

From Old Standards To Common Core Standards in an Elementary Math Classroom

by Mr. Dea

Purpose and Steps

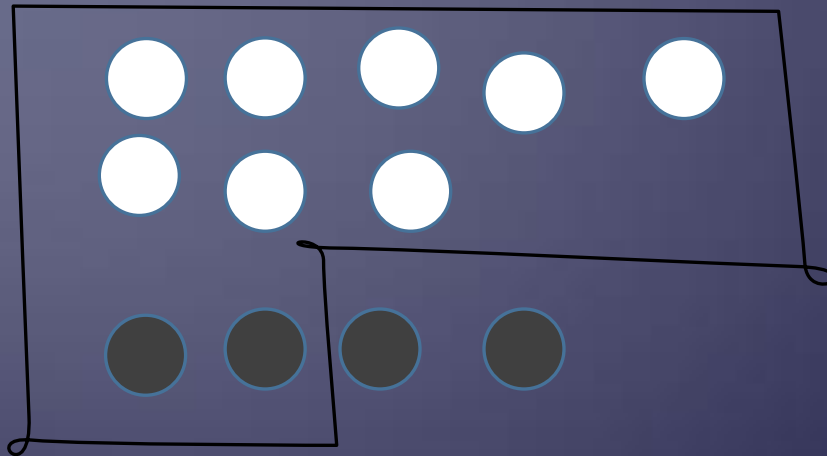
- To give you a taste of how it will “feel” different to be in an elementary math classroom in fifteen minutes (or less).
- Four BEFORE & AFTER Lessons:
 - First Grade Addition
 - Third Grade Area
 - Third Grade Addition
 - Fifth Grade Multiplying Fractions
- Key Contrasts between BEFORE and AFTER Lessons

First Grade Addition: BEFORE

Circle a group of 10. Then write 2 addition sentences.

1. Kim has 8 white toy bears. Tia has 4 gray toy bears. How many bears do they have in all?

$$10 + \underline{\quad\quad\quad} = 12, \text{ so } 8 + 4 = \underline{\quad\quad\quad}$$



First Grade Addition: AFTER

What is $8 + 6$? How do you know?

Ten Frame Mat

The image shows two ten frame mats. Each mat is a 2x5 grid. The top mat has 8 red dots in the first four columns of both rows. The bottom mat has 6 red dots in the first three columns of both rows.

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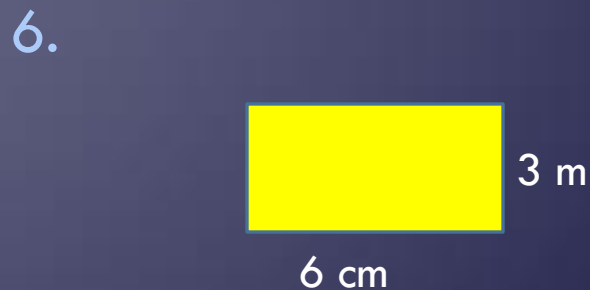
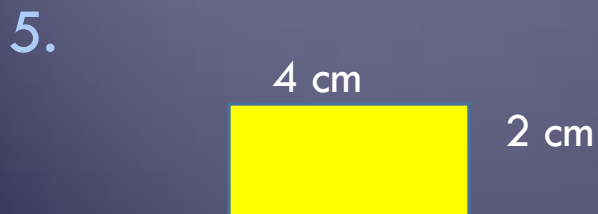
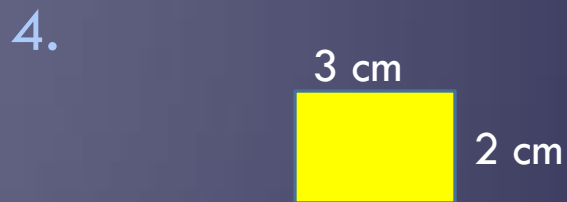
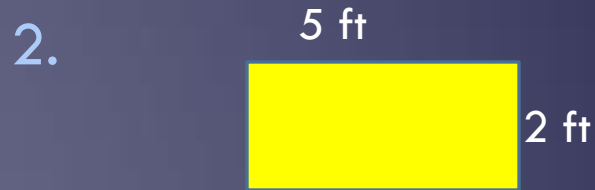
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Third Grade Area: BEFORE

Find the Area of each figure.



Third Grade Area: AFTER

You have 24 yards of fencing. If each side of fencing is a whole number of yards, how many different rectangles can you make that use all of the fencing. Using graph paper and working in partners, draw and label all of the possible rectangles. Which of the rectangles is the smallest? Which is the largest? How do you know?

Third Grade Addition: BEFORE

Find each sum.

1.

$$\begin{array}{r} 347 \\ + 325 \\ \hline \end{array}$$

2.

$$\begin{array}{r} 136 \\ + 252 \\ \hline \end{array}$$

3.

$$\begin{array}{r} 564 \\ + 283 \\ \hline \end{array}$$

4.

$$\begin{array}{r} 499 \\ + 484 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 347 \\ + 587 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 415 \\ + 168 \\ \hline \end{array}$$

Third Grade Addition: AFTER

How many different strategies can you think of to solve the addition problem $119 + 126$? Think about it first on your own, then the class will share out strategies as I write them down on the chart.

5th Grade Multiplying Fractions: BEFORE

Find each product. Simplify, if necessary.

1. $\frac{3}{4} \times \frac{7}{8}$

2. $\frac{3}{5} \times \frac{5}{9}$

3. $\frac{1}{6} \times \frac{5}{6}$

4. $\frac{1}{3} \times \frac{2}{5}$

5. $\frac{7}{8} \times \frac{2}{3}$

6. $\frac{2}{9} \times \frac{3}{10}$

Fifth Grade Multiplying Fractions: AFTER

You are running on a track that is $\frac{3}{4}$ of a mile long. You are running along, and when you get $\frac{2}{3}$ of the way down the track, you see a riddle posted. It says, “How much of a mile have you run so far?” Here is a worksheet (on the next slide) with four different representations of your situation. Figure out which of the drawings correctly solves the riddle. Work first on your own. Then, see if you can convince your small group which of the drawings solves the riddle accurately and which do not.

The Representations

Representations



$$\frac{2}{3} \times \frac{3}{4} = \frac{2}{4} = \frac{1}{2} \text{ of a mile}$$



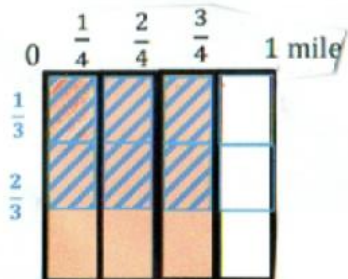
$$2 + 2 + 2 = 6$$

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{9} \text{ of a mile}$$



$$2 + 2 + 2 = 6$$

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2} \text{ of a mile}$$



$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12}$$

$$\frac{6}{12} = \frac{1}{2} \text{ mile}$$

Key Contrasts

BEFORE

- Fill in the blank: only one “right” pathway to the final answer
- Practice completed alone after teacher “shows” students how to complete a process

AFTER

- Encourages multiple entry-ways or problem-solving techniques
- Students expected to have and communicate mathematical thinking with each other