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Common Core State Standards— Supporting Instruction

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Session Description

The Common Core State Standards provide clarity and specificity of what students should learn. This session helps supervisors and coaches reflect on practices that help teachers reach the depths of knowledge for every student.

What does it mean to solve problems based on place value, properties of operations and relationships between operations?

“All young Americans must learn to think mathematically, and they must think mathematically to learn.”

National Research Council. 2001. *Adding It Up: Helping Children Learn Mathematics*. J. Kilpatrick, J. Swafford, and B. Findell, eds., p. 1. Mathematics Learning Study Committee, Center for Education, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

8 Standards for Mathematical Practice

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

What we will do in this session

- Compare and contrast a state standard with related standards from the Common Core
- Experience an activity that promotes what Common Core standards require
- Observe classroom instruction to see how instruction and student learning are aligned

Comparing Standards

Example of Past 3rd grade standard

Use a variety of strategies to add and subtract three-digit numbers (with and without regrouping).

CCSS – 3rd grade

Use place value understanding and properties of operations to perform multi-digit arithmetic.

- Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Standards include...

- Apply properties of operations: Commutative Property; Associative Property; Distributive Property.
- Apply the relationship between addition and subtraction; multiplication and division.
- Use place value understanding in solving problems.
- Use strategies and algorithms based on place value, properties of operations, and /or relationships between addition and subtraction or multiplication and division.

True or False

In pairs:

1. Turn one card over, determine if it is true or false.
2. State what makes it true or what makes it false.
Record your thinking.
3. How could you change false statements to be true?
4. In what ways did you use what you know about properties, place value, or how operations relate to each other to determine if the statement was true or false?

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From the Classroom

- Grade 3 class from South Shades Crest Elementary in Hoover, AL
- Number Talk about:

$$38 + 37$$

From Number Talks: Helping Children Build Mental Math and Computation Strategies—A Multimedia Professional Learning Resource, Math Solutions 2010

Focus for Viewing Video

What evidence do you find that the teacher offers instructional experiences to support students in developing:

- fluency in adding using strategies based on place value, properties of operations, and/or
- the relationship between addition and subtraction?

Number Talks 38 +37 Video Clip

Focus for Viewing Video

What evidence do you find that the teacher offers instructional experiences to support students in developing:

- fluency in adding using strategies based on place value, properties of operations, and/or
- the relationship between addition and subtraction?

From the Classroom

- Grade 5 class from South Shades Crest Elementary in Hoover, AL
- Number Talk about:

$$12 \times 15$$

From Number Talks Helping Children Build Mental Math and Computation Strategies—A Multimedia Professional Learning Resource, Math Solutions 2009

Watch Video Clip

Grade 5 Number Talk: 12×15

What evidence did you find that the teacher provided instructional experiences to support students in:

- Seeing and using relationships among numbers to solve a problem?
- Using properties to solve a problem?

What is the role of teacher planning in this lesson?

Number Talks 12 x 15 videoclip

What evidence did you find that the teacher provided instructional experiences to support students in:

- Seeing and using relationships among numbers to solve a problem?
- Using properties to solve a problem?

What is the role of teacher planning in this lesson?

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Conclusion

The promise of standards:

These Standards are not intended to be new names for old ways of doing business. They are a call to take the next step. It is time for states to work together to build on lessons learned from two decades of standards based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep.

Common Core State Standards for Mathematics (p. 5).
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Resources

www.corestandards.org

www.edexcellence.net

www.achieve.org

www.mathsolutions.com/commoncore

Reflection

What is the most important insight you've had during this session regarding the Common Core and your plans for supporting teachers in implementing the Common Core?



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True or False Number Sentences

a. $3 \times 7 = 7 + 7 + 7$	b. $6 \times 4 = 4 + 4 + 4 + 4$
c. $7 \times 8 = (2 \times 8) + (5 \times 8)$	d. $8 \times 6 = 8 \times 5 + 6$
e. $9 \times 7 = 10 \times 7 - 7$	f. $9 + 6 = 10 + 5$
g. $37 + 56 = 39 + 54$	h. $33 - 27 = 34 - 26$
i. $93 = 9 + 30$	j. $94 = 80 + 14$
k. $17 + 20 = 20 + 17$	l. $(3 + 7) + 2 = 3 + (7 + 2)$