# The Week at a Glance

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<th>Ideas</th>
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<td>Focus on Language, Equity, and Learners</td>
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<td>Friday</td>
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</tbody>
</table>
### Feedback on Feedback

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<tr>
<th>Plus</th>
<th>Delta</th>
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ADAPTING CURRICULUM FOR EQUITY

Objectives and Agenda

Objectives

Participants will be able to

• use an English learners language development framework to provide access to the mathematics curriculum for ALL students.

• facilitate a curriculum adaptation planning method that intentionally addresses gaps in students’ learning.

Agenda

I. Framing the Challenge

I. Mathematical Language Routines

I. Connecting to Prior Learning: The Shifts and Standards

I. Modeling Planning for Gaps

I. Practice Planning for Gaps

I. Expand on Planning with Progressions
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Norms That Support Our Learning

• Take responsibility for yourself as a learner.
• Honor timeframes (start, end, activity).
• Be an active and hands-on learner.
• Use technology to enhance learning.
• Strive for equity of voice.
• Contribute to a learning environment in which it is “safe to not know.”
• Identify and reframe deficit thinking and speaking.
Our learning is grounded in the intersection of the standards, content, aligned curriculum, and the equitable instructional practices that are essential for closing the opportunity gap caused by systemic bias and racism.
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Unpacking Equity

Equity exists when the biases derived from dominant cultural norms and values no longer predict or influence how one fares in society.

Equity systematically promotes fair and impartial access to rights and opportunities.

Equity may look like adding supports and scaffolds that result in fair access to opportunities or creating opportunities for all voices to be heard.

*Educational* Equity ensures that all children—regardless of circumstances—are receiving high-quality, grade-level, and standards-aligned instruction with access to high-quality materials and resources.

*We become change agents for educational equity when we acknowledge that we are part of an educational system that holds policies and practices that are inherently racist and that we have participated in this system. We now commit to ensuring that all students, regardless of how we think they come to us, leave us having grown against grade-level standards and confident in their value and abilities.*
We are the gatekeepers of academic language in the classroom. We must provide students with well-structured, intentional opportunities for collaboration that amplifies academic language.

We experience the world through our culture, language, and values. We must be intentionally inclusive of students whose culture, language, and value system may be unfamiliar or different from ours. This includes holding space for academic English, while also making the classroom a safe space for students to use variants of English and languages other than English.

Academic English proficiency is critical for all students. We must model academic language, provide instruction using grade-level complex text and tasks, and ensure opportunities for students to practice academic language in an academic context.

There is no scope-and-sequence for the acquisition of knowledge and language, and all student knowledge and language is an asset. We as educators must leverage student knowledge and language as we scaffold students toward independence with complex texts and tasks.
Share Your Learning!

Let your voice be heard.

SHARE YOUR LIGHTBULB MOMENTS AS THEY HAPPEN!

Use #StandardsInstitute on Twitter and Facebook and be sure to follow @UnboundEdu for the latest.
“Communicating is essential to the learning of mathematics. . . . From the perspective of mathematics learning, by articulating the principles, concepts and rationale behind the steps of a particular problem solution, students have the opportunity to reinforce and deepen their understanding of higher-level knowledge structures in mathematics content”

Ryve, 2004; Huang, Normandia & Greer, 2005, p.45

What words or phrases are examples of equitable instructional practices? Which equity principles do they reflect? Are they fully evident in your math classrooms? If not, why not?
Language development and cognitive development are interrelated and mutually dependent.

(Walqui & Heritage, 2012)
### Guiding Principles

Students need well-structured opportunities to practice language to learn it. Amplify, do not simplify, language.

Content and language develop inseparably and in integrated ways; language development occurs over time and in a nonlinear manner.

Scaffold students toward independence with complex tasks; do not scaffold by simplifying text language and task complexity.

We are the gatekeepers of language in the classroom as teachers and leaders.

All students benefit from a systematic and comprehensive focus on language acquisition that helps them attain the masterful use of standard English in speaking and writing.

All students bring valuable knowledge and culture to the classroom.
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Understanding Language SCALE

Support Sense Making
Optimize Output

Cultivate Conversation
Maximize Linguistic and Cognitive Meta-Awareness

Four Design Principles
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Understanding Language SCALE

As a group, create a poster that

• names the Principle, and

• answers the questions:

☐ What is the big idea of this Principle?

☐ How does it support student linguistic and/or cognitive development?

☐ How does this Principle support equity?

1) Support Sense-Making – page 6
2) Optimize Output – page 6-7
3) Cultivate Conversation – page 7-8
4) Maximize Meta-Awareness – page 8
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Mathematical Language Routines

MLR 1 – Stronger and Clearer Each Time

MLR 2 – Collect and Display

MLR 3 – Critique, Correct, and Clarify

MLR 4 – Information Gap

MLR 5 – Co-Craft Questions and Problems

MLR 6 – Three Reads

MLR 7 – Compare and Connect

MLR 8 – Discussion Supports
Sampling the MLRs

Which one of these sequences seems different from the others?

<table>
<thead>
<tr>
<th>Sequence</th>
</tr>
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<tbody>
<tr>
<td>0, 1.5, 3, 4.5, 6, 7.5</td>
</tr>
<tr>
<td>6, 12, 24, 48, 96, 192</td>
</tr>
<tr>
<td>9, 12, 15, 18, 21, 24</td>
</tr>
<tr>
<td>10, 15, 20, 25, 30, 35</td>
</tr>
</tbody>
</table>
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Sampling the MLRs

Write a story problem that can be solved by finding $5 \times 4$.

Draw two different diagrams that show $5 \times 4 = 20$. Explain how your diagrams represent $5 \times 4 = 20$.

Which of the diagrams you used to represent $5 \times 4 = 20$ can be used to represent $5 \times 2/3$? Draw the diagram if possible.
Alysha really wants to ride her favorite ride at the amusement park one more time before her parents pick her up at 2:30 pm. There is a very long line at this ride, which Alysha joins at 1:50 pm (point A in the diagram below).

Alysha is nervously checking the time as she is moving forward in the line. By 2:03 she has made it to point B in line.
What is your best estimate for how long it will take Alysha to reach the front of the line? If the ride lasts 3 minutes, can she ride one more time before her parents arrive?
Access for English learners is access for ALL.
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Three Corners Activator

Choose the corner with the shift that most resonates with you.

• Set context for your choice.
  • What is your role in mathematics education?
  • Why does this shift resonate with you?

• Discuss the shift as a group, and chart answers to the questions:
  If you were teaching others about this shift, what points would you make?
  What does this shift mean with regard to the Standards?

• Have a scribe write a definition.

• In 1 minute, one person will teach the shift and what it means with regard to the Standards to the rest of the room.
Focus
The Standards call for greater focus in mathematics. Rather than racing to cover many topics in a mile-wide, inch-deep curriculum, the standards ask math teachers to significantly **narrow and deepen** the way time and energy are spent in the classroom.
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## Focus in Grade 1

### MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 1

Emphases are given at the cluster level. Refer to the Common Core State Standards for Mathematics for the specific standards that fall within each cluster.

**Key:**
- ■ Major Clusters
- □ Supporting Clusters
- ○ Additional Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.OA.A</td>
<td>Represent and solve problems involving addition and subtraction.</td>
</tr>
<tr>
<td>1.OA.B</td>
<td>Understand and apply properties of operations and the relationship between addition and subtraction.</td>
</tr>
<tr>
<td>1.OA.C</td>
<td>Add and subtract within 20.</td>
</tr>
<tr>
<td>1.OA.D</td>
<td>Work with addition and subtraction equations.</td>
</tr>
<tr>
<td>1.NBT.A</td>
<td>Extending the counting sequence.</td>
</tr>
<tr>
<td>1.NBT.B</td>
<td>Understand place value.</td>
</tr>
<tr>
<td>1.NBT.C</td>
<td>Use place value understanding and properties of operations to add and subtract.</td>
</tr>
<tr>
<td>1.MD.A</td>
<td>Measure lengths indirectly and by iterating length units.</td>
</tr>
<tr>
<td>1.MD.B</td>
<td>Tell and write time.</td>
</tr>
<tr>
<td>1.MD.C</td>
<td>Represent and interpret data.</td>
</tr>
<tr>
<td>1.G.A</td>
<td>Reason with shapes and their attributes.</td>
</tr>
</tbody>
</table>
Within Grade Coherence: Coherence is built into the standards for each grade through the utilization of complementary topics to support and reinforce a major topic in a grade. This also increases focus in the grade.
Across Grade Coherence: Learning is carefully connected across grades so that students can build new understanding onto foundations built in previous years.
Rigor: Materials should pursue with equal intensity the three aspects of rigor in the major work of the grade: conceptual understanding, procedural skill and fluency, and application.
Which Aspect of Rigor?

3.OA.B.6

Understand division as an unknown-factor problem. For example, find $15 \div 3$ by finding the number that makes 15 when multiplied by 3.
Which Aspect of Rigor?

Make a Ten to Add (6 minutes)

Note: Reviewing making ten allows students to add within the teens during the lesson and see the distinction.

T: Let’s make ten to add. I say 9 + 2, and you say 9 + 2 = 10 + 1. Ready? 9 + 2.
S: 9 + 2 = 10 + 1.
T: Answer?
S: 11.
T: 9 + 5.
S: 9 + 5 = 10 + 4
T: Answer?
S: 14.

Continue with the following possible sequence: 9 + 7; 9 + 6; 9 + 8; 8 + 3; 8 + 7; 7 + 4; and 7 + 6.

2.OA.B.2

Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
4.OA.A.2
Multiply or divide to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison).

Helen raised $12 for the food bank last year and she raised 6 times as much money this year. How much money did she raise this year?

Sandra raised $15 for the PTA and Nita raised $45. How many times as much money did Nita raise as compared to Sandra?
Focus, Coherence, and Rigor
Take a break . . .
Planning for Gaps: Coherent Content in Context

Equity is engaging in practices that meet students where they are and advances their learning by giving them what they need.

It’s about fairness, not sameness.

Standards-Aligned Intervention

- Identify the major work for the grade.
- Identify key prerequisite standard.
- Design curricular intervention.
- Design performance task to assess prerequisite standard.
Lesson Objective: Use the area model and multiplication to show the equivalence of two fractions. (4.NF.1)

To help us better understand the objective, let’s look at how this exit ticket informs the expectations of 4.NF.1.

Draw two different area models to represent one fourth by shading. Now, in the first model, decompose the shape into eighths and decompose the second into twelfths. Use multiplication to show how each fraction is equivalent to one fourth and how that looks in your shapes.
Modeling Planning for Gaps: The Problem

- **Turn and Talk:** What are some of the prerequisite standards students need to be successful on the opening problem? How did you track them down?
- Discuss in your group; table leaders will share out big ideas.
What Are the Prerequisites for 4.NF.1?

- **3.NF.A.3 (A–D)**
  Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

- **3.NF.A.1**
  Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts; understand a fraction $a/b$ as the quantity formed by $a$ parts of size $1/b$.

- **3.NF.A.2**
  Understand a fraction as a number on the number line; represent fractions on a number line diagram.

- **4.OA.2**
  Multiply or divide to solve word problems involving multiplicative comparison.
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Curricular Interventions Using Coherent Content in Context

Coherent Content in Context

• Coherent in the progression of grade-level learning
• Focused on current grade level content
• Relatively quick
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Modeling Planning for Gaps: Curricular Interventions Using 3Cs
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Modeling Planning for Gaps: Curricular Interventions Using 3Cs

Turn and Talk:

• Do you like this plan, why?
• Is this always the best approach to this kind of problem?
• What are other options and what are benefits and risks to doing them?
• What other types of interventions you could plan for?
Use the progressions to add prerequisite standards from prior grades to all units.

Consider expanding focus on major content where necessary.
Adapt lessons to include prerequisite content in the context of grade-level objectives.

Consider adding additional lessons that address prerequisite content where necessary and appropriate.
Modeling Planning for Gaps: Curricular Interventions Using Coherent Content in Context
Part III: Where do Operations and Algebraic Thinking come from, and where are they going?

Multiplication and division make their debut in Grade 3, but (as with most things) they’re part of a careful progression of prior learning. Knowing the lead-up to multiplication and division will help you leverage content from previous grades in your lessons; mathematical learning should always be explicitly connected to previous understandings. And if your students are behind, seeing where these ideas come from will allow you to adapt your curriculum and lessons to make new ideas accessible. Let’s look at the main threads that lead up to multiplication in Grades K-2; then we’ll examine some ways that you might use this information to meet the unique needs of your students. After that, we’ll see how the ideas of multiplication and division extend beyond Grade 3.

Where do Operations & Algebraic Thinking in Grade 3 come from?

Grades K-2: addition and subtraction with whole numbers

Students focus intently on the development of the ideas of addition and subtraction in Kindergarten through Grade 2. This study is characterized by a balance of deep conceptual understanding, gradual development of fluency, and gradual exposure to more and varied problem-solving contexts.
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Modeling Planning for Gaps: Using the Content Guides

Skim Part III to get a feel for it. How is it structured?

At Your Table:

• Divide up the progressions in your guide and create a poster for each progression. We’ll use these as anchor charts.
• When you’re done, take a few minutes to explain the progressions to your table mates.

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Modeling Planning for Gaps: Mapping It All Out

How can we plan for this in a focused manner?

Give G3 M5 L21 exit slip at end of class Friday before M5 L1

3.NF.A.3.A: Not able to identify equivalent fractions using visual fraction models and number lines.

Teach 2 full lessons on equivalent fractions on the number line using EngageNY G3 M5 L22-23?
1. What are your takeaways from this session?

2. How do the content guides affect your practice as a leader or a coach in planning for students with unfinished learning? In particular, consider the role the progressions play in intervention planning.

3. How is this kind of planning for students with unfinished learning an equity move?

4. What further questions do you have? What further resources do you want?
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Thumb Rating: Are we on track?

Objectives

Participants will be able to

• use an English learners language development framework to provide access to the mathematics curriculum for ALL students.

• facilitate a curriculum adaptation planning method that intentionally addresses gaps in students’ learning.
Lunch Break!
Welcome Back!
Objectives

Participants will be able to

• use an **English learners language development framework** to provide access to the mathematics curriculum for ALL students.

• facilitate a **curriculum adaptation planning method** that intentionally addresses gaps in students’ learning.

Agenda

I. Framing the Challenge

I. Mathematical Language Routines

I. Connecting to Prior Learning: The Shifts and Standards

I. Modeling Planning for Gaps

I. Practice Planning for Gaps

I. Expand on Planning with Progressions
For the following, fill out the *prerequisite skills* and *curricular intervention* columns with two rows for your grade level. Be prepared to share with the room!

<table>
<thead>
<tr>
<th>Mystery Column</th>
<th>Prerequisite Skills</th>
<th>Curricular Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>?</td>
<td>?</td>
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<td>?</td>
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</tbody>
</table>

Grade 3: **3.OA.3**  
Grade 4: **4.OA.2**  
Grade 5: **5.NBT.6**
Break
Completing the Puzzle . . .
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Expanding on Planning with Progressions: A Change in Practice?

1. Choose a lesson from your unit and note the expectations of the focus standard(s).

2. Use the Content Guides, Coherence Map, or other resources to determine prerequisite skill(s).

3. Determine your curricular interventions.

4. Determine what approach(es) you will take to determine whether or not students have those skill(s). Consider the tool and the timing.
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Expanding on Planning with Progressions

Let’s talk about how we can plan for this in a focused manner:

<table>
<thead>
<tr>
<th>Assessment Approach</th>
<th>Prerequisite Skills</th>
<th>Curricular Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TOOL] + [TIME]</td>
<td>[STANDARDS] / [KNOWLEDGE] / SKILLS</td>
<td>Insert <strong>two full lessons</strong> from (G3 M5 Lessons 22 and 23)</td>
</tr>
</tbody>
</table>

3.NF.3 - explain equivalent fractions; recognize and generate equivalent fractions using multiple representations
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A Change in Practice?

3. Determine your curricular interventions. Consider type of intervention and the resource.
   - Standard 3.NF.A.3
   - TYPE: Two Lessons
   - RESOURCE: Engage NY, Lessons 22 & 23 (Grade 3 - Module 5)

4. Determine what approach(es) you will take to determine whether students have those skill(s). Consider the tool and the timing.
   a) Exit ticket from ENY aligned to those standards given one week before, to allow for planning.
   b) Observation during my unit on X previously in the year.
   c) Add additional problem(s) to the exit ticket from previous week.
   d) Add additional problem(s) into class work a day or two before.
## Adapting

<table>
<thead>
<tr>
<th>Assessment Approach</th>
<th>Prerequisite Skills</th>
<th>Curricular Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TOOL] + [TIME]</td>
<td>[STANDARDS] / [KNOWLEDGE] / [SKILLS]</td>
<td>[TYPE] + [RESOURCE]</td>
</tr>
<tr>
<td>a) Give G3 M5 L20 exit ticket at end of class Friday before starting Module 4.</td>
<td>3.NF.3 – Explain equivalent fractions; recognize and generate equivalent fractions using multiple representations.</td>
<td>Teach 2 full lessons on equivalent fractions on the number line using EngageNY G3 M5 L22-23.</td>
</tr>
<tr>
<td>b) Assessment data from previous year?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>c) Add additional problem(s) into class work a day or two before.</td>
<td>?</td>
<td>?</td>
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</tbody>
</table>
Expanding on Planning with Progressions: Practice

<table>
<thead>
<tr>
<th>Assessment Approach</th>
<th>Prerequisite Skills</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TOOL] + [TIME]</td>
<td>[STANDARDS] / [KNOWLEDGE] / [SKILLS]</td>
<td>[TYPE] + [RESOURCE]</td>
</tr>
</tbody>
</table>

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Reflection: Gallery Walk & Discussion

Discuss:
1. What did you learn from engaging in this planning process?
2. Write down a description of the current state of your organization, school, or district with intentional planning for equity in mathematics.
3. List the necessary next steps to making change based on your role and/or sphere of influence. This is also based on today’s learning.
4. Identify leadership moves that you will make to move this work forward.
Thumb Rating: Did we meet our objectives?

Objectives

Are you now able to

• use an *English learners language development framework* to provide access to the mathematics curriculum for ALL students?

• facilitate a *curriculum adaptation planning method* that intentionally addresses gaps in students’ learning?
1. Click on the grey ‘Daily Survey’ link
2. Choose the appropriate link for today’s survey, i.e. Day 1, and continue to new window

Please fill out the survey located here: standardsinstitutes.org/institute/summer-2019
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