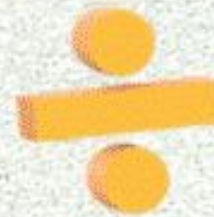


Read It, Write It, Solve It: Improving Content-Area Literacy and Problem Solving



Talking Drawings

Background Information

One way to activate students' prior knowledge and generate interest on a topic is through the Talking Drawings activity (McConnell 1993). Research shows that motivating students to create images before, during, and after reading is an effective method for improving reading comprehension. Prior to reading in the Talking Drawings activity, students create a mental picture initiated during a teacher-led discussion. They draw what they imagined, and they share their drawings with the entire class in hopes of clarifying the ideas described. The teacher compiles all of the information of the sharing in a semantic map on the board or displays the information using a document camera. After reading the selection using the mental images they created while they read, students repeat the process and discuss what they have learned after comparing and contrasting the two pictures. All students, but particularly emergent learners, benefit from being provided with a way to express their ideas in another way.

Grade Levels/Standards Addressed

See page 200 for the standards this strategy addresses, or refer to the Digital Resource CD (standards.pdf) to read the correlating standards in their entirety.

Activity

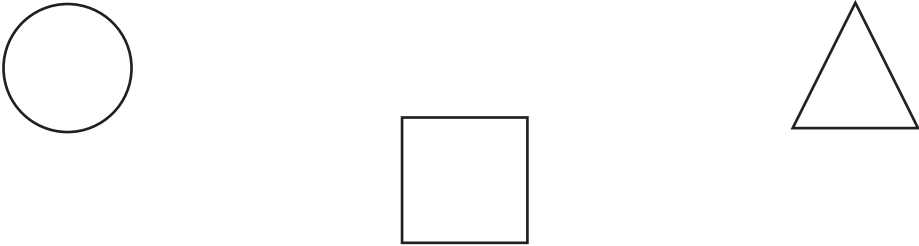
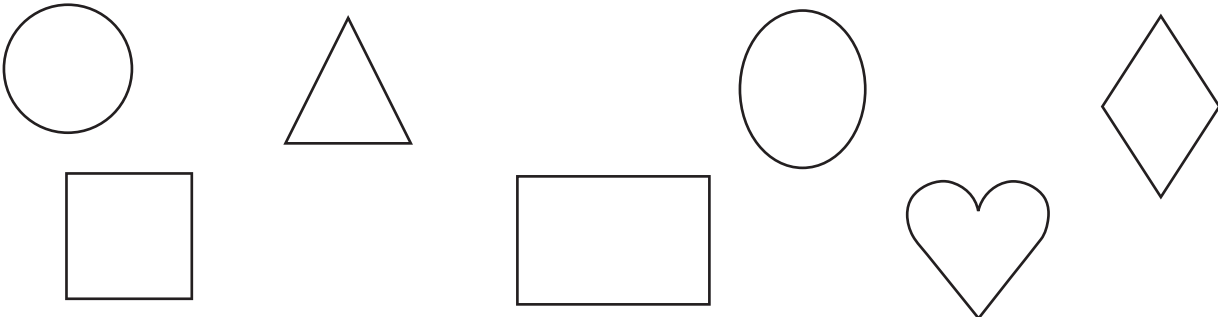
Instruct students to close their eyes and allow their minds to form mental pictures on a topic you have selected. For example, if the selected topic is fractions, students might picture a pizza or cake cut into equal parts. When students are finished picturing, ask them to draw what they see, using labels to depict parts, locations, people involved, and so on as necessary. After drawing, place students in pairs to share their drawings and talk about what they drew and why. Encourage them to engage in one-on-one discussions to ask their partners questions about their drawings. Meet as a whole class and use a document camera to display the information students generated in the *Talking Drawings* activity sheet (page 208, talkingdrawings.pdf). Instruct students to read the reading selection with their pictures in mind. After reading, ask them to make another drawing to show what they have learned. Then, have them discuss their pictures with their partners and ask questions about their partners' pictures.

Differentiation

English language learners should be encouraged to label their first picture in their native language. They can add the words in English later. Below-level students should be placed in homogeneous groups to reduce anxiety. Above-level students may have nothing to write during the writing task, so provide them with a reflective question.

Talking Drawings *(cont.)*

Grades 1–2 Example

Before Reading	Close your eyes and think about the topic. Draw what you see. Talk about your drawing with your partner.
	
After Reading	Read the selection and then draw a new picture of what you learned.
	
What's Different?	Explain what is different about your before and after pictures.
<p>My first picture has only a circle, a square, and a triangle. My second picture has a lot more shapes because I learned more shapes. I learned about rectangles, ovals, diamonds, and that even a heart is a shape.</p>	

Talking Drawings *(cont.)*

Grades 3–5 Example

Before Reading	Close your eyes and think about the topic. Draw what you see. Talk about your drawing with your partner.													
<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">1, one thousand</td> <td style="text-align: center;">5 five hundreds</td> <td style="text-align: center;">6 six tens</td> <td style="text-align: center;">7 seven ones</td> </tr> </table>								1, one thousand	5 five hundreds	6 six tens	7 seven ones			
1, one thousand	5 five hundreds	6 six tens	7 seven ones											
After Reading	Read the selection and then draw a new picture of what you learned.													
<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">1, one million</td> <td style="text-align: center;">2 two hundred thousands</td> <td style="text-align: center;">7 seven ten thousands</td> <td style="text-align: center;">8, eight thousands</td> <td style="text-align: center;">5 five hundreds</td> <td style="text-align: center;">6 six tens</td> <td style="text-align: center;">3 three ones</td> </tr> </table>								1, one million	2 two hundred thousands	7 seven ten thousands	8, eight thousands	5 five hundreds	6 six tens	3 three ones
1, one million	2 two hundred thousands	7 seven ten thousands	8, eight thousands	5 five hundreds	6 six tens	3 three ones								
What's Different?	Explain what is different about your before and after pictures.													
<p>Before I read more about place value, I already knew the ones place, tens place, hundreds place, and thousands place. Now I have learned past the thousands place all the way to the millions place.</p>														

Name: _____ Date: _____

Talking Drawings

Before Reading	Close your eyes and think about the topic. Draw what you see. Talk about your drawing with your partner.
After Reading	Read the selection and then draw a new picture of what you learned.
What's Different?	Explain what is different about your before and after pictures.

Addressing Word Problems

Read → Decide → Estimate → Work → Explain

1. Read the Problem

- What is happening in the problem?
- What do I know?
- What don't I know?
- What is the problem asking me to find out?

2. Decide

- What operation(s) will I need to do to solve the problem?
- What strategy will I use to solve the problem?

3. Make an Estimation

What is a reasonable answer?

4. Work the Problem

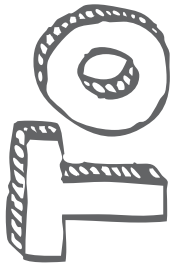
Check my work.

5. Explain My Math Thinking in Writing

Name: _____ Date: _____

One-Step Problems

Directions: Complete the steps below to write a framed paragraph.



- solve the problem
- find the answer
- answer the question

and found _____

Therefore, I know _____

Number Sentence

Answer (label/unit)



Name: _____ Date: _____

Break IT Down

Directions: Complete the graphic organizer below to write a number sentence.

1.

Find the Answer

2.

Write as a Number Sentence

Remember that Number Sentences
use Math Symbols

+ - × ÷

3.

Write as a Written Sentence

Remember that written sentences
use math words.

*add, plus, combined, subtracted, take away, divided by,
multiplied by, times, equals*

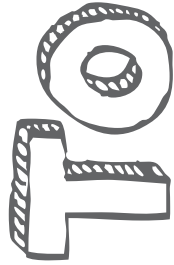
Name: _____

Date: _____

Two-Step Problems

Directions: Complete the steps below to write a framed paragraph.

1 <div style="border: 1px dashed gray; height: 100px; width: 90%; margin: 0 auto;"></div>	2 <div style="border: 1px dashed gray; height: 100px; width: 90%; margin: 0 auto;"></div>
---	---



- solve the problem
- find the answer
- answer the question

and found _____

Then Next After that

Number Sentence

1 _____

2 _____

Answer (label/unit)



Name: _____ Date: _____

Explain and Gain the Concept

Directions: Complete the graphic organizer below to explain your mathematical thinking.

Step 1	What is happening in the problem? • What do I know? • What is my data? • What don't I know? • What is the problem asking me to find out?
	Data: Number Facts

Step 2 Using my data, what mathematical operation(s) will I need to do to solve the problem?

Step 3 Work the problem. Check your work.

Step 4 Explain your math thinking. How did you solve the problem?
