



## January Happenings

- Jan 18 MLK Day NO SCHOOL
- Jan 19 K-3 Advisory Committee @ CO
- Jan 20 EILA
- Jan 20 West End Academy
- Jan 21 Math Club @ CO
- Jan 22 2nd Grade Academy

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mathematics is not a spectator sport

# Friday Focus

## Carter County Schools

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### Comprehending Math

Arthur Hyde (co-author of the popular *Best Practice* book) cites a troubling statistic in his book, *Comprehending Math*. "At least half of our nation's fifth graders hate story problems. Actually, they dislike math in general." Ask any teacher why our students have such strong feelings about word problems and they can quickly tell you it is because our kids just don't understand them/are not successful in solving them. Isn't it strange, though, that our kids are quite resourceful when they are set out in the real world and they must share toys or money or pizza? Are you perplexed by the way children can build complex structures with their Legos, but they can't seem to graph a simple line? What happens to them when these life-like situations are put in front of them as story problems? Hyde would argue that mathematics teachers have all too often steered students away from truly comprehending the words on the page. Too many times we have allowed kids to grab numbers and compute when we should have been pushing them to read. You know—preview, visualize, question, summarize, etc. Too many times we have left out the thinking part of comprehending math.

So, now what? Let's return to an intentional focus on utilizing what we know are effective, research-based comprehension strategies. We can use these strategies to help our kids be successful at math. We should explicitly teach our students to: monitor and clarify, question, visualize, summarize, and preview/activate/connect.

#### Monitor and Clarify

In reading class, students are taught to do certain things when a text does not make sense to them. These same strategies should be used when a reading problem is giving them trouble. They should: slow down, reread, look for clues, or ask for help. Teachers can practice these steps with students as they post difficult word problems. Simply post the work and model these strategies with kids during a think-aloud.

#### Question

To use this strategy, students should practice asking themselves questions as they read and calculate the math. There are many great questioning strategies teachers can teach students. One is QFT (Question Formulation Technique). Also, many teachers use problem solving mats with their students. One such mat is a KFC mat. This mat prompts children to answer: "What do I KNOW for sure?" "What am I trying to FIND or FIGURE out?" and "What CONDITIONS or rules must I remember?"

#### Visualize

Probably the most effective strategy to teach your students to comprehend math is to use their mathematical eyes. This can be done in many simple and quick ways. For example, have your students turn and tell a partner what a particular math concept looks like. Have them close their eyes and describe what they see. Let them fold their paper and draw pictures of a particular number or concept. "Build it, draw it, write it, and say it." This flow of building conceptual understanding implements the visualization process. And, don't forget that acting it out is another great way to get kids to visualize a math problem. If you want them to understand subtraction on a number line—let them be a human number line!

#### Summarize

How do we summarize a math problem? We build it, draw it, write it....When students are able to think about what the problem is asking them to find and rewrite it in another form, they are summarizing the problem. We must teach our children to find key words, infer meanings, visualize, etc. if they are going to be able to accurately summarize a word problem.

#### Preview-Activate-Connect

Reading teachers are great at previewing a text in order to activate prior knowledge. They are brilliant when it comes to helping their kids make text to text, text to self, and text to world connections. Did you know that we can do these same steps with our students as we read a word problem? Sure we can! We can certainly relate new problems to old problems and to prior knowledge. Furthermore, we can definitely use problems that are relevant to our students' daily lives and the world around them. [Yummymath.com](http://Yummymath.com) is a great website for real world, relevant word problems.

Reading and math both require high levels of thinking. Using these strategies will increase our students' chances of success by giving them the tools they need to attack the text. Once they know what they are being asked to do, then they can grab the numbers and compute away!

**MATHEMATICS**  
is not about  
numbers, equations,  
computations, or  
algorithms:  
it is about  
**UNDERSTANDING.**

William Paul Thurston