Tier 2 Elementary Math Interventions
August 2017

Presenters
Kathleen Begeeny-Johnson
Cathy Hudak
• Content Objective
  – Participants will be able to implement targeted math Tier 2 interventions based on the core standards for struggling students

• Language Objective
  – Participants will review student data, identify the math core standards necessary for Tier 2 interventions and select additional math materials.
Learning Task 1
Table Talk & Share OUT

• Review the following documents at your table
  1. MTSS Common Vocabulary
  2. Granite School District Multi-Tiered System of Support Critical Components Chart

• Then discuss the following questions
  1. Tier 2 instruction focuses on ______________ skills.
  2. Compare Differentiated Instruction to Tier 2 Instruction.
  3. Post-it-Note: Write any challenges you have faced or are anticipating when implementing Tier 2 instruction.
Tier 2 Math Interventions
Where Do I Begin?

Recap
Tier 2 Interventions are designed for approximately 15% of students not making adequate progress in Tier 1.
Step 1 – Data Review

• Purpose: Identify students at risk for potential mathematics difficulties

• As you review the data **Ask** – *Which students MAY need extra assistance to master grade level content?*
Step 1 – Data Review

GSD Tier I Decision Tree – Elementary Math

Prerequisite Assessment Results

- SAGE Summative Grades 4 – 6 (Beginning of each year from previous year)
- Go Math Prerequisite Inventory (Beginning of each year)
- Granite Semester Benchmark (GSB) Pre-tests (Beginning of each semester)
- Go Math Show What You Know (Beginning of each unit)
Step 1 – Data Review – SAGE

Beginning of the Year

• SAGE Assessment
  – Available for grades 4-6
  – Initial data review
  – Identify students who are below proficiency
    • Level 1 or 2
Step 1 – Data Review - SAGE

Individual Student Report

How did my student perform on the Mathematics test?
Test: Grade 5 Mathematics
Year: Summative 2016-2017

Scale Score and Overall Performance

<table>
<thead>
<tr>
<th>Scale Score</th>
<th>Overall Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
<td>Highly Proficient</td>
</tr>
<tr>
<td>600</td>
<td>Proficient</td>
</tr>
<tr>
<td>300</td>
<td>Approaching Proficient</td>
</tr>
<tr>
<td>100</td>
<td>Below Proficient</td>
</tr>
</tbody>
</table>

4 - Highly Proficient Students understand and represent addition and subtraction of fractions with different denominators. They use fractions to make reasonable estimates. They add, subtract, multiply, and divide multi-digit numbers fluently and perform operations on decimals to the hundredths. They understand and calculate volume of three-dimensional objects by using unit cubes.

3 - Proficient Students represent addition and subtraction of fractions with different denominators. They use fractions to make estimates. They add, subtract, multiply, and divide multi-digit numbers fluently and perform operations on decimals to the hundredths. They calculate volume of three-dimensional objects by using unit cubes.

2 - Approaching Proficient Students add and subtract fractions with simple different denominators (e.g., 1/2 + 1/4). They use fractions to make estimates. They add, subtract, multiply, and divide numbers up to three digits and perform operations on decimals to the tenths. They understand volume of three-dimensional objects can be found by using unit cubes.

1 - Below Proficient Students add and subtract fractions with simple different denominators (e.g., 1/2 + 1/4). They add, subtract, multiply, and divide numbers up to two digits and perform operations on decimals to the tenths. They understand three-dimensional objects have volume.

Comparison Scores - Math Grade 5

<table>
<thead>
<tr>
<th>Name</th>
<th>Average Scale Score</th>
<th>Percent Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRANITE DISTRICT (12)</td>
<td>350</td>
<td>35</td>
</tr>
<tr>
<td>GRANGER SCHOOL (12-128)</td>
<td>315</td>
<td>8</td>
</tr>
</tbody>
</table>

Scale Score:
The scale score is used to designate proficiency and whether or not a student is on track for college and career readiness. Note: There is some error of measurement in all assessments. That error is noted by the number in the parenthesis next to the scale score.

Student Performance Relative to Self:
This compares the student's performance on a specific reporting category with the performance of the test as a whole. It indicates the concepts in which the student is strong or weak. Note: The (+, -) indicates student performance is significantly higher (+) or lower (-) than their overall performance. The (±) indicates student performance is statistically similar to their overall performance.

Student Performance Relative to Proficiency:
This indicates the student's proficiency based on overall proficiency levels for the test. Note: The (+, -) indicates student performance is significantly above (+) or below (-) proficiency. The (±) indicates student performance is statistically similar to the overall proficiency level for the test.
Step 1 – Data Review - SAGE

Individual Student Report

How did my student perform on the Mathematics test?
Test: Grade 5 Mathematics
Year: Summative 2016-2017

<table>
<thead>
<tr>
<th>Reporting Category</th>
<th>Reporting Category Performance</th>
<th>Scale Score</th>
<th>Student Performance Relative to Self</th>
<th>Student Performance Relative to Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations and Algebraic Thinking</td>
<td></td>
<td>328 ± 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number and Operations in Base Ten</td>
<td></td>
<td>394 ± 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number and Operations - Fractions</td>
<td></td>
<td>356 ± 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement and Data &amp; Geometry</td>
<td></td>
<td>347 ± 24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Depth of Knowledge (DOK) Indicator

<table>
<thead>
<tr>
<th>Student's ability to engage in a range of tasks of varying complexity</th>
<th>Student Performance Relative to Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOK 1 - Recall / Reproduction</td>
<td>+</td>
</tr>
<tr>
<td>DOK 2 - Skill / Concept</td>
<td>-</td>
</tr>
<tr>
<td>DOK 3/4 - Strategic / Extended Thinking</td>
<td>-</td>
</tr>
</tbody>
</table>
Step 1 – Data Review

GSD Tier I Decision Tree – Elementary Math

Prerequisite Assessment Results

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- Go Math Prerequisite Inventory (Beginning of each year)
- Granite Semester Benchmark (GSB) Pre-tests (Beginning of each semester)
- Go Math Show What You Know (Beginning of each unit)
Step 1 – Data Review
Go Math Prerequisite Inventory
Beginning of the Year

<table>
<thead>
<tr>
<th>Item</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C, G</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>C</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>C</td>
</tr>
<tr>
<td>11</td>
<td>C</td>
</tr>
<tr>
<td>12</td>
<td>C</td>
</tr>
<tr>
<td>13</td>
<td>C</td>
</tr>
<tr>
<td>14</td>
<td>C</td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>C</td>
</tr>
<tr>
<td>18</td>
<td>C</td>
</tr>
<tr>
<td>19</td>
<td>C</td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

– Grades K-6
– Assess previous grade level math skills
– Can be administered online or paper & pencil
  • For online instructions page 35 in Go Math Navigation Guide
– The Record Form identifies math standards a student has mastered or may need review
  • Online Prerequisite Skills Inventory assessment only gives overall score
Step 1 – Data Review

DRAFT (March 2017)

GSD Tier I Decision Tree – Elementary Math

Prerequisite Assessment Results

- SAGE Summative Grades 4 – 6 (Beginning of each year from previous year)
- Go Math Prerequisite Inventory (Beginning of each year)
- **Granite Semester Benchmark (GSB) Pre-tests (Beginning of each semester)**
- Go Math Show What You Know (Beginning of each unit)
Step 1 – Data Review

Granite Semester Benchmark Post-Test

• Data collected at the ½ way point of the school year – January

• **Standard Analysis Reports** lists the core standards and student performance for each standard

• Caution –
  
  – GSB may only have 1 item tested on a standard
  – Consider this before creating Tier 2 targeted interventions on that standard
Standard 4.NF.4a
Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$.

One item tested on this standard.

**Caution** – GSB may only have 1 item tested on a standard.
- Consider this before creating Tier 2 targeted interventions based on that standard.

**Partner Talk** – Would this be a Tier 2 intervention group?
Could the overall Average Scores for SchoolCity Post-Semester Benchmark help to create a Tier 2 Math Intervention Group?

This example lists the students who scored below 25%.

<table>
<thead>
<tr>
<th>Level Tested</th>
<th>Raw Score</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 4</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>5</td>
<td>16.7%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>5</td>
<td>16.7%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>5</td>
<td>16.7%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>7</td>
<td>23.3%</td>
</tr>
<tr>
<td>Grade 4</td>
<td>7</td>
<td>23.3%</td>
</tr>
</tbody>
</table>
Step 1 – Data Review

GSD Tier I Decision Tree – Elementary Math

Prerequisite Assessment Results

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- Go Math Prerequisite Inventory (Beginning of each year)
- Granite Semester Benchmark (GSB) Pre-tests (Beginning of each semester)
- Go Math Show What You Know (Beginning of each unit)
Step 1 – Data Review

Ongoing Assessment

• Go Math Show What You Know
  – Beginning of each unit/chapter
  – Assessing prior knowledge
  – Use to determine if a student needs strategic or intensive interventions
Step 1 – Data Review

Ongoing Assessment

• Go Math Chapter Tests
  – After each chapter

Name ____________________________________________________________

1. Select a number shown by the model. Mark all that apply.

2. Rick has one dollar and twenty-seven cents to buy a notebook. Which names this money amount in terms of dollars? Mark all that apply.

   A  12.7
   B  1.027
   C  $1.27
   D  1.27
   E  $1.27
   F  $1.27

   100
   10
# Chapter Test Data Information

## Data-Driven Decision Making

Based on the results of the Chapter Review/Test use the following resources to review skills.

<table>
<thead>
<tr>
<th>Item</th>
<th>Lesson</th>
<th>Standard</th>
<th>Content Focus</th>
<th>Personal Math Trainer</th>
<th>Intervene with</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 5, 10</td>
<td>8.1</td>
<td>4.NF.B.4a</td>
<td>Identify multiples of unit fractions.</td>
<td>4.NF.B.4a</td>
<td>R—8.1</td>
</tr>
<tr>
<td>19, 21</td>
<td>8.2</td>
<td>4.NF.B.4b</td>
<td>Understand a fraction ( \frac{a}{b} ) as a multiple of ( \frac{1}{b} ).</td>
<td>4.NF.B.4b</td>
<td>R—8.2</td>
</tr>
<tr>
<td>3, 4, 6, 9, 11, 13, 14, 16, 18, 20</td>
<td>8.4</td>
<td>4.NF.B.4c</td>
<td>Multiply a fraction or mixed number by a whole number.</td>
<td>4.NF.B.4c</td>
<td>R—8.4</td>
</tr>
<tr>
<td>7, 17</td>
<td>8.5</td>
<td>4.NF.B.4c</td>
<td>Draw a diagram to solve comparison problems with fractions.</td>
<td>4.NF.B.4c</td>
<td>R—8.5</td>
</tr>
<tr>
<td>2, 8, 12</td>
<td>8.3</td>
<td>4.NF.B.4b</td>
<td>Use a visual model to multiply a fraction by a whole number.</td>
<td>4.NF.B.4b</td>
<td>R—8.3</td>
</tr>
</tbody>
</table>

Key: R—Reteach (in the Chapter Resources)
Step 1 – Data Review
Ongoing Assessment

• CFA

• Inspect UT Checkpoint - SchoolCity
  – Can be used as a CFA
  – Can be exported to word document (can modify test)
    • Click on Advance
    • Click on Export to word
  – Grades 1-6 (Grades 1-2 will be added)
  – All grade levels available for all teachers
  – Short assessment - 6 questions
  – Covers 2-3 math standards
  – Lists DOK Levels
  – Multiple choice, True False, or select all that apply
  – Online or paper & pencil
Inspect UT Checkpoint SchoolCity

Click on Assessment

Click on Inspect

<table>
<thead>
<tr>
<th>#</th>
<th>Assessment Name</th>
<th># of Items</th>
<th>Start Date</th>
<th>End Date</th>
<th>Status</th>
<th>Progress</th>
<th>Activity</th>
<th>Type</th>
<th>Created By</th>
<th>Last Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inspect UT Checkpoint Grade 4 Four operations: Solve Problems Whole Numbers 2017-2018</td>
<td>6</td>
<td>07/01/2017</td>
<td>07/31/2018</td>
<td></td>
<td>0.99</td>
<td>Published</td>
<td>Item Bank</td>
<td>Support, SchoolCity</td>
<td>08/10/2017</td>
</tr>
<tr>
<td>2</td>
<td>Inspect UT Checkpoint Grade 4 Fractions Equivalence/Ordering 2017-2018</td>
<td>6</td>
<td>07/01/2017</td>
<td>07/31/2018</td>
<td></td>
<td>0.99</td>
<td>Published</td>
<td>Item Bank</td>
<td>Support, SchoolCity</td>
<td>08/10/2017</td>
</tr>
<tr>
<td>3</td>
<td>Inspect UT Checkpoint Grade 4 Fractions: Build from Operations 2017-2018</td>
<td>3</td>
<td>07/01/2017</td>
<td>07/31/2018</td>
<td></td>
<td>0.99</td>
<td>Published</td>
<td>Item Bank</td>
<td>Support, SchoolCity</td>
<td>08/10/2017</td>
</tr>
</tbody>
</table>
Inspect UT Checkpoint - SchoolCity

- Teacher Team – Think-Pair-Share
  - Review Inspect UT Checkpoint sample assessments
  - Discuss how you would use this assessment

6. Sophie is baking with butter. She had $\frac{3}{4}$ of a stick of butter. She used $\frac{2}{3}$ of a stick of butter. Which picture represents the amount of butter that has been used and the amount of butter left?
Common Core Sheets

http://www.commoncoresheets.com/
Step 1 – Data Review

More Detailed Assessment

• Go Math Diagnostic Interview Assessments
  – Grades K-6
  – One Diagnostic Assessments for each chapter
  – Interview format given individually to students
  – Only 3 questions
  – May include hands on materials
  – Found on the GSD Intranet
  – Aligns with Show What You Know page in Teacher’s Guide
### Diagnostic Interview Assessment • Chapter 2

**Materials**
- counters
- index cards

#### Skill/Item

<table>
<thead>
<tr>
<th>Skill/Item</th>
<th>Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaning of Division</strong></td>
<td>Display 24 counters on a flat surface. Have the student divide the</td>
</tr>
<tr>
<td></td>
<td>counters into 6 equal groups and identify how many counters are in</td>
</tr>
<tr>
<td></td>
<td>each group. Then ask the student to write the division fact. Repeat</td>
</tr>
<tr>
<td></td>
<td>with other numbers of counters.</td>
</tr>
</tbody>
</table>

**Multiply 3-Digit and 4-Digit Numbers**

Write the following multiplication problems on cards or paper.

\[
\begin{array}{cc}
243 & \times 6 \\
3,625 & \times 4 \\
\end{array}
\]

Have the student explain how to regroup ones, tens, and hundreds to find each product and then solve each multiplication problem.

**Estimate with 1-Digit Divisors**

Write the following division problems on cards or paper.

\[
\begin{array}{cc}
3)634 \\
6)2,425 \\
\end{array}
\]

Ask the student to explain the steps he or she would use to estimate each quotient and then provide an estimate for each division problem.

---

**Show What You Know • Diagnostic Assessment**

Use to determine if students need intervention for the chapter's prerequisite skills.

Were students successful with Show What You Know?

<table>
<thead>
<tr>
<th>Skill</th>
<th>Missed More Than</th>
<th>Personal Math Trainer</th>
<th>Intervene With</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meaning of Division</strong></td>
<td>0</td>
<td>3.OA.A.2</td>
<td>Intensive Intervention Skill 14;</td>
</tr>
<tr>
<td><strong>Multiply 3-Digit and 4-Digit Numbers</strong></td>
<td>1</td>
<td>4.NBT.B.5</td>
<td>Intensive Intervention User Guide Activity 2</td>
</tr>
<tr>
<td><strong>Estimate with 1-Digit Divisors</strong></td>
<td>1</td>
<td>4.NBT.B.6</td>
<td>Strategic Intervention Skill 3</td>
</tr>
<tr>
<td><strong>Estimate with 1-Digit Divisors</strong></td>
<td></td>
<td></td>
<td>Strategic Intervention Skill 4</td>
</tr>
</tbody>
</table>

---

85 Chapter 2

- estimates 200 or 210 as the quotient of 634 ÷ 3
- estimates 400 as the quotient of 2,425 ÷ 6

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Grade 5 Example
Step 2 – Implement Decision Tree

GSD Tier I Decision Tree – Elementary Math

Do individual students demonstrate mastery?

No

Below Proficient Student

District Recommended Tools
- Reteach Lesson
- Customized Homework
- Interactive Student Edition
- Strategic Intervention
- Intensive Intervention – Response to Intervention
- Diagnostic Interview
- Other

Yes – Low/Mid DOK

Proficient Student

District Recommended Tools for Independent Work
- Homework
- Math Centers
- Math Games
- Other

Yes – High DOK

Highly Proficient Student

District Recommended Tools for Independent Work
- Enrichment Activities
- Math Investigation Centers
- Performance Tasks
- Critical Area Projects
- Math Olympiad
- Other
Step 3 – Move to Tier 2

• Move to Tier 2 Math Interventions
  – **AFTER** Tier 1 Below Proficient Student tools have been implemented

  **AND**

  – Student scores consistently 40% or below (more than 3-4 data scores)

  – Create interventions are based on Math Standards
Step 3 – Develop Tier 2 Intervention Plan

• Target areas for growth / foundational skills
  – Number Sense
  – Addition
  – Subtraction
  – Multiplication
  – Division
  – Fractions / Decimals

  – Always include word problems in you intervention
Background Knowledge

• Math Learning Progressions / Learning Trajectories
  – Built into Math Core Standards
  – A foundation for Standards, Curriculum, Assessment, and Instruction
  – Paths students follow as they learn mathematics
  – A basis for identifying interim goals that students should meet
  – Provide points of reference for designing interventions
Learning Progressions Link

These documents describe the progression of each math core domain across various grade levels.

Math Vocabulary Cards

<table>
<thead>
<tr>
<th>Levels</th>
<th>8 + 6 = 14</th>
<th>14 – 8 = 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Count all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>6 7 8 9 10 11 12 13</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Level 2: Count on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>9 10 11 12 13 14</td>
<td></td>
</tr>
<tr>
<td>Level 3: Recompose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make a ten (general): one addend breaks apart to make 10 with the other addend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 + 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make a ten (from 5’s within each addend)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 + 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Chinese and Chinese
Learning Progressions Go Math

- Learning Progression & Content Standards Page
  - Found in the Teacher’s Guide for each chapter
  - The *Before* standards can be used for Tier 2 Interventions
Learning Progressions Go Math

- FCR Coherence section
  – Found in each lesson Teacher’s Guide

**Lesson 3.4**

**Round Decimals**

**FCR Focus:**
- Common Core State Standards
  - 5.NBT.A.4 Use place value understanding to round decimals to any place.
- MATHEMATICAL PRACTICES (See Mathematical Practices in GO Math! in the Planning Guide for full text.)
  - MP3 Construct viable arguments and critique the reasoning of others.
  - MP6 Attend to precision.
  - MP8 Look for and express regularity in repeated reasoning.

**FCR Coherence:**
- Standards Across the Grades
  - Before Grade 5 After
  - 4.NBT.A.1 5.NBT.A.4 6.NS.B.3
  - 4.NBT.A.2
  - 4.NBT.A.3

**FCR Rigor:**
- Level 1: Understand Concepts...........................Share and Show (☑ Checked Items)
- Level 2: Procedural Skills and Fluency......On Your Own, Practice and Homework
- Level 3: Applications........................................Think Smarter and Go Deeper

**Learning Objective**
- Round decimals to any place.

**Language Objective**
- Students explain in their Math Journal how you can use place value to round decimals to a given place.

Pay Attention to the Before Standards

For more about how GO Math! fosters Coherence within the Content Standards and Mathematical Progressions for this chapter, see page 149.
This is important because using the standards you will be able to print out Tier 2 lessons / interventions based on student need!

Note: We will practice accessing website during Tier 2 Intervention Case Study
Learning Progression by Skills

https://turnonccmath.net/

NC STATE UNIVERSITY

TurnOnCCMath.net
Learning Trajectories for the K-8 Common Core Math Standards
• New updated **Core Standard Guides** from USBE
  – Explains each standard in detail
• Important Information for Tier 2
  – Critical Background Knowledge
  • For each standard
  • Lists standards 1-2 grade levels below
**Operations and Algebraic Thinking**

**Core Guide**

**Grade 3**

**Represent and solve problems involving multiplication and division within 100 (Standards 3.OA.1–4 and Standard 3.OA.7).**

**Standard 3.OA.1** Interpret products of whole numbers, such as interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as $5 \times 7$.

**Concepts and Skills to Master**

- Understand multiplication as combining equal groups of objects
- Model skip counting on a number line
- Understand that in a multiplication equation, the first factor equals the number of groups and the second factor equals the number in each group
- Find the total number of objects within equal groups ($5 \times 7 = 35$; 5 groups of 7 is 35)
- Write multiplication expressions and equations to represent pictures
- Draw pictures to represent multiplication expressions and equations

<table>
<thead>
<tr>
<th>Related Standards: Current Grade Level</th>
<th>Related Standards: Future Grade Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.OA.2 Interpret whole-number quotients of whole numbers</td>
<td>4.OA.1, 4.OA.2 Interpret and solve a multiplication equation as a comparison</td>
</tr>
<tr>
<td>3.OA.3 Use multiplication and division to solve word problems involving equal groups, arrays, and measurement quantities</td>
<td>4.NBT.5 Multiply multi-digit whole numbers</td>
</tr>
<tr>
<td>3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.</td>
<td>5.NBT.5 Fluently multiply multi-digit whole numbers</td>
</tr>
<tr>
<td>3.OA.5 Apply properties of operations as strategies to multiply and divide</td>
<td>4.NF.4, 5.NF.4 Apply and extend previous understandings of multiplication to fractions</td>
</tr>
<tr>
<td>3.OA.6 Understand both division as an unknown-factor problem and the relationship between multiplication and division</td>
<td></td>
</tr>
<tr>
<td>3.OA.7 Fluently multiply and divide within 100</td>
<td></td>
</tr>
</tbody>
</table>

**Critical Background Knowledge**

- Use addition to find the total number of objects in an array (2.OA.4)
- Skip count by fives and tens (2.NBT.2)

**Academic Vocabulary**

equal groups, array, multiplication, factor, product, equation

**Suggested Models**

- Write an equation that can help you find the total number of points on the stars. $3 \times 5 = 15$

**Suggested Strategies**

- number lines
- model equal groups with various counters
- real-life situations where objects are in groups
- bar models
- area model

**Illustration:**

- Frank bought six boxes of crayons. Each box of crayons has 8 crayons in it. How many crayons does he have?
### Key Concepts GSD Curriculum Map

- **Optional:** You can cross reference the selected core standards with key concepts in the Curriculum Maps.

| Math Standards | Semester 1 Pretest | Semester 1 Posttest | Semester 2 Pretest | Semester 2 Posttest | SAG
<table>
<thead>
<tr>
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</table>

*Indicates emphasized standards.

### Beginning and Ending of Semesters
- **1st Semester:** Aug 21, 2017 – Jan 11, 2018
- **2nd Semester:** Jan 16, 2018 – May 25, 2018

---

1.OA.6
- Add numbers within 20.
- Subtract numbers within 20.
- Fluently add numbers within 10.
- Fluently subtract numbers within 10.

1.OA.7
- Understand what an equal sign means.
- Tell if an equation is true or false.

1.OA.8
- Find a missing number in an addition problem.
- Find a missing number in a subtraction problem.
Engage NY

• A USBE recommended math resource
• Also known as *Eureka Math*—
• A PreK – grade 6 math curriculum
• Carefully sequences the mathematical progressions into modules
Engage NY

- [https://www.engageny.org/common-core-curriculum](https://www.engageny.org/common-core-curriculum)

UTMSS
Utah Multi-Tiered System of Supports

- UMTSS Overview Module

A great resource for Tier II (and Tier III) instruction is Engage New York’s site ([https://www.engageny.org](https://www.engageny.org)) for mathematics lessons. These partially scripted lessons break concepts into small chunks, include systematic and explicit instruction that uses visual representations, helps teachers understand how to teach concepts in a way that is different than they learned, and provides both teacher and student materials.
Lesson 2

Objective: Interpret a fraction as division.

Suggested Lesson Structure

- Application Problem: 8 minutes
- Fluency Practice: 12 minutes
- Concept Development: 30 minutes
- Student Debrief: 10 minutes

Total Time: 60 minutes

Problem Set (10 minutes)  Exit Ticket (3 minutes)  Homework
Lesson 7

Objective: Round multi-digit numbers to the thousands place using the vertical number line.

Suggested Lesson Structure

- Fluency Practice: (15 minutes)
- Application Problem: (6 minutes)
- Concept Development: (27 minutes)
- Student Debrief: (12 minutes)

Total Time: (60 minutes)
Sally Sue’s Go Math Workbook
Share & Show Scores

<table>
<thead>
<tr>
<th>TRACKING SHEET</th>
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</thead>
<tbody>
<tr>
<td>STUDENT:</td>
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<td>Chapter/Unit:</td>
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<td>START &amp; END DATE:</td>
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<td>24%</td>
<td>35%</td>
<td>37%</td>
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</table>

If a child misses the checked exercises, then differentiate instruction with:
- Reteach 5.3
- Personal Math trainer 2.NBT.B.5
- RtI Tier 1 Activity (online)

Worked in small group with Sally Sue on Reteach Lessons & assigned Personal Math trainer
### Reteach Lesson 5.1

- Lesson 5.2
- Lesson 5.3
- Lesson 5.4
- Lesson 5.5
- Lesson 5.6

### Mid-Chapter Checkpoint

**Assessment(s):**
- Reteach Lesson 5.1
- Reteach Lesson 5.2
- Reteach Lesson 5.3
- Reteach Lesson 5.4
- Reteach Lesson 5.5
- Reteach Lesson 5.6

**Score(s):**
- Guided Practice
  - 0% Redo Reteach Lesson
  - 50%
  - 50%
  - 67%
  - 34%
  - 38%
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<thead>
<tr>
<th>Math Standards</th>
<th>Semester 1 Pretest</th>
<th>Semester 1 Posttest</th>
<th>Semester 2 Pretest</th>
<th>Semester 2 Posttest</th>
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</table>

*Indicates emphasized standards.

### Beginning and Ending of Semesters

1st Semester: Aug 21, 2017 – Jan 11, 2018
2nd Semester: Jan 16, 2018 – May 25, 2018

### Math Targeted Skill Area(s):

- **2.NBT.B.5**
- **1.NBT.C.4**

### 1st Semester

- 1.NBT.4 – Grade 1, Module 4 Topic D Lessons 13-18
- 2.NBT.5 – Grade 2, Module 1, Lesson 6 & 7
### Step 3 – Sammy

**Develop Tier 2 Intervention Plan**

<table>
<thead>
<tr>
<th>Student(s):</th>
<th>Sammy</th>
<th>Grade:</th>
<th>Date:</th>
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<table>
<thead>
<tr>
<th>Math Standards</th>
<th>Engage NY Lessons / Go Math Resources</th>
<th>Additional Supplemental Materials &amp; Strategies</th>
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<tbody>
<tr>
<td>List math learning progressions standards for Tier 2 Interventions (Optional) Circle the Key Concepts standards</td>
<td></td>
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**Math Targeted Skill Area(s):**
Step 4 – Progress Monitoring

NAME: Sally Sue  GRADE: 2  TEACHER: Ms. Miles
MATH SKILL/STANDARD(S): Subtraction with Regrouping, 1.NBT.4, 2.NBT.5

Goal:
I can, break apart a number to regroup in Subtraction.

<table>
<thead>
<tr>
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<th>Check 2</th>
<th>Check 3</th>
<th>Check 4</th>
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Date: 1/16, 1/17, 1/20, 1/28, 1/31, 1/31, 1/31, 1/31, 1/31, 1/31
Step 4 – Progress Monitoring

**Progress Monitoring Record**

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<tr>
<th>STUDENT:</th>
<th>GRADE:</th>
<th>TEACHER:</th>
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</thead>
</table>

**MATH SKILL/STANDARD(S):**

Current % Correct (Baseline)          Target % Correct (Goal)

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<td>19</td>
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</table>
Step 4 – Progress Monitoring

Name: Sally Sue
Graph: Math Progress Monitoring
Standard: 1.NBT.4

<table>
<thead>
<tr>
<th>Date</th>
<th>Percentage Correct</th>
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<td>Nov. 20</td>
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<tr>
<td>Nov. 30</td>
<td>80</td>
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<tr>
<td>Dec. 1</td>
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</table>

* once you have added data - right click on a data point and select add trendline.
* when you begin adding data the axis will change to 100% scale.
Additional Resources

Go Math

- Strategies and Practice for Skills and Facts Fluency - Primary, GK-3
- Strategies and Practice for Skills and Facts Fluency - Intermediate, G3-6
- Response to Intervention Activities, G4
- Strategic Intervention (SE)
- Go Math! Intensive Intervention Skill Pack G3
Additional Resources
2nd Grade

http://vkc.mc.vanderbilt.edu/pals/pdfs/math_wise.pdf

1. Addition number combinations (single digits)
2. Addition without regrouping (double digits)
3. Addition with regrouping (double digits)
4. Subtraction number combinations (single digits)
5. Subtraction without regrouping (double digits)
6. Subtraction with regrouping (double digits)

All payments must be made in US Dollars.

Price includes manual and all supplemental materials.

FREE Shipping in Continental US

Unit Price
$55.00
FREE
TARGETING MATH INTERVENTIONS
Helping students succeed and feel confident in learning and doing mathematics

SUBSCRIPTION
An annual subscription is only $30. (Group rates are available.)

Fun Activities
Diagnostic Assessments
Lesson Strands

TEACHERS
Do you have students with math learning gaps?
We can help!
We provide math training for Tier II students in grades 2-6.

TESTIMONIALS
3rd Grade Teacher
"I organized a tub for each area on the Iceberg Model with the activities. Students wanted to create their own games to play with the activity boards and cards."

4th Grade Teacher
"I started by letting only my intervention students play the games. Before long all of the students in my class were asking to play them."

5th Grade Teacher
"We can attribute the increase in our math test scores over the past two years to implementing a daily review of the seven components from the Iceberg Model."

For Professional Development or help with any of the assessments or activities please contact Barbara Child or Arla Westenskow at:
TargetingMathInterventions@gmail.com

http://targetingmathinterventions.weebly.com/
Additional Resources

Individual books range in price from $13.50 - $14.50
Level 1 - $85.00 • Addition Facts 0 to 9 • Addition Facts 10 to 18 • Division Facts 0 to 81
• Multiplication Facts 0 to 81 • Place Value: Discovering Tens and Ones • Subtraction Facts 0 to 9
• Subtraction Facts 10 to 18 (7 books)
Level 2 - $26.00 • Addition With Regrouping • Subtraction With Regrouping (2 books)

The Instructional Sequence Table 1. Instructional Phases of the Strategic Math Series

<table>
<thead>
<tr>
<th>Phase</th>
<th>Purpose</th>
<th>Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pretest</td>
<td>Pretest Lesson</td>
</tr>
<tr>
<td>2</td>
<td>Teach concrete application</td>
<td>Lesson 1-3</td>
</tr>
<tr>
<td>3</td>
<td>Teach representational application</td>
<td>Lesson 4-6</td>
</tr>
<tr>
<td>4</td>
<td>Introduce the DRAW strategy</td>
<td>Lesson 7</td>
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<tr>
<td>5</td>
<td>Teach abstract application</td>
<td>Lesson 8-10</td>
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<tr>
<td>6</td>
<td>Posttest</td>
<td>Posttest Lesson</td>
</tr>
<tr>
<td>7</td>
<td>Provide practice to fluency</td>
<td>Lessons 11-21</td>
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</tbody>
</table>
Post-it-Note Reflection

Post-it-Note: Write any challenges you have faced or are anticipating when implementing Tier 2 instruction.

• Discard post-it if it has been answered
• Discuss at your table 1 challenge per person
• Share out ideas and solutions