
Math Parent Forum

— Kindergarten, 1st and 2nd —
Grades

Goals of Program:

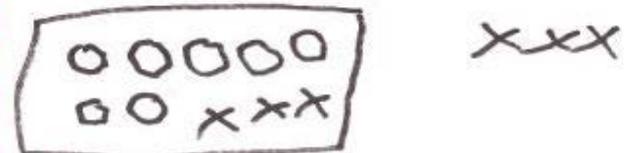
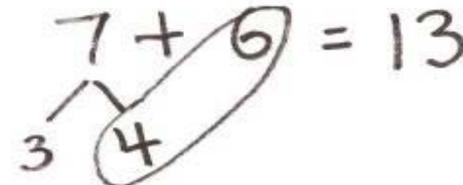
- * Help parents understand math standards and practices
- * Provide parents with knowledge and confidence in understanding their child's thinking
- * Build parents repertoire of strategies to assist with homework and support their child's mathematical progression
- * Answer any additional questions

Changes in Mathematical Instruction: the whats and whys

<https://www.youtube.com/watch?v=tBkQAxt1JA>

- * Goal is to understand procedures, not memorize them
- * Important to start with what a student knows and to build upon that knowledge and understanding

Louie made 7 puppets out of paper bags. Roberto made 6 puppets out of socks. How many puppets did the boys make?

<p>Student A</p>  <p>$7 + 6 = 13$</p>	<p>Student B</p>  <p>$7 + 6 = 13$</p> <p>3 3</p>
<p>Student C</p>  <p>$7 + 6 = 13$</p>	<p>Student D</p>  <p>$7 + 6 = 13$</p>

Kindergarten Standards: new vs. old

2011:

Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$)

Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

2000:

Use objects and drawings to model and solve related addition and subtraction problems to ten.

Name, describe, sort and draw simple two-dimensional shapes.

1st Grade Standards: new vs. old

2011:

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$*

Compare two two-digit numbers based on the meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

2000:

Construct and solve open sentences that have variables, \square ., $_ + 7 = 10$

Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than, ($<$, $=$, $>$).

2nd Grade Standards: new vs. old

2011:

Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction

Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns; write an equation to express the total as a sum of equal addends.

2000:

Understand and use the inverse relationship between addition and subtraction (e.g., $8 + 6 = 14$ is equivalent to $14 - 6 = 8$ and is also equivalent to $14 - 8 = 6$) to solve problems and check solutions.

Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition.

Examples of K Standards

KOA4 - For any number 1 to 9, find the number that makes 10 when added to a given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

KOA1 - Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions or equations.

Examples of 1st Grade Standards

1OA7 - Understand the meaning of the equal sign and determine if equations involving addition and subtraction are true or false.

1OA6 - Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on, making ten, decomposing a number leading to a ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums.

Examples of 2nd Grade Standards

2NBT3 - Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

2NBT9 - Explain why addition and subtraction strategies work, using place value and the properties of operations.

8 Mathematical Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure

8. Look for and express regularity in repeated reasoning

Math Practice 2 - Thinking abstractly and quantitatively

- * make sense of quantities and their relationships
- * represent problems symbolically
- * consider the units involved
- * knowing and flexibly using different properties

Math Practice 7: Look for and make sense of structure

*pattern or structure

*step back for an overview and shift perspective

*algebraic expressions, as single objects or as being composed of several objects.

Math Practice 8: Look for and express regularity in repeated reasoning.

*notice if calculations are repeated, and look both for general methods and for shortcuts

*maintain oversight of the process, while attending to the details

*evaluate the reasonableness

Mathematical Tasks

K - comparative sizes of objects

1st - number bonds and models

2nd - number bonds and/or other models

Students may use these materials to model their math thinking

Rekenrek

Rekenrek Bracelet

Number Line

Counters

Hundreds Chart

Ten Frame

These are different ways of counting, adding, subtracting or solving problems in Math.

Counting On

Counting Up

Counting Back

Doubles

Doubles +1

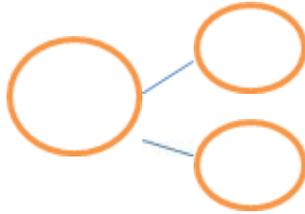
Sums to 10

Making a 10

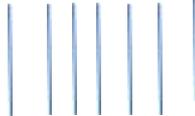
Taking from a 10

These are common practices or ways of showing your understanding of a math problem or operation.

Number Bonds:



Math Drawings: A quick sketch that illustrates the problem you are trying to solve. For example to show 7 kids swinging you might draw 7 vertical lines.



Fact Families: 4 Number Sentences (2 add, 2 subtract) that go together and use the same 3 numbers: 3 4 7

$3+4=7$

$4+3=7$

$7-3=4$

$7-4=3$

Online Parent Support

<http://greatminds.net/>

<http://www.hotchalkeducationnetwork.com/parents-guide-to-surviving-common-core-math/>

http://pages.uoregon.edu/dps/CommonCore/CCSSM_bygrade.pdf