

Planning for Learning Acceleration & Just-in-Time Interventions

Mathematics

March 2021

What are we doing today?

Today, we're discussing a few big questions as you plan to accelerate student learning in the 2020-2021 school year:

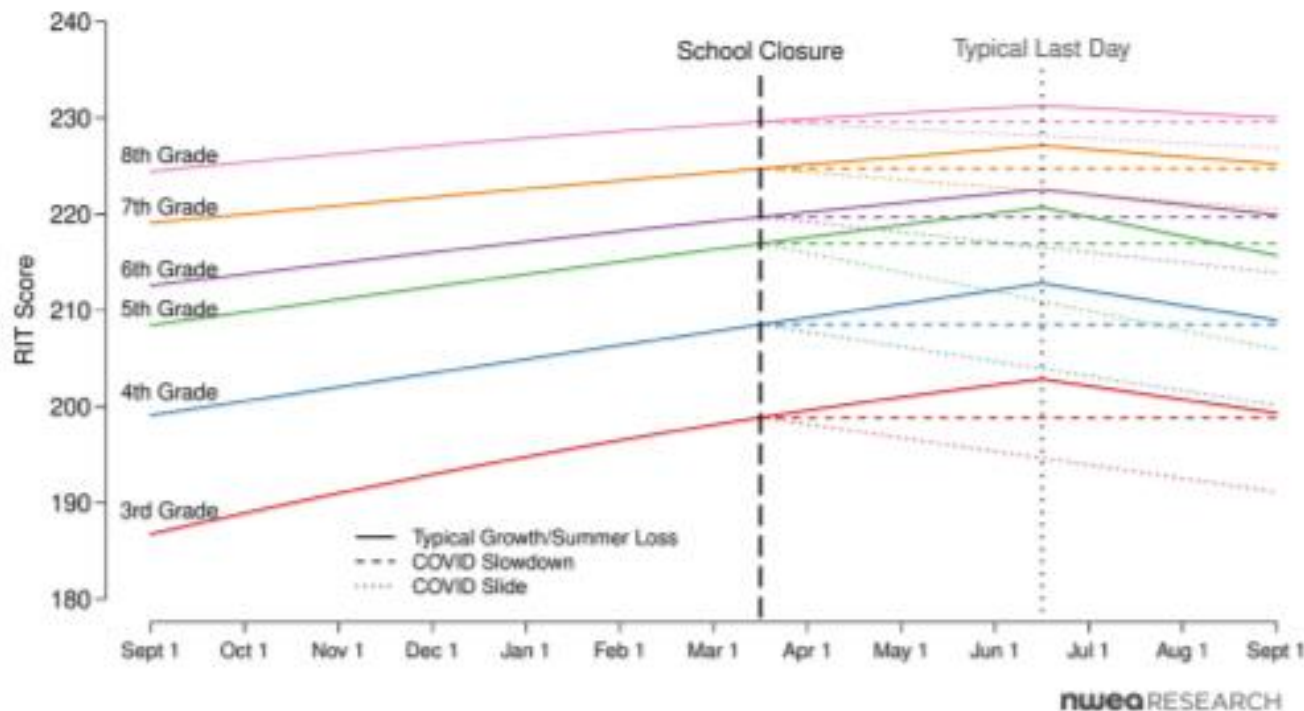
How do we create a **plan to accelerate student learning**?

How do we **accelerate student learning** in the next two years?

What **other challenges** should we anticipate as we plan to accelerate student learning?

One study predicts that students will experience a learning loss of 50 percent in math...

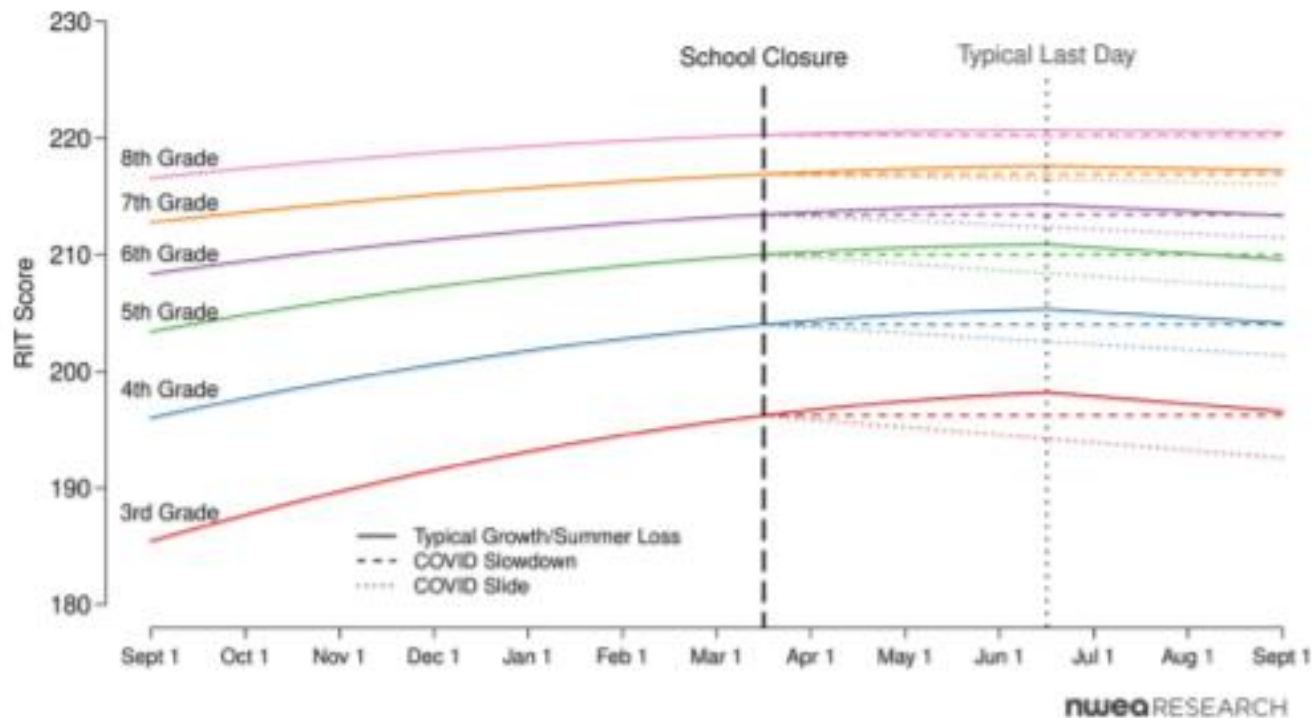
Figure 1. Mathematics forecast



“[I]n mathematics, students are likely to show much smaller learning gains, returning with less than 50% of the learning gains and in some grades, nearly a full year behind what we would observe in normal conditions.”

..and 30 percent in reading.

Figure 2. Reading forecast



“Preliminary COVID slide estimates suggest students will return in fall 2020 with roughly 70% of the learning gains in reading relative to a typical school year.”

We've historically tried to address learning loss in three ways.



Retention: Students that have fallen far behind their peers are retained and required to repeat an academic year of school.



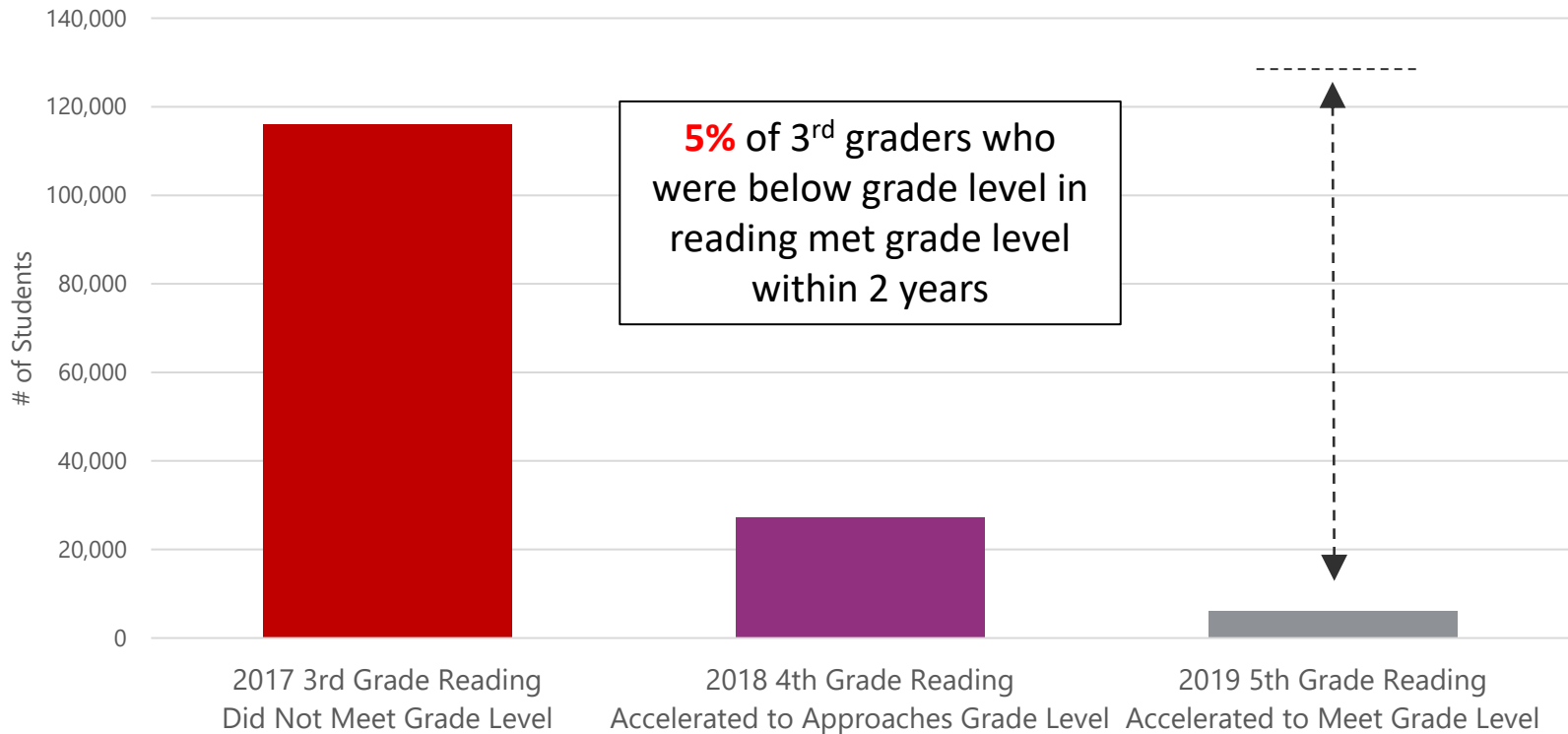
Social Promotion: Students continue with their age peers regardless of their academic performance.



Remediation: At a basic level, remediation (or reteaching) means "teaching again" content that students previously failed to learn.

The Actions We Take Now Must Be Different From What We've Done

Historically in Texas, **acceleration** from being **below grade-level** to being **on grade-level** occurs for only **4%** of students across all grades/subjects



With COVID, the # of students below grade level is likely to increase dramatically

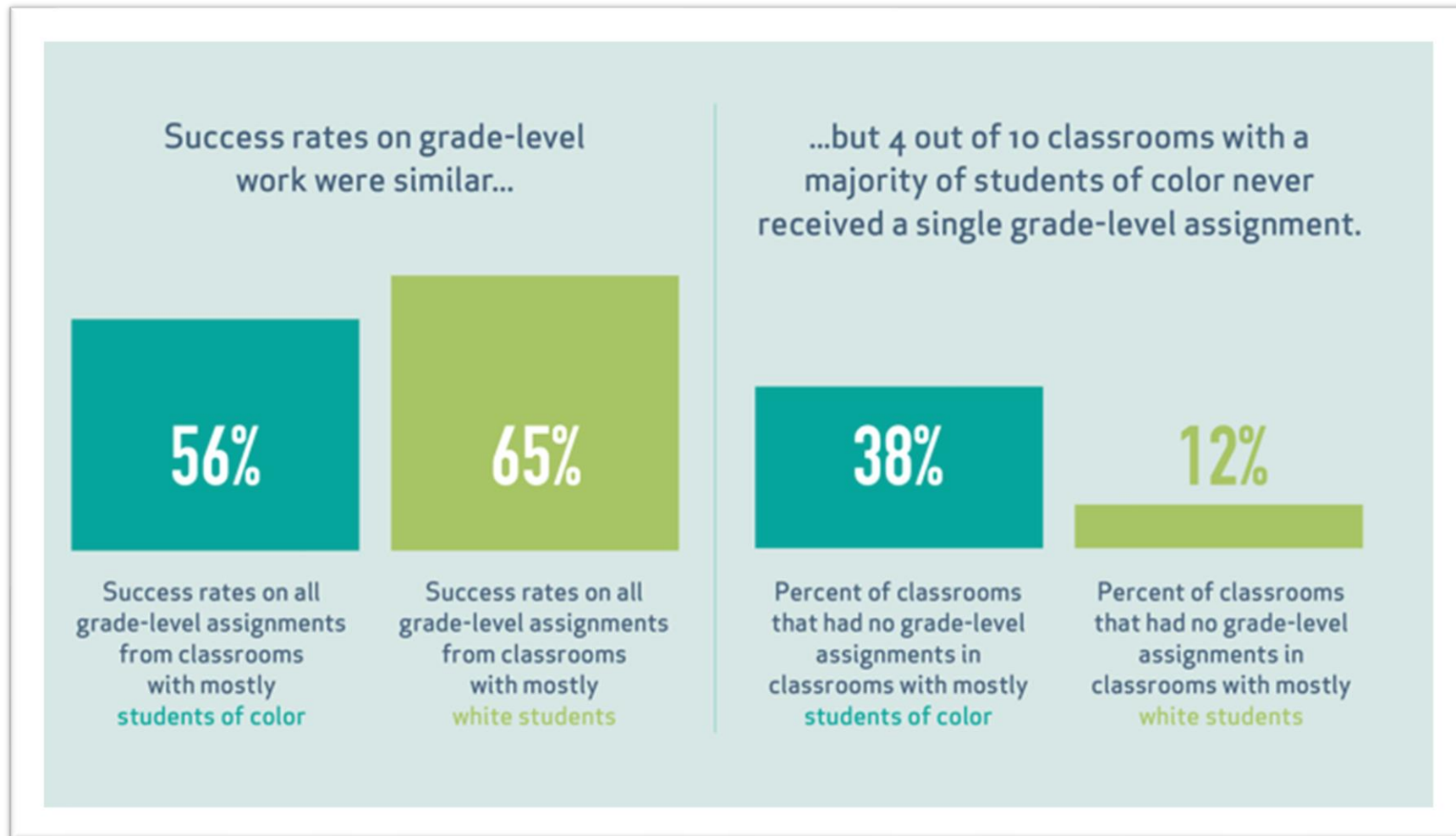
Due to COVID, students are likely to be further behind than ever before. And typical approaches to catching students up have not proven effective.



**Starting in '20-21, we need to accelerate
—not remediate—student learning.**

**That starts by keeping grade-level content
at the heart of instruction.**

When we gave students a chance to do grade-level work, they succeeded more than half the time.



Students who received more frequent access to grade-level content made significantly larger gains than their peers who did not.

In The *Opportunity Myth* sample, all students made

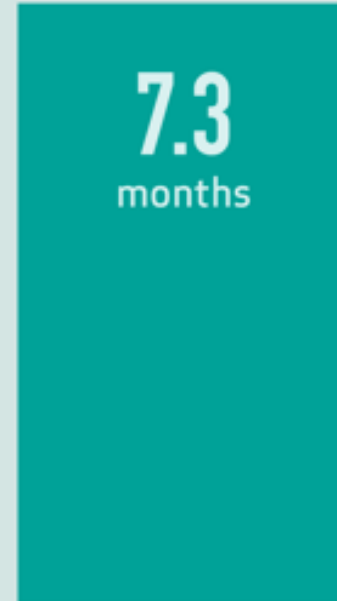
1.7
months



more months of
academic progress
when they had access
to **BETTER ASSIGNMENTS**.

But students who were
furthest behind made

7.3
months



more months of
academic progress
when they had access
to **BETTER ASSIGNMENTS**.

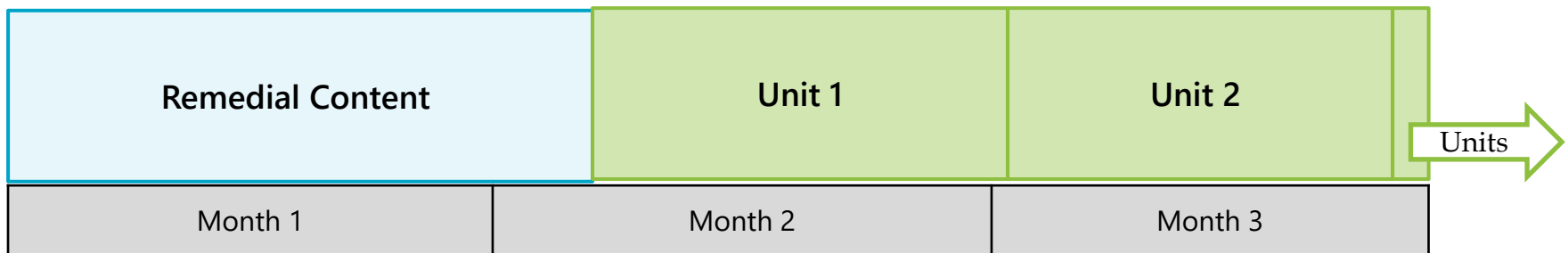
This tells us that we must **accelerate—not remediate**—student learning.

We're going to provide students access to grade-level work because we know they'll grow faster if we do so.



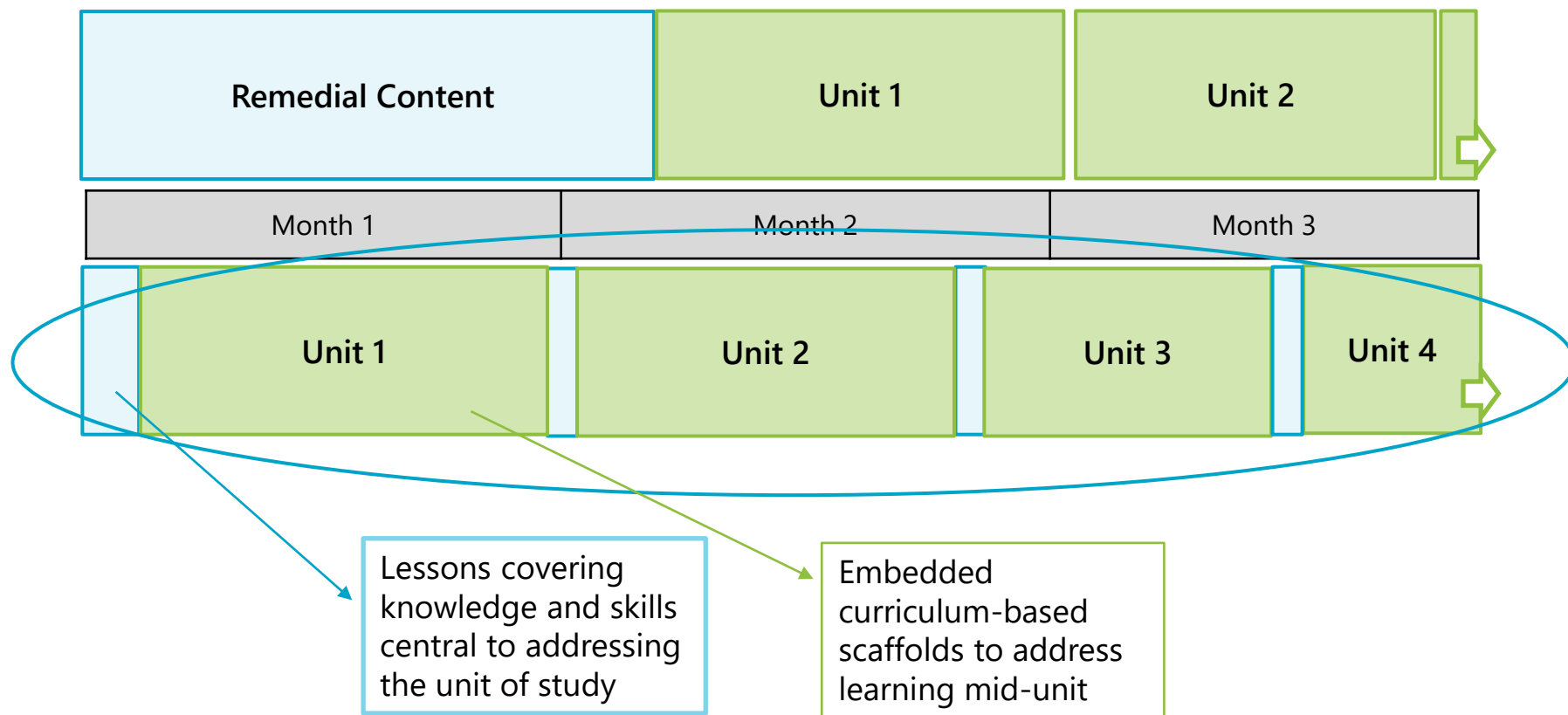
Remediation in Practice: The long runway to grade-level content can widen the achievement gap.

At a basic level, remediation (or reteaching) means reteaching content from previous units or grade levels that students previously failed to learn.

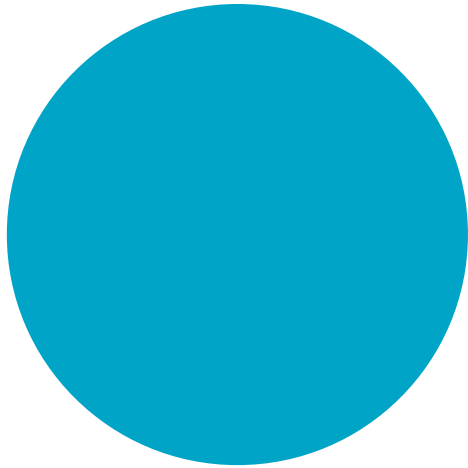


Acceleration with Just-In-Time Intervention

Just-in-time intervention strategically prepares students for success in current grade-level content by providing targeted support for the most **critical, prerequisite content for upcoming units** of study. Previous grade-level concepts and skills are addressed, but always in the context of current learning.



Accelerated Learning versus Remediation

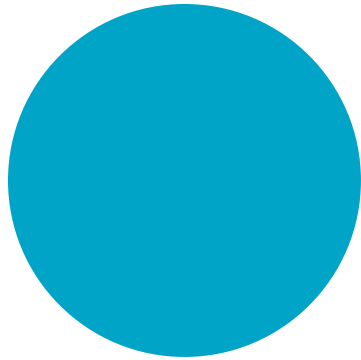


Remediation often focuses on drilling students on isolated skills that bear little resemblance to current curriculum. Activities connect to standards from years ago and aim to have students master content from years past.



Accelerated Learning strategically prepares students for success in current grade-level content. Acceleration readies students for new learning. Past concepts and skills are addressed, but always in the purposeful context of current learning.

Accelerated Learning with Just-in-Time Intervention



Accelerated Learning strategically prepares students for success in current grade-level content.

Acceleration readies students for new learning. Past concepts and skills are addressed, but always in the purposeful context of current learning.

- **Analyze:** Identify priority standards, skills, and content
- **Diagnose:** Unfinished learning on prerequisite and priority content
- **Plan:** Adapt instructional plans for just-in-time interventions.

Keys to Accelerating Learning through Just-in-time Intervention

Prioritize the most critical prerequisite skills and knowledge students will need to access that grade level content in upcoming units.

Diagnose students' unfinished learning on prerequisite content. Scope and deploy pre-unit assessments, preferably utilizing curriculum-based resources.

Integrate just-in-time lessons and supports in the scope and sequence to address unfinished learning on prerequisite content.

Adapt schedule to ensure ample time to support Tier 1 scope and sequence and to provide high-leverage Tier 2 & 3 intervention blocks for additional student support.

Train teachers and leaders to plan and execute just-in-time supports on critical content.

Monitor your students' progress.

Just-in-Time Intervention in Mathematics

Common Math Intervention Pitfalls

1. Remediation: Prioritizing below grade level content
2. Procedural Instruction: Focusing primarily on procedures to speed up instruction.
3. Tier I Fluency Focus: Prioritizing fluency practice at the expense of tier 1 instructional time

Common Math Intervention Pitfalls #1.

Remediation: Prioritizing below grade level content

"I can't teach this fourth-grade unit I know my students have mastered all of the 3rd grade content"

Instead...

Prioritize the most critical prerequisite skills and knowledge for each topic that students need now. Strategically add lessons or interventions to focus on critical skills and knowledge that are genuinely prerequisites, other content can be mastered while studying grade-level content.

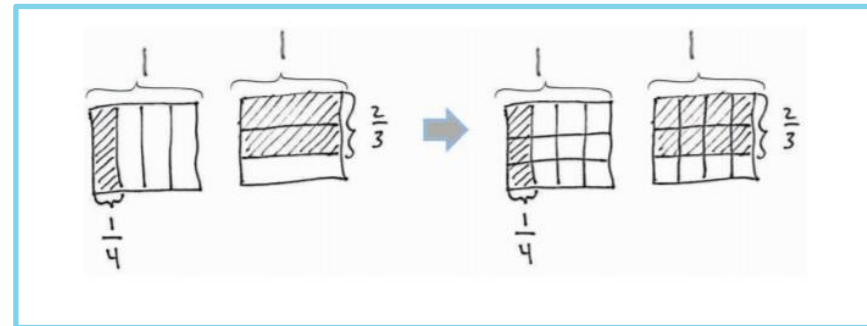
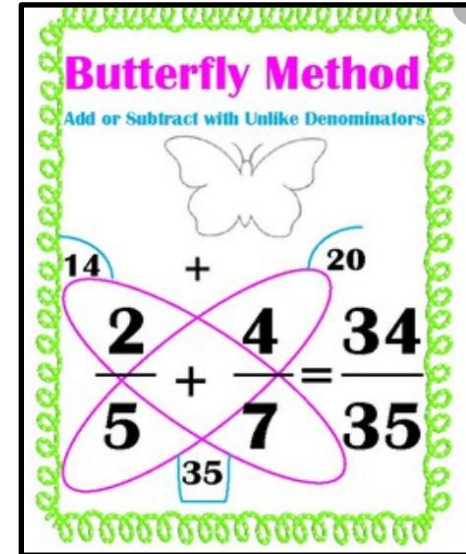
Common Math Intervention Pitfall #2.

Procedural Instruction: focusing on procedures to speed up instruction.

"I don't have enough time to teach conceptually. I need to model the quickest, easiest way to complete the problem so we can get through the content."

Instead...

Support teachers to teach conceptually, aligned to the full standard. Often, popular procedural tricks or shortcuts can slow student progress in later grades.



Common Math Intervention Pitfall #3

Tier 1 Fluency Focus: Prioritizing fluency practice at expense of tier 1 instruction

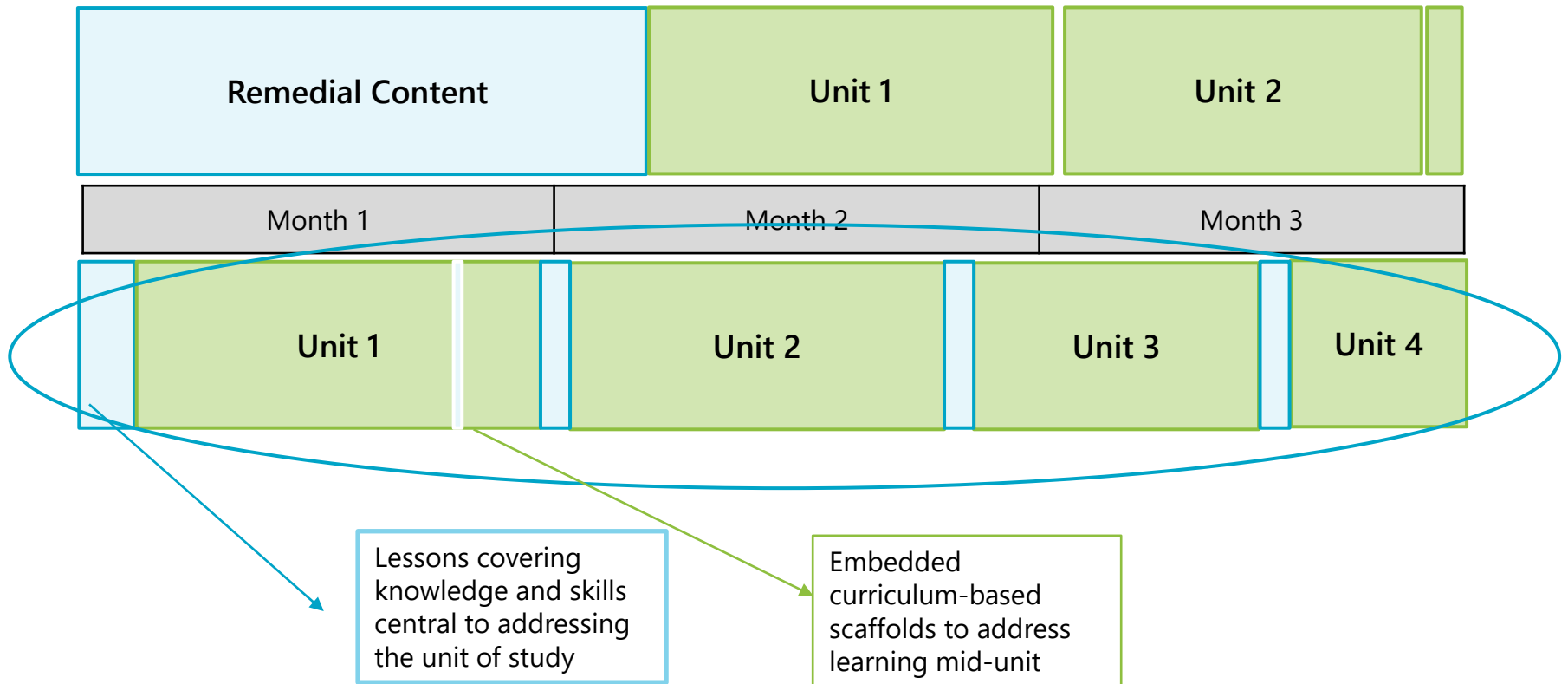
“Students don’t know their math facts yet so they’re not ready for this grade-level instruction. We need to get caught up on math facts so we can prevent mistakes and get to grade level content.”

Instead..

Analyze student work and TEKS. Often, students don’t need to master math facts before tackling grade level work. If fluency gaps are present, **adjust short, in-class fluency sequence in response to data and/or provide additional fluency practice in tier 2 or tier 3 interventions blocks.**

Acceleration with Just-In-Time Intervention

Just-in-time intervention strategically prepares students for success in current grade-level content by providing targeted support for the most **critical, prerequisite content for upcoming units** of study. Previous grade-level concepts and skills are addressed, but always in the context of current learning.



Just-In-Time Intervention: 2nd Grade Mathematics Example

Prioritize most critical prerequisite skills and knowledge for each topic that students need now

Geometry and Measurement

The student applies mathematical process standards to select and use units to describe length, area, and time.¹ The student is expected to:

- 2.9A find the length of objects using concrete models for standard units of length;
- 2.9B describe the inverse relationship between the size of the unit and the number of units needed to equal the length;
- 2.9C represent the length of objects using concrete models for standard units of length;
- 2.9D determine the length of objects using concrete models for standard units of length;
- 2.9E determine the length of objects using concrete models for standard units of length;

Foundation

The student is expected to:

- 1.7A use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement;
- 1.7B illustrate that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other;
- 1.7D describe a length to the nearest whole unit using a number and a unit.

Foundational Standards

The student is expected to:

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- 1.7D describe a length to the nearest whole unit using a number and a unit.

Focus Mathematical Process Standards

Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
- (E) create and use representations to organize, record, and communicate mathematical ideas;
- (F) analyze mathematical relationships to connect and communicate mathematical ideas;
- (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

DIAGNOSE student learning: Curriculum-embedded Assessments



Eureka Math Equip.

Pre-module assessments that focus on essential pre-module knowledge necessary to tackle grade level content in the unit.

BRANCH QUESTION 10 of 11


Measure the length of the crayon by dragging centimeter cubes next to the crayon. Then complete the sentence.

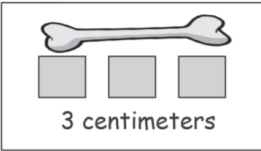
Utilize Previous Grade-Level Resources

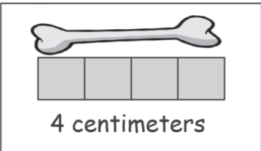
Grade 1, Module 3

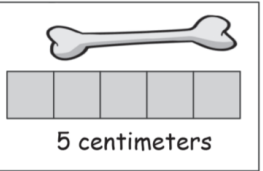
A STORY OF UNITS – TEKS EDITION

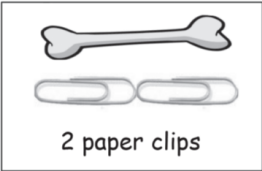
End-of-Module Assessment Task 1 • 3

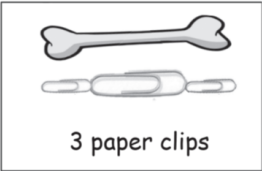
3. Circle the pictures that show a correct measurement.  is a centimeter cube.

a.  3 centimeters

b.  4 centimeters

c.  5 centimeters

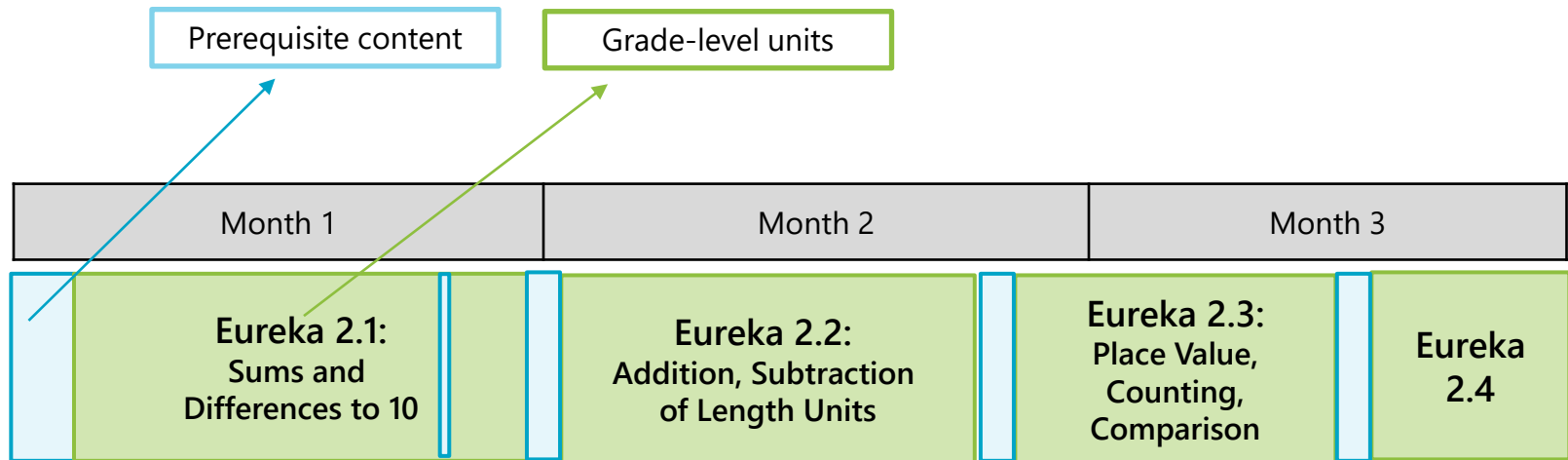
d.  2 paper clips

e.  3 paper clips

a. Why did you pick these pictures? Explain your thinking with two reasons.

Acceleration with Just-In-Time Intervention: Planning interventions

Adjust scope and sequence to prioritize small, just-in-time interventions in units to address gaps in prerequisite knowledge and skills.



1.7A: use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurements.

1.3 Lesson 4

A STORY OF UNITS – TEKS EDITION Lesson 4 1 • 3

Lesson 4

Objective: Express the length of an object using centimeter cubes as length units to measure with no gaps or overlaps.

Suggested Lesson Structure

2.9A: find the lengths of objects using concrete models for standard and unit of length

A STORY OF UNITS – TEKS EDITION Lesson 6 2 • 2

Lesson 6

Objective: Measure and compare lengths using centimeters and meters.

Suggested Lesson Structure

- Fluency Practice (11 minutes)
- Application Problem (7 minutes)

1st grade JIT lesson – Prerequisite Skills Mini-lesson

1.7A: use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurements.

1.3 Lesson 4

A STORY OF UNITS – TEKS EDITION

Lesson 4 1 • 3

Lesson 4

Objective: Express the length of an object using centimeter cubes as length units to measure with no gaps or overlaps.

Suggested Lesson Structure

A STORY OF UNITS – TEKS EDITION

Lesson 4 1 • 3

Concept Development (32 minutes)

Materials: (T) Projector, new crayon (9 cm), unsharpened pencil (19 cm), small glue stick (8 cm), dry erase marker (12 cm), centimeter cubes (S) Bag with 20 centimeter cubes; bag with a new crayon, unsharpened pencil, small glue stick, dry erase marker, jumbo craft stick (15 cm), and small paper clip (3 cm); measurement recording sheet (Template)

Note: Student bags contain items that are used throughout Topic B, although not all items in the bag are used during today's lesson. Collect the bags at the end of the lesson, and keep them in a safe place for future use. Also, collect the bags with centimeter cubes. The centimeter cubes are sent home for use in completing homework for today's lesson and for Lessons 5 and 6.









Have students sit in the meeting area in a semicircle.

- T: (Hold up a new crayon.) How can we find out the length of this crayon?
Turn and talk to your partner.
- S: Use a string. → Use a ruler.
- T: (Project centimeter cubes lined up in a column.) Let's find out how long this crayon is using these **centimeter cubes**. What do you notice about the centimeter cubes?
- S: They are all exactly the same size. → They have the same length.
- T: Since they have the same length, we can figure out how many centimeter cubes long this crayon is. Count with me as I lay down each centimeter cube to match the length of the crayon. (Lay out the first centimeter cube without aligning it to the crayon's endpoint.)
- T/S: 1 centimeter cube.
- T: Am I off to a good start?



Name Maria Date _____

Measure the length of each picture with your cubes. Complete the statements below.

- The pencil is 3 centimeter cubes long. 
- The pan is 5 centimeter cubes long. 
- The shoe is 4 centimeter cubes long. 
- The bottle is 5 centimeter cubes long. 
- The toothbrush is 4 centimeter cubes long. 
- The bag is 4 centimeter cubes long. 
- The ant is 3 centimeter cubes long. 
- The cookie is 2 centimeter cubes long. 

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2nd Grade Lesson Sequence:

Prioritize most important content when customizing lessons

- Identify and internalize embedded scaffolds in lesson
- Ensure students have enough practice on the most important content and skills.

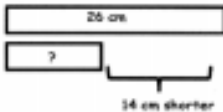
Select specific problems in the problem set and homework to emphasize specific skills in the lesson.

Name Sandy Date _____

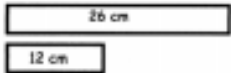
Use the RDW process to solve. Draw a strip diagram for each step. Problem 1 has been started for you.

1. Maura's ribbon is 26 cm long. Colleen's ribbon is 14 cm shorter than Maura's ribbon. What is the total length of both the ribbons?

Step 1: Find the length of Colleen's ribbon.

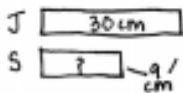
 $26 - 14 = 12$
Colleen's ribbon is 12 cm.

Step 2: Find the length of both ribbons.

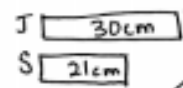
 $26 + 12 = 38$
The total length of both ribbons is 38 cm.

2. Jesse's tower of blocks is 30 cm tall. Sarah's tower is 9 cm shorter than Jesse's tower. What is the total height of both towers?

Step 1: Find the height of Sarah's tower.

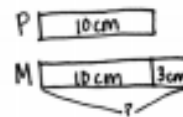
 $30 - 9 = 21$
Sarah's tower is 21 cm.

Step 2: Find the height of both towers.

 $30 + 21 = 51$
The total height of both towers is 51 cm.

3. Pam and Mark measured the distance around each other's wrists. Pam's wrist measured 10 cm. Mark's wrist measured 3 cm more than Pam's. What is the total length around all four of their wrists?

Step 1: Find the distance around both Mark's wrists.

 $10 + 3 = 13$
The length around 1 wrist is 13 cm.

$13 + 13 = 26$
The length around both wrists is 26 cm.

Prioritize most important fluency practice

A STORY OF UNITS – TEKS EDITION

Lesson 4 Sprint 2 • 2

B

Number Correct: _____

Improvement: _____

Related Facts

1.	$9 + 2 =$		23.	$15 - 7 =$	
2.	$2 + 9 =$		24.	$15 - 8 =$	
3.	$11 - 2 =$		25.	$9 + 6 =$	
4.	$11 - 9 =$		26.	$6 + 9 =$	
5.	$6 + 5 =$		27.	$15 - 6 =$	
6.	$5 + 6 =$		28.	$15 - 9 =$	
7.	$11 - 5 =$		29.	$7 + 5 =$	
8.	$11 - 6 =$		30.	$5 + 7 =$	
9.	$8 + 4 =$		31.	$12 - 5 =$	
10.	$4 + 8 =$		32.	$12 - 7 =$	
11.	$12 - 4 =$		33.	$9 + 5 =$	
12.	$12 - 8 =$		34.	$5 + 9 =$	

- Should happen as short, whole group practice.
- Can be used for additional student practice
- Can utilize fluency practice from earlier grade levels and/or in intervention blocks

DIAGNOSE & PLAN: Analyze Priority Content and Standards

Keys to Accelerating Learning through Just-in-time Intervention

Prioritize the most critical prerequisite skills and knowledge students will need to access that grade level content in upcoming units.

Diagnose students' unfinished learning on prerequisite content. Scope and deploy pre-unit assessments, preferably utilizing curriculum-based resources.

Integrate just-in-time lessons and supports in the scope and sequence to address unfinished learning on prerequisite content.

Adapt schedule to ensure ample time to support Tier 1 scope and sequence and to provide high-leverage Tier 2 & 3 intervention blocks for additional student support.

Train teachers and leaders to plan and execute just-in-time supports on critical content.

Monitor your students' progress.

After you've prioritized the critical prerequisite skills and content knowledge, you'll need to plan your approach to diagnosing students' unfinished learning for that prioritized set of skills and content knowledge.

- **Use diagnostics from high-quality adopted materials**
- **Plan to diagnose only your prioritized knowledge and skills**
- **Consider how much time you spend assessing your most struggling students**
- **Think through data you should collect**

Use strategic assessment to diagnose unfinished learning.

Assessments Should:

- Look ahead to provide information on the skills, language, and knowledge that students need to access grade-level content.
- Be specific to each content area & units of study.
- Be embedded in the curriculum as much as possible.
- Identify and build on student's assets.

Assessments Should NOT:

- Look behind at the complete set of lost learning without attention to priority content for the upcoming year.
- Be disconnected from the curriculum or lead a teacher to break the coherence of lessons to remediate.
- Map only student's deficits, which leads to a remediation mindset.

Focus assessment on getting teachers the most actionable instructional information possible to support grade-level learning.

Prioritize assessments that are closely connected to curriculum and classroom instruction

- Assessments that focus on the most important prerequisite content at each grade level and elevate the instructional core (teacher, student, and grade level subject/materials) are the most effective tools.
- Curriculum-embedded assessments within your system's high-quality curricular materials.

Time is precious. Assessment should focus on the instructional elements that matter most.

Planning to Support Just-in-Time Intervention in your System

Rather than addressing unfinished learning through “nine weeks of remediation” or some other structure that puts students in below-grade-level work, you should:

Adopt quality instructional materials and set the expectation that teachers use them. Rather than teachers spending tremendous personal time planning their own activities, support them to prepare to use the high-quality materials that you’ve adopted.

Build the calendar and schedule you need to help students reach the demands of grade level standards. Adjust master schedules to provide adequate time for JIT supports and additional interventions, if needed.

Train teachers and leaders on the principles and tools of JIT acceleration to ensure teachers cover prerequisite content within grade-level learning.

Monitor student progress.

Planning to Support Just-in-Time Intervention in your System

Adopt quality instructional materials and set the expectation that teachers use them.

- Evaluate quality of Tier 1 and Tier 2 & 3 instructional materials.
- Explore available quality instructional materials.
- Evaluate diagnostic tools for highest-leverage data, including screeners and available curriculum-embedded curriculum.

Build the calendar and schedule you need to help students reach the demands of grade level standards. Adjust master schedules to provide adequate time for JIT supports and additional interventions, if needed.

- Collect and evaluate master schedules
- Begin planning and adjusting summer and fall instructional sequence

Train teachers and leaders on the principles and tools of JIT acceleration to ensure teachers cover prerequisite content within grade-level learning.

- Pilot and practice just-in-time instructional practices with a group of teachers or in a single grade-level this spring.
- Plan summer PD to ensure JIT intervention and acceleration training opportunities.
- Plan to support students at all different levels in and out of Tier 1 instruction.

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Breakout #1: District Leadership



Review the accelerated learning and just-in-time intervention recommendations. Which feel most critical for your district right now?

What systems does your district have in place to support just-in-time acceleration?

Keys to Accelerating Learning through Just-in-time Intervention

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Diagnose students' unfinished learning on prerequisite content. Scope and deploy pre-unit assessments, preferably utilizing curriculum-based resources.

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Adapt schedule to ensure ample time to support Tier 1 scope and sequence and to provide high-leverage Tier 2 & 3 intervention blocks for additional student support.

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Leader Actions: Supporting Just-in-Time Acceleration

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Train teachers and leaders on the principles and tools of JIT acceleration to ensure teachers cover prerequisite content within grade-level learning.

Monitor student progress.

DIAGNOSE: To determine your approach to diagnosing student learning and thinking you'll want to...

Plan your approach to understanding student learning and thinking needs and continued challenges.

Developing a strategy for diagnosing student learning and thinking requires that we more deeply understand the limitations and value of assessments and cultivate a more robust vision of what assessments can be.



Utilize available data:

For applicable grade levels, analyze student performance on standards

Curriculum-Embedded Assessments:

District will utilize Eureka math embedded assessment tools

PLAN: Develop a Professional Development Plan to Support Teaching Planning and Implementation

Create a plan to support teachers and leaders to implement JIT strategies

Materials Selection:

Evaluate materials and assessments to ensure teachers have access to strong resources. Select and pilot new materials.

Leader Training:

Train leaders on JIT intervention strategies, with emphasis on using curriculum materials

Teacher Training:

Train teachers on JIT intervention in their content and with district curriculum materials

Progress Monitoring:

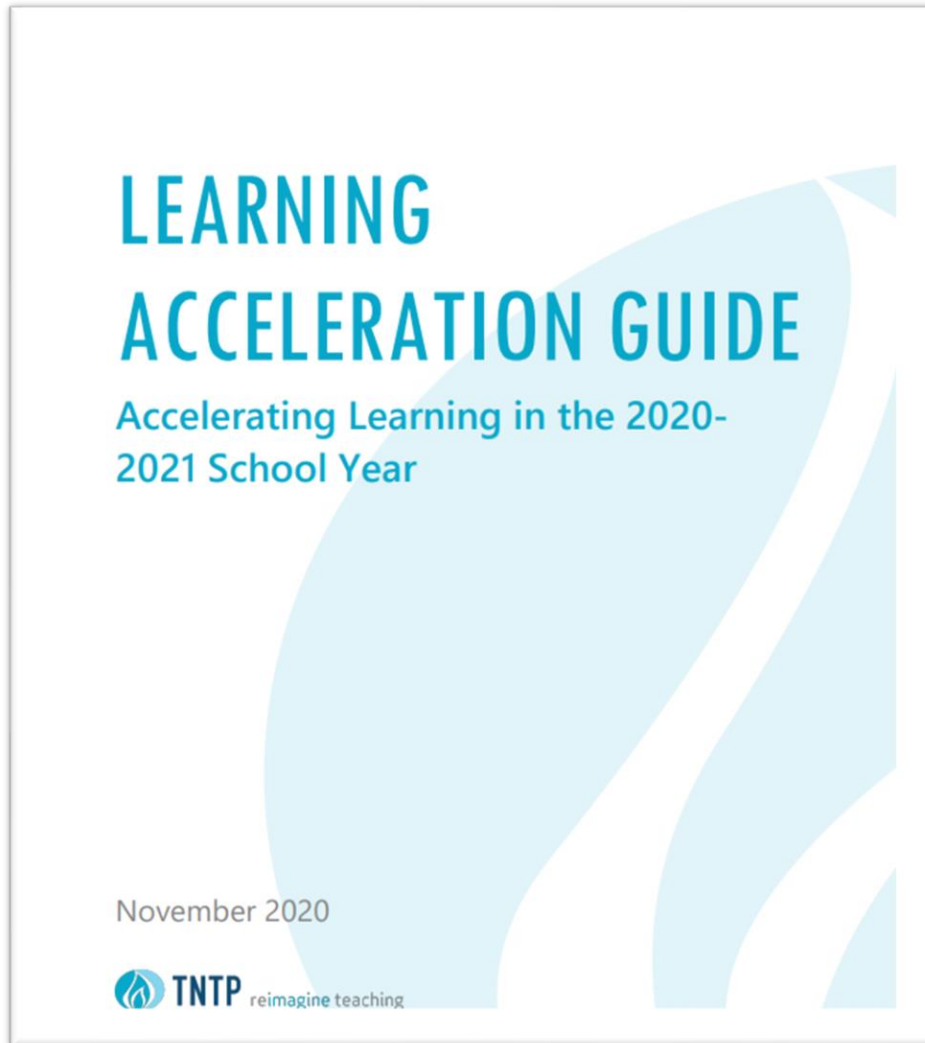
Monitor student progress in priority grade levels throughout the year.

District Leader Reflection



Looking ahead, what steps will you take to support your district to improve acceleration through just-in-time intervention?

For more information, read more about the goals that we've encouraged systems to set – and how systems might measure them.



TNTP's Learning Acceleration Guide provides additional resources for district and school leaders

Breakout #2

School Leaders



Review the accelerated learning and just-in-time intervention recommendations. Which feel most critical for your school right now?

What systems does your school have in place to support just-in-time acceleration?

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Create a plan to support teachers and leaders to implement JIT strategies

Materials Selection:

Evaluate materials and assessments to ensure teachers have access to strong resources. Select and pilot new materials.

Leader Training:

Train leaders on JIT intervention strategies, with emphasis on using curriculum materials

Teacher Training:

Train teachers on JIT intervention in their content and with district curriculum materials

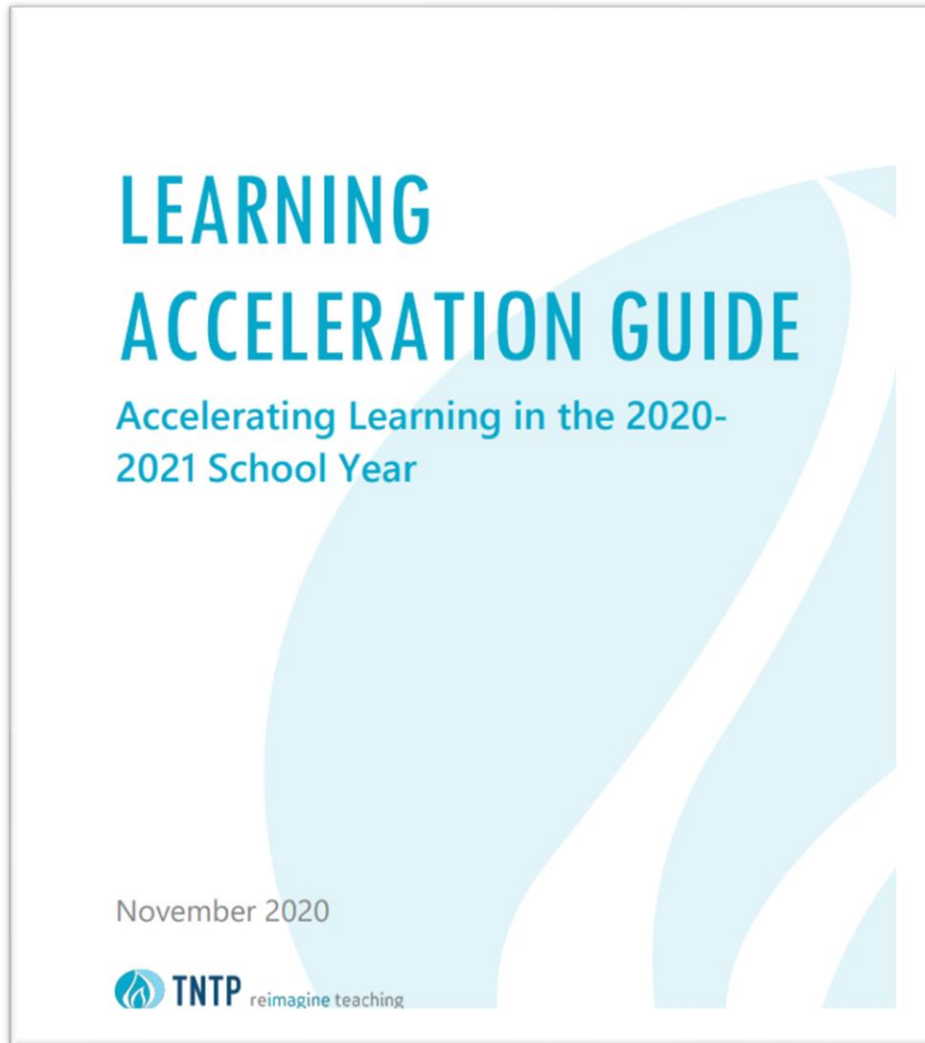
Progress Monitoring:

Monitor student progress in priority grade levels throughout the year.



Looking ahead, what steps will you take to support your school to improve acceleration through just-in-time intervention?

For more information, read more about the goals that we've encouraged systems to set – and how systems might measure them.



TNTP's Learning Acceleration Guide provides additional resources for district and school leaders