Male doesn't eat

Egg hatches

Male must care for baby

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Number - Number the ideas in the order that they will appear in the paragraph.

Penguin's birth

3 *Male takes care of egg*

1 *Female lays egg*

2 *Female leaves*

Female spends winter at sea

The water is very cold

4 *Male puts egg on his feet under belly*

Male stays on egg for two months

5 *Male doesn't eat*

Egg hatches

6 *Male must care for baby*

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Write a summary.

The birth process of penguins is fascinating and quite different from that of other animals. The female penguin lays an egg. However, the female penguin leaves soon after laying the egg and spends the winter in the sea. Meanwhile the male must take care of the egg. For two months, he places the egg on his feet under his belly. During this time, the male penguin doesn't eat. Even after the baby penguin hatches, the male penguin continues to take care of the infant penguin.

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