

Six Facets of Understanding

When we truly understand, we...

- ❖ Can **explain**: provide thorough, supported, and justifiable accounts of phenomena, facts, and data.
- ❖ Can **interpret**: tell meaningful stories; offer apt translations; provide a revealing historical or personal dimension to ideas and events; make it personal or accessible through images, anecdotes, analogies, and models.
- ❖ Can **apply**: effectively use and adapt what we know in diverse contexts.
- ❖ Have **perspective**: see and hear points of view through critical eyes and ears; see the big picture.
- ❖ Can **empathize**: find value in what others might find odd, alien, or implausible; perceive sensitively on the basis of prior experience.
- ❖ Have **self-knowledge**: perceive the personal style, prejudices, and habits of mind that both shape and impede our own understanding; we are aware of what we do and do not understand (**metacognition**) and why understanding is so hard.

Source: Wiggins & McTighe (1998)

Section Two: Thinking Strategies in Theory

- I. Thinking Strategies Used By Proficient Learners
- II. The Language of Thinking
- III. Standards and Thinking Strategies in English/Language Arts
- IV. Standards and Thinking Strategies in Social Science
- V. Standards and Thinking Strategies in Science
- VI. Standards and Thinking Strategies in Mathematical Problem Solving
- VII. Schema
- VIII. Schema: Using Prior Knowledge
- IX. Schema: Strategies for Making Connections
- X. Drawing Inferences From Text
- XI. Drawing Inferences From Text: Using The Gradual Release Of Responsibility Model
- XII. Drawing Inferences: Inferential Reading
- XIII. Asking Questions
- XIV. Asking Questions: Modeling and Explicit Description

- XV. Asking Questions: Strategies For Instruction
- XVI. Asking Questions: Questioning The Author
- XVII. Asking Questions: Notes on Reader Generated Questioning
- XVIII. Asking Questions: Structures for Examining Readers' Questions
- XIX. Determining Importance In Text
- XX. Determining Importance: Distilling the Essence of Text
- XXI. Determining Importance: Strategy Study
- XXII. Determining What's Important
- XXIII. Monitoring Meaning and Comprehension
- XXIV. Monitoring for Understanding
- XXV. Monitoring Meaning: How Do I Know I'm Stuck?
- XXVI. Evoking Images
- XXVII. Evoking Images: Using the Gradual Release of Responsibility Model
- XXVIII. Evoking Images: Strategies for Instruction
- XXIX. Evoking Images: A Strategy For Repairing Comprehension Breakdowns

XXX. Synthesizing

XXXI. Synthesis: Growing Understandings

XXXII. What Is Essential?

XXXIII. What is Essential? -Cognitive Strategies

XXXIV. What is Essential? - Text Structure Instruction

XXXV. What is Essential? - Resources and Materials

XXXVI. What is Essential? - A School and Classroom Climate of Rigor, Inquiry, and Intimacy

Thinking Strategies Used By Proficient Learners

Using prior knowledge helps readers to:

- relate texts to their world knowledge, to other texts and to their personal experiences
- enhance their understanding of text and store text information in long-term memory with related information
- recognize when prior knowledge is inadequate and take steps to build knowledge necessary to understand

Asking questions allows readers to:

- clarify meaning
- make predictions
- locate a specific answer in the text
- focus their attention on important elements of the text

Determining importance in text helps readers to:

- identify key ideas or themes and identify the details that relate to these ideas for themes
- utilize text structures and text features to distinguish important from unimportant information

Drawing inferences helps readers to:

- use their prior knowledge and textural information to draw conclusions and form unique interpretations from text
- make predictions about text, confirm their predictions and test their developing meaning as they read on
- develop answers to unanswered questions in a text

Synthesizing information enables readers to:

- combine information from different sources to create both summaries and interpretations of text
- understand more clearly what they have to read
- extend their synthesis of the literal meaning of a text to the inferential level

Evoking sensory images is a way for readers to:

- draw conclusions and create unique interpretations to the text
- clarify and enhance comprehension

Monitoring meaning and comprehension encourages readers to:

- identify when text is comprehensible and the degree to which they understand it
- understand the processes they can use to make meaning clear
- see places for revision in their own texts as well as those they are reviewing for other writers

Fix-up strategies help readers to:

- acquire and select a wide range of problem-solving strategies and make appropriate choices in a given reading situation
- clarify meaning in a text
- check sources for updated copyrights and reliability

The Language of Thinking

Monitoring for Meaning

Students' Reader Voice

- 'I'm confused here/I'm clear here ...'
- 'I don't get it/I get it ...'
- 'This doesn't make sense/I understand ...'

Teacher Prompts

- 'What makes sense?'
- 'What's confusing?'
- 'Where are you 'clue-full'? 'clueless'?'
- 'What will you do now to restore meaning?'

Activating, Utilizing and Building Background Knowledge (Schema)

Students' Reader Voice

- 'This is just like ...'
- 'This reminds me of ...'
- 'A connection I made to this piece is ...'
- 'This matches the ideas/information in my brain's file folder ...'
- 'A cousin text for this book would be ...'

Teacher Prompts

- 'What does this remind you of?'
- 'What can you connect this to?'
- 'How does this *link* help you understand more deeply?'
- 'Where would you file this information?'
- 'How is this text like ...?'

Asking Questions

Students' Reader Voice

- 'My question is ...'
- 'I'm wondering ...'
- 'How ... what ... why ... when ... who ...'
- 'I wonder ... and I found out ...'

Teacher Prompts

- 'What are you wondering?'
- 'What questions do you have?'
- 'In what ways will those questions help you understand this?'
- 'What are you curious about?'

Drawing Inferences

Students' Reader Voice

- 'I'm thinking that ...'
- 'I predict ...'
- 'Even though the text doesn't say so, I think ...'
- 'I bet ... I knew it ...'
- 'I am guessing that ...'

Teacher Prompts

- 'What are you thinking?'
- 'What conclusions can you draw?'
- 'How does this thinking beyond the text help you make deeper meaning of your reading?'

Determining Importance

Students' Reader Voice

- 'I think this is really important ...'
- 'This is essential ... This is extra ...'
- 'When I sort all this out, these things seem to stick ...'
- 'I'll remember ...'
- 'I learned ...'
- 'The big ideas here are ...'

Teacher Prompts

- 'So, what's essential here?'
- 'Is that important to understand?'
- 'How does the author show us what s/he thinks is important?'
- 'What are the main ideas/messages in this text?'
- 'What does the author want us to learn from this piece?'

Creating Sensory Images

Students' Reader Voice

- 'In my mind, I can see/hear/smell/feel/taste ...'
- 'My image is ...'
- 'The movie in my head ...'
- 'The picture is on/off ...'
- 'Painting a portrait of my reading, I saw ...'

Teacher Prompts

- 'When you read that, what did you see/hear/smell/feel/taste?'
- 'What words led you to that image?'
- 'How does that image help you understand this text?'

Synthesizing Information and Ideas

Students' Reader Voice

- 'At first I thought ... but now I'm thinking ...'
- 'Now I understand that ...'
- 'My have really changed ...'
- 'Like putting a puzzle together, the pieces of my reading are ...'

Teacher Prompts

- 'Now what are you thinking?'
- 'What's changed about your ideas/thinking?'
- 'Tell me about the *quilt* of your thinking.'

Problem Solving

Students' Reader Voice

- 'I think I'll reread to make better sense ...'
- 'I'm going to slow down here ...'
- 'What a minute, I'm not making sense here ...'

Teacher Prompts

- 'So, what did you do to repair meaning?'
- 'Now what are you going to do?'
- 'Knowing that it doesn't make sense is only part of the work. Now you have to fix it up to make better sense.'

Standards and Thinking Strategies in English/Language Arts

PEBC staff developers work alongside teachers to implement classroom practices that address the Colorado Model Content Standards for Reading and Writing, as well as the standards established by the National Council for the Teaching of English (NCTE) in cooperation with the International Reading Association (IRA). The thinking strategies directly support these standards, and are an integral part of instruction as secondary students develop their abilities to read, write and communicate effectively.

Students read and understand a variety of materials.

(Colorado Model Content Standard 1, NCTE/IRA Standards 1, 2)

We encourage teachers to use a wide variety of texts from different media and genres to support literacy instruction. As students apply reading strategies and skills to different types of text, they gain much greater flexibility as readers.

Students write and speak for a variety of purposes and audiences.

(Colorado Content Standard 2, NCTE/IRA Content Standards 4 and 5)

We help teachers develop instructional strategies that help students construct text that meets a wide range of purposes for writing, their own as well as those prompted from outside sources. We also help teachers work with students to develop the fluency and flexibility needed to address the organizational and content demands of various writing forms and audiences, and to develop a strong voice and sense of ownership in their writing, no matter what the purpose or audience.

Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization and spelling.

(Colorado Content Standard 3, NCTE/IRA Content Standard 6)

We help teachers develop inquiry-based writing instruction that engage students in meaningful thinking about compelling topics, and help students show all they can do as writers, both in terms of effective writing process and producing high quality finished products. We demonstrate how students can assess their own writing and set appropriate standards for themselves. We offer strategies for students to give and receive constructive feedback during the editing stage of writing.

Students apply thinking skills to their reading, writing, speaking, listening and viewing.

(Colorado Model Content Standard 4, NCTE/IRA Standard 3)

We support teachers as they teach their students to think critically about material by questioning, inferring, synthesizing, and evoking sensory images across grade levels and disciplines.

Below we highlight how students use specific thinking strategies in English Analysis & Interpretation.

Thinking Strategy	Cognitive Behaviors
Monitoring for Meaning	<ul style="list-style-type: none"> ➤ Readers pause, consider the meanings in text, and use strategies to enhance understanding. ➤ Writers pause to consider the impact of their work and make conscious decisions about revisions such as; turning a small piece into a larger project, when revisions are complete, or when to abandon a piece.
Activating, Using and Building Background Knowledge	<ul style="list-style-type: none"> ➤ Readers use schema about authors and genre to better understand text. ➤ Writers think about and use what they know about genre, text structure, and conventions as they write.
Asking Questions	<ul style="list-style-type: none"> ➤ Readers ask questions to clarify meaning; to make predictions; to determine an author's style, content or form; and to locate a specific answer in text or consider rhetorical questions. ➤ Writers' questions lead to revision in their own pieces and in the pieces to which they respond for other writers.
Drawing Inferences	<ul style="list-style-type: none"> ➤ Readers know when and how to combine text with their own background knowledge to seek answers to questions. ➤ Writers carefully consider their audience in making decisions about what to describe explicitly and what to leave to the readers' interpretation.
Determining Importance	<ul style="list-style-type: none"> ➤ Readers use their knowledge of important and relevant parts of text to prioritize what to remember and synthesize text for others. ➤ Writers study other authors' techniques for highlighting important points in their texts.
Creating Sensory Images	<ul style="list-style-type: none"> ➤ Readers adapt their images as they read to incorporate new information revealed through the text and to create new interpretations. ➤ Writers create images by selecting powerful words and strong nouns and verbs.
Synthesizing Information	<ul style="list-style-type: none"> ➤ Readers develop holistic/thematic statements that encapsulate the text's overall meaning. ➤ Writers include cues in their text to help readers determine essential themes and ideas that would need to be included in any synthesis statement.

Standards and Thinking Strategies in Social Science

Social scientists focus on research, analysis, and inquiry – the desire to find answers to complex problems and discover hidden relationships. PEBC staff developers draw explicit links to the Colorado and National Social Studies Standards as we help teachers develop and implement inquiry based research projects and analysis. Such research depends on students' effective use of the thinking strategies: an ability to generate compelling questions and thoughtfully gather, evaluate, analyze, and synthesize data.

Students read and understand a variety of materials.

(Colorado Model Content Standards for Reading and Writing, Standard 1)

We help teachers design and construct research projects that require students to pull information from multiple sources, to understand the differences and appropriate times to use one material over another.

Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.

(Colorado Model Content Standards for Reading and Writing, Standard 5)

We conduct demonstration lessons, modeling instructional and reading comprehension strategies for teachers. Staff developers think aloud about their own metacognitive process as they research their topics, showing how they monitor meaning while they take notes, ask questions, and determine importance throughout the inquiry process. Teachers debrief these demonstration lessons with the staff developers, deciding how to incorporate these strategies into their own instruction.

Students know how to use the processes and resources of historical inquiry.

(Colorado Model Content Standards for History, Standard 2)

We help teachers design history projects that require students to ask questions, activate background knowledge, gather data, and infer outcomes.

Students have opportunities to practice the skills of historical analysis and interpretation.

(National Standards for Social Studies Teachers, Disciplinary Standard 1 – History)

We help teachers and students determine importance and ask questions as they compare and contrast historical events, examine multiple perspectives, differentiate between historical facts and interpretations, and analyze multiple sources for information such as literature and art.

Below we highlight how students use specific thinking strategies in Social Science Research & Analysis.

Thinking Strategy	Cognitive Behaviors
Monitoring for Meaning	<ul style="list-style-type: none"> • Social Scientists pause and evaluate information. • Social Scientists use a variety of sources to validate information and to check for accuracy.
Activating, Using and Building Background Knowledge (schema)	<ul style="list-style-type: none"> • Social Scientists use their current background knowledge and how it impacts their interpretation of historical events, economic issues and culture. • Social Scientists launch investigations and ask questions based on previous interests and experiences.
Asking Questions	<ul style="list-style-type: none"> • Social Scientists evaluate their work by considering: What are the most effective resources and how will I access them? Do I have enough information? Have I used a variety of resources? What more do I need? Does it make sense? Have I told enough? Is it interesting and original thinking? Does my writing have voice? • Social Scientists ask critical questions of text: Is there a bias? Whose voice is left out? From whose point of view is this being told?
Drawing Inferences	<ul style="list-style-type: none"> • Social Scientists use primary source documents and artifacts to infer themes and patterns. • Social Scientists use research to infer why and how historical choices were made, the implications of those choices, and how those choices impact us today.
Determining Importance	<ul style="list-style-type: none"> • Social Scientists use their understanding of primary and secondary source text structures to uncover information and navigate text. • Social Scientists determine importance as they sift through data and information collected on the Internet or in other sources.
Creating Sensory Images	<ul style="list-style-type: none"> • Social Scientists use sensory images to imagine other times and places in order to relate to the experiences of others. • Social Scientists incorporate auditory, visual, and kinesthetic imagery when they write.
Synthesizing Information	<ul style="list-style-type: none"> ▪ Social Scientists enhance their understanding of a topic by considering different perspectives, opinions, and sources. ▪ Social Scientists recognize misinformation and reconcile conflicting points of view.

Standards and Thinking Strategies in Science

Scientific inquiry is the vehicle for enhancing student understanding of scientific theories and processes. Such inquiry demands that students actively engage both with the world and with difficult text. PEBC staff developers support science teachers in implementing inquiry-based science instruction that align with the National Science Education Standards. We recognize the role that literacy plays in the lives of scientists as they record data and share their findings with the greater scientific community.

Students read and understand a variety of materials.

(Colorado Model Content Standards for Reading and Writing, Standard 1)

We help teachers design and construct research projects with their students. They support teachers as they show students how to pull information from multiple sources and media, to understand the differences and appropriate times to use one material over another.

Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.

(Colorado Model Content Standards for Reading and Writing, Standard 5)

We offer demonstration lessons, modeling instructional and reading comprehension strategies for teachers. They think aloud about their own metacognitive process as they research their topics on the WEB, showing how they monitor meaning while they take notes, ask questions, and determine importance throughout the inquiry process. Teachers debrief these demonstration lessons with the staff developers, deciding how to incorporate these strategies into their own instruction.

Students understand the process of scientific investigation and design, conduct, communicate about, and evaluate such investigations.

(Colorado Model Content Standards for Science, Standard 1)

We help teachers to create a research process for their students while showing teachers how students can learn to ask questions to develop a hypothesis, map a topic to design a process, and explore resources to test a theory or find answers to a question.

Teachers of science design and manage learning environments that provide students with the time, space, and resources needed for learning science.

(National Science Education Standards, Teaching Standard D)

PEBC staff developers help teachers analyze their learning environments and make modifications to increase their effectiveness with students. This may include the implementation of the workshop model, increasing students' use accessible text, maximizing student dialogue or developing formative assessments that provide timely information regarding student learning.

Below we highlight how students use specific thinking strategies in Scientific Inquiry.

Thinking Strategy	Cognitive Behaviors
Monitoring for Meaning	<ul style="list-style-type: none"> • Scientists reflect on the validity of their hypotheses in light of new data and assess the possibility of errors in their experiments. • Scientists repeat their investigations to ensure that their results are replicable.
Activating, Using and Building Background Knowledge (schema)	<ul style="list-style-type: none"> • Scientists form hypotheses and draw inferences based on their background knowledge. • Scientists build their background knowledge by reading the publications of other scientists, attending scientific meetings, and participating in peer reviews of their work.
Asking Questions	<ul style="list-style-type: none"> • Scientists focus each investigation by posing specific, testable questions and designing experiments that can give definitive answers. • Scientists often pose new questions or modify their hypothesis after gathering new data.
Drawing Inferences	<ul style="list-style-type: none"> • Scientists develop hypotheses based on their inferences. • Scientists examine existing and new data and draw inferences to explain their observations.
Determining Importance	<ul style="list-style-type: none"> • When designing investigations, scientists determine the sequence of steps to take in the process. • Scientists take data and carry out a statistical analysis to determine its significance and try to communicate the importance of their work to the larger community and public.
Creating Sensory Images	<ul style="list-style-type: none"> • Scientists gather qualitative data using their five senses. • Scientists record their qualitative observations with illustrations.
Synthesizing Information	<ul style="list-style-type: none"> • Scientists analyze and interpret quantitative data using tables, charts, graphs, and diagrams. • Scientists draw conclusions from their data by synthesizing what they learned with what they already knew before an investigation.

Standards and Thinking Strategies in Mathematical Problem Solving

Mathematicians explore and investigate an often uncertain world and attempt to explain what they see. Sometimes a single explanation works; more often, patterns, and relationships emerge that lead to several different conclusions. Logic helps mathematicians justify their methods and determine the validity of their solutions as they try to make sense of the unknown. PEBC's professional development in mathematics aligns with the Colorado Model Content Standards in Mathematics and the National Council of Teachers of Mathematics, which focus on authentic problem-solving and clear communication about mathematical thinking and processes.

Application of mathematical knowledge in problem-solving situations

(All Colorado Model Content Standards, NCTM Standard 6)

We demonstrate techniques that enhance student problem-solving ability. Teachers learn to teach problem solving and use a recursive framework to help students become proficient problem solvers.

Communication of reasoning

(All Colorado Model Content Standards, NCTM Standard 8)

We help teachers develop questioning techniques that not only probe student thinking, but also require students to explain their thinking and to justify their answers orally and in writing.

Development of meaningful mathematical knowledge

(All Colorado Model Content Standards, NCTM Standards 1-5)

We help teachers increase their own understanding of the math content – number sense, patterns, algebra, data analysis including statistics and probability, geometry, measurement, and computation. Staff developers model lessons that focus on conceptual understanding and the meaningful development of mathematical procedures. We also give teachers research to help them understand how they can help their students make sense of mathematics.

Below we highlight how students use specific thinking strategies in Mathematical Problem Solving.¹

Thinking Strategy	Cognitive Behaviors
Monitoring for Meaning	<ul style="list-style-type: none"> • Mathematicians are metacognitive as they continually ask themselves, "Does this make sense?" and "Is my answer reasonable?" • Mathematicians use accurate math vocabulary and show their work in clear concise forms so others can follow their thinking without asking questions.
Activating, Using and Building Background Knowledge (schema)	<ul style="list-style-type: none"> • Use their prior knowledge to generalize about similar problems and to choose problem solving strategies. • Mathematicians add to schema by trying more challenging problems and hearing for others about different problem solving methods.
Asking Questions	<ul style="list-style-type: none"> • Mathematicians test theories/answers/hypotheses by asking questions about various approaches to a problem. • Mathematicians extend their own thinking by asking themselves questions for which they don't have answers.
Drawing Inferences	<ul style="list-style-type: none"> • Mathematicians use patterns and relationships to generalize and infer what come next in the problem-solving process. • Mathematicians solve problems in different ways and support their methods through proof, number sentences, pictures, charts, and graphs.
Determining Importance	<ul style="list-style-type: none"> • Mathematicians gather text information from graphs, charts, and tables. • Mathematicians use key words to decide what information is relevant and irrelevant to a problem.
Creating Sensory Images	<ul style="list-style-type: none"> • Mathematicians use mental pictures/models of shapes, numbers, and processes to build an understanding of concepts and problems and to experiment with ideas. • Mathematicians visually represent their thinking through drawings, pictures, graphs, models, and charts.
Synthesizing Information	<ul style="list-style-type: none"> • Mathematicians generalize from patterns they observe. • Mathematicians synthesize math concepts when they use them in real-life applications.

¹ Adapted by Pearson/Dole revised Tovani & James Donouhue.
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Schema

Learners need to activate and use their background knowledge, experiences, and beliefs to remember and use new knowledge. Schemata change because of new information assimilated into long term memory.

SOME KEY IDEAS:

- Proficient learners spontaneously and purposefully recall their relevant, prior knowledge (schema) before, during, and after they read and learn by connecting to the text.
- Proficient learners use their schema to make sense of new information they read and learn, and to store that new information with related information in memory.
- Proficient learners assimilate information from text and other learning experiences into their relevant prior knowledge and make changes in that schema to accommodate the new information. Linking new understandings to other stored knowledge makes it easier to remember and reapply the new information.
- Proficient learners adapt their schema as they read, converse with others and learn - they delete inaccurate information (naive conceptions), add to existing schema, and connect chunks of knowledge to other related knowledge, opinions, and ideas.
- Proficient learners can articulate how they use schema to enhance their comprehension in all forms of text and in all learning situations.
- Proficient learners capitalize on six types of schema when comprehending text and learning new material:
 - memories from particular experiences and emotions that shed light on the events, characters, and so on in a text or learning situation (text-to-self connections)
 - specific knowledge about the topic as well as general world knowledge (text-to-world connections)
 - specific knowledge about text topics, themes, content, structure and organization (text-to-text connections)
 - knowledge of potential barriers to comprehension (particularly in nonfiction text or text with completely unfamiliar content)
 - knowledge about their own reading tendencies, preferences, and styles
 - specific knowledge about the author/illustrator and the tools s/he uses to create meaning
- Each type of schema permits students to monitor for meaning, pose questions, make predictions, draw conclusions, create mental images, synthesize, and determine importance as they read and learn.
- Teachers assist readers in activating (giving students the necessary tools to recall relevant prior knowledge) and building (creating background knowledge on a given topic, author, text structure, etc.) schema.

Schema: Using Prior Knowledge

(From "Developing Expertise in Reading Comprehension" by Pearson, Roehler, Dole, Duffy, 1992)

- Reading is seen as an active process of constructing meaning by connecting old knowledge with new information encountered in text.
- Each of us prints a unique personal stamp on every act of reading we undertake.
- New information is learned and remembered best when it is integrated with relevant prior knowledge.
- Young readers and poor readers often do not activate their prior knowledge.
- Misconceptions are schemata too. Poor readers can be taught to alter prior ideas by doing activities like Double Entry Diaries.

Good readers use their prior knowledge to:

- make predictions
- visualize
- ask questions to monitor comprehension
- draw inferences
- confirm hypothesis (e.g., "That's what I expected.")
- determine what's important in text
- demonstrate to others that they have understood what they have read

There are three kinds of prior knowledge:

- specific knowledge about the topic of the text
- general world knowledge about social relationships and casual structures
- knowledge about the text's organization (genre)

Poor readers need to be taught that they already have ideas in their heads, and that they can use those ideas to help them understand what they read. This is accomplished by:

- modeling our own out-loud thinking with a variety of texts (e.g., "Watch me think out loud and I'll show you how to get your background knowledge ready.")
- doing lots of guided practice before students are sent to practice on their own
- inviting students to transfer their growing understandings to new reading materials
- allowing for many opportunities for students to share how the strategy helped them understand their reading

Ways to help students activate prior knowledge:

- Double Entry Diaries
- Creating "I wonder if this is going to be about . . . What I learned . . ." charts
- Think Alouds (This reminds me of . . . "Oh, I know that!" "Now I get it!")
- Creating "What I know . . . What I want to know . . . What I learned . . ." charts
- Brainstorming

- Engaging in reading conversations that invite students to think more deeply about their thinking by asking questions/sharing observations like:
 - Do you choose books to read based on your interest and background?
 - How does your life impact the reading of this book?
 - Are you like anyone in this book?
 - Really good readers do that all the time. They think of their own lives as they read a book.
 - Reading is a way to connect with other people's lives.
 - Why is this a perfect book for you?
 - As you read, do you ever think about the answers you already have in your head?
 - When you come to a confusing part, ask yourself, "What do I think is supposed to occur here?" How does it fit with what the author says?
 - What do you already know about this topic?
 - What comes to your mind as you read this title?
 - Does this theme or author's style of writing remind you of other books you've read?
 - What do you already know about reading a poem, fiction story, newspaper article, phone book, list of instructions, report, or a map?
 - Are you familiar with similar human conditions? Have you ever know fear or prejudice?

For you as a reader, why is it important to think about what you already know? How does this strategy help you understand what you read? Could you advise other students about the procedure you use to call on your background knowledge?

Schema: Strategies for Making Connections

1. *Relate to a character.* If I make a connection, I better understand how the character is feeling.
2. *Visualize.* When I connect to a piece I have a better picture in my head.
3. *Avoid boredom.* It is harder for me to be bored with my reading if I am connecting to it.
4. *Pay attention.* Making connections gives me a purpose for my reading. When I have a purpose, my mind doesn't wander.
5. *Listen to others.* I am curious to see if people connect to the same things I am connecting to. I want to know their opinions about my connections, too.
6. *Be active readers.* When I connect I am forced to do more than *just read the words*.

Drawing Inferences from Text

Learners use their background knowledge and clues that they receive from the environment or text to draw inferences that help them understand. Inferences can include predictions, conclusions and insights.

Some Key Ideas:

- Inferring is the process of creating a personal and unique meaning from text. It involves a mental process that combines information gleaned from the text and/or learning experience and relevant prior knowledge (schema). The learner's unique interpretation of text is the product of this blending.
- When proficient learners infer, they create a meaning that is neither stated explicitly in the text nor shown in the illustrations. The process implies that they actively search for, or become aware of, implicit meaning.
- Inferring may cause a learner to read/work more slowly, reread/redo sections, converse, write, or draw to better understand the content.
- Inferences may be more thoroughly developed if the learner pauses to reflect and consider multiple interpretations and perspectives.
- When they infer, proficient learners:
 - draw conclusions from text
 - make reasonable predictions as they read, and test and revise those predictions as they read further
 - create dynamic interpretations of text that are adapted as they continue to read and after they read
 - use the combination of background knowledge and explicitly stated information from the text to answer questions they have as they read
 - make connections between conclusions they draw and other beliefs or knowledge, and use the inferences to extend and adapt existing knowledge
 - make critical or analytical judgments about what they read
- When proficient learners infer, they are more able to remember and reapply what they have read, create new and revise existing background knowledge, discriminate and critically analyze text and authors, and engage in conversation and/or other analytical or reflective responses to what they read.
- Proficient learners revise their inferences based on the inferences and interpretations of other learners.
- A wide variety of interpretation is appropriate for fiction and poetry; a narrower range of interpretation is typical for non-fiction text. Teachers should allow great latitude for inferences, provided that the learners can defend their inferences with a description of relevant prior knowledge and specific text they have read.

Drawing Inferences from Text:

Using the Gradual Release of Responsibility Model

The teacher begins by modeling – thinking aloud about his/her own process of inferring during reading. Modeling should occur frequently using short selections. The teacher should focus on his/her process of drawing conclusions, creating interpretations, making predictions, and making judgments and/or critical analyses about what he/she reads. It is important to focus on how inferring enhances comprehension.

Gradually students are invited to share their own inferences from a variety of texts and to defend their conclusions with references to text used.

Students may meet in small groups or pairs to compare predictions, conclusions, and interpretations from the text. They can discuss ways in which their comprehension is enhanced or impaired by their inferences.

Book clubs focus on inferences from a shared reading during the strategy study.

In reading conferences with students, conversation can focus on their inferences in a variety of text. Records from conferences are an effective way to assess the students' use of the strategy.

Invitational (needs-based) groups are created for students who need more modeling and explicit instruction.

Text sets can be used to invite students to reflect on inferences and to compare inferences from different books within the text set.

Sharing time should focus on inferences individual students made during their independent reading for the day, how those inferences came about, and how working through important ideas enhanced their comprehension.

Connections between this strategy and other strategies the students have learned should be made throughout the study.

Modeling in a variety of texts – genre and difficulty – is critical. Modeling is most concentrated at the beginning of a strategy study, but does continue throughout.

The *Major Point Interview for Readers* can be used before and after the study to measure student growth in use of this strategy.

Drawing Inferences: Inferential Reading

Inferential reading occurs when readers . . .

- think about what's next and what to expect
- gather clues together to figure out what is going on
- confirm or disconfirm predictions
- laugh
- build evidence about a character, a setting, a conflict
- feel an emotion and then reacting to it
- answer a question not directly found in the text
- pull information leaked throughout the text to form new thinking
- see clearly a scene or a description
- speculate
- form an educated guess or an opinion
- fill in omitted details, make elaborations
- understand symbolism, similes, metaphors
- form own unique interpretation
- use reason and logic to come up with new ideas
- draw a conclusion, create an outcome
- make analogies
- form a judgment
- connect conclusions with background knowledge
- figure out author's unstated intent
- weave their own sense into the text
- work with information in a new way – to reapply and/or recall later
- argue with the author
- feel empathy for characters and/or the conflict
- construct life lessons, build background knowledge
- take action, e.g., join a response group, write to newspaper
- think about the book even when it's ended
- appreciate reading because they've worked with the author to create meaning

"The reader writes the book." Annie Proulx

Asking Questions

Learners self-question as they read and learn new information. These questions may help them to clarify but more importantly, they will help them to pursue ideas and consider concepts critically.

SOME KEY IDEAS:

- Proficient thinkers spontaneously and purposefully generate questions before, during, and after reading and learning, depending on their purpose.
- Proficient learners ask questions to:
 - clarify meaning
 - speculate about text yet to be read
 - show skepticism or a critical stance
 - determine an author's intent, style, content, or format
 - locate a specific answer
 - consider rhetorical questions that will take their understandings deeper

The types of questions differ based on the type of text (genre) and learner purpose.

- Proficient learners use questions to focus their attention on ideas, events, or other elements they want to remember.
- Proficient learners understand that many of the most intriguing questions are not answered explicitly in the text but left to the learner's interpretation.
- However, when an answer is needed, proficient learners determine whether it can be answered by the text or whether they will need to infer the answer from the text, their background knowledge and/or another text.
- Proficient learners understand how the process of questioning is used in other areas of their lives, both academic and personal.
- Proficient learners understand and can describe how asking questions deepens their comprehension.
- Proficient learners are aware that as they hear others' questions, new ones – called generative questions - are inspired in their own minds. In some cases, the learner's own question causes him/her to generate more.

Asking Questions: Modeling and Explicit Description

In order for students to learn the value of questioning, they need modeling and explicit instruction by a proficient reader. The teacher can:

- Model with picture books or other short text over several days -- recording questions on chart paper that has categories for each of the purposes and times readers ask questions (e.g., questions before reading that relate to author's intent).
- Make clear the distinction between reading aloud and thinking aloud as s/he models.
- Talk to the students about why readers pose questions, how questions help them to comprehend more deeply, and how they use questions in other academic areas and in their lives outside school.
- Gradually invite the students to share their questions, adding them to appropriate places on the chart in the students' language, while continuing to model, gradually diversifying the genre of text used.
- Invite students to meet in small groups or pairs to share and compare questions -- encourage them to list new questions generated through these discussions.
- Continue modeling with invitational groups of students who might benefit from more explicit instruction.
- Remind book clubs to focus on questioning in their conversations throughout the strategy study.
- In reading conferences, focus on their questions before, during, and after reading. Ask students to identify places in the text where they had questions and ask them to use the class chart to categorize their questions. Invite them to pose types of questions they haven't tried yet. Use **think alouds** to assess their use of questioning. Ask the students to identify ways in which posing questions helps deepen their comprehension.
- Focus sharing sessions on questions students discovered while reading and can add to the class chart -- add new categories to the chart if necessary.
- Continue large and invitational group modeling in a variety of texts -- modeling is most concentrated at the beginning of a strategy study but continues throughout.
- Make frequent connections between questioning and other strategies on which the students have already focused.
- Use the *Major Point Interview for Readers* to assess students' use of questioning as a tool for deepening comprehension before and after the strategy study.
- Use a variety of tools such as coding, highlighting markers on copied text, post-its, question maps, story maps, and double-entry diaries, to help students become aware of and record their questions.

Asking Questions: Strategies for Instruction

Asking questions:

- Establishes a purpose for reading
- Leads the reader to deeper levels of processing text
- Improves comprehension by allowing the reader to know when understanding breaks down
- Helps the reader take responsibility for his/her own learning
- Helps the reader predict and confirm
- Helps the reader more fully understand specific topics, genres and author's intent.
- Leads to group discussions
- Invites others to justify, clarify, and add information to their thinking

"Students who generated their own questions showed greater improvement in comprehension than did students who simply answered questions constructed by their teachers."

Pearson, Roehler, Dole, and Duffy

Teacher-generated questions that enable students to own the questioning process:

- What do you wonder about when you see this book?
- What questions do you find yourself asking when something you're reading doesn't make sense?
- Do you need to infer the answer to your question? Will you draw from your background knowledge for the answer? Will you find the answer in the print or in the pictures?
- When you listen to other people question the text, does it help you think of new questions to ask?
- What questions do you find yourself asking as a writer, mathematician, researcher, or when you're outside of school?
- How do your questions change as you understand more about a topic?
- Do you have lingering questions after finishing this text?
- Do your questions lead you somewhere, make you think, or help you to understand what you've read?

Ways we can encourage effective use of questioning:

- Invite students to continually respond to what they read. Successful readers interact with text and it is important we help students learn to ask questions of themselves, of the text, and of each other.
- Help students see that if they don't ask questions, they'll miss the whole point. Asking questions allows them to speculate about text yet to come. Wondering about information or story line helps them confirm or disconfirm their predictions.

- Have students pose questions from their reading. Use a 3-column note sheet and invite readers to see if questions fit within these categories:

Literal
(text explicit)

Personal Response
(opinion)

Question the Author

- Help readers move beyond literal, text explicit questions by showing them where they might search for answers.

Right There

Think and Search

In Your Head

Outside Source

- Help readers learn to pose questions that cannot be answered with a yes or no.
- Encourage readers to ask questions they really want answer!

Questions I Have

Answers I Can Give

Words

I don't understand this word.

Ideas and Concepts

I'm questioning what's going on.

- During writing time, help students ask questions about each other's pieces to focus, clarify, and organize.
- Focus on questioning during a conference by wondering:
 - How is asking questions working for you?
 - What are you wondering after reading that section?
 - Do you have questions you expect the author to answer?
 - What is the author trying to tell you?
 - Which questions are still unanswered?
 - After reading, what have you learned that you didn't know before?
 - Does this question help you understand something about what you read?
 - What do you understand now that you didn't understand before?

Asking Questions: Questioning the Author

Model for students what it's like to be a reader juggling issues about *author's intent* in the context of a piece of reading. Unzip your thinking so they can learn to language what good readers do when they construct meaning.

The teacher thinks aloud:

- Where is the author taking me in this story?
- Am I paying attention to the author's message?
- What lesson is the author teaching me?
- Why did the author choose this story to tell?
- What information is the author trying to explain to me?
- When I finish this book or report, what would the author like me to remember?
- Why is the author spending so much time with this scene, character, topic conflict, resolution, clue, or fact?
- Have I figured out the author's big idea?

Asking Questions: Notes on Reader-Generated Questioning

From *Reading Reconsidered* by Dennie Palmer Wolf

- Literacy is not eking out sounds or writing down facts. It is about questioning and reflecting.
- We need to be cautious about delivering "recitation literacy", where students are encouraged to reel off memorized portions of basic texts. Replace this notion with questioning, reflection, discussion, and written response.
- A good reader is someone who can articulate his or her experience of reading. How well students read is fed by the kinds of questions they ask, the nature of their discussions, the types of writing they do, and the responses their writing provokes.
- When questions stick to matters of management and facts, they install a low ceiling on the talk that occurs in a classroom. When questions open lines of genuine inquiry, they can teach students pursue ideas. Intelligence and achievement show that the power of what individuals know depends not on the information they control, but on the scope and originality of the questions they ask.
- Texts can be puzzling, and to know you are puzzled is the first step to understanding.
- Readers don't find the original meaning just lying there, they build it.
- Good literature instruction has to do with more than assigning—it has to be taught. It's about insisting that students struggle hard with original questions. It's not about a quiz on the reading and then a review of the answers to those questions. The questions should go beyond the facts of the story. They should make you think.
- In some classrooms, students hear and see only questions that elicit short, easily corrected, highly quantifiable answers. Instead, work should focus on open-ended and difficult issues.
- We need to move beyond the view that teaching literature is worthwhile, but teaching reading is remedial.
- Help students generate questions that will draw them beyond facts to interpretations.
- We need to give students a sense of what goes on in the head of an experienced reader, how a reader follows the thread of an idea from beginning to end.

Asking Questions:

Structures for Examining Readers' Questions

- Questions before, during and after reading
- Questions that are answered in the text and those that are not
- Questions that illuminate comprehension problems and those that clarify meaning
- Questions that push us deeper, those that allow us to dance on the top, and those that draw us away from the text
- Questions as a result of a first read, second read, etc.
- Question/Answer Relationships -- right there, think and search, you and the author, on your own
- Questions related to text structure, author craft, etc.
- Questions related to problem solving in math, science, etc.
- Questions that have single answers and those that have many
- Questions that have simple answers and those that have complex ones
- Questions that continue to pique our interest and curiosity
- Questions that effectively extend our comprehension and those that limit it
- Vocabulary related to questions . . . *ask, answer, wonder, respond, inquire, inquiry, speculate, doubt, ponder, think, etc.*
- Patterns in our questioning
- Sources of questions: author's text, my thinking, what someone else said, etc.
- Connections between questioning, inferring and schema
- Analyzing what constitutes a great question

Instructional Strategies for Examining Questions

- Tallying
- Analyzing
- Comparing and contrasting
- Webbing
- Sorting
- Coding

Determining Importance in Text

Learners think about their purpose to figure out what is important to retain and reapply from their reading.

Some Key Ideas:

- Proficient learners make purposeful and spontaneous decisions about what is important in text at the:
 - Word Level Words that carry the meaning are contentives. Words that connect are functors. Contentives tend to be more important to the overall meaning of passage than functors.
 - Sentence Level There are usually key sentences that carry the weight of meaning for a passage or section. Often, especially in non-fiction, they may contain bold print, begin or end the passage, or refer to a table or graph.
 - Text Level The text contains key ideas, concepts, and themes; our opinions about which of these are most important change as we read the passage. We typically make final conclusions about the most important themes after reading the passage, perhaps several times and/or after conversing or writing about the passage. Clues, such as repetition for emphasis, specific text structures, illustrations or diagrams, symbolism, foreshadowing, character and setting prominence, and conflict all point to importance at the text level.
- Decisions about importance in text/learning are made based on:
 - the learner's purpose
 - the learner's schema for the content – ideas most closely connected to the learner's prior knowledge will be considered most important
 - the learner's sense of the aesthetic – what s/he values, considers worthy or beautiful
 - language that surprises or otherwise captures the learner's sustained focus
 - the learner's related beliefs, opinions, and experiences
 - the learner's schema for text format – text that stands out visually and/or ideas that are repeated are often considered most important
 - concepts another learner mentions prior to, during or after reading
- Frequently, pointing out non-examples (what is unimportant) help learners to distinguish importance more clearly.
- Interesting discussion emanates from dispute about what is most important – learners need to work toward defending their positions, but there is rarely one 'right' set of most important ideas.
- Learners should be able to articulate how they make decisions about what is important in a given context and how those decisions enhance their overall understanding.

Determining Importance: Distilling the Essence of Text

Our **purpose** for reading determines what we identify as being important.

Are we trying to . . .

- Remember important information?
- Learn new information and build background knowledge?
- Distinguish what's important from what's interesting?
- Discern a theme, opinion, or perspective?
- Answer a specific question?
- Determine the author's message . . . Is it to inform, persuade, or entertain?

Determining Importance: Strategy Study

- Begin by modeling frequently with short selections. Focus not only on your conclusions but on how you arrived at them and how concentrating on what you believe to be important enhances your comprehension.
- Gradually invite the students to share their thoughts about what is important at the whole text level, and later at the word and sentence level. Students should provide some **evidence** or **reasoning** to support their judgments.
- Ask students to meet in small groups or pairs to compare ideas about what is most important in text and **how they came to that conclusion**. Ask them to share how their comprehension is enhanced by focusing on themes they believe to be important.
- Remind book clubs to focus on determining importance in their conversations during the strategy study.
- In reading conferences with students, conversation can focus on what decisions the reader is making about important ideas in a **variety of texts**. **Think alouds** are an effective way to assess the student's use of the strategy.
- Form invitational (needs-based) groups for students who need more modeling and explicit instruction.
- Text sets can be used to invite students to draw conclusions about important themes found in all (or most) books in the text set. *Note: Text sets are collections of books with a common characteristic such as a common author, topic, style, etc.*
- Sharing time should focus on ideas individual students found important in their independent reading for the day, how they arrived at their conclusions, and how thinking about important ideas enhanced their comprehension.
- Connections between this strategy and other strategies the students have learned should be made throughout the study.
- Modeling in a variety of texts -- genre and difficulty -- is critical. Modeling is most concentrated at the beginning of a strategy study, but does continue throughout. Students gradually assume responsibility for modeling their own conclusions about what's important in the texts that they are reading.

Determining What's Important

What is the definition of "Determining What's Important?"

The reader determines what is necessary to remember after each reading. Important features may include: gist, topic, topic sentence, macrostructure, superstructure, summary, key words, thesis, theme, interpretation, characters' roles and their interrelationships, author's purpose, text structure, genre, graphics, etc.

Key Points:

- Good readers are better able to judge author-based importance than are poor readers.
- Good readers use their knowledge of text structure to help them identify and organize information.
- Good readers use their knowledge of author biases, intentions, and goals to help determine importance.
- Good readers selectively determine what's important depending on their purpose for reading.

When is the strategy used?

As readers read, check with their prior knowledge, use textual clues, and decide what to remember for later use.

Why is this strategy used?

- To demonstrate learning and knowledge.
- To negotiate multiple sources of information.
- As a strategy for engaging in research projects.

How is this strategy used?

- Look for textual clues such as topic sentences, repeated items and episodes, characteristics of the genre, picture clues, and items that mentioned in the tease, end papers, and/or reviews.
- Use what you know about the author and the purpose for writing the piece. Look for places where a lot of time is spent describing, where characters' thoughts are revealed, and the climax. Think about how the ending relates to the story, and to what you expected.
- Think about other things you have read, seen and heard that relate to this piece.
- Decide if what you have just read supports or conflicts with what you already know.

Monitoring Meaning and Comprehension

Learners know when they understand something and why they understand. They also know when they do not comprehend and what to do to improve their comprehension.

SOME KEY IDEAS:

- Proficient learners monitor their comprehension while learning – they know when what they're doing makes sense, when it does not, what does not make sense, and whether the unclear portions are critical to their overall understanding.
- Proficient learners can identify when text/learning is comprehensible and the degree to which they understand it. They can identify ways in which a text/learning becomes gradually more understandable by moving beyond an unclear portion, rereading/revisiting a part, or rereading/revisiting the whole text or experience.
- Proficient learners know what they need to comprehend from a text/experience – they are aware of their purpose and what will be required of them with respect to reporting on their learning.
- Proficient learners are aware of the purpose for their learning and direct special attention to the parts of a text/experience they most need to comprehend for that purpose.
- Proficient learners are able to assume different 'stances' toward a text/experience. For example, readers can read a book from the point of view of different characters within it or a book reviewer or a writer seeking new techniques for their work.
- Proficient learners identify difficulties they have in comprehending at the word, sentence and whole text level. They are flexible in their use of tactics to revise their thinking and solve different types of problems.
- Proficient learners can "think aloud" about their processes. They can describe strategies they use to comprehend and can use language to create and manage solutions to problems.
- Proficient learners can identify confusing ideas, themes and/or surface elements (words, sentence or text structures, graphs, tables, etc.) and can suggest a variety of means to solve the problems they encounter.
- Proficient learners are independent, flexible and adaptive.
- Proficient learners use text management strategies. They pause, reread, skim, scan, consider the meaning of a text/experience and reflect on their understanding with others.

Monitoring For Understanding

In their research, Swartz and Perkins have described four different thinking behaviors.

These categories can be used when describing readers.

Tacit Learners/Readers

- These are readers who lack awareness of how they think when they read.

Aware Learners/Readers

- These are readers who realize when meaning has broken down or confusion has set in, but who may not have sufficient strategies for fixing the problems.

Strategic Learners/Readers

- These are readers who use the thinking and comprehension strategies to enhance understanding and acquire knowledge. They are able to monitor and repair meaning when it is disrupted.

Reflective Learners/Readers

- These are the readers who are strategic about their thinking and are able to apply strategies flexibly depending on their goals or purposes for reading. They also reflect on their thinking and ponder and revise their use of strategies.

Monitoring Meaning: How Do I Know I'm Stuck?

- The voice in my head changes. I've stopped having a conversation with the text and started to just say the words. When this happens, I'm either confused or bored and probably won't remember what I've read.
- The camera inside my head shuts off. I no longer have a picture of what the author is saying. When this happens, I've stopped making sense of what I'm reading.
- My mind starts to wander. When I catch myself thinking about things other than what I'm reading, I know I need to reconnect!
- I can't remember what I've been reading. When my reading makes sense, I can retell what I've read to myself. If I can't, I need to go back and do some rereading.
- The literal questions I'm asking to help make my reading clearer go unanswered. When this happens, I need more background knowledge or need to refocus my attention on what I'm reading.
- I reencounter a character, an event, or a fact in the text that I don't remember at all. If I can't accurately keep track of what's happening as I read, I know I'm not making sense.
- I can't accurately think about what might come next in the text. This usually means I haven't understood what I've read well enough to 'think forward' in the text and guess what's coming up.
- I can't sort out the most important ideas or events from everything the author has written. It begins to feel like all the words are equally important. If I'm making sense, I should be able to sort out the essential information from the interesting details.
- The connections with my background knowledge either stop or become trivial. When this happens, I know I'm not using what I already know to help me comprehend.

Evoking Images

Learners create mental images to help them understand more completely. These images include information from the other senses and emotions as well.

SOME KEY IDEAS:

- Proficient learners spontaneously and purposefully create mental images before, during and after reading/learning. The images emerge from all five senses and a learner's emotions, and are anchored in a learner's prior knowledge.
- Proficient learners create images to immerse themselves in rich detail as they learn. The detail gives depth and dimension to the learning, engaging the learner more deeply, making the experience more memorable.
- Proficient learners use images to draw conclusions, to create distinct and unique interpretations of the text/experience, to recall significant details, and to recall the plot/story or information long after the text was read or experience occurred.
- Images from reading frequently become part of the reader's writing.
- Images from a personal experience frequently become part of a learner's comprehension.
- Proficient learners adjust/adapt their images as they continue to read/learn to incorporate new information revealed through the text/experience and new interpretations they develop over time.
- Proficient learners understand and can articulate how creating images enhances their comprehension.
- Proficient learners adjust/adapt their images in response to the shared images of others.

Evoking Images:

Using the Gradual Release of Responsibility Model

- The teacher begins by modeling –thinking aloud about his/her own process of evoking images during reading. Modeling should occur frequently using short selections.
- The teacher should focus on visual images and on images that emanate from the other senses, as well as how s/he created those images.
- It is important to think aloud about how creating and monitoring mental images enhances comprehension.
- Gradually students are invited to share their own images inspired by a variety of text.
- Students may meet in small groups or pairs to compare images and to discuss elements of the text that inspired those images. They discuss ways in which their comprehension is enhanced by their mental images.
- Book clubs focus on images from their shared reading in their conversations during the strategy study.
- In reading conferences with students, conversation can focus on reader's images in a variety of texts. Records from conferences are an effective way to assess the students' use of the strategy.
- Invitational (needs-based) groups are created for readers who need more modeling and explicit instruction.
- Text sets can be used to invite students to reflect on their images and compare images evoked from different books within the text set.
- Sharing time should focus on images individual readers discovered in their independent reading for the day, how those images were evoked, and how thinking about mental images enhanced their comprehension.
- Connections between this strategy and other strategies students have learned should be made throughout the study.
- Modeling in a variety of texts – genre and difficulty – is critical. Modeling is most concentrated at the beginning of a strategy study, but continues throughout.
- The *Major Point Interview for Readers* can be used before and after the study to measure student growth in use of the strategy.

Evoking Images: Strategies for Instruction

Define Evoking Images

- Regularly discuss how evoking mental images helps them as readers. This is the most important question.
- Readers create images in their heads as they read. These images include pictures (like a video camera) and other sensory images (smells, sounds, tastes, feelings).
- Authors write in such a way to purposely create these images in the reader's mind. Start a class chart of language used by authors that help the reader evoke images.
- Create a class chart that includes the definition, how it is being used by the class, and how it helps readers better comprehend the text.

Thinking Aloud

- Think aloud about a picture book. Talk about the words that are helping you create mental images the most. Talk about what the picture looks like in your head. Don't show the illustrator's pictures to the students, so they can make pictures of their own.
- Think aloud from your own reading. Find a spot in the book that you are reading, read it aloud to the students and let them hear about the picture you create in your head.
- Think aloud about other mental images and senses. Look for spots in your reading and in other picture books, poems, etc., which evoke sensory images other than visual.
- Invite the students to share their sensory images as well.

Scaffolding

- Have students draw (sketch) while you are reading from a chapter book or a picture book.
- Have students read a common text individually or in pairs, picking out spots in the text that help them to create sensory images. Students can use highlighters or post-its to mark those spots to share with everyone.
- Draw using a common text. Discuss commonalities and differences between the pictures and the reason why these might exist.

Independence

- Double Entry Journals—Readers find spots in the text that helps them to create an image and then write about how that image appears in their heads.
- Talk about what it means to the reader when the "video camera shuts off." Have them pay attention to when this happens. What might this tell them as a reader? What can they do to fix it?
- In their own reading, students should mark (with highlighters, post-it or in a journal) where they visualize and how it helps.
- Students can share with book clubs and in conferences how evoking images helps them as readers.

Evoking Mental Images: A Strategy for Repairing Comprehension Breakdowns

Marjory describes mental images as a strategy to use when you have a **“broken picture.”** Chryse suggests using it as soon as you **“notice that your camera shut off.”** My own analogy is similar, but somewhat more auditory in nature, and is based upon my own schema of comprehension frustration. I lived for two years at the base of Pinnacle Hill, Rochester’s highest point, and the locale where all the FM stations in town built their antennas. Needless to say, hearing the morning news was impossible! I think of generating mental images as means for tuning in a station, **eliminating the static that interferes with reception.**

Questions to consider as you experiment with this strategy and study it through multiple lenses:

The lens of the learner, the teacher, and the staff developer:

- When you reflect on times in your life when comprehension has broken down, how have you used mental images to aid in comprehension?
- What are the images you discover as you try to apply this strategy to your own comprehension?
- Explain how this process changes the meaning of your reading (relate to the spot where you noticed a comprehension breakdown).
- How does creating mental images change the whole gist of the piece for you?

Ideas for explicit instruction of this strategy:

- Explore expository writing in order to discover students’ mental images for developing comprehension. For example, some students may have methods of graphing synthesized facts, pictures of pertinent people and objects along a mental timeline.
- Use picture books as read-alouds without showing the illustrations until after students have shared their mental images. This sharing can expand to include physical, auditory, and visual representations of sensory images. Modeling and sharing comprehension breakdowns and differing mental images can be shown through dance, drama and artwork.
- Share riddles with the class, which are highly dependent upon mental images for finding solutions and inferring the meaning. “What am I” visual image challenges written by students can scaffold this strategy for monitoring during reading.

Synthesizing

Learners can bring together all of their learning strategies to understand and internalize a piece. They cannot only retell but also create new meaning for themselves -a synthesis- using all that they know.

Learners are aware of an evolving meaning that changes as they read.

Some Key Ideas:

The process of synthesizing occurs during reading:

- Proficient readers are **aware of changes** in their conclusions about text as their thinking throughout the piece evolves.
- Proficient readers **maintain a cognitive synthesis** as they read. They monitor the overall meaning and themes in the text as they read and are aware of the ways text elements "fit together" to create an overall meaning and theme.
- Proficient readers are aware of **text elements** in fiction and nonfiction and understand that text elements provide clues to help them predict and understand the overall meanings or themes.
- As they read, proficient readers attend more directly to character, setting, conflict, sequence of events, resolution, and theme in fiction and to text patterns such as chronological, cause and effect, and problem/solution in non-fiction. They use their **knowledge of these elements to make decisions about the overall meaning of a passage, chapter, or book.**
- Proficient readers actively **revise** their cognitive synthesis as they read. New information is assimilated into the reader's evolving ideas about the text rendering some earlier decisions about the text obsolete.

The process of synthesizing occurs after reading:

- Proficient readers are able to express, through a variety of means, a synthesis of what they have read. The synthesis includes ideas and **themes** relevant to the overall meaning from the text and is cogently presented.
- A synthesis is the sum of information from the text and the reader's background knowledge, ideas, and opinions produced in an **original way.**
- Proficient readers use synthesis to share, recommend, and critically review texts they have read.
- Proficient readers purposefully use synthesis to better understand what they have read.

Synthesis: Growing Understandings

When learners synthesize, they . . .

- make information their own
- transform other's knowledge into something new, and therefore, more personally meaningful
- share what is important in a way that makes sense
- develop a keen sense of curiosity about a topic, a question, a problem, etc.
- generate new ideas
- connect experiences, information and learnings across media sources and over time
- distill their understandings into big ideas and important aha's
- are left changed

LITERACY LEARNIN WHAT IS ESSENTIAL?

A SCHOOL AND CLASSROOM CLIMATE OF RIGOR, INQUIRY AND INTIMACY

RESOURCES AND MATERIALS PRACTICING THE CRAFT IN A WIDE VARIETY OF TEXT GENRES AND LEVELS

HELPING STUDENTS UNDERSTAND TEXT STRUCTURES

COGNITIVE STRATEGIES

Surface Structure Systems	Deep Structure Systems	Narrative Text	Expository Text	Distinguish Among Genres applying reading, writing strategies differently depending the genre	Use Different Level Texts for Different Purposes	Living a literate and Engaged life in the Classroom
<p>Grapho-Phonic Letter/sound knowledge Phonemic awareness Decoding</p> <p>Lexical Visual word recognition based on frequent exposure Visual memory for all words</p> <p>Syntactic Auditory understanding of language structure at the word, sentence and text level *see more under text structures</p> <p>Strategies for Solving Word Problems and Reading Fluently Identifying and pronouncing words, reading fluently orally and silently</p> <ul style="list-style-type: none"> • Using context • Visual word • recognition strategies including use of environmental print • Word analysis strategies such as prefixes, suffixes, compound words, and word derivations • Text management strategies such as rereading/reading ahead, deep reading, skimming/ scanning • Decoding strategies such as identifying word families, chunking, point and slide, looking for known words inside words • Checking across cue systems (word makes sense, sounds like language, letters match the sounds) • Asking another reader 	<p>Semantic Word meanings/ expectancies/associations; precision in word usage in writing</p> <p>Schematic Constructing meaning at the whole text level; prior knowledge that governs storage and retrieval of information, understanding themes concepts, ideas</p> <p>Pragmatic Social construction of meaning, reading and writing for specific purposes and audiences – adopting the social mores of a reader/writer, reading and writing habitually, interacting with others around ideas read</p> <p>Cognitive Strategies for Comprehending Probing ideas and extending meaning, reading deeply by:</p> <ul style="list-style-type: none"> • Monitoring for meaning • Determining importance • Creating mental images • Synthesizing • Relating new to known (schema) • Questioning • Inferring 	<p>Text Structure (whole text) Character Setting Conflict Plot structure (i.e., character, setting, conflict introduction, rising action, climax, resolution)</p> <p>Narrative Technique Development of ideas through:</p> <ul style="list-style-type: none"> • Exposition • Action • Dialogue <p>Creating believable character, setting, events through use of images</p> <p>Use of fore-shadowing, parallel plot structure, flashback and flash forward</p> <p>Development of word meaning through:</p> <p>Choice, diction, phrasing, voice</p>	<p>Text Structure (paragraph/section) Cause/Effect Compare/Contrast Chronological Problem/Solution Descriptive Enumerative</p> <p>Hurdles for readers and writers of expository text</p> <p>Word Hurdles Anaphora Vocabulary load</p> <p>Text Hurdles Insufficient schema for text content/ structures Inefficient predicting Naïve conceptions Staccato reading Concept load Pacing demands</p> <p>Expository Technique Elaborating, developing and grouping ideas/ themes Organizing ideas with a discernable, but not blatant, structure Laying out and defending a position based on an opinion Writing to persuade based on factual information Using compelling leads and endings</p>	<ul style="list-style-type: none"> • Biography • Historical Fiction • Textbooks/Reference Text • Persuasion • Realistic Fiction • Poetry • Memoir/Autobiography • Science Fiction • Mystery • Journalism, Opinion/Editorial • Tests • Expository text (narrative or didactic) • Picture Book • Photo Essay • Promotional Materials and Advertising • Fantasy <p>Work in instructional level text for:</p> <ul style="list-style-type: none"> • Practice in decoding • Practice word recognition • Practice oral reading fluency • Practice in word work such as recognizing prefixes and suffixes, word analysis <p>Work in challenging text (that may have been read to children) for:</p> <ul style="list-style-type: none"> • Application of comprehension strategies • Book club discussion • Reading with a partner • Reading to learn new content (especially when there are charts, graphs and/or pictures available) 	<p>Students:</p> <ul style="list-style-type: none"> • Understand and engage in the processes, procedures and rituals of the learning community: are taught to respond and react with civility and respect • Select books, topics, authors appropriately for level, challenge, interest • Engage deeply in book discussions; share recommendations and insights with other readers, seek to understand the insights of others • Understand and use options for oral, artistic, dramatic, and written responses to literature • Use oral language precisely to describe their thinking during reading and writing – use that language to apply strategies independently • Talk about how using reading strategies and writer's tools helps them understand more completely and communicate more effectively <p>Teachers:</p> <ul style="list-style-type: none"> • Create a culture of rigor, inquiry and intimacy by continually expecting more, probing ideas further and pressing children to explore their intellect • Create a culture conducive to in-depth study of books, genres, topics, authors, and comprehension strategies <p>Use five key instructional strategies:</p> <ul style="list-style-type: none"> • Think aloud to show what readers who comprehend think about and how they create a literate life and think aloud about what writers who write convincingly think about and how they observe the world to feed their writing • Model what it is to live a literate life and share insights from those literary experiences, model how readers and writers codify their thinking • Confer with individual students to assess application of strategies, skills and writer's tools, push students to the next level • Demonstrate classroom rituals and routines so that students can interact effectively with one another • Manage sharing opportunities so that students teach their peers what they have learned rather than merely share 	

Literacy Learning: What is Essential?

Cognitive Strategies

Surface Structure Systems

Grapho-Phonic

Letter/sound knowledge
Phonemic awareness
Decoding

Lexical

Visual word recognition based on frequent exposure
Visual memory for all words

Syntactic

Auditory understanding of language structure at the word, sentence and text level *see more under text structures

Strategies for Solving Word Problems and Reading Fluently

Identifying and pronouncing words, reading fluently orally and silently

- * Using context
- * Visual word recognition strategies including use of environmental print
- * Word analysis strategies such as prefixes, suffixes, compound words and word derivations
- * Text management strategies such as rereading/reading ahead, deep reading, skimming/scanning
- * Decoding strategies such as identifying word families, chunking, point and slide, looking for known words inside words
- * Cross check across cue systems (word makes sense, sounds like language, letters match the sounds)
- * Asking another reader

Deep Structure Systems

Semantic

Word meanings/experiences/associations;
precision in word usage in writing

Schematic

Constructing meaning at the whole text level; prior knowledge that governs storage and retrieval of information, understanding themes, concepts, ideas

Pragmatic

Social construction of meaning, reading and writing for specific purposes and audiences – adopting the social mores of a reader/writer, reading and writing habitually, interacting with others around ideas read

Cognitive Strategies for Comprehending

Probing ideas and extending meaning, reading deeply

- * Monitoring for meaning
- * Determining importance
- * Creating mental images
- * Synthesizing
- * Relating new to known (schema)
- * Questioning
- * Inferring

Literacy Learning: What is Essential?

Helping Students Understand Text Structures

Narrative Text

Text Structure (whole text)

Character
Setting
Conflict

Plot structure (character, setting, conflict
introduction, rising action, climax,
resolution)

Narrative Technique

Development of ideas through:

- * Exposition
- * Action
- * Dialogue

Creating believable character, setting,
events through use of images

Use of foreshadowing, parallel plot
structure, flashback and flash forward

Development of word meaning through:

Choice, diction,
phrasing, voice

Expository Text

Text Structure (paragraph/section)

Cause/Effect
Compare/Contrast
Chronological
Problem/Solution
Descriptive
Enumerative

Hurdles for readers and writers of expository text

Word Hurdles

Anaphora
Vocabulary load

Text Hurdles

Insufficient schema for text
content/structures
Inefficient predicting
Naïve conceptions
Staccato reading
Concept load
Pacing demands

Expository Technique

Elaborating/developing and grouping
ideas/themes
Organizing ideas with a discernable, but
not blatant, structure
Laying out and defending a position
based on an opinion
Writing to persuade based on factual
information
Using compelling leads and endings

Literacy Learning: What is Essential?

Resources and Materials Practicing the Craft in a Wide Variety of Text Genres and Levels

Distinguish among genres; apply reading writing strategies differently depending on the genre:

- Biography
- Historical Fiction
- Textbooks/Reference Text
- Persuasion
- Realistic fiction
- Poetry
- Memoir/Autobiography
- Science fiction
- Mystery
- Journalism, Opinion/Editorial
- Tests
- Expository text (narrative or didactic)
- Picture Book
- Photo essay
- Promotional Materials and Advertising
- Fantasy

Use different level texts for different purposes

Work in instructional level text for:

- Practice in decoding
- Practice word recognition
- Practice oral reading fluency
- Practice in word work such as recognizing prefixes and suffixes, word analysis

Work in challenging text (that may have been read to children) for:

- Application of comprehension strategies
- Book Club discussion
- Reading with a partner
- Reading to learn new content (especially when there are charts, graphs and/or pictures available)

Literacy Learning: What is Essential?

A School and Classroom Climate of Rigor, Inquiry and Intimacy

Students:

- * Understand and engage in the processes, procedures and rituals of the learning community; are taught to respond and react with civility and respect
- * Select books, topics, authors appropriately for level, challenge, interest
- * Engage in book discussions; share recommendations and insights with other readers/writers, seek to understand the insights of others
- * Understand and use options for oral, artistic, dramatic, and written responses to literature
- * Use oral language precisely to describe their thinking during reading and writing – use that language to apply strategies independently
- * Talk about how using reading strategies and writer's tools helps them understand more completely and communicate more effectively

Teachers:

- * Create a culture of rigor, inquiry and intimacy by continually expecting more, probing ideas further and pressing children to explore their intellect
- * Create a culture conducive to in-depth study of books, genres, topics, authors, and comprehension strategies
- * Use the five key instructional strategies:
 - **Think Aloud** to show what readers who comprehend think about and how they create a literate life and think aloud about what writers who write convincingly think about and how they observe the world to feed their writing
 - **Model** what it is to live a literate life and share insights from those literary experiences, model how readers and writers codify their thinking
 - **Confer** with individual students to assess application of strategies, skills and writer's tools, push students to the next level
 - **Demonstrate** classroom rituals and routines so that students can interact effectively with one another
 - **Manage sharing** opportunities so that students teach their peers what they have learned rather than merely share