Why Are the Standards Changing?

- North Carolina reviews standards every five years.
- Teacher feedback was used to make adjustments to the standards.
- All K-12 standards must align with workforce and higher education expectations.

Collaborative K-8 Instructional Frameworks
General Changes

- Many of the standards with multiple parts were rewritten using bullets to make the expectations clear and concise.
- Language added to clarify expectations.
- Examples were removed from the standards and placed in the instructional support documents.
- Footnotes were removed and placed in the standards or instructional support documents.
- Some standards were combined to make the expectation more concise while other standards were separated for clarity.
- Cluster headings are an organizational tool. They are no longer necessary for interpretation of the standard.

K-2
Counting, Reading and Writing Numbers

- The purpose of the counting standards (NC.K.CC.1 and NC.1.NBT.1) is for students to rote count to investigate patterns in the number system.
- The purpose of the reading and writing number standards (NC.K.CC.3, NC.1.NBT.7, NC.2.NBT.3) is for students to apply their place value understanding to read and write numbers.

Specific Second Grade Changes

<table>
<thead>
<tr>
<th>New Limitation: Comparison Type Problems:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compare-Bigger Unknown</td>
</tr>
<tr>
<td>• Compare Smaller Unknown</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concept removed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Line Plots</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Combining Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2.G.2 was integrated into NC.2.OA.4</td>
</tr>
<tr>
<td>• Students use rectangular arrays to work with repeated addition.</td>
</tr>
<tr>
<td>• Students also explore arrays as rectangles partitioned into rows and columns</td>
</tr>
</tbody>
</table>
### Second Grade Instructional Framework

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Building a Mathematical Community while Working with Numbers within 20</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Adding and Subtracting within 100</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Skip Counting in Multiple Contexts</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>Understanding Place Value to Read, Write and Compare Numbers</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>Adding and Subtracting within 1,000</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>Working with Linear Measurement</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>Data and Two Step Problem Solving</td>
</tr>
<tr>
<td>Cluster 8</td>
<td>Problem Solving with Money</td>
</tr>
<tr>
<td>Cluster 9</td>
<td>Reasoning with Shapes</td>
</tr>
</tbody>
</table>

**Clusters:**
- Make connections among mathematical ideas and procedures to foster student meaning and understanding over time
- Include concepts in multiple clusters with increasing depth
- Build across the year beginning with conceptual understanding and moving toward procedural fluency
Instructional Framework Components

Supporting Standards:
- MC.3.OA.1: For whole-number quotients of whole numbers with a one-digit divisor and a one-digit quotient:
  1. Verify the quotient and remainder of a division equation as representing the number of equal groups and the number of objects in each group.
  2. Illustrate and explain strategies including arrays, repeated addition or subtraction, and decomposing a factor.

Mathematical Practices:
- 1. Reason abstractly and quantitatively.
- 2. Make sense of problems and persevere in solving them.
- 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.

Important Considerations:
Provides guidance based on student learning progressions as well as models and recommendations for instruction.

What is the mathematics?
Describes significant concepts and connections within the standards necessary for students to make sense of and use the mathematics.

“Each time one prematurely teaches a child something he could have discovered for himself, that child is kept from inventing it and consequently from understanding it completely.”

Piaget
Models of Instruction

I → You
We → You
You → We

Shifting to Student-Centered Instruction

<table>
<thead>
<tr>
<th>Role</th>
<th>Student-Centered</th>
<th>Teacher-Centered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>• listener</td>
<td>• talker</td>
</tr>
<tr>
<td></td>
<td>• sorter of information</td>
<td>• giver of information</td>
</tr>
<tr>
<td>Student</td>
<td>• rely on reasoning, proof, &amp; patterns</td>
<td>• relying on telling and patterns</td>
</tr>
</tbody>
</table>

Lesson Format: Launch, Explore, Discuss
Lesson Format: **Launch, Explore, Discuss**

The purpose of the launch is for the teacher to:
- help students understand the context of the problem
- issue a mathematical challenge to the students
- elicit prior understanding and misconceptions

<table>
<thead>
<tr>
<th>Student Behaviors</th>
<th>Teacher Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Actively engaged in mathematics</td>
<td>• Circulating, monitoring and observing students as they solve the problem</td>
</tr>
<tr>
<td>• Solving the problem using strategies</td>
<td>• Asking questions to encourage thought, redirect and/or extend learning, and better understand students’ strategies</td>
</tr>
<tr>
<td>that make sense to them</td>
<td>• Selecting which students will share and in what order</td>
</tr>
<tr>
<td></td>
<td>• Providing support when necessary</td>
</tr>
</tbody>
</table>

Lesson Format: **Launch, Explore, Discuss**

During the Discuss phase of the lesson -
- Selected students explain their solutions and processes to the group
- Whole class views and discusses solutions
- Strategies are compared, summarized, and discussed
- Teacher asks questions to guide students to make connections between strategies, representations, and content
A Few of Our Favorite Things

Using Tools for Teachers Resources

NC.NBT.5 Demonstrate fluency with addition and subtraction, within 100, by:
- Flexibly using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Comparing addition and subtraction strategies, and explaining why they work.
- Selecting an appropriate strategy in order to efficiently compute sums and differences.

Using T4T Resources to Teach NBT 5

- Introduce adding with base ten blocks.
- Arrow Cards: Use arrow cards to add two digit numbers by decomposing into tens and ones. Connects to the number line (2 Days).
- How Far to 100?: Movie playing game that requires students to build two digit numbers with tens and ones and count on to figure out how far to 100. Connect to addition number sentences.
- Decomposing to Subtract (L,E,U): Students explore trading one ten and tens with base ten blocks to subtract in Launch 1. Students complete a task using decomposition with or without base ten blocks.
- Model counting up or back on a number line to subtract by keeping one number whole and decomposing the other. Practice Problems.
- Comparing Addition Strategies: Jack and Sarah have solved the same problem with base ten block, but in different ways. What is similar? What is different? (L,E,D)
- Comparing Subtraction Strategies: (Formative Instructional and Assessment Task)
Formative Assessment Tasks

Assessment Tasks - Scoring Rubric

<table>
<thead>
<tr>
<th>Level I</th>
<th>Level II</th>
<th>Level III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Yet</td>
<td>Progressing</td>
<td>Meets Expectation</td>
</tr>
</tbody>
</table>

3-5 Example

K-2 Example
Cluster 1: Building a Math Community

Cluster 1 provides time for teachers to set up their classrooms and establish their mathematical communities. This includes:

- Creating a positive and respectful climate for learning (Why celebrate mistakes?)
- Developing classroom norms for communication
- Developing math routines
- Setting various expectations for the structure of the math block
- Modeling and practicing expectations for mathematical discourse (sentence starters)
- Introducing the mathematical practices
- Developing positive attitudes and mindsets towards mathematics and problem solving

Where Can I Find These Resources?

http://tools4ncteachers.com/