Accelerate Math
Spring 2021

Overview

Accelerate

Accelerate is an **equal-access**, just-in-time tutoring model that is focused on identifying, celebrating, and building upon the assets students bring to the learning experience.

An acceleration approach addresses unfinished learning in an equitable way.

Acceleration means connecting unfinished learning in the **context** of new learning, integrating new information and the needed prior knowledge.

What is Acceleration?

ACCELERATION IS	ACCELERATION IS NOT
✓ Achieved through tutoring, or extra time, that supports students in building the knowledge and skills required to be successful in core instruction within the context of a high-quality curriculum.	✗ Speeding up teaching or compressing content.
✓ A type of intervention.	✗ Teaching skills in isolation from current, grade-level learning.
✓ Proactive, deliberate action planning.	✗ Grade retention or skipping.
✓ Targeted and individualized for students based on their specific needs as gathered from diagnostic and formative data collected as students engage in the work of the curriculum.	✗ A substitution for more intensive interventions students might also need.
	✗ Computer programs, workbooks, or test preparation.
	✗ Boot camp or reteaching of previous grade skills at the beginning of the school year.
	✗ Utilizing resources or programs that are disconnected from the high-quality curriculum.
	✗ Determined only through standards-based assessing and reporting absent of high-quality curriculum embedded assessments.
	✗ Grouping students by perceived ability.

Agenda

I. Purpose
II. Acceleration Approach In Math
III. Math Resources
IV. Acceleration Cycle Deep Dive
V. Closing

Purpose

Purpose

Louisiana believes that all students, including students with disabilities, English learners, and students who persistently struggle, can achieve grade-level standards. To ensure that this vision is realized for all students, the following things have to be true.

1. All students should access **on-grade-level** instruction every day through a **high-quality curriculum** in the least restrictive environment.
2. Supports for students should supplement instruction and accelerate student progress by preparing students for **new learning**.
3. All teachers who support struggling learners, including but not limited to general education, special education, English learners, and intervention teachers, should be **trained on the curriculum** and should **plan in a coordinated way** to ensure all students are prepared for grade-level content during core instruction.

Core Pillars

Accelerate has three core pillars with practices identified in each pillar that provide the highest academic return on investment. For maximum impact, these pillars must be implemented in tandem.

Approach in Math

Accelerate Math: Approach

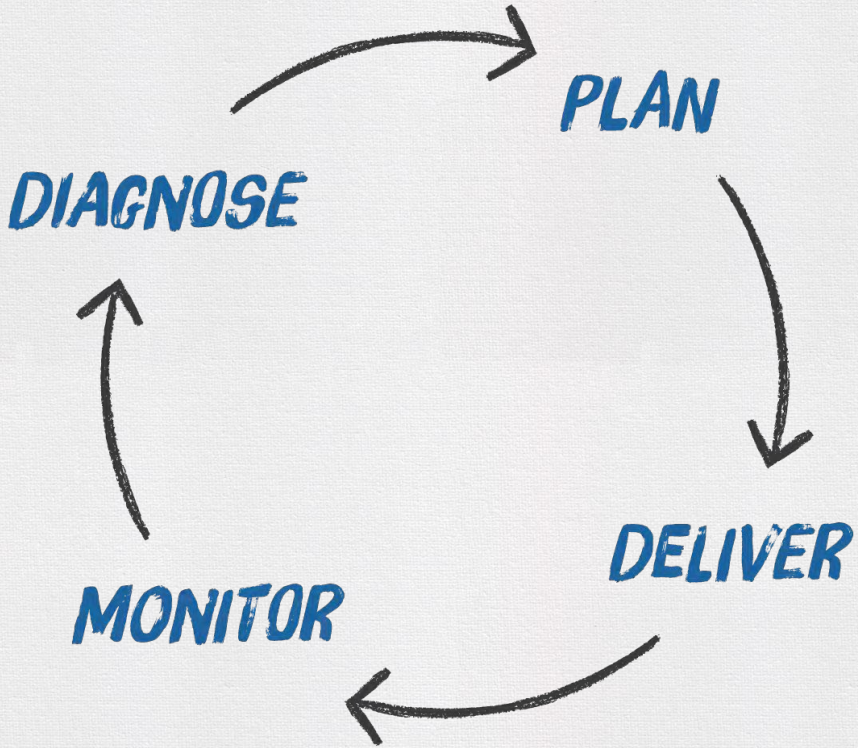
The approach in math focuses on scaffolding previous grade-level conceptual understanding.

In addition to the supports provided within the existing high quality curriculum, teachers should:

- Engage students with previous grade-level content in a timely manner with explicit connections to the on-grade-level content with which students are currently engaging.
- Review data specific to essential prerequisite knowledge and skills for upcoming lessons and determine when and how to act based on the evidence of the unfinished learning in the class.

Acceleration Cycle

The Acceleration Cycle is a structure of continuous planning and responding to address student needs.



Resources

Tools to Support Accelerating Math

Learning Acceleration Guidance provides quick access to coherent connections between on-grade-level and prerequisite or corequisite standards.

Eureka Acceleration Tools provide short three question screeners on prerequisite standards for specific topics. The tools also provide suggested lessons materials to use with students to ensure readiness for grade level content.

DEPARTMENT of EDUCATION
Louisiana Believes

Louisiana STUDENT STANDARDS MATHEMATICS

Grade 5 Learning Acceleration Guidance

Learning acceleration will ensure students have the skills they need to equitably access and practice on-grade level content. This chart is a reference guide for teachers to help them more quickly identify the specific prerequisite and co-requisite standards necessary for every Grade 5 math standard. Students should spend the large majority of their time on the major work of the grade (■). Supporting work (■) and, where appropriate, additional work (■) can engage students in the major work of the grade.

5th Grade Standard	Previous Grade(s) Standards	5th Grade Standards Taught in Advance	5th Grade Standards Taught Concurrently
5.OA.A.1 Use parentheses or brackets in numerical expressions, and evaluate expressions with these symbols.			
5.OA.A.2 Write simple expressions that record calculations with whole numbers, fractions and decimals, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18,932 + 9.21) is three times as large as 18,932 + 9.21, without having to calculate the indicated sum or product.*		5.OA.A.1 Use parentheses or brackets in numerical expressions, and evaluate expressions with these symbols.	5.NF.B.5 Interpret multiplication as scaling (resizing). a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case). c. Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1. d. Relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

To become mathematically proficient, students **must** access on-grade-level content. The Eureka Acceleration Tools aim to help teachers who use the Eureka curriculum to ensure readiness for students before and **while** approaching on-grade-level work, creating opportunities for timely support directly connected to the new learning.

Eureka Acceleration Tools include:

1. a diagnostic assessment to help teachers determine the misunderstandings or gaps in mathematical knowledge related to a specific Topic in the Eureka curriculum
2. guidance for teachers to analyze student work on the diagnostic assessment
3. suggested materials for targeted remedial instruction

Note: The use of the Acceleration guidance is not intended to delay students' engagement with on-grade-level learning. On-grade-level learning should be the focus of instructional time and be treated as an opportunity for students to "finish" learning previous skills and deepen conceptual understanding.

Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Algebra I
Module 1, Topic A	Module 1, Topic A	Module 1, Topic A	Module 1, Topic A	Module 1, Topic A	Module 1, Topic B
Module 1, Topic D	Module 1, Topic B	Module 1, Topic B	Module 1, Topic B	Module 1, Topic B	Module 1, Topic C
Module 1, Topic E	Module 1, Topic C	Module 1, Topic C	Module 1, Topic C	Module 4, Topic A	Module 1, Topic D
Module 1, Topic F	Module 1, Topic D	Module 2, Topic A	Module 2, Topic A	Module 4, Topic B	Module 2, Topic A
Module 3, Topic C	Module 2, Topic B	Module 2, Topic B	Module 2, Topic B	Module 4, Topic C	Module 2, Topic C
Module 5, Topic A	Module 3, Topic B	Module 2, Topic C	Module 2, Topic C	Module 4, Topic D	Module 2, Topic D
Module 5, Topic C		Module 2, Topic D	Module 3, Topic A	Module 5, Topic A	Module 3, Topic A
Module 5, Topic D		Module 4, Topic A	Module 3, Topic B	Module 5, Topic B	Module 3, Topic B
		Module 4, Topic D	Module 3, Topic C	Module 6, Topic A	Module 4, Topic A
		Module 4, Topic G	Module 4, Topic A		

Math Resources

The **Accelerate Math** resources are built as proactive support to upcoming classroom content in order to ensure students' readiness for grade level mathematics. Math tutoring resources are designed to provide support on the most essential prerequisite knowledge and skills to support success in next week's upcoming lessons. Materials for each grade-level include correlations to in-class lessons, links to Google slide presentations for each tutoring session, links to virtual manipulatives, and Desmos activities when available. Sessions were designed for one hour of virtual instruction for two sessions per week, but teachers should adjust to the mode of delivery, time, technology, and resources available. Elements of the Google slide presentations can be delivered as is, written on paper and shown to students through a document camera, imported into other presentation software or platforms, or used with students physically present.

Spring Release Schedule		
Set 1 **Five weeks of resources**	**Set 2** **Five weeks of resources**	**Set 3** **Five weeks of resources**
January 30	February 15	February 26
Additional resources will be released throughout the summer and fall of 2021.		

Accelerate Math Resources										
Pre-K Coming Soon	Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6 Eureka Math Grade 6 Illustrative Math	Grade 7 Eureka Math Grade 7 Illustrative Math	Grade 8 Eureka Math Grade 8 Illustrative Math	High School Coming Soon

Grade 2				
Session Accelerates to these Grade-Level Lessons	**Session Focus Topic:**	**Connected Grade-Level Standards.**	**Source Content and Foundational Standards**	**Resources**
Module 4 (Lessons 1-5)	Sums and Differences within 100	2.OA.A.1, 2.NBT.B.5	G1 M6 L5, G1 M6 L11, G1M4 L12,L14, L16, L17, L19 Foundational Standards: 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.1, 2.OA.B.2, 1.OA.B.3, 2.NBT.1	• Desmos Activity Session 1 • Desmos Activity Session 2 • 100-bead virtual Rekenrek • VIrtual Unifix Cubes • Whiteboard or paper
Module 4 (Lessons 6-10)	Strategies for Composing a Ten	2.OA.A.1, 2.NBT.B.5, 2.NBT.B.7	G1M4 L26 - 29, G1M6 L16 Foundational Standards: 1.NBT.C.4, 1.OA.B.3, 2.NBT.5	• Desmos Activity Session 1 • Desmos Activity Session 2 • VIrtual Unifix Cubes • VIrtual Base Ten Blocks • Whiteboard or paper

Focus standard for class: 2.OA.1, 2.NBT.7, 2.NBT.9

Prerequisite Standard: 1.OA.1, 1.NBT.C.4, 1.OA.B.3, 2.NBT.5

Vocabulary: number bond, two-digit number, decompose, unbundle, part, whole, number sentence

Rigor: conceptual understanding, procedural and fluency, 2.OA.1 (application)

Manipulatives/ Materials: place value chart, white board,dry erase marker, virtual 20-bead Rekenrek, Virtual Unifix Cubes, Desmos activity session 1, Desmos activity session 2

Tutor Notes: Decomposing a ten to subtract from a two digit number is a brand new concept for 2nd graders. Most of the first grade standards are based on addition with 2 digit numbers. Start the tutoring lessons with unifix cubes so that the students have a concrete visual of decomposing a ten into ten ones by breaking the ten stick into cubes. Refer back to that ten stick of cubes throughout these lessons when you are talking about decomposing or unbundling a ten.

Coming Soon

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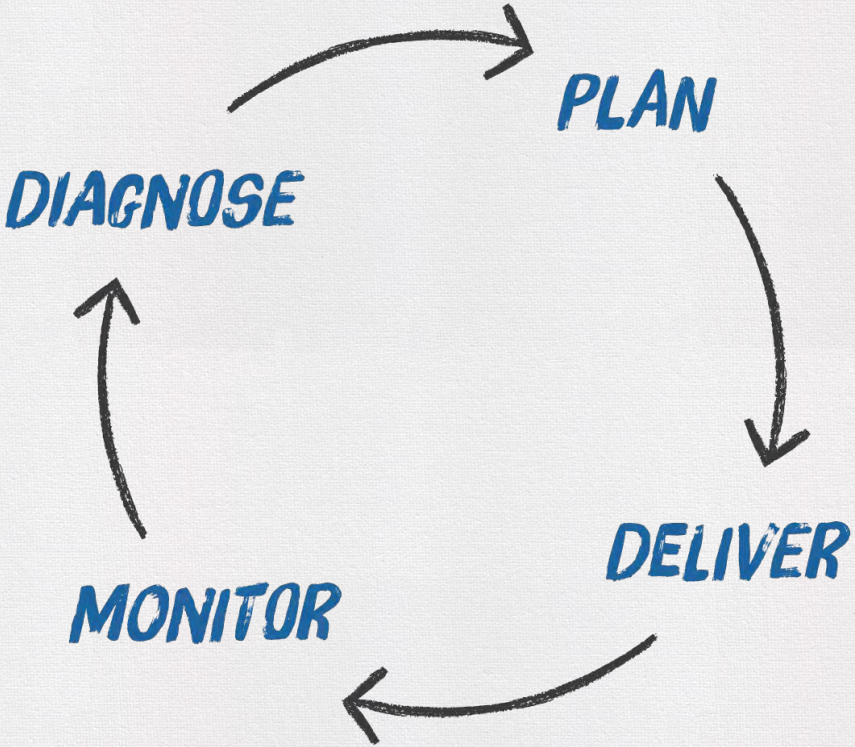
Acceleration Cycle Deep Dive

Example from
Grade 7 Module 3 Topic A

Acceleration Cycle



Diagnose

Eureka Acceleration Tool: Grade 7
Module 3, Topic A

To become mathematically proficient, students **must** access on-grade-level content. This document aims to help teachers who use the Eureka curriculum to ensure readiness for students before and during on-grade-level work, creating opportunities for timely support directly connected to the new learning.

About this Topic

Focus Standards:

7.EE.A.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients to include multiple grouping symbols (e.g., parentheses, brackets, and braces).

7.EE.A.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example,* $a + 0.05a = 1.05a$*, means that "increase by* 5%*" is the same as "multiply by* 1.05*".*

Topic Overview per the Eureka Curriculum

In Lesson 1 of Topic A, students write equivalent expressions by finding sums and differences extending the *any order* (commutative property) and *any grouping* (associative property) to collect like terms and rewrite algebraic expressions in standard form (**7.EE.A.1**). In Lesson 2, students rewrite products in standard form by applying the commutative property to rearrange like items (numeric coefficients, like variables) next to each other and rewrite division as multiplying by the multiplicative inverse. Lessons 3 and 4 have students using a rectangular array and the distributive property as they first multiply one term by a sum of two or more terms to expand a product to a sum, and then reverse the process to rewrite the sum as a product of the GCF and a remaining factor. Students model real-world problems with expressions and see how writing in one form versus another helps them to understand how the quantities are related (**7.EE.A.2**). In Lesson 5, students recognize that detecting inverses and the identity properties of 0 for addition and 1 for multiplication allows for ease in rewriting equivalent expressions. This topic culminates with Lesson 6 with students applying repeated use of the distributive property as they collect like terms containing fractional coefficients to rewrite rational number expressions.

Eureka Acceleration Tool: Grade 7
Module 3, Topic A

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Part A: 6.EE.A.3

1. Apply properties of operations to write an equivalent expression.
   $t + t + t + t$

2. Apply the distributive property to write an equivalent expression.
   $4(2 + w)$

3. Apply the distributive property to write an equivalent expression.
   $21b + 28c$

Part A: 6.EE.A.3

1. Apply properties of operations to write an equivalent expression.

   $t + t + t + t$

Period 3 30 Students	Three Correct	Two Correct	One Correct	None Correct
6.EE.A.3	2	18 Most missed Q3	7	3
6.EE.A.4	2	18 Most missed Q3	9	1

2. Apply the distributive property to write an equivalent expression.

   $4(2 + w)$

3. Apply the distributive property to write an equivalent expression.

   $21b + 28c$

Plan and Deliver

Grade 7 - Eureka Math				
Session Accelerates to these Grade-Level Lessons	**Session Focus Topic:**	**Connected Grade-Level Standards.**	**Source Content and Foundational Standards**	**Resources**
Grade 7 Module 3 Topic A Lessons 1-3	Writing equivalent expressions	7.EE.A.1, 7.EE.A.2	G6 M4 6.EE.A.3, 6.EE.A.4	• Desmos Activity Session 1 • Desmos Activity Session 2 • Whiteboard or paper
Grade 7 Module 3 Lessons 4-6	Understanding the opposite of a number and operating with fractions	7.EE.A.1, 7.EE.A.2	G7 M2 and G5 M3 6.EE.A.3, 6.EE.A.4, 7.NS.A.1a, 7.NS.A.1b, 5.NF.A.1, 5.NF.A.2	• Desmos Activity Session 1 • Desmos Activity Session 2 • Whiteboard or paper

Monitor

Grade 7 - Eureka Math				
Session Accelerates to these Grade-Level Lessons	**Session Focus Topic:**	**Connected Grade-Level Standards.**	**Source Content and Foundational Standards**	**Resources**
Grade 7 Module 3 Topic A Lessons 1-3	Writing equivalent expressions	7.EE.A.1, 7.EE.A.2	G6 M4 6.EE.A.3, 6.EE.A.4	• Desmos Activity Session 1 • Desmos Activity Session 2 • Whiteboard or paper
Grade 7 Module 3 Lessons 4-6	Understanding the opposite of a number and operating with fractions	7.EE.A.1, 7.EE.A.2	G7 M2 and G5 M3 6.EE.A.3, 6.EE.A.4, 7.NS.A.1a, 7.NS.A.1b, 5.NF.A.1, 5.NF.A.2	• Desmos Activity Session 1 • Desmos Activity Session 2 • Whiteboard or paper

Possible Questions

1. My school system uses a curriculum other than Eureka Math or Illustrative Math. How can this help me?
2. Are there other ways to utilize these resources outside of a "tutoring" session?
3. Is it ever a good idea to do a session with a whole class?
4. Do I use these resources with the same group of students each week?

Feedback and Questions

Please provide feedback on the Accelerate Math Resources by filling out this form.

http://bit.ly/2MpDlzA

For questions or suggestions, please reach out to STEM@la.gov.