Louisiana Believes

Eureka Remediation Tools
Objectives

- This session is designed to improve the quality of implementation of Eureka Math by helping teachers understand how to leverage the Eureka curriculum from previous grades for remediation.
- This session will explore and challenge traditional mindsets around remediation in the mathematics classroom, then introduce the new Eureka Remediation Tools as a tool to combat common misconceptions about remediation. Participants will practice using a tool, analyzing sample student work to diagnose gaps in understanding and skills and create a specific plan to respond.
1. Current State of Mathematics
2. Dangerous Mindsets for Remediation
3. Eureka Remediation Tools
4. Assessment Updates and Support
5. Reflections and Next Steps
Louisiana Data Trends for Cohorts

Cohort A: 2017 5th Graders

- Advanced, Mastery
- Basic
- Approaching Basic, Unsatisfactory

Cohort B: 2017 6th Graders

- Advanced, Mastery
- Basic
- Approaching Basic, Unsatisfactory

Contact LouisianaStandards@la.gov with questions.
Louisiana Data Trends for Cohorts

Cohort C: 2017 7th Graders

- Advanced, Mastery
- Basic
- Approaching
- Basic, Unsatisfactory

Cohort D: 2017 8th Graders

- Advanced, Mastery
- Basic
- Approaching
- Basic, Unsatisfactory

Contact LouisianaStandards@la.gov with questions.
What do the data show?

1. An increase in the number of students scoring below Basic, resulting in an average of more than 40% of our students scoring below Basic in 2017.

2. Fewer students are mastering the grade-level content.

3. A greater number of students are beginning each year at a deficit, needing targeted remediation to ensure access to and mastery of new grade-level content.

4. The remediation techniques/strategies/programs we are currently employing do not appear to be working.
Agenda

1. Current State of Mathematics
2. Dangerous Mindsets for Remediation
3. Eureka Remediation Tools
4. Assessment Updates and Support
5. Reflections and Next Steps
Discuss:

1. When and how does math remediation/intervention happen at your school? What is working well and what is not?
2. How is instruction for below-grade-level students different from instruction for students who are on or above grade-level?
Dangerous Mindset No. 1

My students are really far behind in math and there’s no time to teach them the math conceptually. I have to show students the quickest, easiest way to get the right answer so that they can catch up.
1. What do you notice about how the standards progress across grades?

2. What implications does this have for remediation/intervention?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Conceptual Standard</th>
<th>Conceptual/Procedural Standard</th>
<th>Procedural Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>Fluently add multi-digit whole numbers using the standard algorithm. (4.NBT.B.4)</td>
<td>Fluently subtract multi-digit whole numbers using the standard algorithm. (4.NBT.B.4)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Fluently add within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (3.NBT.B.2)</td>
<td>Fluently subtract within 100 using strategies and algorithms based on place value, properties, and relationships. (3.NBT.A.2)</td>
</tr>
<tr>
<td>2</td>
<td>Fluently add within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (2.NBT.B.5)</td>
<td>Fluently subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (2.NBT.B.5)</td>
<td>Add w/in 1000 using concrete or visual models and other strategies (2.NBT.B.7) Subtract w/in 1000 using concrete or visual models and other strategies (2.NBT.B.7)</td>
</tr>
<tr>
<td>1</td>
<td>Add within 100 using concrete or visual models properties, and relationships. (1.NBT.C.4)</td>
<td>Subtract multiples of 10 using concrete or visual models properties, and relationships. (1.NBT.C.4)</td>
<td>Explain why addition and subtraction strategies work, using place value and the properties of operations. (2.NBT.B.9) Understand three-digit numbers are composed of hundreds, tens, and ones. (2.NBT.A.1)</td>
</tr>
</tbody>
</table>
My students don’t know their math facts so they’re not ready for on-grade-level standards. I have to get them caught up on the math facts first.
Agree or Disagree? Students need to be solid with time tables before they can solve this problem:

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

Note: This is a 4th grade problem.

How would you solve this problem?
4.NF.B.4a — Understand Fractions as Multiples of Unit Fractions

Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$. (4.NF footnote: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12 and 100.)
4.NF.B.4a — Understand Fractions as Multiples of Unit Fractions

Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times \left(\frac{1}{4}\right)$, recording the conclusion by the equation $\frac{5}{4} = 5 \times \left(\frac{1}{4}\right)$. (4.NF footnote: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12 and 100.)
Dangerous Mindset No. 2

What it should look like:

**Examples:**
- \(3 \times \frac{2}{5} = 6 \times \frac{1}{5} = \frac{6}{5}\)

\[
\begin{array}{c}
\frac{2}{5} \\
\frac{1}{5} \\
\frac{1}{5} \\
\frac{5}{5}
\end{array}
\]
Dangerous Mindset No. 3

I can’t teach my grade-level content until I’ve filled the gaps with previous grade-level content.
1. Teaching procedures without building conceptual understanding flies in the face of the standards and does not help below-grade-level students.

2. Often, students do not need to master “math facts” before learning standards on their grade level. Closely analyzing the standards is the only way to find out.

3. All students can engage with grade-level work even with gaps in prior grade-level skills. Some prior grade-level content is prerequisite work, while other prior grade-level content can be mastered while studying on-grade-level content.

All students need to spend as much time as possible engaging with on grade-level content!
1. Current State of Mathematics
2. Dangerous Mindsets for Remediation
3. Eureka Remediation Tools
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5. Reflections and Next Steps
Eureka Remediation Tools

• Available for prioritized topics in Grades 4-8 and Algebra I

• Include 3 diagnostic questions for prior grade level standards that are foundational for new content

• Point teachers to portions of prior grade level Eureka lessons that can be used to target the gaps that are revealed

• Can be used within core math class, intervention time, or a combination
Recommended Approach

Diagnose

- Embed diagnostic questions in instruction/assessment prior to starting the new module/topic
- Determine what gaps exist and whether they are for the whole class or a small group

Understand

- Study how the foundational standard relates to the new content
- Understand whether the gap can be addressed alongside upcoming material or if it must come before

Take Action

- Whole class needs: plan to build needed scaffolds into upcoming lessons. If needed, adjust pacing calendar to add in additional lessons
- Small group needs: plan differentiated instruction or coordinate to address gaps within intervention periods
Analyzing Student Work from Diagnostic Questions

1. Read the “Diagnostic Assessment” section on page 2 of the Eureka Remediation Tool.
2. Review the sample student work to determine where gaps exist.
Part A: 4.NBT.A.1:

1. Write a number where the value of the 4 is ten times the value of the 4 in the number 62,347.
   \[ 4 \times 10 = 40 \]

2. Write a number where the value of the 2 is ten times the value of the 2 in the number 62,347.
   \[ 2 \times 10 = 20 \]

3. Write a number where the value of the 6 is ten times the value of the 6 in the number 62,347.
   \[ 6 \times 10 = 60 \]
Part B: 4.NBT.A.2:

4. Write the following number in expanded form: 12,497
   \[10000 + 2000 + 400 + 90 + 7\]

5. Write the following number in expanded form: 64,025
   \[60000 + 4000 + 0 + 20 + 5\]

6. Write the following number in standard form: \((4 \times 100,000) + (9 \times 1,000) + (6 \times 100) + (7 \times 10) + (5 \times 1)\)
   \[49,675\]
Part C: 4.NF.C.6:

7. What is the decimal form of the fraction 3/10?
   \[
   \frac{3}{10} = 0.3
   \]

8. What is the decimal form of the fraction 8/100?
   \[
   \frac{8}{100} = 0.08
   \]

9. What is the fraction form of 0.90?
   \[
   0.90 = \frac{90}{100}
   \]
Analyzing Student Work from Diagnostic Questions

Part D: 4.MD.A.1:

10. Complete the following table.

<table>
<thead>
<tr>
<th>Unit</th>
<th>=</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilometer</td>
<td>=</td>
<td>1000 meters</td>
</tr>
<tr>
<td>1 meter</td>
<td>=</td>
<td>100 centimeters</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>=</td>
<td>100 grams</td>
</tr>
<tr>
<td>1 liter</td>
<td>=</td>
<td>100 milliliters</td>
</tr>
</tbody>
</table>

11. Complete the following table.

<table>
<thead>
<tr>
<th>Unit</th>
<th>=</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 kilometers</td>
<td>=</td>
<td>2000 meters</td>
</tr>
<tr>
<td>3 meters</td>
<td>=</td>
<td>300 centimeters</td>
</tr>
</tbody>
</table>

12. Complete the following table.

<table>
<thead>
<tr>
<th>Unit</th>
<th>=</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000 grams</td>
<td>=</td>
<td>20 kilograms</td>
</tr>
<tr>
<td>5,000 milliliters</td>
<td>=</td>
<td>50 liters</td>
</tr>
</tbody>
</table>
Use guidance on p. 5 for 4.NBT.A.1:

1. What component of rigor (conceptual, procedural, application) is addressed by this standard?

2. How does that knowledge/skill connect to this 5th grade content in Module 1 - Topic A - Lesson 2:

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**NYS COMMON CORE MATHEMATICS CURRICULUM**

**Lesson 2 Exit Ticket**

1. Solve.

   a. \(32.1 \times 10 = \) ________________  
   b. \(3632.1 \div 10 = \) ________________
1. Identify which prior grade lessons should be used, when, and with which students.

2. Decide whether the gaps displayed by students should be addressed prior to starting this Module or if can be filled alongside grade level content.
<table>
<thead>
<tr>
<th></th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Current State of Mathematics</td>
</tr>
<tr>
<td>2.</td>
<td>Dangerous Mindsets for Remediation</td>
</tr>
<tr>
<td>3.</td>
<td>Eureka Remediation Tools</td>
</tr>
<tr>
<td>4.</td>
<td>Assessment Updates and Support</td>
</tr>
<tr>
<td>5.</td>
<td>Reflections and Next Steps</td>
</tr>
</tbody>
</table>
LEAP 2025: Focus

LEAP 2025 assessments focus where Louisiana Student Standards for Mathematics focus:

<table>
<thead>
<tr>
<th>Conceptual Understanding</th>
<th>Procedural Skill and Fluency</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understand, recognize, interpret</td>
<td>• Fluently, find, solve</td>
<td>• Word problems, real-world, context</td>
</tr>
<tr>
<td>• How operations/skills are related</td>
<td>• Accuracy, efficiency, flexibility</td>
<td>• Problem-solving in meaningful, relevant context</td>
</tr>
<tr>
<td>• How algorithms are developed</td>
<td>• Built from foundation in conceptual understanding</td>
<td>• Expression in mathematical reasoning</td>
</tr>
<tr>
<td>• How one skill builds a foundation for the next</td>
<td>• Adds to foundation in application and solving more complex problems</td>
<td>• Modeling symbolically and by design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Interpreting what the symbolic modeling represents in the real world</td>
</tr>
</tbody>
</table>
### Assessment Comparison

<table>
<thead>
<tr>
<th></th>
<th>EOC: 2005 – Spring 2017</th>
<th>LEAP 2025: starting Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comparability</strong></td>
<td>Limited to within LA</td>
<td>Expands to compare with other states</td>
</tr>
<tr>
<td><strong>Consistency</strong></td>
<td>Separate EOC system from LEAP</td>
<td>One seamless system – LEAP 2025</td>
</tr>
<tr>
<td></td>
<td>• 4 achievement levels</td>
<td>• 5 achievement levels</td>
</tr>
<tr>
<td></td>
<td>• Reporting by discrete domains</td>
<td>• Similar design to grades 3-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reporting to support college/career ready claim</td>
</tr>
<tr>
<td><strong>Components</strong></td>
<td>• 46 multiple-choice questions</td>
<td>• 32 tasks: multiple select, fill in the blank, technology enhanced</td>
</tr>
<tr>
<td></td>
<td>• 1 constructed-response task with limited connection to</td>
<td>• 6-7 constructed-response tasks designed to assess reasoning and</td>
</tr>
<tr>
<td></td>
<td>mathematical practices</td>
<td>modeling mathematical practices with specific content</td>
</tr>
<tr>
<td><strong>College/Career</strong></td>
<td>None</td>
<td>Built into design with evidence statements and reporting categories</td>
</tr>
<tr>
<td><strong>Ready Claim</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Assessment Comparison

|------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| **Test Design** | • Session 1: MC, No Calculator  
• Session 2: CR, Calculator  
• Session 3: MC, Calculator | • Session 1a – No Calculator/Session 1b – Calculator  
• Session 2 – Calculator  
• Session 3 – Calculator |
| **Materials** | • Scientific Calculator  
• Geometry Reference Sheet  
• Online Tools Training (OTT)  
• Rulers/protractor  
• Sample Items documents | • Calculator and graphing capability  
• High School Mathematics Reference Sheet available for Algebra I & Geometry  
• Online Tools Training (OTT) – to be updated  
• Practice Tests for Algebra I & Geometry |
| **Timing** | Untimed, suggested times                                                                 | Timed  
Session 1a/1b: 25 minutes/55 minutes  
Session 2: 80 minutes  
Session 3: 80 minutes |
## Test Design

<table>
<thead>
<tr>
<th>Test Session</th>
<th>Type I (points)</th>
<th>Type II (points)</th>
<th>Type III (points)</th>
<th>Total (points)</th>
<th>Number of Embedded Field-Test Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1a: No Calculator</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Session 1b: Calculator</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Session 2: Calculator</td>
<td>13</td>
<td>4</td>
<td>6</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Session 3: Calculator</td>
<td>13</td>
<td>4</td>
<td>6</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>42</td>
<td>11</td>
<td>15</td>
<td>68</td>
<td>6</td>
</tr>
</tbody>
</table>

- 38-39 tasks for 68 points
- 6 total embedded field-test tasks (5 Type I, 1 Type II or III)
- field-test tasks do **not** count towards a student’s final score on the test
- Major Content/Additional & Supporting Content ~ 65/35
Implications: Action Steps

- Assess with a variety of item types
- Include/increase opportunities for written expression of reasoning and modeling
- Incorporate *High School Mathematics Reference Sheet*
- Plan time for students to explore OTT on multiple occasions
- Consult practice test guide for best practices when administering and reviewing practice tests
- Teaching the standards is the best "test prep."
- Access LEAP 360 for support in assessing mastery of standards throughout the year.
- The biggest factor for success is time spent engaged with on-grade-level work. Any study of previous grade-level content should be done so in the context of the new learning, leveraging the coherence in the standards.
• Available Fall 2017
• Mirrors operational test
  ▪ Test design – sessions, points per session, task types, ancillaries
  ▪ Variety in item types
  ▪ Secure testing platform – requires test tickets

• The Teacher Access Link for high school LEAP 2025 assessments is now available. Teachers can view the practice tests by accessing the Teacher Access link in Google Chrome and entering a username and password for an assessment. The high school practice tests for student use will be available this fall.

<table>
<thead>
<tr>
<th>Practice Test</th>
<th>Username</th>
<th>Login</th>
</tr>
</thead>
<tbody>
<tr>
<td>English I</td>
<td>ENG1</td>
<td>teach2025</td>
</tr>
<tr>
<td>English II</td>
<td>ENG2</td>
<td>teach2025</td>
</tr>
<tr>
<td>Algebra</td>
<td>ALG1</td>
<td>teach2025</td>
</tr>
<tr>
<td>Geometry</td>
<td>GEO</td>
<td>teach2025</td>
</tr>
<tr>
<td>US History</td>
<td>USHIST</td>
<td>teach2025</td>
</tr>
</tbody>
</table>
Assessment Guidance Resources

MATH ASSESSMENT STRUCTURE

<table>
<thead>
<tr>
<th>File</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 3 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 4 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 5 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 6 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 7 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Grade 8 Math</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Algebra I</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Assessment Guide for Geometry</td>
<td>Download</td>
</tr>
</tbody>
</table>

MATH ASSESSMENT RESOURCES

<table>
<thead>
<tr>
<th>File</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAP 2025 Equation Builder Guide for Grades 3-5</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Equation Builder Guide for Grades 6-8</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Equation Builder Guide for High School</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Spanish Equation Builder Guide for Grades 3-5</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Spanish Equation Builder Guide for Grades 6-8</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Spanish Equation Builder Guide for High School</td>
<td>Download</td>
</tr>
<tr>
<td>LEAP 2025 Grades 5-HS Mathematics Reference Sheets</td>
<td>Download</td>
</tr>
</tbody>
</table>

All Assessment Guides were updated 8/22/2017

- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Algebra I
- Geometry

Equation Builder Guides

- 3-5
- 6-8
- High School
- Sp. 3-5
- Sp. 6-8
- Sp. High School

Mathematics Reference Sheets 5-High School
1. Current State of Mathematics
2. Dangerous Mindsets for Remediation
3. Eureka Remediation Tools
4. Assessment Updates and Support
5. Reflections and Next Steps
Based on today’s training,

• What are the some potential dangers of a “traditional” mindset when it comes to remediation?
• What are the key actions needed to support students who may not be prepared to engage in the grade-level content of all Eureka lessons?
Closing

Math Tools on the Math Planning Page

Understand the Standards
• K-12 Louisiana Student Standards for Math
• Teacher Companion Documents
• Focus Documents
• Rigor Documents

Implement the Eureka Curriculum
• Louisiana Eureka Guides (*updated*)

Help Students who Struggle
• Remediation Guides
• Eureka Remediation Tools (*new*)

Assess the Standards
• [LEAP 360](#) (diagnostics, interims, EAGLE)
• Summative Assessment Guidance

Year-long Planning
• Sample Year Plans
• Sample Middle School Accelerated Plans

Contact LouisianaStandards@la.gov with questions.