

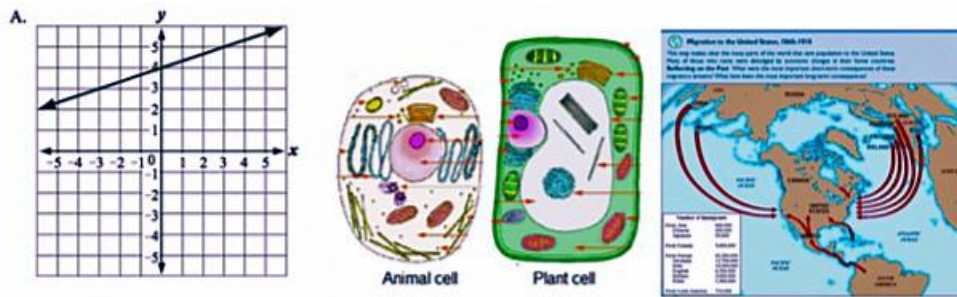
# Collins Writing Exchange

Practical Ideas, Tips, and Resources for Improving Learning Through Writing

## TIP OF THE MONTH

### Making Sense Out of Graphics

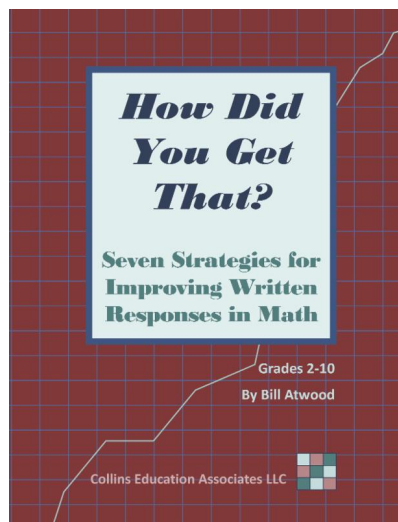
Graphics are a key part of learning in nearly every content area and are frequently seen on high-stakes assessments. They also form a great foundation for Type One and Type Two writing prompts. Graphics might include graphs, diagrams, number models, maps, political cartoons, photographs, historical documents, poems, even student responses to open-ended test questions.



As students look at a selected graphic, you might ask, "List four or more mathematical terms that are related to this image." Or "Write down three or more things that you notice about this graphic." As students become more comfortable with these graphics, you can ask students to "write down two or more questions that would likely be asked" and finally, "if the question is this...what mistakes should you avoid?"

By using quickwrites to analyze graphics with a clear purpose in mind, students get plenty of opportunities to work with lots of different graphics, helping them to gain confidence, review important content, and build domain-specific vocabulary.

For more on using graphics-based prompts to enhance learning, see our [two-page guide with sample graphics](#). And math teachers—check out [How Did You Get That?](#) by CEA Associate Bill Atwood for a huge selection of math graphics and more strategies for writing in the math classroom.

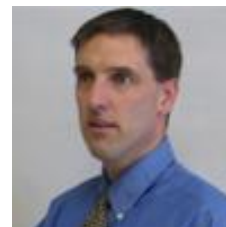


## CALLING ALL MATH TEACHERS

# Deciphering the Language of Math Problems

For many students, reading and understanding word problems is more difficult than doing the math involved in solving them. Breaking down the language of math problems and taking the emphasis off solving the problem can lead students to slow down and grapple with the problem structure.

[Bill Atwood](#), CEA Associate and author of [How Did You Get That?](#), suggests presenting students with a single math word problem and posing one or more of the following questions as Type Ones or Twos:



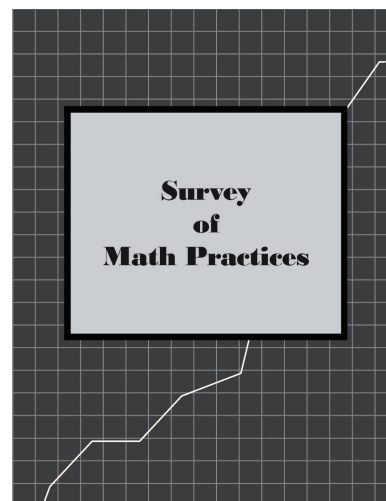
- How many steps are involved in solving this problem and how do you know?
- Identify the “givens” in this problem, OR sketch and label a diagram that shows the givens.
- What are you being asked to find and how do you know this?
- What will the units of the answer be and how do you know this?

Repeating this process frequently as part of your instructional routine exposes students to a wide variety of problems on a range of topics while developing meaning and comprehension.

To take this a step further, Atwood suggests presenting two small groups of word problems and asking students to describe or list three or more similarities or differences between the two groups of problems. For example, you might group problems related to procedures required (multiplication versus division, substitution versus elimination); focus on content (geometry, measurement, place value); which type of division (size of group or number of groups) is required; or whether the problem is a one-step or two-step problem. This focus on seeing similarities and differences can allow students to recognize patterns in how problems are written and help them to determine the correct path toward a solution.

Atwood dedicates an entire chapter of *How Did you Get That?* to reading strategies in the math classroom. For a brief summary of his high-impact strategies, [click here](#).

You may also wish to assess your math teaching skills and habits by taking Bill's very quick [Survey of Math Practices](#).



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## FEATURED RESOURCE

# You Make a Test Question—Math Word Problems, Study Skills, and More!

Our April 2022 issue of the *Collins Writing Exchange* featured this quote from Dylan Wiliam following his research on effective study techniques: "...one technique that is particularly useful both for getting students to clarify, share, and understand learning intentions and for informing the teacher about the students' level of understanding is to have the students design test items, with correct answers, about what they have been learning." **William's study found that reversing roles and challenging students with creating test questions was more effective than providing study guides and teacher-made practice tests.**

Creating test questions works in all content areas but is especially helpful when teaching students how to tackle much-dreaded math word problems. Composing an effective problem allows students to master the different problem types, use the related vocabulary, incorporate relevant graphics, and understand possible errors. Initially, this can be a difficult process, but with guidance and practice, students can master this form while building a deeper understanding of the mathematics involved.

**Math Teacher?** Try [Make a Math Test Question](#).

## Make a Math Test Question

Subject \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

### *Assignment Summary*

Being able to write a great math problem is a sign that you really know the math. Fortunately for you, the state testing department is hiring! Test making is a million-dollar industry, and the people writing the test questions are making lots of money. With good knowledge of math and the ability to write a good question, you could get a piece of this action.

**Not a Math Teacher?** Your students can benefit by creating their own test questions, too. Try one of these assignments to get you started.

- Grades K-3 [Make Your Own Trivia Game](#)
- Grades 4-8 [Create a Test](#)

- Grades 9-12 [Create a Test](#)
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## QUICK LINKS



Quickly diagnose student writing skills and habits and plan purposeful assignments and instruction for the second half of the school year with [Writing Roadmap](#). Watch the [overview video](#) with author Kristine Gibson. Or, [download the PDF](#) of the Preview booklet.

**NEW! Retrieval Routine**

**An easy-to-implement, 4-step routine that establishes good academic habits, builds classroom stamina, and improves learning.**

**Collins Video Course**

**A six-part *Introduction to the Collins Writing Program* course with Dr. John Collins. Get started using Collins Writing [here](#).**

**Check Your Collins IQ**

**Try a sample of our quick self-assessment survey to review Basic, Intermediate, and Advanced Collins implementation strategies.**

**Essential Conventions**

**Check Mate™ and other resources to tackle the rules of writing that are teachers' biggest pet peeves!**

**Free Resources**

**Ready-to-use Type Threes, Focus Correction Area lists, graphic organizers, and more!**

**PD Options**

**Everything you need to know about our PD options, workshops, institutes, and courses.**

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