

How QARs Mirror Expert Thinking in the Disciplines

Yet another reason why we love Question–Answer Relationship questions (QARs) for reading nonfiction in the disciplines is that asking these types of questions mirrors expert reading, thinking, problem solving, and inquiry in the disciplines. As content-area teachers are asked to do more reading with students, particularly of complex nonfiction, the QARs are a great tool for teachers to assist students to meet the anchor standards of the Common Core and all other next-generation standards. Take a look below at how each QAR question type requires and supports essential thinking processes from each discipline.

Content-area teachers can convey to students how the QAR question emphasizes threshold procedures from the discipline they are teaching, as seen below. They can also model how answering QARs can require threshold learnings from the discipline.

QARs in Science

- **Right There:**
 - Promote observation and the consideration of direct evidence.
- **Think and Search:**
 - Promote the seeing of relationships among data and the seeing of patterns across data sets.
 - Promote the making of reasonable inferences and hypotheses, and a consideration of indirect evidence to make predictions, and to theorize.
 - Encourage making reasonable inferences.
- **Author and Me:**
 - Promote creating mental models and extending these for use in altered contexts.
 - Promote experimentation, intervention, and the creation of new data to add to what is already established or to confirm or disconfirm hypotheses.
- **On Your Own:**
 - Promote the application of scientific concepts and processes, and encourage making connections between scientific learning and real-world issues and problems and the testing of generalizations.

Examples

- **Right There:**
 - Describe the incisors in a carnivorous mammal.
- **Think and Search:**
 - Describe the major differences between carnivore and herbivore teeth.
- **Author and Me:**
 - Describe what a giant herbivorous dinosaur's teeth might look like based on what you know about other dinosaurs.
- **On My Own:**
 - What other adaptations did dinosaurs have in order to make them so successful as to rule the earth for 160 million years?

QARs in Math

- **Right There:**
 - Establish the facts and understand the details from the data/text.

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- **Think and Search:**
 - Connect dots from within the text.
 - Discern patterns and relationships in the data.
 - Infer proper operations to use to solve the problem.
- **Author and Me:**
 - Connect dots from outside and inside the text.
 - Identify and apply proper operations.
 - Consider alternative operations and ways of solving the problem, the costs and benefits, and the efficiencies and inefficiencies of each.
 - Check your work. Evaluate the effectiveness of your procedures. Hypothesize and articulate general principles. Test your hypotheses.
- **On Your Own:**
 - Consider real-world applications of general principles and problem-solving procedures.
 - Identify situations in which concepts and strategies can be used.

Problem	Right There	Think and Search	Author and Me	On Your Own
<p>A cord of seasoned almond wood costs \$190. I paid \$190 for a pile that was 4 feet wide, 2 feet high, and 10 feet long. Did I get an honest deal?</p> <p>(Cord—a rectangular pile of wood 4 feet high, 4 feet wide, and 8 feet long.)</p>	<p>What is a cord?</p> <p>How much did I pay?</p> <p>How much does a cord of seasoned almond wood cost?</p> <p>What are the dimensions of the pile of wood I bought?</p>	<p>What five pieces of information do I need to solve this problem?</p> <p>What proportion of a cord does my pile of wood represent?</p> <p>What is a reasonable price for the wood I bought?</p>	<p>Would I purchase a cord of wood from this person again?</p> <p>How does the volume of wood I purchased compare to a cord? How could I attempt to estimate whether I really receive a cord in the future?</p>	<p>What would someone do with a cord of wood?</p> <p>Why is wood sold by the cord?</p> <p>Why does the type of wood matter when determining the cost?</p> <p>How do goods get priced?</p> <p>What makes a fair price? What prices are “sellable”?</p>
<p>The owner of a DVD store buys some DVDs and plans to sell them for \$12 each. This price includes both the purchase price and a mark-up of 20%. The owner doesn't sell many DVDs at \$12.00 so he reduces the price by 20%. At this new marked-down price, will the owner make a profit from the sale of the remaining DVDs?</p>	<p>What was the original marked-up price on the DVDs?</p> <p>When DVDs don't sell, what does the owner do?</p>	<p>What information is not needed?</p> <p>What are all the things the owner does to the prices of his DVDs?</p>	<p>Determine the markdowns that would result in either a clear profit or a clear loss.</p> <p>What various strategies could you use to solve this problem, and what are the costs and benefits of each?</p> <p>What is important to know about the selling price of DVDs?</p>	<p>How does a store owner determine the amount of mark-up for a product? What does a product market depend on (product, availability, supply and demand, etc.)?</p> <p>How do store owners survive when they sometimes must sell at a loss?</p>

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QARs in Social Studies

- **Right There:**
 - Know your facts. (Who shot Lincoln?)
- **Think and Search:**
 - Consider causality. (What were the effects on the country of shooting Lincoln?)
 - Look for patterns. Compare and contrast. How do problems relate to solutions?
 - Extrapolate/predict.
- **Author and Me:**
 - Make an interpretation through a personal lens/cultural lenses.
 - Deal with bias and perspective. Everything has an agenda. Look at wider world contexts.
 - Ask “what if” questions:
 - How do you think history would be different if Washington had been shot?
 - How do you think history would be different if Lincoln had not been shot?
 - What do you think would have happened if the North had lost the Civil War?
 - If southerners could have foreseen the future of Reconstruction and then 20th-century American history, how do you think they might have regarded Lincoln’s assassination when they first heard of it?
- **On Your Own:**
 - Create new knowledge. Theorize new possibilities as yet untested.
 - Make social science applicable to new situations:
 - What events in American history had the most positive and negative effects on the evolution of the United States?