



Dear George,

Not only did I never teach you how to fish, I don't think I even showed you how to bait the hook. I guess I hoped the osmosis plan would work—that as you stood near me, how to think about a text would just magically move into you. But comprehension isn't sleight of hand; it's hard work that can be examined, modeled, practiced, and learned.

(Beers, 2003, p. 60)





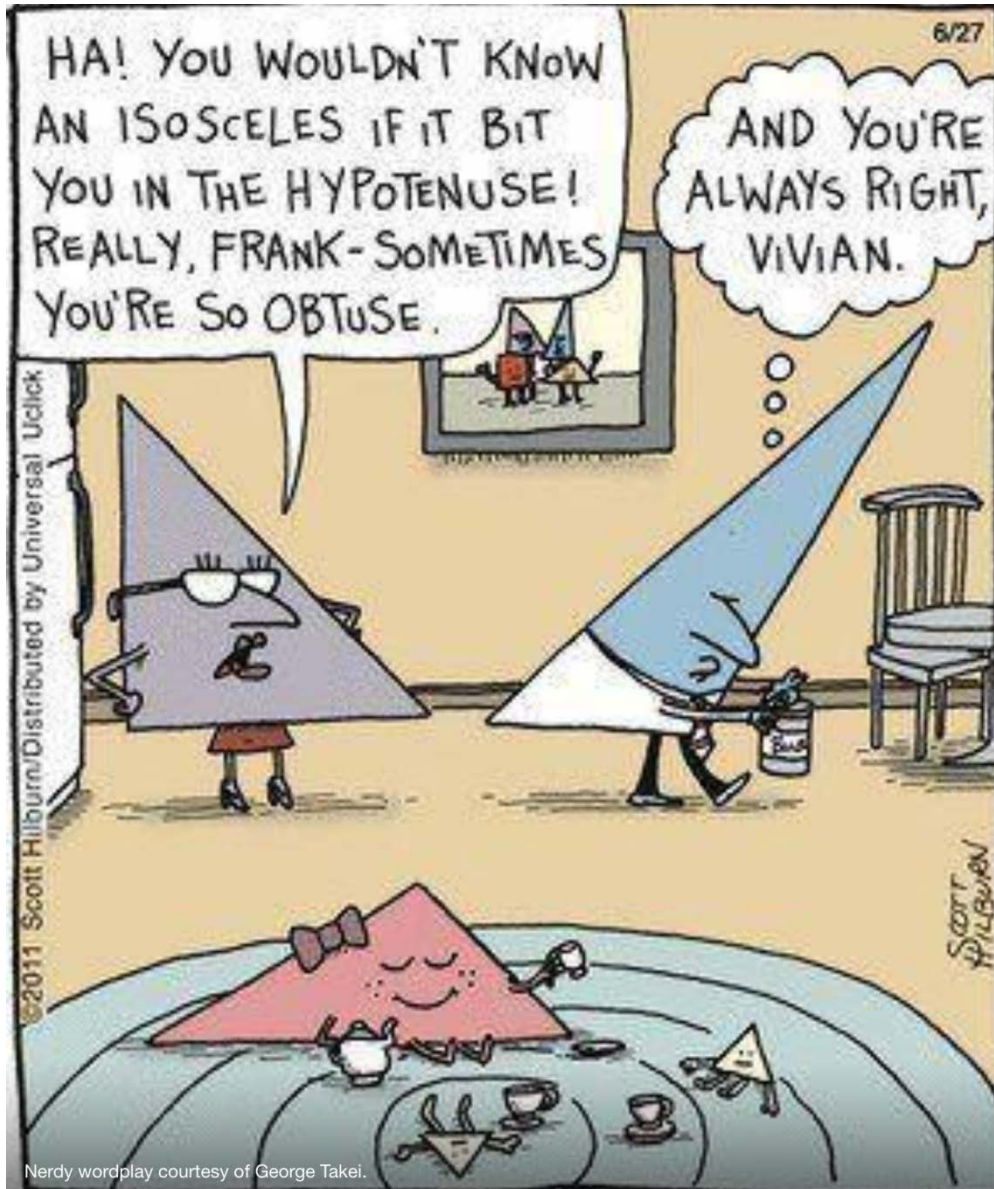
TEXAS LITERACY INITIATIVE



Making Inferences and Predictions

Grades 6 – 12





Nerdy wordplay courtesy of George Takei.





“ Inferring is the bedrock of comprehension, not only in reading. We infer in many realms. Our life clicks along more smoothly if we can read the world as well as text. Inferring is about reading faces, reading body language, reading expressions, and reading tone as well as reading text.”

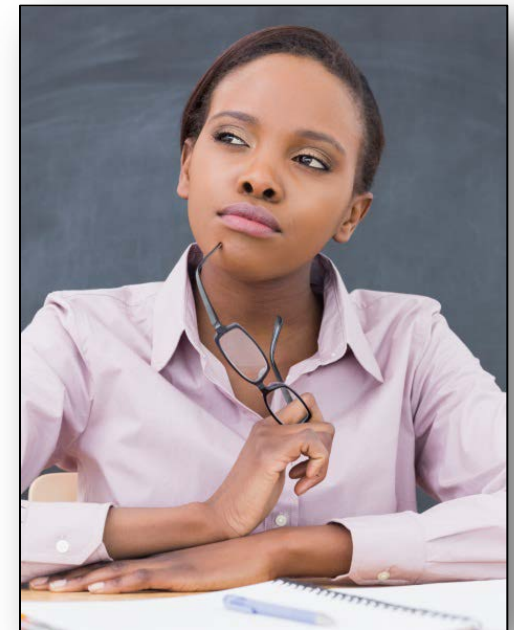
(Harvey & Goudvis, 2000, p. 105)





Goals for This Training

- Clarify what Making Inferences and Predictions includes.
- Recognize the importance of teaching Making Inferences and Predictions.
- Practice a routine for planning and teaching Making Inferences and Predictions.
- Understand how to teach Making Inferences and Predictions across disciplines.







What Is

MAKING INFERENCES and PREDICTIONS?





Making Inferences and Predictions

- Inference: “A logical conclusion based on background knowledge and clues in the text. Inferences are not explicitly confirmed in the text.”
- Prediction: “A logical guess based on the facts. It is either confirmed or disproved by the text.”

(Tovani, 2000, p. 105)





Making Inferences and Predictions

- Assumption: “A fact or statement taken for granted. Assumptions may or may not be based on facts or information and may or may not be correct.”
- Opinion: “A belief or conclusion that isn’t necessarily based on facts or information. It can be informed or ridiculous, because it is based on what one thinks instead of what is proven by facts to be true.”

(Tovani, 2000, p. 105)

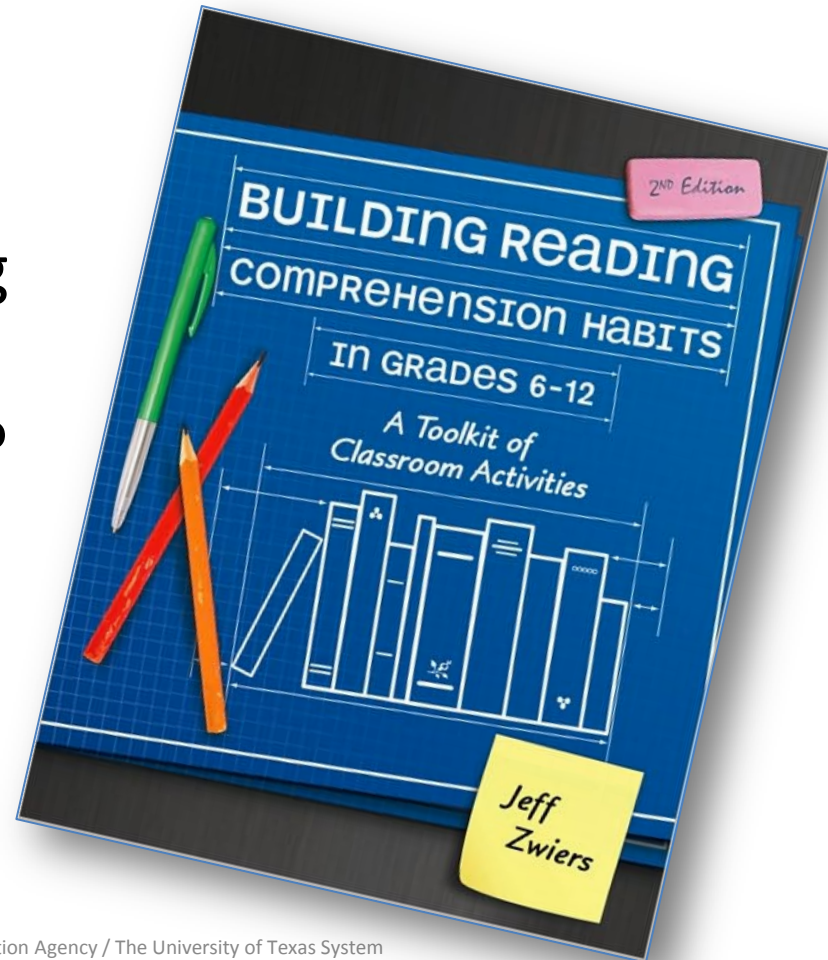




Building Reading Comprehension Habits in Grades 6-12



CPQ: What do you learn about inferring and predicting from reading the excerpt?





Making Inferences

Inferring includes:

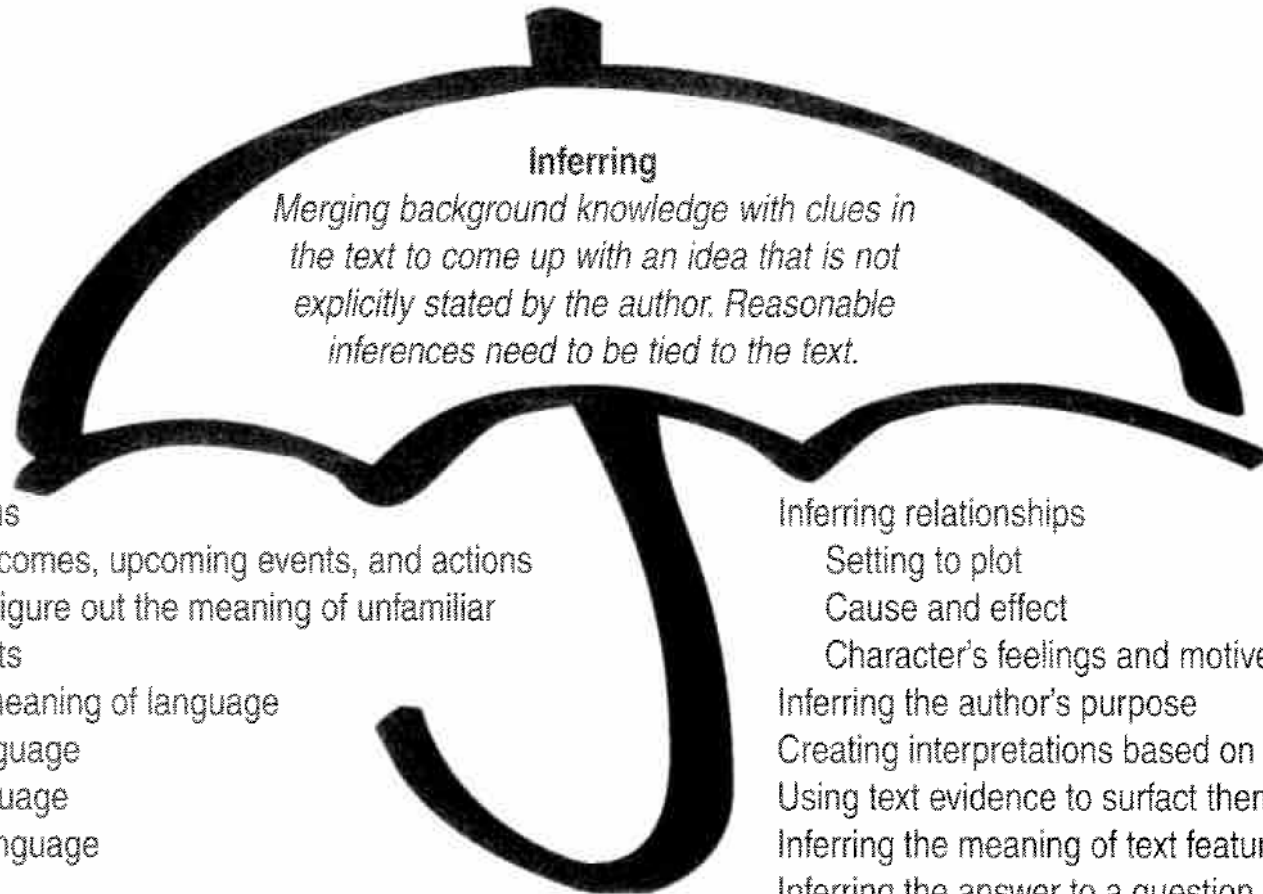
- Determining meanings of unknown words.
- Making predictions.
- Answering our questions when the answers are not in the text.
- Creating interpretations and synthesizing information.

(Miller, 2002)





Handout
2



Inferring
Merging background knowledge with clues in the text to come up with an idea that is not explicitly stated by the author. Reasonable inferences need to be tied to the text.

Making predictions

Predicting outcomes, upcoming events, and actions

Using context to figure out the meaning of unfamiliar words/concepts

Interpreting the meaning of language

Figurative language

Idiomatic language

Metaphoric language

Visualizing

Constructing meaning with a visual image

Inferring creates a picture, movie, or slideshow in the mind

Inferring relationships

Setting to plot

Cause and effect

Character's feelings and motives

Inferring the author's purpose

Creating interpretations based on text evidence

Using text evidence to surfact themes and big ideas

Inferring the meaning of text features and visuals

Inferring the answer to a question

Drawing conclusions based on text evidence

Figure 9.2 The Inferring Umbrella

(Harvey & Goudvis, 2007, p. 132)



Why Should We Teach
**MAKING INFERENCES and
PREDICTIONS?**





Why Should We Teach Making Inferences?

"I can diagram a sentence to death. I know the meaning of every literary term there is, but I don't understand how that's supposed to help me. I wish teachers would spend more time showing us how to understand hard books. Instead, they assign chapters for us to read along with a bunch of questions, and then they send us on an endless search for when literary devices are used. That makes me hate the book.

My friends don't even read the book. They use SparkNotes to answer the questions. In a way, they're learning how to cheat, they're not learning how to understand hard books."

~ Emily, 8th grade Pre-AP





Why Should We Teach Making Inferences?

When we infer, we create a personal meaning from the text. We combine what we read with relevant background knowledge to create a meaning that is not explicitly stated in the text. Good “readers actively search for, or are aware of, implicit meaning.”

(Keene & Zimmermann, 1997, p. 162)





Making Predictions

Encouraging students to make predictions has been successful in increasing interest in and memory of what has been read. This is true however, only if predictions are explicitly compared to the ideas in the text during reading. Verifying predictions may be just as important as making the actual prediction.

(Duke & Pearson, 2002)





Why Should We Teach Making Inferences and Predictions?

English Language Arts: Reading

Students analyze, make inferences and draw conclusions about...

- Theme and genre in different cultural and contemporary contexts.
- The structure and elements of poetry, drama, and fiction.
- The varied structural patterns and features of literary nonfiction.
- How an author's sensory language creates imagery in literary texts.
- The author's purpose in cultural, historical, and contemporary contexts.
- Expository text, persuasive text.

...and provide evidence from the text to support their understanding/analysis.





Why Should We Teach Making Inferences and Predictions?

Fig. 19

Reading/Comprehension Skills

Students are expected to...
make complex inferences about text and use textual evidence to support understanding.

Figure 19 TAC §110.110-110.130
19 TAC Chapter 110 Texas Essential Knowledge and Skills for English Language Arts and Reading
Subchapter B Middle School
Reading/Comprehension Skills §110.11 - §110.20

Fourth Grade (§110.11 English Language Arts and Reading)	Fifth Grade (§110.12 English Language Arts and Reading)	Sixth Grade (§110.13 English Language Arts and Reading)	Seventh Grade (§110.14 English Language Arts and Reading)	Eighth Grade (§110.15 English Language Arts and Reading)
<p>Reading/Comprehension Skills. Students use a range of independent reading skills to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) establish purposes for reading selected texts based upon oral or other directed evidence to enhance comprehension; (B) ask literal, interpretive, evaluative, and inferential questions of text; (C) summarize and adjust comprehension to a new or related knowledge, context. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding.

Figure 19 TAC §110.300-110.340
19 TAC Chapter 110 Texas Essential Knowledge and Skills for English Language Arts and Reading
Subchapter C High School
Reading/Comprehension Skills §110.31 - §110.34

English I (§110.31 English Language Arts and Reading)	English II (§110.32 English Language Arts and Reading)	English III (§110.33 English Language Arts and Reading)	English IV (§110.34 English Language Arts and Reading)
<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as increasingly more complex texts as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding. 	<p>Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills to both assigned and independent reading to understand an author's message. Students will continue to apply reader standards with greater depth as they become self-directed, critical readers. The student is expected to:</p> <ul style="list-style-type: none"> (A) reflect on understanding to acquire comprehension (e.g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and (B) make complex inferences about text and use textual evidence to support understanding.





Why Should We Teach Making Inferences and Predictions?

- **Environmental Systems (c)(2)(I)**... make inferences and predict trends from data;
- **Integrated Physics and Chemistry (c)(3)(C)** draw inferences based on data related to promotional materials for products and services;
- **Social Studies, Grades 6&7 (b)(21)(B)** analyze information by... predictions, and drawing inferences and conclusions;
- **Algebra I (b)(1)(E)** interpret and make decisions, predictions, and critical judgments from functional relationships.
- **Algebra I (b)(2)(C)** interpret situations in terms of given graphs...



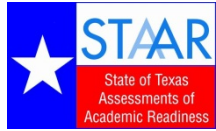


Why Should We Teach Making Inferences and Predictions?



ELPS Reading 4(J) demonstrate English comprehension and expand reading skills by employing inferential skills such as predicting, making connections between ideas, drawing inferences and conclusions from text and graphic sources, and finding supporting text evidence commensurate with content area needs;





Why Should We Teach Making Inferences and Predictions?

Think about your data.

- What does your data indicate regarding our students' ability to make inferences and predictions?





How Should We Teach
MAKING INFERENCES and
PREDICTIONS?





Dear George,

I gave you after-school detention one day for mouthing off to me. I thought I had done such a good job of setting up the premise for the story we read—a great mountain-climbing adventure called “Top Man”—and then had read most of it aloud to the class. You, along with everyone else, were supposed to read the rest of it on your own and then, that night for homework, answer one question: Who was the top man? The next day, when I asked who you thought the top man was, you just shrugged. I asked what the shrug meant. “I don’t know,” you replied. “You don’t know the answer to the question or you don’t know why you shrugged?” I pressed. “The question. It didn’t say who was the top man.” “You’re supposed to make an inference, George, you know, inferencing. That’s how you answer the question. Make an inference.” You stared at me for a moment, then said, “No, I guess I don’t know. Don’t you think if I did know, I’d just do it and **get** you off my back? Jeez.”

Obviously, George, twenty-three years ago, it took much less for me to send a kid to detention. Honestly, though, I think I gave you detention because your answer was just too honest. I backed you into a corner and then punished you when you defended yourself. If I was so good at making inferences, I wonder why it took me so long to figure that one out?





The Teacher Is Key

“Children’s difficulties on inference-related items often correlate to teachers’ lack of clarity about what good inference instruction looks like... if we’re not sure how to describe inference, our instruction tends to be less explicit, less frequent, and less than memorable.”



(Keene & Zimmermann, 2007, p. 148)





Cognitive Strategy Routine

Cognitive Strategy Lesson Planning

Title of Text _____

Step 1 Use a real-world example	Anchor lesson:
Step 2 Give the strategy a name.	"Today, we are going to learn a strategy called _____"
Step 3 Define the strategy, how and when it is used, and how it helps with reading.	Strategy definition: How it helps us comprehend:
Step 4 Give students touchstones.	Model hand gesture, explain strategy poster, and refer to anchor lesson.

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Strategy Instruction

DIRECT • EXPLICIT • SYSTEMATIC

Release of Responsibility

1. Use a real-world example to create a context (anchor lesson).
2. Give the strategy a name.
3. Define the strategy, how and when it is used, and how it helps with reading.
4. Give students touchstones, such as a hand gesture or icon, to help them remember the strategy.
5. Think aloud, using the strategy in a variety of contexts.
6. Engage students by providing opportunities for them to share their thinking during the reading. Practice shared application with planned discussion prompts.
7. Scaffold practice, providing opportunities for students to use the strategy while reading, with teacher support and monitoring.
8. Provide accountability measures for students while using the strategy independently.

Ongoing Assessment and Feedback

Ongoing Assessment may include informal assessments such as anecdotal records, observations of class discussion, portfolios, projects, student records of thinking (post-it notes, drawings, and writings), as well as formal assessments.

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Use a Real-World Example (Step 1)



- An anchor lesson is a real-world example used to create context for a cognitive strategy.
- We refer to the anchor lesson to remind students of the cognitive strategy.





Anchor Lesson for Making Inferences & Predictions





Use a Real-World Example (Step 1)

“Remember when we looked through the purse and used the clues in the purse and our background knowledge to figure out who owned the purse?”



Record what you will say for Step 1 on your orange Cognitive Strategy Routine Lesson Planning Card.

Cognitive Strategy Lesson Planning	
Title of Text _____	
Step 1 Use a real world example.	Anchor lesson: _____
Step 2 Give the strategy a name.	Today, we are going to learn a strategy called _____
Step 3 Define the strategy, how and when it is used, and how it helps with reading.	Strategy definition: _____
	How it helps us comprehend: _____
Step 4 Give students touchstones.	Model hand gestures, explain strategy poster, and refer to anchor lesson.

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Strategy Instruction

DIRECT • EXPLICIT • SYSTEMATIC

Responsibility

1. Use a real-world example to create a context (anchor lesson).
2. Give the strategy a name.
3. Define the strategy, how and when it is used, and how it helps with reading.
4. Give students touchstones, such as a hand gesture or icon, to help them remember the strategy.

Ongoing Asses

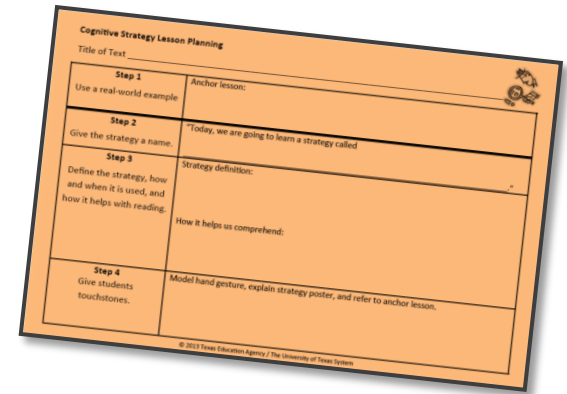




Give the Strategy a Name (Step 2)

“Today, we’re going to talk about a strategy called Making Inferences and Predictions.”

Record what you will say for Step 2 on your orange Cognitive Strategy Routine Lesson Planning Card.



The image shows an orange 'Cognitive Strategy Lesson Planning Card' tilted at an angle. It has a title 'Cognitive Strategy Lesson Planning' and a field for 'Title of Text'. The card is divided into four steps:

Step 1	Anchor lesson:
Use a real-world example	
Step 2	"Today, we are going to learn a strategy called
Give the strategy a name.	
Step 3	Strategy definition:
Define the strategy, how and when it is used, and how it helps with reading.	How it helps us comprehend:
Step 4	Model hand gesture, explain strategy poster, and refer to anchor lesson.
Give students touchstones.	

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Define the Strategy (Step 3)

“An inference is when we combine our background knowledge along with information in the text to understand what the author is not telling us directly. An inference about future information is a prediction. When we make inferences, it helps us understand text more fully.”





“Inferences are really important and great readers make them all the time. An inference is something a reader knows from reading, but the author doesn’t include it in the book. It helps you understand the story more deeply and helps make books mean something very personal to you.”

(Keene & Zimmermann, 2007, p. 148)





Define the Strategy (Step 3)

Record what you will say for Step 3 on your orange Cognitive Strategy Routine Lesson Planning Card.

Cognitive Strategy Lesson Planning	
Title of Text _____	
Step 1 Use a real-world example	Anchor lesson: _____
Step 2 Give the strategy a name.	"Today, we are going to learn a strategy called _____"
Step 3 Define the strategy, how and when it is used, and how it helps with reading.	Strategy definition: _____ How it helps us comprehend: _____
Step 4 Give students touchstones.	Model hand gesture, explain strategy poster, and refer to anchor lesson. _____

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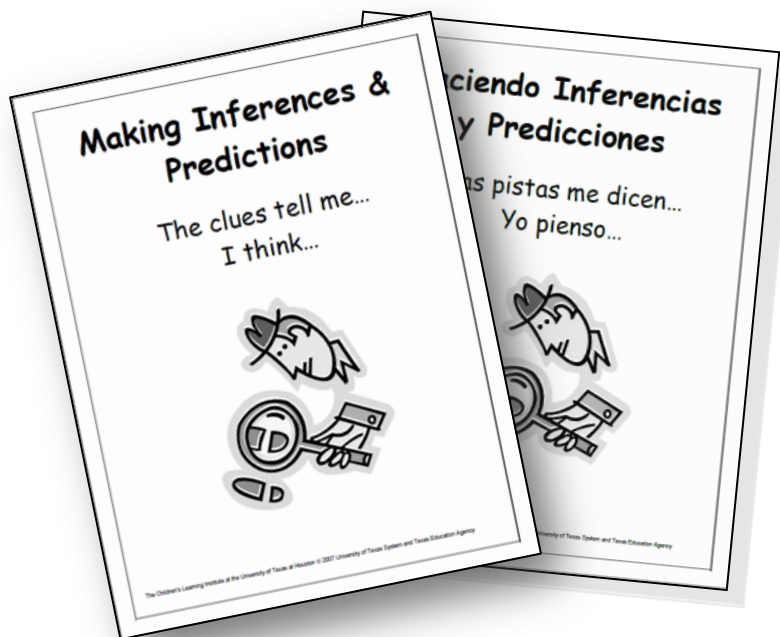
An inference is...





Give Students Touchstones (Step 4)

You may choose to provide students with a hand motion that signals “Making Inferences and Predictions.”



Display strategy posters in the classroom.





Give Students Touchstones (Step 4)

Touchstones: Explain the strategy poster and refer to the anchor lesson.

“When I make an inference, I will show you by pointing to the poster. Look at the detective on our poster. He is searching for clues in the text and using his background knowledge to make an inference. We made inferences when we tried to figure out to whom the purple purse belonged.”





Give Students Touchstones (Step 4)

Record what you will say for Step 4 on your orange Cognitive Strategy Routine Lesson Planning Card.

Cognitive Strategy Lesson Planning

Title of Text _____

Step 1 Use a real-world example	Anchor lesson: _____
Step 2 Give the strategy a name.	"Today, we are going to learn a strategy called _____"
Step 3 Define the strategy, how and when it is used, and how it helps with reading.	Strategy definition: _____ How it helps us comprehend: _____
Step 4 Give students touchstones.	Model hand gesture, explain strategy poster, and refer to anchor lesson. _____

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Think-Aloud (Step 5)

“A think-aloud is a way to provide *instruction* rather than just give *instructions*” (Daniels & Zemelman, 2004, p. 238).

Students who struggle with reading “in general do not possess knowledge of strategies and often are not aware of when and how to apply the knowledge they do possess” (Duffy et al., 1987, p. 348).



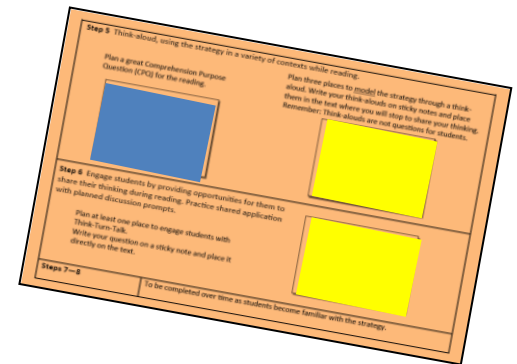


Cognitive Strategy Lesson Planning Card (Side 2)

Step 5 is where we SHOW students how we use the strategy while reading.

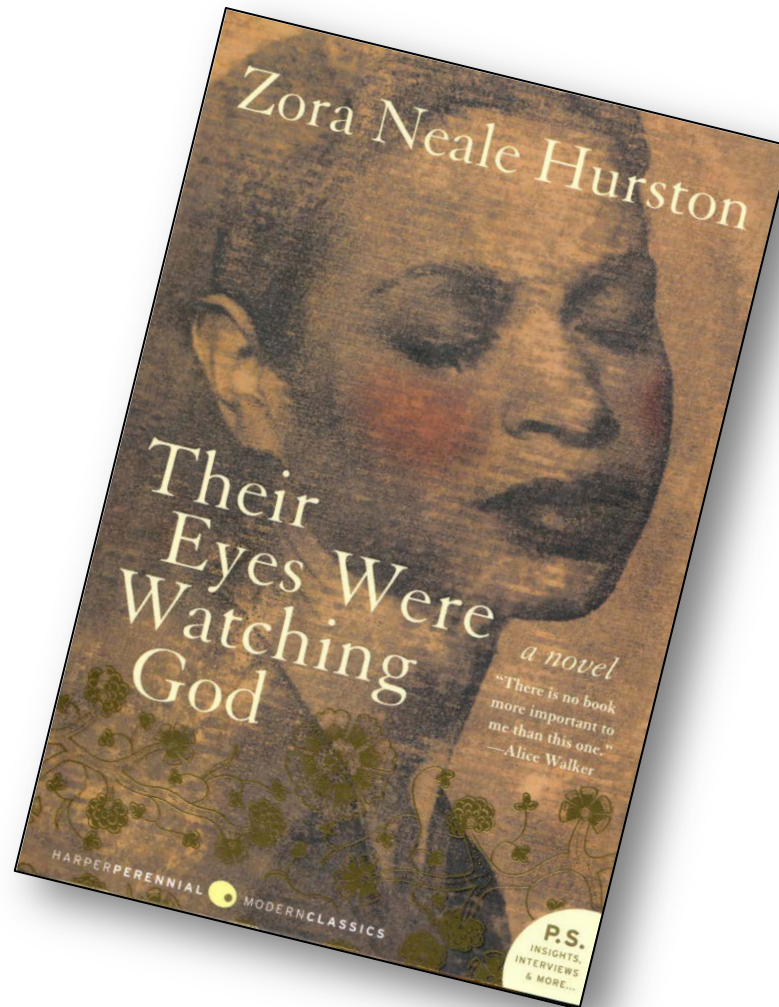
We plan a Comprehension Purpose Question (CPQ), as well as places to model thinking-aloud for students.

Step 5 will differ with each lesson. We transfer the sticky notes from the planning card and place them on the text.





Think-Aloud (Step 5)





Making Inferences Graphic Organizer

Graphic organizers can help struggling students to focus “attention on the text while they read or help them organize the incoming information contained in the text” (Almasi, 2003, p. 92).

This type of activity helps students to actively think about the text while they are reading. This particular organizer helps students to “explore a text by using text-explicit and text-implicit thinking processes... It is a child-centered strategy that allows the teacher to guide children both to the ideas in the text and to the processes involved in getting those ideas” (Searfoss & Readence, 1994, pp. 246-248).





Think-Aloud (Step 5)



Handout
3

Use scaffolds to support student learning.

Making Inferences Graphic Organizer

Title: Their Eyes are Watching God – pp. 1-3
 CPQ: What do we learn about the woman coming into town?

P. #	Statement About the Text that is Thought to be True	Direct (Explicit) or Inference (Implicit)?	Evidence (Text Clues)	Background Knowledge (Connections to What I Know)
1	She was coming back from burying the dead of someone who died suddenly.	direct	<ul style="list-style-type: none"> She had come back from burying the dead ... the sudden dead. 	
2	The townspeople used to be envious of her but now they enjoyed seeing her fall on hard times and they were talking badly about her.	inference	<ul style="list-style-type: none"> remember the envy they had stored swallowed with relish Burning statements ... laughs The mood came alive Words like harmony in a song 	They are remembering the envy was in the past. When you swallow something and the mood of that means you enjoy it, people's statements burn they laugh at you, they mean.
2	She's 40 years old.	direct	<ul style="list-style-type: none"> What dat ole forty year ole 'oman doin' ... 	
2	Her hair is long and she's wearing it down which isn't appropriate for an older woman.	inference	<ul style="list-style-type: none"> What dat ole forty year ole 'oman doin' wid her hair swingin' down her back like some young gal? 	Most women in their hair down like young girls are asking what she's doing wearing her hair like me they think it's not appropriate.

In the Text

Its says it **right here**. I can see those words.

The **AUTHOR** says it **DIRECTLY**.

In My Head

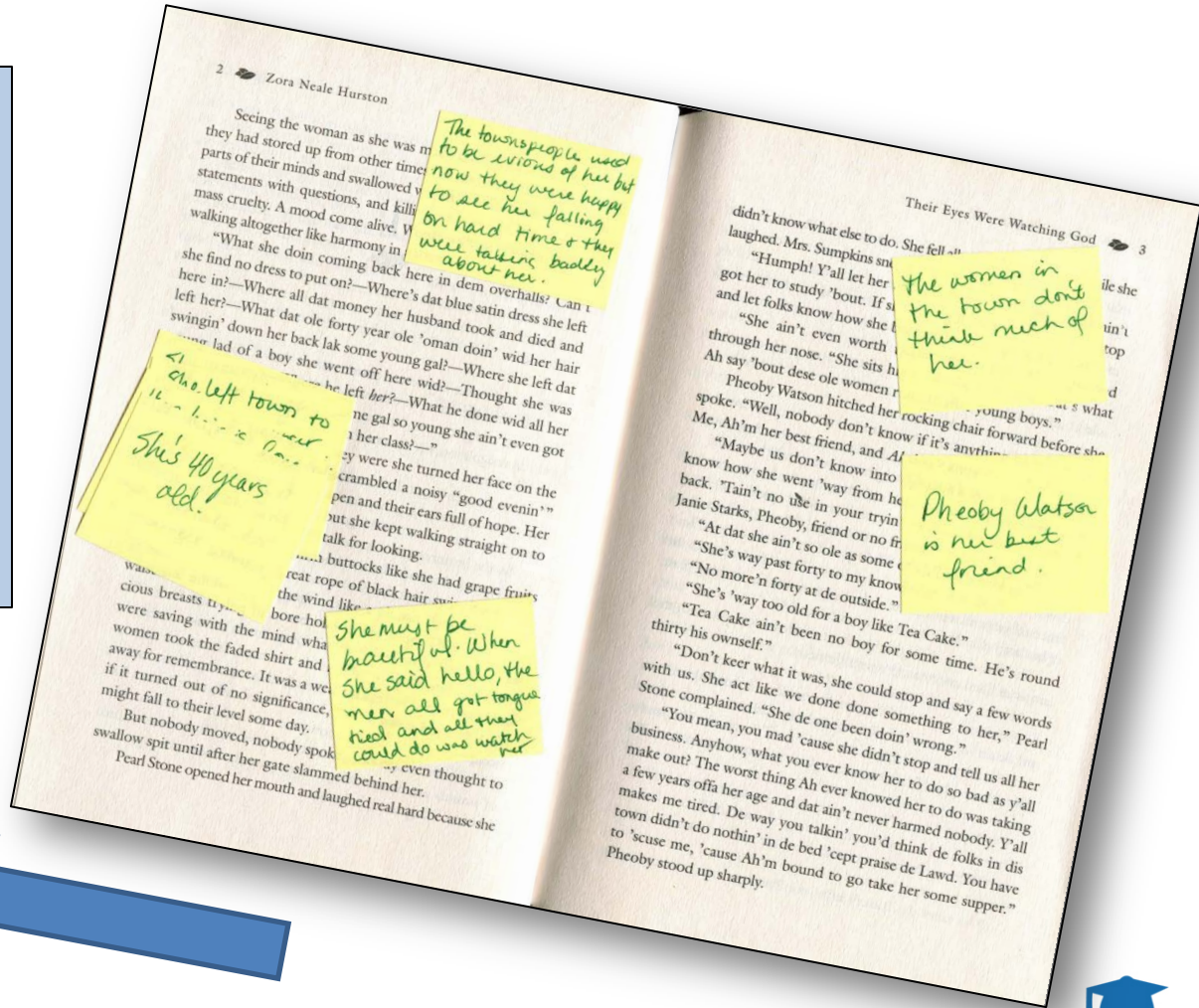
I have to use **clues** from the text and my **background knowledge**...

I have to make an **INFERENCE**.





CPQ: What do we learn about the woman coming into town?



Step 5 Think-aloud, using the strategy in a variety of contexts while reading.

Plan a great Comprehension Purpose Question (CPQ) for the reading.

Plan three places to model the strategy through a think-aloud. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thinking. Remember: Think-alouds are not questions for students.

Model the Strategy 3 Times

Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.

Plan at least one place to engage students with Think-Turn-Talk. Write your question on a sticky note and place it directly on the text.

Steps 7-8 To be completed over time as students become familiar with the strategy.



Making Inferences Graphic Organizer

Title: Their Eyes Were Watching God – pp. 1-3

CPQ: What do we learn about the woman coming into town?

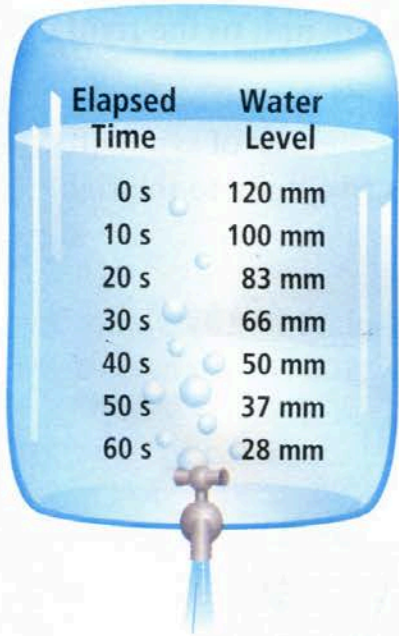
P. #	My Answers to the CPQ	Direct (Explicit) or Inference (Implicit)?	Evidence (Text Clues)	Background Knowledge (Connections to What I Know)
1	She was coming back from burying the dead - someone who died suddenly.	direct	<ul style="list-style-type: none"> • She had come back from burying the dead... the sudden dead. 	
2	The townspeople used to be envious of her, but now they enjoyed seeing her fall on hard times.	inference	<ul style="list-style-type: none"> • Remember the envy they had stored. • Swallowed with relish. • Burning statements... laughs. • The mood comes alive. • Coming back in dem overalls? • Where's that blue satin dress? 	They are remembering the envy, so it was in the past. When you relish something and the mood comes alive, it means you enjoy it. When people's statements burn and they laugh at you, they are being mean. She's dressed like she is poor.
2	She's 40 years old.	direct	<ul style="list-style-type: none"> • What dat ole forty year ole 'oman doin'... 	
2	Her hair is long and she's wearing it down, which isn't appropriate for an older woman.	inference	<ul style="list-style-type: none"> • What dat ole forty year ole 'oman doin' wid her hair swingin' down her back lak some young gal? 	Most women in their 40s don't wear their hair down (which means long) like young girls. The fact they are asking what she thinks she's doing wearing her hair like that, tells me they think it's not appropriate.

2	She left the town to marry a poor, younger man, but that didn't work out.	inference	<ul style="list-style-type: none"> • Where she left dat young lad of a boy she went off here wid? • Thought she was going to marry? • What he done wid all her money? • Why she don't stay in her class? 	It says she left with a younger man and she thought she was going to marry him. Now she is alone and it seems like her money is gone. Class is like lower and middle class. She didn't stay in her class, which tells me he was poor compared to her.
2	She was higher class compared to the rest of the townspeople.	inference	<ul style="list-style-type: none"> • Remember the envy they had stored. • Where's that blue satin dress? • Where all dat money... • Why she don't stay in her class? 	People are jealous of others when they have less than them. It sounds like she had money and used to dress nice. Since they talk about her staying in her class, it makes me think she's in a different class than all of them as well.



CPQ: What information from the table helps you to know your prediction for b is reasonable?

Handout 4



Hydraulics The table at the left shows the height of a column of water as it drains from its container. Model the data with a quadratic function. Graph the data and the function. Use the model to estimate the water level at 35 seconds.

Step 1 Enter the data. Use **QuadReg**.

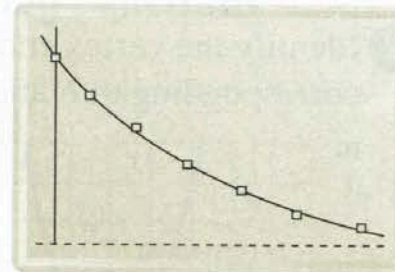
Step 2 Graph the data and the function.

Step 3 Use the table feature to find $f(35)$.

```

QuadReg
y = ax^2 + bx + c
a = .0091666667
b = -2.103571429
c = 120.3333333

```



X	Y1
29	67.039
30	65.476
31	63.932
32	62.406
33	60.898
34	59.409
35	57.937

Y1 = 57.9375

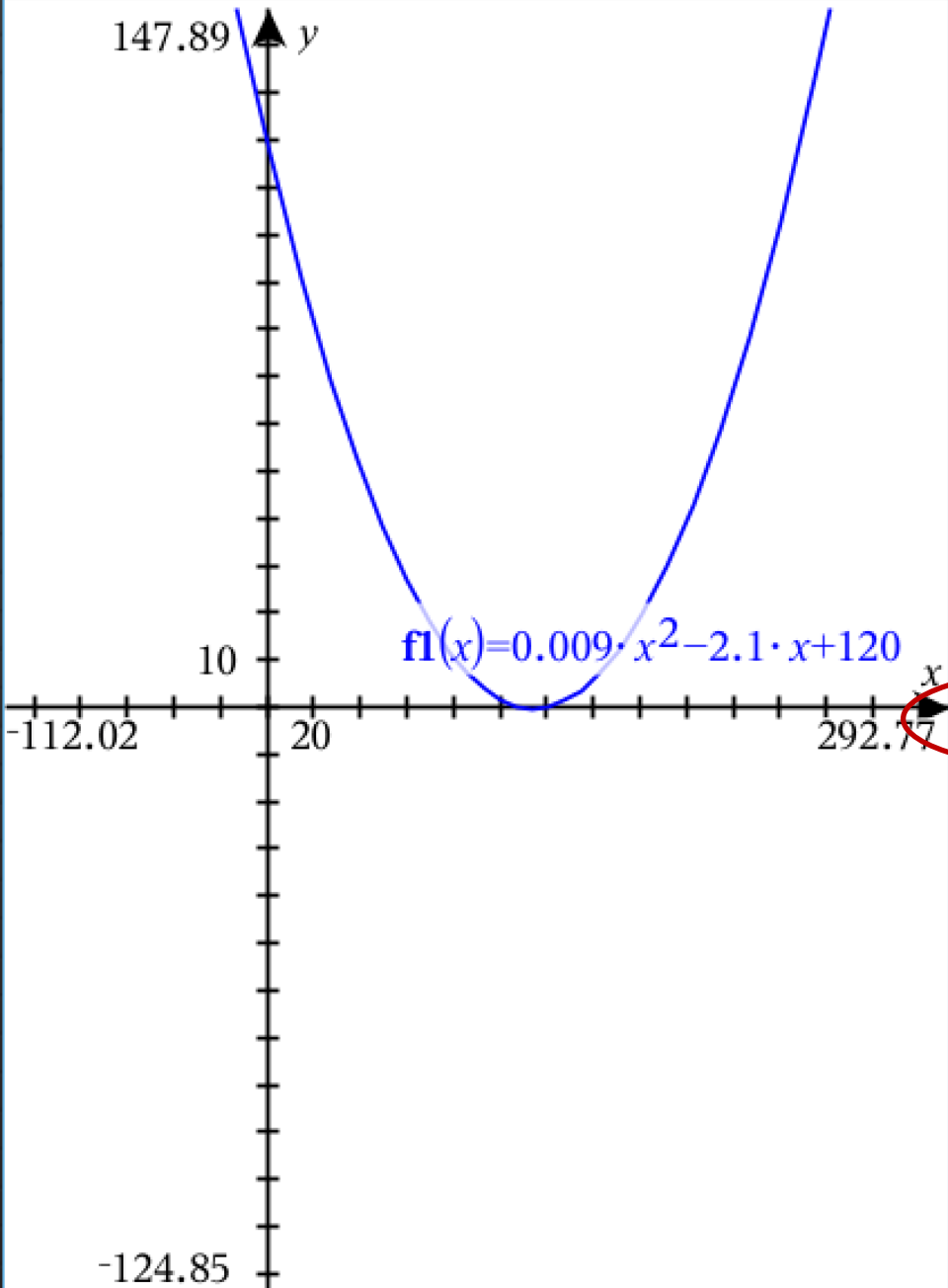
An approximate model of the quadratic function is $y = 0.009167x^2 - 2.10x + 120$. At 35 seconds the water level is approximately 58 mm.

Check Understanding

- 4 a. Use the quadratic model to estimate the water level at 25 seconds.
- b. Use the quadratic model to predict the water level at 3 minutes.
- c. **Critical Thinking** Is your prediction in part (b) reasonable? Explain.

(Bellman, A., Bragg, S., Charles, R., Handlin, W., Kennedy, D. (2004). *Prentice Hall mathematics algebra 2*. Upper Saddle River, NJ: Pearson Education, Inc.)





x	f1(x):=
	32.140092
	0.009167..
174.	32.1401
175.	33.2394
176.	34.357
177.	35.4929
178.	36.6472
179.	37.8198
180.	39.0108
181.	40.2201
182.	41.4477
183.	42.6937
184.	43.958
185.	45.2406
186.	46.5415
187.	47.8608
188.	49.1984

Making Inferences Graphic Organizer

Title: Using Quadratic Models, Chapter 5, p. 236

CPQ: What information from the table helps you to know your prediction for b. is reasonable?

P. #	My Answers to the CPQ	Direct (Explicit) or Inference (Implicit)?	Evidence (Text Clues)	Background Knowledge (Connections to What I Know)
	As time elapses, the water level decreases.	inference	<ul style="list-style-type: none"> • $0\text{ s} = 120\text{ mm.}$ • $60\text{ s} = 28\text{ mm.}$ • Water drains from its container (says in the problem). 	When water drains from something, the level decreases like when you drain a bathtub. It takes time for something to drain. It doesn't happen instantly.
	b. Water level at 3 minutes will be 0 mm.	inference	<ul style="list-style-type: none"> • $60\text{ s} = 28\text{ mm.}$ 	In the first minute the water level went down from 120 mm to 28 mm which is a difference of 92 mm. At the start of the second minute, there are only 28 mm left. In 2 minutes there wouldn't be any water left. It's not possible for the container to refill itself - it is draining.



Handout
5

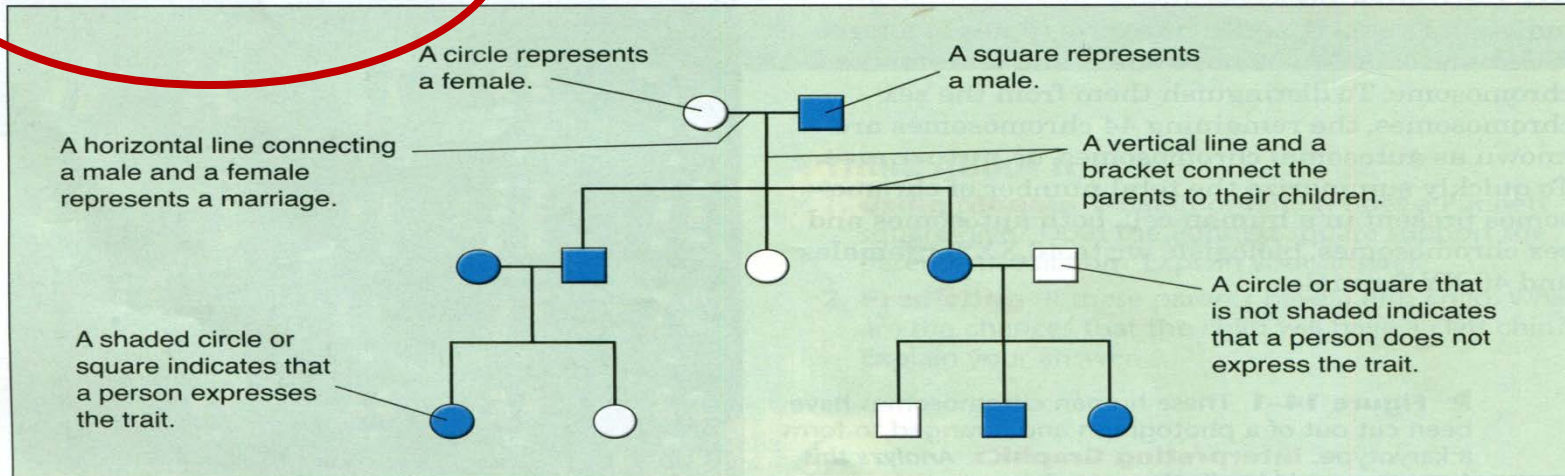
Go Online
active art

For: Pedigree activity
Visit: PHSchool.com
Web Code: cbp-4141

▼ **Figure 14-3** This drawing shows what the symbols in a pedigree represent. **Interpreting Graphics** What are the genotypes of both parents on the left in the second row? How do you know?

Pedigree Charts A **pedigree** chart, which shows the relationships within a family, can be used to help with this task. The pedigree in **Figure 14-3** shows how an interesting human trait, a white lock of hair just above the forehead, is transmitted through three generations of a family. The allele for the white forelock trait is dominant. At the top of the chart is a grandfather who had the white forelock trait. Two of his three children inherited the trait, although one child did not. Three grandchildren have the trait, and two do not.

Genetic counselors analyze pedigree charts to infer the genotypes of family members. For example, since the white forelock trait is dominant, all the family members that lack the trait must have homozygous recessive alleles. Since one of the grandfather's children lacks the white forelock trait, the grandfather must be heterozygous for the trait.



(Miller, K. & Levine, J. (2008). *Prentice Hall biology*. Boston, MA: Pearson Education, Inc.)



Making Inferences Graphic Organizer

Title: Pedigree Charts, Chapter 14, p. 342

CPQ: What are the genotypes of both parents on the left in the second row? How do you know?

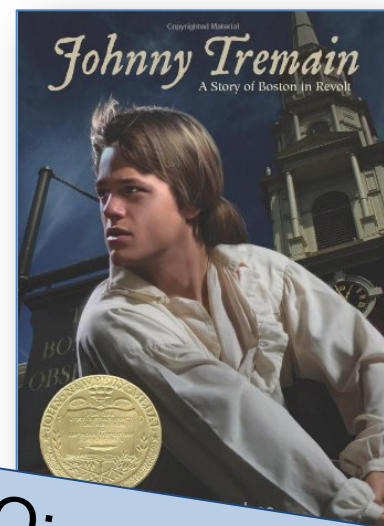
P. #	My Answers to the CPQ	Direct (Explicit) or Inference (Implicit)?	Evidence (Text Clues)	Background Knowledge (Connections to What I Know)
Text	At the top of the chart is a grandfather. Grandfather has the heterozygous trait.	direct	<ul style="list-style-type: none"> • At the top of the chart is a grandfather ... • The grandfather must be heterozygous for the trait. 	
Figure 14-3	Square represents a male; circle a female. Shaded shape indicates the trait. Horizontal line = marriage. Vertical line = children.	direct	<ul style="list-style-type: none"> • Square represents male; circle female. • Shaded...expresses the trait; not shaded does not express trait. • Horizontal line reps marriage. • Vertical line reps children. 	
Figure 14-3	Both parents have the heterozygous genotype for the white forelock.	inference	<ul style="list-style-type: none"> • Circle (mom) and square (dad) are shaded. • The grandfather of the male has the trait. • They are linked to two circles (children). • Only one circle is shaded. 	Dad must be heterozygous, because only one of his parents has the trait and he has the trait. We don't know about mom's parents, but since only one of their kids has the trait, mom has to be heterozygous. If she was homozygous, then both kids would have the trait.



Your Turn! (Step 5)



- Read the excerpt from *Johnny Tremain*.
- Use the Cognitive Strategy Routine Lesson Planning Card to plan a CPQ for this text.



CPQ:
 What do the other characters think about Johnny?



Step 5 Think-aloud, using the strategy in a variety of contexts while reading.	
Plan a great Comprehension Purpose Question (CPQ) for the reading.	Plan three places to model the strategy through a think-aloud. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thinking. Remember: Think-alouds are not questions for students.
CPQ	
Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.	
Plan at least one place to engage students with Think-Turn-Talk. Write your question on a sticky note and place it directly on the text.	
Steps 7-8	To be completed over time as students become familiar with the strategy.

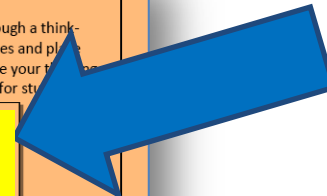




Your Turn! (Step 5)

- Use the Think-Aloud sticky notes to record the first three statements you will stop to think-aloud for students.

Step 5 Think-aloud, using the strategy in a variety of contexts while reading.	
Plan a great Comprehension Purpose Question (CPQ) for the reading.	Plan three places to <u>model</u> the strategy through a think-aloud. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thoughts. Remember: Think-alouds are not questions for students.
<div style="border: 1px solid black; padding: 10px; text-align: center;">CPQ</div>	<div style="background-color: yellow; width: 100px; height: 100px;"></div>
Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.	
Plan at least one place to engage students with Think-Turn-Talk. Write your question on a sticky note and place it directly on the text.	<div style="background-color: yellow; width: 100px; height: 100px;"></div>
Steps 7—8	To be completed over time as students become familiar with the strategy.





Your Turn! (Step 5)



- Place your sticky notes on Handout 6 (blank graphic organizer).
- To ensure that your lesson is clear and explicit, plan what you will say to students. Record the text evidence and/or background knowledge you relied on to make the statement.

Making Inferences Graphic Organizer

Title: _____
CPQ: _____

P. #	My Answers to the CPQ	Direct (Explicit) or Inference (Implicit)?	Evidence (Text Clues)	Background Knowledge (Connections to What I Know)





Practice Your Think-Aloud Lesson

- Place your sticky notes back in the text where you will stop and think-aloud for students. Now read the excerpt.
 - a. Stop and share aloud the statement on the sticky note.
 - b. Place the sticky note on a blank organizer as you would when modeling for students.
 - c. Share out loud and record the appropriate information on the graphic organizer (refer to the organizer you created when planning as a guide).
 - d. Tell students whether your statement is directly stated in the text or if you made an inference.
- Continue reading until you reach your next stop.
- Repeat a–d.





Step 6

Strategy Instruction

DIRECT • EXPLICIT • SYSTEMATIC

Release of Responsibility

1. Use a real-world example to create a context (anchor lesson).
2. Give the strategy a name.
3. Define the strategy, how and when it is used, and how it helps with reading.
4. Give students touchstones, such as a hand gesture or icon, to help them remember the strategy.
5. Think aloud, using the strategy in a variety of contexts.
6. Engage students by providing opportunities for them to share their thinking during the reading. Practice shared application with planned discussion prompts.

Ongoing Assessment and I





Engage Students (Step 6)

Ask students to share their thinking. Add statements to the graphic organizer and ask them to identify whether or not the statement is directly stated in the text or if they have to make an inference.

Is this true? Did the author tell us this directly or are we making an inference?



2	She left the town to marry a poor, younger man, but that didn't work out.	inference	<ul style="list-style-type: none"> • Where she left dat young lad of a boy she went off here wid? • Thought she was going to marry? • What he done wid all her money? • Why she don't stay in her class? 	It says she left with a younger man and she thought she was going to marry him. Now she is alone and it seems like her money is gone. Class is like lower and middle class. She didn't stay in her class, which tells me he was poor compared to her.
2	She was higher class compared to the rest of the townspeople.	inference	<ul style="list-style-type: none"> • Remember the envy they had stored. • Where's that blue satin dress? • Where all dat money... • Why she don't stay in her class? 	People are jealous of others when they have less than them. It sounds like she had money and used to dress nice. Since they talk about her staying in her class, it makes me think she's in a different class than all of them as well.
Step 6 2	The men find her appealing (maybe she's very attractive).			
3	The women in the town don't think much of her.			
3	Pheoby Watson is her best friend.			



Engage Students (Step 6)

“Discussion plays a key role in supporting the development of students’ understanding of text. It is through the interaction – or the transaction – of ideas, language, and perspective that comprehension is developed” (Israel & Duffy, 2009, p. 523).





Engage Students (Step 6)

Ask Think-Turn-Talk questions that require students to make inferences or predictions.

- “How did Janie feel about her discovery and why did she feel that way?”
- “Why is Nanny pushing so hard for Janie to get married?”
- “What are you inferring now?”
- “What do you think might happen?”

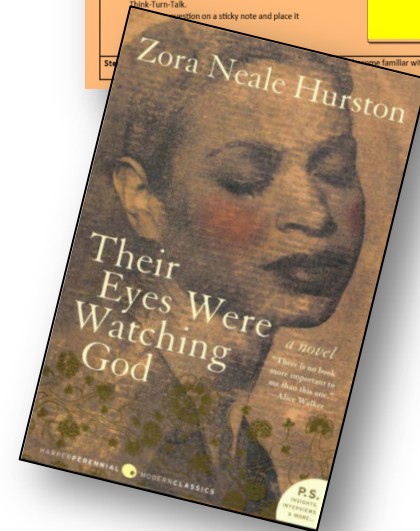
Step 5 Think-aloud, using the strategy in a variety of contexts while reading.

Plan a great Comprehension Purpose Question (CPQ) for the reading.

Plan three places to model the strategy through a think-aloud. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thinking. Remember: Think-alouds are not questions for students.

Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.

Plan at least one place to engage students with Think-Turn-Talk questions on a sticky note and place it





Creating a Safe Environment

“If we encourage and celebrate changes in thinking, rather than ‘correct’ responses, reading improves ... We want to encourage our students to go back into the text to validate their thinking. We want ... them to know that they can review the text and change their thinking” (Sibberson and Szymusiak, 2003, p. 124).

“Constant penalties for being wrong, as well as an overemphasis on correctness, grades, and being right, undermine the climate of safety that ... readers need to take risks and grow” (Zemelman, Daniels, & Hyde, 2012, p. 107).





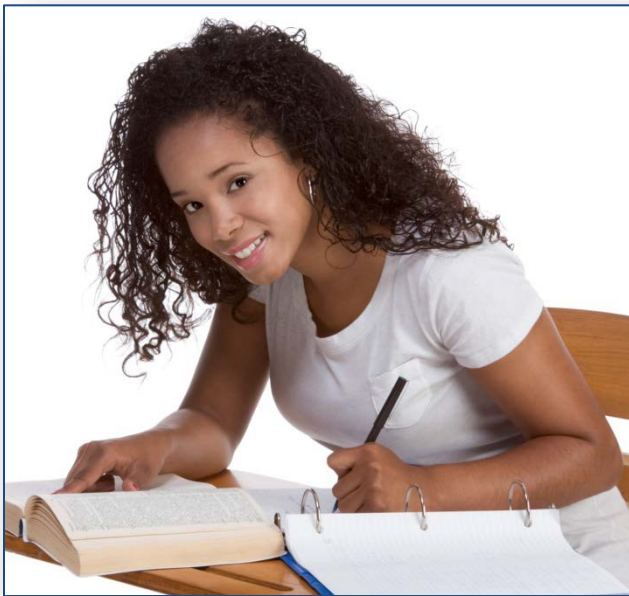
Scaffold Practice (Step 7)

“Today, we are going to read a well-known poem called, *Invictus*. As you work to understand the poem, record the inferences you are making on sticky notes. You will share your inferences with your group. Be prepared to explain why you think what you do.”





Provide Accountability Measures (Step 8)



“After reading the excerpt today, I would like you to write your response to the CPQ. In your writing, explain what you learned about the character and her motivations. Be sure to provide text evidence and background knowledge to support your thinking.”





Provide Accountability Measures (Step 8)

“Students' comprehension of science, social studies, and language arts texts is improved when they write about what they read, specifically when they respond to a text in writing (writing personal reactions, analyzing and interpreting the text)...”

(Graham & Hebert, 2010, p. 5)



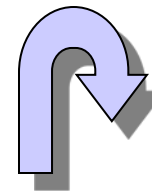


Cognitive Strategy Routine

How might using the Cognitive Strategy Routine as an approach to teaching Making Inferences and Predictions support the students with whom you work?



Think



Turn



Talk





Teaching Making Inferences and Predictions

FADING THE SCAFFOLD





Annotating the Text

- “Annotating text is one of the most common comprehension-enhancing strategies used by proficient readers (Daniels & Steineke, 2011, p. 41).
- “When students capture their thinking while reading, they are more likely to return to texts, participate in discussion and have an easier time starting writing assignments. They also use their marked text to review and study” (Tovani, 2004, p. 68).





Annotating the Text

- “The concept of holding and making thinking is new to a lot of students because they’ve been taught that it’s the teacher’s job to ask the questions, and the student’s job to answer them” (p. 68).
- “Merely underlining text is not enough. Thinking about the text must accompany the underlining” (p.69).
- “I have to teach students how to show their thinking again and again. It doesn’t miraculously happen because I’ve assigned it” (p. 69).

(Tovani, 2004)





Annotating the Text

- Select small, complex pieces of text to model annotating text for students.
- Project the text so it is large enough for all students to see.
- Set the CPQ for the reading.
- Read the text aloud, stopping to underline the key information and place sticky notes explaining your thinking in the margin of the text.
- Clearly explain why you underlined what you did and what you are thinking.





Annotating the Text

Text
Excerpt

The Gettysburg Address, 1863 Abraham Lincoln

Four score and seven years ago our fathers brought forth, upon this continent, a new nation, conceived in liberty and united by the proposition that "all men are created equal."

CPQ: What is Lincoln saying in this speech?

87 years ago (1776 when Declaration of Independence was signed) beginning of our nation.

The country was founded on the idea that all men are created equally. At the time of this speech, Lincoln was looking to abolish slavery.





Consecrate: To dedicate, honor.
 Hallow: To honor as holy.
 Dedicate, consecrate, and hallow all have similar meanings. So, he's stressing the importance of this idea.

He's come to dedicate a portion of the battlefield as a memorial to those who have died in the war.

Now, he's wondering if our nation will survive because of the war.

It isn't necessary to have a president declare this battleground an honored place, because the brave who have died have already made it an honored place.

...whether that nation, long endure. We are met to dedicate a portion of the ground for those who died here, that the nation might may, in all propriety do. But in a larger sense, we cannot dedicate, we cannot consecrate, we cannot hallow brave men, living and dead, who struggle above our poor power to add or detract. long remember what we say here; while they did here.





Your Turn!



- Read the excerpt from *The Story of An Hour*.
- Use the Cognitive Strategy Routine Lesson Planning Card to plan a CPQ for this text.

CPQ:
What are the various phases of emotion the woman goes through after she hears the news?

Step 5 Think-aloud, using the strategy in a variety of contexts while reading.	
Plan a great Comprehension Purpose Question (CPQ) for the reading.	Plan three places to model the strategy through a think-aloud. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thinking. Remember: Think-alouds are not questions for students.
<div style="border: 1px solid black; padding: 5px; text-align: center;">CPQ</div>	<div style="background-color: yellow; width: 100px; height: 100px;"></div>
Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.	<div style="background-color: yellow; width: 100px; height: 100px;"></div>
Plan at least one place to engage students with Think-Turn-Talk. Write your question on a sticky note and place it directly on the text.	
Steps 7-8	To be completed over time as students become familiar with the strategy.





Your Turn!

- As you read, underline the most important information (evidence in the text). On sticky notes, record your thinking. Be aware of the inferences you are making to help you answer the CPQ.
- Think about how you would explain to students **WHY** you are annotating the text the way you are.

Step 5 Plan a great Comprehension Question (CPQ) for the reading. Write your think-alouds on sticky notes and place them in the text where you will stop to share your thinking. Think-alouds are not questions for students.

Step 6 Engage students by providing opportunities for them to share their thinking during reading. Practice shared application with planned discussion prompts.

Plan at least one place to engage students with Think-Turn-Talk. Write your question on a sticky note and place it directly on the text.

Steps 7—8 To be completed over time as students become familiar with the strategy.





Annotating the Text

- After we model multiple times for students, we can annotate text together (Step 6).
- Gradually, we release responsibly so students are able to successfully annotate complex chunks of texts independently (Step 8), increasing their ability to make inferences and predictions while reading.



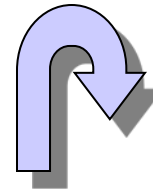


Reflecting On the Training

- How might you implement the approaches for teaching Making Inferences and Predictions in your classroom?
- How might this type of instruction help your students?



Think



Turn



Talk





Dear George,

On the last day of class, you handed me a note. "Read it later," you said, then headed off for summer vacation. You had barely walked out our classroom door before I had unfolded your note. There, in your familiar pencil-smudged scrawl, you had written: "Sometimes what we show on the outside doesn't really match what's going on on the inside. Thank you for being my teacher."

My inferencing skills weren't too good, as I was never quite sure if the "we" meant students, in particular you, or the "we" meant teachers, in particular me. In either case, your words meant more than I ever had the chance to tell you. By the time I got into the hall, you were gone. I dreamed you a summer of basketball, skateboards, and fishing . . . I have hoped you a life of success.

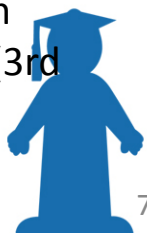
(Beers, 2003, p. 72)





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