

Background Knowledge

Key to Reading Comprehension and Learning

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Background Knowledge - What?

- ...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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One-minute Quick List

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Background Knowledge - What?

■ Personal Background Knowledge

Academic Background Knowledge

Declarative Knowledge

Facts
Word meanings
Academic concepts
Schema
Relevant personal experiences
Political, social, historical contexts

Procedural Knowledge

Procedures
Strategies

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Background Knowledge - What?

Schema Defined

Reader's schema is organized knowledge of the world, which provides information for comprehending, remembering ideas, and learning. Anderson, 1994

Teachers encourage schema building by helping students build background knowledge, access the background knowledge, and use it to bridge new learning. Rea & Mercuri, 2006

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Background Knowledge - What?

- Background knowledge is related to the **subject**.
- When adults were tested on knowledge of 20 academic subjects, their knowledge varied from subject to subject. Rolfhus & Ackerman, 1999
- Thus, background knowledge must be built subject by subject.

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Why important?

Background Knowledge & Comprehension

- Background knowledge of text has a major impact on whether or not a reader can comprehend text.

Anderson & Pearson, 1984; Bransford, Stein, & Shelton, 1984; Wilson & Anderson, 1986

- Across grades and reading ability, prior knowledge of subject area and key vocabulary results in higher scores on reading comprehension measures.

Langer, 1984; Long, Winograd, & Bridget, 1989; Stevens, 1980

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Why important? Background Knowledge & Comprehension

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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Why important? Background Knowledge & Comprehension

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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Why important? Background Knowledge & Processing

1. Provides scaffolding for understanding text.
2. Helps reader decide where to attend.
3. Allows the reader to make inferences.
4. Provides a guide to search memory.
5. Helps produce hypotheses about information that is missing. Anderson, Anderson, & Pichert, 1978
6. Allows the reader to remember more.
7. Enhances speed of processing.

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Why important? Background Knowledge & Processing

Fill in partial notes.

1. Provides _____ for understanding text.
2. Helps reader decide where to _____.
3. Allows the reader to make _____.
4. Provides a guide to _____.
5. Helps produce hypotheses about _____ that is missing.
Anderson, Anderson, & Pichert, 1978
6. Allows the reader to _____ more.
7. Enhances _____ of processing.

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Why important? Background Knowledge & Processing

Allows the reader to make inferences.
Determine the meaning of each sentence.

1. Harry Thompson was the Benedict Arnold of the oil industry.
2. They headed towards the gate under Sousa's spell.

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Why important? Background Knowledge & Learning

“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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Why important? Background Knowledge & Learning

- Average correlation between person's background knowledge of a given topic and extent to which a person learns new information is .66. Marzano, 2004
- Prior knowledge has a large influence on student performance, explaining 30 to 60% of variance in performance. Docy, Segers, & Buehl, 1999

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Why important? Background Knowledge & Writing

- Background knowledge is important in expository writing.
- Students who know little about an assigned topic have difficulty writing about it. Davis & Winek, 1989

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Why Important?

Background Knowledge & Income

- Significant relationship between knowledge of academic information and type of occupation and overall income. Stricht, Hofstetter, & Hofstetter, 1997

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Background Knowledge and Memory

■ Sensory Memory

- Attends to sensory information
- Very selective
- Filters out much sensory information
- Extremely short term

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Background Knowledge and Memory

■ Working Memory

Also referred to as short-term memory

- Allows us to temporarily store and manipulate information
- Can process 7 bits of information at a time (Miller, 1956)
- Cowan (1998) suggested 4 bits of information more accurate
- Quality & type of processing in working memory dictates whether information makes it to permanent memory
- Repeated practice with details added and associations made

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Background Knowledge and Memory

■ Permanent Memory

Also referred to as long-term memory

- Stores background knowledge
- Activated by related item in working memory
- Sometimes activated without our awareness

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Background Knowledge - How?

Instruction on background knowledge can significantly improve students' comprehension of relevant reading materials.

Dole, Valencia, Greer, & Wardrop, 1991; Graves, Cooke, & Laberge, 1983; McKeown, Berk, Sinatra, Loxterman, 1992; Stevens, 1982

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Background Knowledge - How?

Ways of addressing background knowledge

1. **On-going Instruction**
2. **Frontloading Passage Reading or Unit**
3. **General Background Knowledge Activities**

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On-going Instruction

- Today's Knowledge = Tomorrow's Background Knowledge
- Must be stored in permanent memory (long term memory) to serve as background knowledge.

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On-going Instruction

- Today's Knowledge = Tomorrow's Background Knowledge
 - Provide explicit instruction.
 - Teach to mastery.
 - Support memory.
 - **Intend**
 - **Organize**
 - **Rehearse**
- (Minniger, 1984; Yates, 1966)

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On-going Instruction

Provide explicit instruction.

Structure of Lesson.

Opening

Attention

Preview - What (Goal) and Why (Purpose-Rationale)

Review

Body

Closing

Review

Preview

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On-going Instruction

- Today's Knowledge =
Tomorrow's Background Knowledge

Intend

Teacher

- This information/strategy/skill is important because.....
- We need to remember
- The most important idea is....
- Let's review.....

Students

- I will take notes / highlight /web / complete graphic organizer / summarize/
- I will study

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On-going Instruction

- Today's Knowledge =
Tomorrow's Background Knowledge

Organize

- **Big ideas** (Example)
 - *Problem* (economic or people's rights)
 - *Solution*
 - *Effect* (problem ends, problem continues, causes a new problem)
Carnine, Crawford, Harness, Hollenbeck and Miller, 1998
- **Graphic organizers** (See Examples 1 - 7)
- **Schema**

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On-going Instruction

Today's Knowledge =
Tomorrow's Background Knowledge

Rehearse

-Repeated practice needed

-The more times students process information the more likely they are to remember it. Marzano, 2004

-Students require 4 exposures to information to adequately integrate into background knowledge (within a 2 day period) Nuthall, 1999

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On-going Instruction

Today's Knowledge =
Tomorrow's Background Knowledge

Rehearse

Provide judicious practice (Burke, Hagan, & Grossen, 1998)

- Provide sufficient practice opportunities
- Initial instruction
- Distributed practice
- Cumulative review

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On-going Instruction

Today's Knowledge =
Tomorrow's Background Knowledge
Rehearse

Develop a PLAN for practice

Science Teacher's Plan

Rehearse information during lessons

Entry tasks - Two Questions on current topic
Two Review Questions

Exit tasks - Big Ideas from Today's Lesson

Friday Review - Teach Previous Graphic Organizer to Partner
Play Quizlet Vocabulary Review Game

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Background Knowledge

BIG IDEA

Even a thin slice of background
knowledge is useful.

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Frontloading Passage Reading

- Passage Specific Background Knowledge Instruction

- **Frontloading**

- **Teach**

- **Preview**

- **Critical Information**

- **Vocabulary**

- **Activate**

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Frontloading Passage Reading

Goals of frontloading

- To increase comprehension of unit, chapter, or passage.
- To increase ease of processing information.
- To increase learning of new information by connecting to previously learned information.
- To reduce cognitive “overload.”

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Frontloading Passage Reading

Goals of frontloading

- To increase _____ of unit, chapter, or passage.
- To increase ease of _____.
- To increase learning of new information by connecting to _____ information.
- To reduce cognitive _____.

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Frontloading - Preview Narrative Passage Reading

If little or no knowledge of book's subject, comprehension and enjoyment are impaired.

(Anderson & Hite, 2010)

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Frontloading - Preview Narrative Passage Reading

Two narrative approaches

1. Teacher-lead preview based on story grammar elements
2. Student preview strategy to build a schema for enjoying new novel

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Frontloading - Preview Narrative Passage Reading

Teacher-lead preview focusing on story
grammar elements (based on Graves et. al, 1983)

Examine Plot Synopsis (back cover/front flap)

- title
- settings (Provide historical background.)
- characters (Provide descriptive list of characters.)
- conflict
- plot
- events
- theme *(See Example 8)*

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Frontloading - Preview Narrative Passage Reading

Student **preview strategy** to build a schema for
enjoying new novel (adapted from Anderson & Hite, 2010)

Student Sleuth extracts information from:

- **Back Cover or Book Jacket Flap**
 - Synopsis of story
 - Setting - When and Where
 - Main character - Name, age, characteristics
 - Conflict
- **Reviews**
 - Theme
 - Conflict
 - Genre

(Continued on next slide.)

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Frontloading - Preview Narrative Passage Reading

- **Cover**
 - Title - Meaning?
 - Illustration
 - Character's actions
 - Clues about setting
- **Publication date**
- **Author's foreword**
 - Why was the book written
 - Information on the historical setting
- *(See Example 9)*

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Frontloading - Preview Informational Passage Reading

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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Frontloading - Preview Informational Passage Reading

- Guide students in previewing the chapter and formulating a topical outline using the **text structure**: title, introduction, headings, subheadings, questions. (See Example 10)
- Has students preview the selection independently, with his/her partner, or team members.

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Frontloading - Preview Informational Passage Reading

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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Frontloading - Teach Critical Information Narrative and Expository Text

Preparation

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

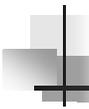
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Frontloading - Teach Critical Information Narrative and Expository Text

Anchor Instruction in:

- Power Point
- Supplementary Informational Text
- Visuals
- Video
- Graphic Organizer

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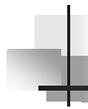
Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Power Point

See Example 11. *Number the Stars - Historical Context*

Reflect on the lesson. Record good practices.

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Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in supplementary informational text.

- Video #1 - Historical context of biography about *Harriet Tubman*. Record good instructional practices.

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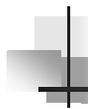


Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Visuals

- Have students interpret topic - related pictures. Croll, et. al, 1986
- Using visuals especially helpful to English Language learners. Hudson, 1982; Fitzgerald & Graves, 2004/2005

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Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Visuals.

- Reflect on the photographs. What might you conclude about the *Night of the Broken Glass*?

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Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Video Clip

- Select well-crafted video.
 - Appropriate length
 - Major points stressed
 - Matches necessary background knowledge
- Scaffold “information dense videos” (e.g., watch more than one time, provide limited focus for each viewing)
- Opportunity to focus on visual literacy skills. (Cena & Mitchell, 1998)

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Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Video Clip - Instructional Procedure

1. **Focus:** Establish a focus for watching the video.
2. **Response:** Ask students to take notes, complete partial notes, or complete a think sheet or other graphic organizer. Tell students that they will be sharing with their partners.
3. **Share:** Have students share their observations with their partners or team.
4. **Discuss:** Lead students in a discussion of the main ideas from video.
5. **Review/Rehearse:** Ask students questions on the critical content.

Frontloading - Teach Critical Information Narrative and Expository Text

Anchor in Graphic Organizer

Provide students with an outline or graphic organizer overview of facts and concepts that show relationship among the concepts and ideas in the chapter. Darch & Gersten, 1986; Griffin, Simmons, & Kame'enui, 1991)

(See Example 12. Use of Visuals and Graphic Organizer for Kingdoms.)

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Frontloading - Teach Critical Information Narrative and Expository Text

Video #2 Frontloading Social Studies- The Great Depression

As you watch this video, record any good practices and any missed opportunities.

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Background knowledge is evidenced in vocabulary.

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

- Vocabulary and background knowledge have the potential to be two of the more powerful means of improving learning and comprehension of adolescent readers

Cromley & Azevedo, 2007

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Science

- “The specialized vocabulary knowledge in science represents the concept-laden hooks on which learning is hung and enables students to build prior knowledge through the expansion of these conceptual hooks.”

Rupley & Slough, 2010

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

- Vocabularies used in science often denote meanings unlike the general everyday general language use.
Rupley & Slough 2010
- Parent - mother or father
- Chemistry - parent molecules starting component in chemical reaction
- Biology - parent - any organization that produces or generates another
- Physics - first nuclide in a radioactive series

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

- “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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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Attributes of Good Vocabulary Instruction

1. Select of words that enhance academic success.
 - Content Vocabulary - Background knowledge
 - Academic Vocabulary - Generalize across domains
2. Group words semantically.
3. Provide student-friendly explanations.
4. Teach parts of words.
5. Provide multiple exposures to terms and meanings.
6. Expand instruction to “word relatives”.
7. Have students maintain a log of vocabulary terms.
8. Provide judicious review.

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Attributes of Good Vocabulary Instruction

1. Select of words that enhance academic success.
 - Content Vocabulary - _____ knowledge
 - Academic Vocabulary - _____ across domains
2. Group words _____.
3. Provide _____ explanations.
4. Teach _____ of words.
5. Provide _____ exposures to terms and meanings.
6. Expand instruction to “word _____”.
7. Have students maintain a _____ of vocabulary terms.
8. Provide judicious _____.

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Selection of Words

In content area classes, add “Academic Vocabulary” to content area words.

Example: Holt World History: The Human Journey, Chapter 13, Section 2

- Suggested words - feudalism, fief, vassal, primogeniture, manorialism, serfs, chivalry
- Added “Academic Vocabulary” - inherit, inheritance; analyze, analysis

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

■ Selection of Words

In content area classes, add “Academic Vocabulary” to content area words.

- Example: Prentice Hall, *Science Explorer: Earth's Changing Surface* Chapter 3, Section 2
 - Suggested words - runoff, rills, gully, stream, river, drainage basin, divide, flood plain, tributary, meander, oxbow lake, alluvial fan, delta, ground water, stalactite, stalagmite
 - Added “Academic Vocabulary” - feature, deposit

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Step 1. Introduce the word.

- Write the word on the board or display on the screen.
- 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. This is particularly important for science terms.

(Pronunciation help: www.howjsay.com)

Introduce the word with me.

This word is element. What word? *element* Element is a noun.

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Vocabulary Instructional Routine

Step 2. Introduce meaning of word.

Option A. Critical Attributes

Present the meaning of the vocabulary term by breaking the definition into the critical attributes (parts).

OR

Have students locate the definition in the glossary or text and break the definition into the critical attributes.

Glossary Entry: An element is a pure chemical substance consisting of one type of atom. An element can not be broken down by chemical means.

Critical Attributes: Element

- pure chemical substance
- one type of atom
- can not be broken down by chemical means

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Vocabulary Instructional Routine

Step 2. Introduce meaning of word.

Option B. Present a student-friendly explanation.

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

Present the definition with me.

When something is required and you must do it, it is compulsory. So, if it is required and you must do it, it is _____.
compulsory

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Vocabulary Instructional Routine

Step 2. Introduce meaning of word.

Option C. Introduce the word using the meaningful parts of the word.

autobiography

auto - self
bio - life
graph - words/letters

photosynthesis

photo - light

subterranean

terra - land

epidemic

demo - people

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Common Latin and Greek Roots

aqua	water	Greek	aquarium, aqueduct, aquaculture, aquamarine, aquaplane, aquatic
aud	hearing	Latin	audio, audition, audiovisual, auditorium, audiotape, inaudible
auto	self	Greek	autograph, autobiography, automobile, autocrat, autonomy
astro	star	Greek	astronomy, astrophysics, astrology, astronaut, astronomer, asterisk
biblio	book	Greek	Bible, bibliography, bibliophobia, bibliophile, biblioklept
bio	life	Greek	biography, biology, autobiography, bionic, biotic, antibiotic, biome, biosphere, biometrics
chrono	time	Greek	synchronize, chronology, chronic, chronicle, anachronism
corp	body	Latin	corpse, corporation, corps, incorporate, corporeal, corpulence
demo	the people	Greek	democracy, demography, epidemic, demotic, endemic, pandemic
dic, dict	speak, tell	Latin	dictate, dictation, diction, dictator, verdict, predict, contradict, benediction, jurisdiction, predict, indict, edict
dorm	sleep	Latin	dormant, dormitory, dormer, dormouse, dormition, dormitive
geo	earth	Greek	geology, geologist, geometry, geography, geographer, geopolitical, geothermal, geocentric

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Common Latin and Greek Roots

graph	to write, to draw	Greek	autograph, biography, photograph, telegraph, lithograph
hydro	water	Greek	hydroplane, dehydrate, hydroelectric, hydrogen, hydrophone
ject	throw	Latin	reject, deject, project, inject, injection, projection
logos, logy	study	Greek	geology, astrology, biology, numerology, zoology, technology, psychology, anthropology, mythology
luna	moon	Latin	lunar, lunacy, lunatic, interlunar
meter	measure	Greek	meter, thermometer, diameter, geometry, optometry, barometer, centimeter, symmetry, voltammeter
mega	great, large, big	Greek	megaphone, megalith, megalomania, megatons, megalopolis
min	small, little	Latin	minimal, minimize, minimum, mini, miniature, minuscule, minute, minority
mit, mis	send	Latin	mission, transmit, transmission, remit, missile, submission, permit, emit, emissary
path	feeling, suffering	Greek	pathetic, pathology, apathy, antipathy, sympathy, telepathy, empathy, sociopath
ped	foot	Latin	pedestrian, pedal, peddle, peddler, pedicure, pedometer
philia	love, friendship	Greek	philosopher, Philadelphia, philanthropist, philharmonic, Philip

Common Latin and Greek Roots

phono	sound	Greek	phonograph, microphone, symphony, telephone, phonogram, megaphone, phony, euphony, xylophone, phony,
photo	light	Greek	photograph, photosynthesis, telephoto, photometer, photophilia
port	carry	Latin	port, transport, transportation, portable, portage, report
spect	see	Latin	respect, inspection, inspector, spectator, spectacles, prospect
scope	look at	Greek	microscope, telescope, periscope, kaleidoscope, episcopal
sol	sun	Latin	solar, solar system, solstice, solarium, parasol
struct	build, form	Latin	instruct, instruction, construction, reconstruction, destruct, destruction, infrastructure, construe, instrument, instrumental
tele	distant	Greek	telephone, television, telegraph, telephoto, telescope, telepathy, telethon, telegenic
terra	land	Latin	territory, terrestrial, terrace, terrarium, extraterrestrial, Mediterranean Sea, terra cotta, subterranean

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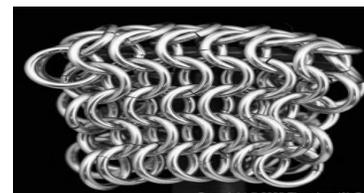
Frontloading - Teach Critical Vocabulary Narrative and Expository Text

**Step 3. Illustrate the word with examples
and non-examples.**

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

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Gold is an element. What do we know about gold?



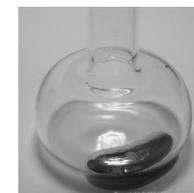
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What do you know about gold?

- A pure substance
- Consists of only one type of atom
- Cannot be broken down by chemical means

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Mercury is an element. What do we know about mercury?



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What do you know about mercury?

- A pure substance
- Consists of only one type of atom
- Cannot be broken down by chemical means

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Step 4. **Check students' understanding.**

Option A. Ask deep processing questions.

Option B. Have students discern between examples and non-examples.

Option C. Have students generate their own Examples and non-examples.

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Video #3. Vocabulary Instruction prior to reading *Harriet Tubman*. Please note any good practices and missed opportunities.

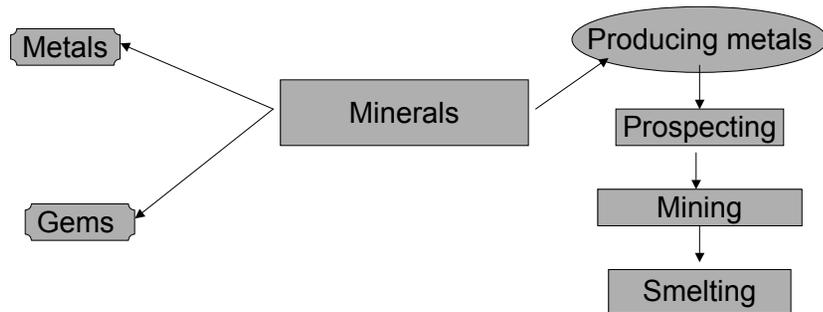
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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

1. When feasible introduce the vocabulary term in relationship to other terms using a graphic organizer.
2. Introduce the **part of speech**.
3. Introduce **synonyms** (same), **antonyms** (opposite), **homographs** (same spelling - different meaning).
4. Tell students when and where the word is often **used**.
5. When appropriate, introduce the **etymology** (history and/or origin) of the word.
6. **Introduce other words in the same word family (derivatives).**

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text



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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

- Have students maintain a vocabulary log.
- The log can be used for:
 - Scheduled vocabulary reviews with the class.
 - Study with a partner or a team.
 - Self-study of vocabulary.
 - (See Examples 13 and 14)

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Frontloading - Teach Critical Vocabulary Narrative and Expository Text

Provide Practice including cumulative review

- Practice activities should:
 - Be **engaging**.
 - Provide **multiple exposures** to the words. (Stahl, 1986)
 - Encourage **deep processing** of the word's meaning. (Beck, McKeown, & Kucan, 2002)
 - When possible, connect the word's meaning to **prior knowledge**.
- Provide practice over time.
- Example: Quizlet

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Frontloading - Activate Background Knowledge

Activate Background Knowledge

- Reflection and Recording
- Anticipation guide
- Cloze
- Semantic Mapping
- These evidenced-based practices can be used to activate background knowledge and assess entering level of knowledge.

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Frontloading - Activate Background Knowledge

Reflection and Recording

1. Have students state, write down, or record what they know about the topic.

What do I already know about this topic?

Carr & Thompson, 1996; Peeck, van dem Bosh & Keupling, 1982; Smith, Readence & Alvermann, 1983; Spires & Dontey, 1998; Walraven & Reitsma, 1993

2. After reflecting and recording, engage students in a group discussion of the topic.

Dole, et. al, 1991; Schmidt & Patel, 1987; King, 1994; Hansen & Pearson, 1983.

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Frontloading - Activate Background Knowledge

- Teacher-directed instruction focused on information necessary for understanding text, more effective than activating student knowledge and discussing it.

Dole, Valencia, Greer, & Wardrop, 1991

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Frontloading - Activate Background Knowledge

Cloze Procedure

1. Select a self-contained reading passage.
2. Leave first and last sentence and all punctuation intact.
3. Carefully select the words for omission by using a word count formula, such as every fifth word, or other criteria. Delete words that carry meaning, such as nouns, main verbs, adjectives, and adverbs.
4. Have students read the entire passage before they fill in blanks.
5. Encourage the students to fill each blank.
6. Give students an appropriate amount of time to complete the task.
7. Prompt students to reread the completed passage.

Kroeger, Burton, and Preston, 2009; Taylor, 1953

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Background Knowledge - Activate Cloze Procedure

Students' background knowledge is highly related to reading comprehension and overall learning. Given that students often have little _____ of the topic, the teacher can _____ the passage reading either by teaching _____ background knowledge or by activating background _____. When introducing background knowledge directly, the _____ can be anchored to a power-point presentation, _____ informational article, visuals, a video, or _____ organizer. The teacher can promote retention of _____ information by using three practices: intend, _____, and rehearse. Similarly, the teacher can provide _____ instruction on vocabulary terms. Studies have consistently validated the benefits of explicit instruction on critical background knowledge and vocabulary.

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Frontloading - Activate Background Knowledge

Students' background knowledge is highly related to reading comprehension and overall learning. Given that students often have little knowledge of the topic, the teacher can frontload the passage reading either by teaching critical background knowledge or by activating background knowledge.

When introducing background knowledge directly, the instruction can be anchored to a power-point presentation, an informational article, visuals, a video, or a graphic organizer. The teacher can promote retention of the information by using three practices: intend, organize, and rehearse. Similarly, the teacher can provide explicit instruction on vocabulary terms. Studies have consistently validated the benefits of explicit instruction on critical background knowledge and vocabulary.

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Frontloading - Activate Background Knowledge

Anticipation Guide

1. The teacher reads the chapter and determines the most important ideas that students should gain.
2. These ideas are stated either as true or false statements.
3. Before reading the chapter, the students read each statement and indicate if they believe the statement is true or false based on their current background knowledge.
4. After reading the chapter and participating in other learning activities, the students read each statement and indicate if they believe the statement to be true or false based on their expanded knowledge.
5. (Optional) Students rewrite false statements, creating true statements. In the end, the students will have a summary of key ideas.

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Frontloading - Activate Background Knowledge

Semantic Mapping

1. Have students generate a list of words that they associate with the concept.
2. Next, have students generate categories for the words.
3. Then, students record words from their list with a matching category.
4. Semantic mapping can be done individually, in pairs, or in cooperative teams. (See Example 16)

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General Background Knowledge Activities

- Real Experiences
- Virtual Experiences
- Wide Reading
- School-wide Vocabulary Program

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General Background Knowledge Activities

- Real Experiences
 - Field trips
 - Museums
 - Art Galleries
 - Court Houses
 - Cemeteries

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General Background Knowledge Activities

- Virtual Experiences
 - Virtual field trips
 - Virtual dissection labs

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General Background Knowledge Activities

Wide Reading

- Large differences in amount of independent reading by students at different reading levels.
- Students at the 90th percentile encounter 200 times more words than students at the 10th percentile.

Anderson, Wilson, & Fielding, 1986

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Variation in Amount of Reading

Percentile Rank	Minutes per day reading in books	Minutes per day reading in text	Words per year in books	Words per year in text
98	65.0	67.3	4,358,000	4,733,000
90	21.2	33.4	1,823,000	2,357,000
80	14.2	24.6	1,146,000	1,597,000
70	9.6	16.9	622,000	1,168,000
60	6.5	13.1	432,000	722,000
50	4.6	9.21	282,000	601,000
40	3.2	6.2	200,000	421,000
30	1.8	4.3	106,000	251,000
20	0.7	2.4	21,000	134,000
10	0.1	1.0	8,000	51,000
2	0	0	0	8,000

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Increasing Amount of Independent Reading

- Maximize access to books.
 - Extended library hours
 - Classroom libraries
 - Book sales, book exchanges
- Establish time for independent reading.
 - Silent Sustained Reading
 - Partner Reading
 - BUT don't substitute silent reading for reading instruction.
 - Expect reading outside of class.

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Increasing Amount of Independent Reading

- Encourage selection of books at the independent reading level.
 - Teach the “five-finger test”.
- Encourage students to read “familiar” books.
 - Same author
 - Same character
 - Same genre
 - Books in a series

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Increasing Amount of Independent Reading

- Enhance personal motivation.
 - Establish a school climate that encourages reading.
 - Have book-rich environments.
 - Provide book recommendations.
 - Bulletin boards posted with recommendations
 - Book tables
 - Book clubs

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General Background Knowledge Activities -Television???

- Television viewing seemed to add nothing to development of background knowledge. Stanovich & Cunningham, 1993
- Type of television moderates background knowledge. Hall, Chiarello, Edmonson, 1996

Entertainment - Does not increase background knowledge.

Educational - Increases background knowledge.

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General Background Knowledge Activities

- School-wide Vocabulary Program
- Example: Middle School Program
- Researcher: Catherine Snow
- Word Generation Program

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One-minute Quick List

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Thank You

How well we teach =
How well they learn

Teaching for Remembering
Intend Organize Rehearse

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