Not Just Pretty Pictures

The graphics in books have a purpose.
Don't let students ignore them.

Rebecca R. Norman and Kathryn L. Roberts

Take a minute to look through your classroom library. How many of your books have graphics in them? What do you do with those graphics when you are reading aloud to your students? What do students do with them when they are reading on their own? If you are like many teachers and students we have observed, you focus most of your time on the written words, and little on the graphics.

Although you probably wouldn't go to this extreme, we know one 1st grade teacher who covered up all the graphics in the books he read aloud to his students because he believed they took away from the reading experience. Along those same lines, we spoke to one 2nd grade boy who considered looking at the pictures to be "babyish" and "cheating." Countless students have told us they like having

lots of pictures in their textbooks, which caused us to cheer until they told us it was because all those pictures meant there was less to read. Those children seemed to think of graphics as space fillers and, therefore, largely ignored them.

It is true that some graphics in books are simply decoration and don't contribute much to the meaning of a text. For example, in a chapter book for early readers, you may find a picture of a boat next to the chapter number for a chapter about going to the beach. However, most graphics support or extend the written text (Carney & Levin, 2002; Clark & Lyons, 2004) and are composed or selected by the author just as carefully as the words are.

The Role of Graphics

When graphics support the written text, they provide an alternate route to the information, which can help struggling readers understand the information as well as solidify the understanding of more adept readers. For example, a science text may describe the process of photosynthesis, while an accompanying flow chart illustrates the process.

But when graphics extend the text, they are the *only* route to certain facts. An example of this would be a social studies textbook in which the written text describes the climate of a country as varying widely by regions and an accompanying color-coded map shows where each climate zone in that country is located. Recent research indicates that 60 percent of graphics in informational texts for 2nd and 3rd graders convey information *not* available in the written text (Fingeret, 2012).

The learning that can come
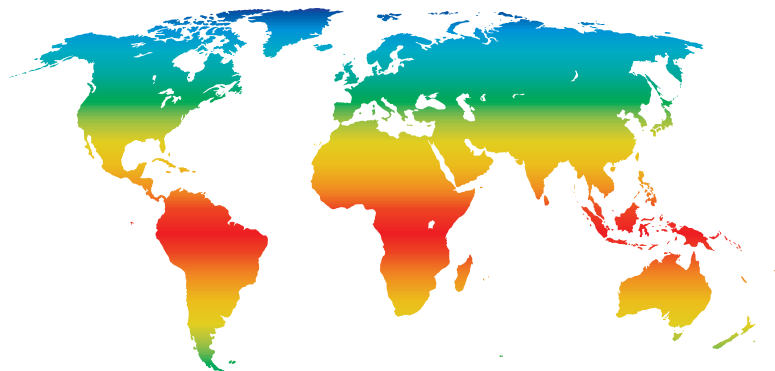
The learning that can come from the **graphical elements** of text **should not be underestimated**.

from the graphical elements of text should not be underestimated. Our own research with a diverse group of 156 3rd graders indicates that understanding graphics not only is important in its own right, but also figures prominently in children's overall comprehension of text, accounting for up to 16 percent of overall comprehension for 3rd graders reading informational texts (Roberts & Norman, 2012). In fact, comprehension of graphical devices is a stronger predictor of overall comprehension of informational text than several other known predictors, including words read correctly per minute, listening comprehension, cognitive flexibility, attitude toward reading, and individual word reading skill, and is second only to vocabulary knowledge (Roberts & Norman, 2012). However, students don't always study the graphics, and even when they do, they do not necessarily understand how to gain information from them (Duke et al., in press; Duke, Roberts, & Norman, 2011).

As it turns out, we are not the only ones concerned with children's

graphical comprehension. The Common Core State Standards place heavy emphasis on both the understanding and use of graphical elements of text (see "Graphical Literacy and the Common Core" on p. 64).

We hope that this discussion has been successful in convincing you that graphics matter. So what now? Well, first we need to do a little public relations work in favor of graphics to let our colleagues and students know that illustrations in their books are usually not just decorations. Next, we need to teach our students strategies for comprehending graphics just as we teach them strategies for comprehending written text.

In Support of Graphic Content

We have to begin by ensuring that our students know that graphics are serious business—they carry important information to which all good readers need to attend. You might do this by bookending your lessons with "good reader" statements like this one:

> One thing that good readers always do when they are trying to understand a text is to read both the words and the graphics. Sometimes, the graphics can help you understand the words. Sometimes, they can tell you things that aren't in the words at all. Today, let's pay extra close attention to the graphics in this book and see what we can learn.

At the end of the lesson, reiterate this concept, saying something like, "Today we practiced something that good readers always do—we carefully examined the graphics and thought about what we could learn from them. What did we learn from the graphics in this book?"

You can also draw attention to the illustrations in texts in the same ways

you draw attention to features of written text. Reading and examining texts with high-quality graphics helps students see what role graphics play in informational texts (Roberts, Norman, Duke, Morsink, Martin, & Knight, 2013). Students reading these texts might create a Venn diagram, indicating which information they found in the written text, the illustrations, and both (Norman & Roberts, 2013).

Strategies for Comprehension

Once you have sold your students on studying graphics, select a text that includes excellent graphics, such as those listed in "Suggested Texts for Graphical Literacy" on p. 66. Then, teach your students to think strategically about the information in the written text and illustrations. Again, there are many ways to do this, using both techniques designed for graphical comprehension and those designed for written text that can be extended to graphics.

Visual Thinking Strategies

Visual thinking is an instructional strategy designed to help "readers" examine works of art, describe their observations, listen to others' ideas, and collaboratively build understanding (Housen & Yenawine, n.d.). Although illustrations in informational text are not necessarily works of art, a modified version of the strategy is a great way to get kids looking at and thinking critically about graphics and their relationships with the surrounding text.

Begin by giving students time to examine a graphic. Then ask, "What do you see in this graphic?" followed by (when appropriate), "What do you see that makes you say that?" The first question pushes students to look at the whole image and try to figure out the message or information that it is meant to convey. The second question requires them to ground their

Graphical Literacy and the Common Core

The following is a sampling of the Common Core English language arts standards that relate to interpreting visual content.

Reading: Informational Text Standards

Kindergarten: Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text. (Standard 6)

Grade 1: Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. (Standard 6)

Grade 2: Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text. (Standard 7)

Grade 4: Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. (Standard 7)

Speaking and Listening Standards

Grade 3: Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. (Standard 2)

Grade 3: Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (Standard 5)

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responses in evidence—a valuable skill in nearly all content areas and one that is expected of students under the Common Core standards. Finally, ask, "What else do you see?" This question encourages children to continue to dig deeper, as opposed to quickly viewing a graphic and moving on. The following dialogue, drawn

from research by Kristy Brugar and Kathryn Roberts (2013), shows how a 3nd grade teacher uses this process to discuss a photograph of a turn-of-the-century logging camp:

TEACHER: What do you see in this picture? Look at the top, the bottom, the middle . . . all around. Take a minute to really look at it and think. [*Waits.*] Roosevelt, what do you see?

ROOSEVELT: I see a cook shack in the back.

TEACHER: What do you see that makes you say that's a cook shack?

ROOSEVELT: It's smaller than the rest, and we read in our book that they cooked in small shacks built out of sticks.

TEACHER: OK, so you're thinking that because this building is smaller and

built out of sticks that it could be a cook shack?

ROOSEVELT: Yes.

TEACHER. OK, what else do we see? Clark?

CLARK: I see a lot of snow and the people are all bundled up. It's cold.

TEACHER: Hmm. So you're seeing snow and people dressed in warm clothes and thinking that it must be cold. I'm thinking about what the photographer might have been trying to show in this picture. Maybe he or she wanted us to see how cold they look so that we would understand that they sometimes worked in really harsh weather.

The teacher ends by modeling her own visual thinking, which helps students see how a mature reader processes graphics (Kucan & Beck, 1997).
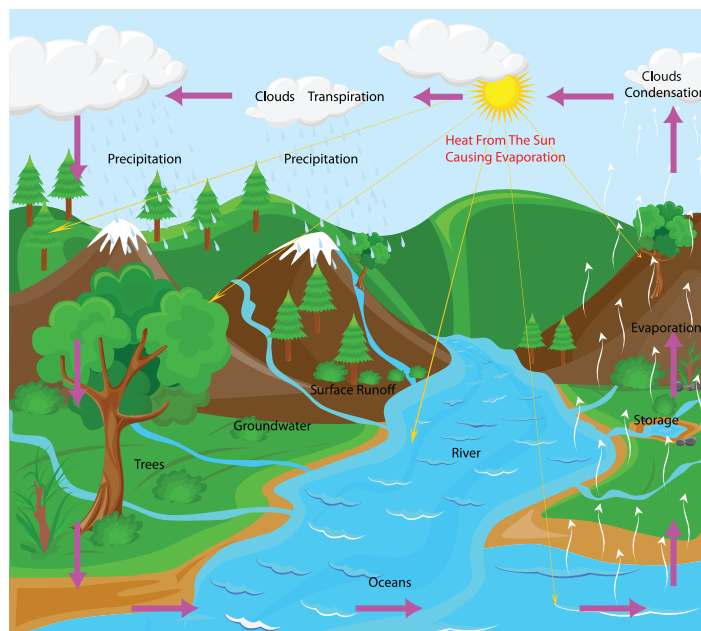
Question/Answer Relationships

This strategy teaches students to think about where they find the answers to questions: in the text, their heads, or a combination of the two (Raphael, 1986). When answers to a question can be found directly in one part of the text, those questions are identified as "Right There" questions. When finding the answer requires linking various pieces of information from across the text, the questions are identified as "Think and Search" or "Putting It Together" questions. If the answers use only the reader's prior knowledge or opinions, they are called "On My Own" questions. Questions that require the reader to combine prior knowledge and information from the text to make inferences are called "Author and You" questions.

Although in the original strategy, the questions refer mostly to the written text, they really can, and probably should, involve both written and visual text. To encourage students to focus more on graphics, teachers could ask them to also identify whether an answer is found in the words, the pictures, or both.

Questioning the Author

Another strategy originally intended for use with written text that can be extended to the graphics is Ques-

tioning the Author, in which students are taught to recognize that authors are fallible and may not always create text that is easily understood. While reading, students ask questions such as, "What is the author trying to say?" and "Is it said clearly?" (McKeown, Beck, & Worthy, 1993, p. 562). These questions can be extended to the graphics by asking, "What is the illustrator trying to say with the pictures? Do they match what the words are telling us? Do they give us more information? Do they help me understand?" These questions guide students to attempt to understand the whole text and not just "read" the words without thinking about the information.

When readers identify sections that are not clear, they should ask, "How could the author or illustrator have made these ideas more clear?" At times, the answer might be to create a graphic. After all, a visual depiction of the placement of the planets in the solar system is easier to understand than written text explaining it. Students might also suggest improving the graphics that already exist. For example, a surface diagram of a bicycle will help readers understand the parts of a bicycle better than a captioned photograph. Students could create or improve these graphics themselves to aid in their comprehension of the text (Duke, Halladay, & Roberts, 2013).

Graphics Matter

Informational texts are filled with a plethora of interesting and informative graphics that support and extend the written text, giving readers another, if not the only, entry point to information. However, just being able to see the graphics does not ensure that readers are paying attention to, let alone comprehending, them. We need to teach our students to (1) recognize the importance of the graphics and (2) strategically read these graphics to better comprehend the whole text. After all, the graphical content in informational text is itself informational and worthy of every reader's attention. EL

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Suggested Texts for Graphical Literacy

Graphical Device	Suggested Texts
Captioned graphics	*Life Science: Ecosystems* by Nancy Finton (National Geographic Society, 2004) *The Life Cycle of a Butterfly* by Margaret McNamara (Benchmark, 2009)
Cross-sectional diagrams	*Oil Spill!* by Melvin Berger (HarperCollins, 1994) *Recycling Adds Up* by Pam Zollman (Celebration, 2008)
Flowcharts	*Frogs* by Norman Yu (National Geographic Society, 2003) *Weather Watching* by Denise Ryan (Weldon Owen, 2008)
Insets	*How Mountains Are Made* by Kathleen Weidner Zoehfeld (HarperCollins, 1995) *Walking Up Walls* by Isabella Jose (National Geographic Society, 2003)
Maps	*Find People and Places: Mongolia* by National Geographic (http://kids.nationalgeographic.com/kids/places/find/Mongolia) *Tornado Alert* by Franklyn M. Branley (HarperCollins, 1988)
Surface diagrams	*Bicycle Book* by Gail Gibbons (Holiday House, 1995) *Scary Creatures: Octopuses and Squids* by Gerald Legg (Franklin Watts, 2004)
Tables	*Baseball Math* by Erin Sullivan (Benchmark Education, 2002) *Money* by Natalie Lunis (Benchmark Education, 2002)
Timelines/chronology	*Daring Women of the Civil War* by Carin T. Ford (Enslow, 2004) *Timeline of the Revolution* by PBS (www.pbs.org/ktca/liberty/chronicle_timeline.html)

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