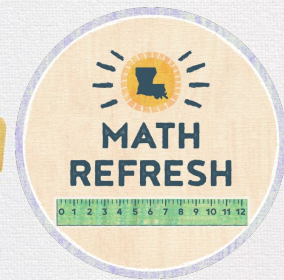


LOUISIANA DEPARTMENT OF EDUCATION



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# Build Fluency with New Math Resources Summer Webinar

July 20, 2023  
11 a.m.

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# Objectives

By the end of this session, you should be able to

- understand the Math Refresh approach to fluency; and
- plan for how FLAME resources can be used with your current curriculum.

# Louisiana's Math Pillars



school structures  
prioritize **all students'**  
successful engagement  
in **high-quality,**  
**grade-level core math**  
**instruction** alongside  
peers



**timely, proactive**  
**interventions**  
connecting  
prerequisite learning to  
upcoming and current  
grade-level work



ongoing  
**professional**  
**learning and**  
**proactive planning**  
are essential for  
effective teaching  
and accelerating



**families,**  
**caregivers, and**  
**communities** play  
an essential role at  
all ages and stages

The [Louisiana Math Comprehensive Plan](#) outlines state and system actions to support math success for all students.



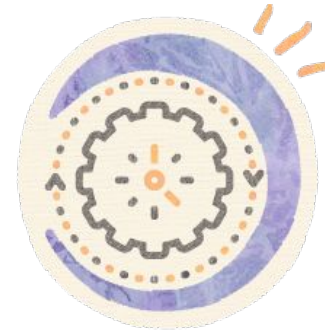
# Accelerating Math Learning



Teachers have access to **high-impact structures and systems** to support their growth.



Teachers have access to **high-quality, aligned resources.**



Teachers are prepared to lead **highly-effective instruction in positive, inclusive environments** every day.

**What is fluency?**







# Fluency Defined




Procedural fluency includes accuracy, efficiency, flexibility, and appropriate strategy selection. Fluency develops along a concrete, pictorial, abstract progression.

**K.OA.A.1** Represent addition and subtraction with objects, fingers, mental images, drawings\*, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.  
 \*Drawings need not show details, but should show the mathematics of the problem. (This applies wherever drawings are mentioned in the Standards.)

Concrete	Representational	Abstract
Students use manipulatives and counting to add.  $3 + 2 = 5$	Students use fingers to add or draw the following picture.  $3 + 2 = 5$	Solve the problem $3 + 2$  $3 + 2 = 5$

**4.NBT.A.2** Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals, number names, and expanded forms. Compare two multi-digit numbers based on the meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

Concrete	Representational	Abstract
Which number is larger? 4,942 or 4,492  $4,942 > 4,492$	Which number is larger? 4,942 or 4,492 $4000 + 900 + 40 + 2 > 4000 + 400 + 90 + 2$ $4,942 > 4,492$	Which number is larger? 4,942 or 4,492 $4,942 > 4,492$

[Math Fact Fluency](#) (ASCD, NCTM)



# Fluency Defined



The fundamental understanding of student fluency attainment acknowledges the following statements are true.

- Mastery must focus on fluency.
- Fluency develops in three stages: counting, deriving, and mastery.
- Foundational facts precede derived facts.
- Timed tests do not assess fluency.
- Students need substantial and enjoyable practice.

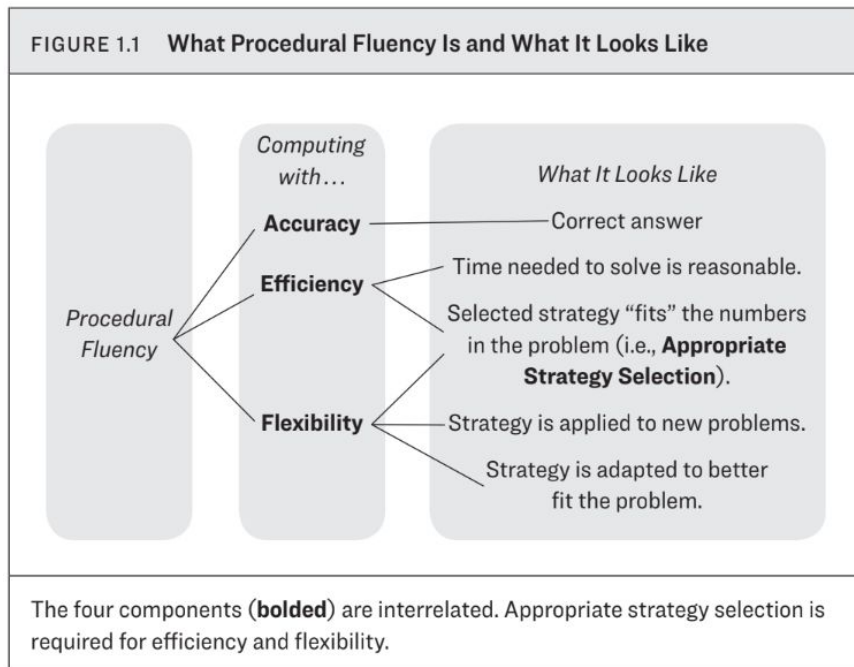


# Fluency Defined continued

## Procedural Fluency



Procedural fluency applies to all operations, not just basic facts, and these elements of fluency are interrelated. (Bay-Williams and Stokes Levine, 2017)



[Math Fact Fluency](#) (ASCD, NCTM)





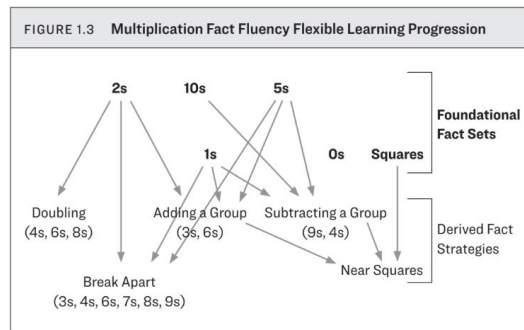
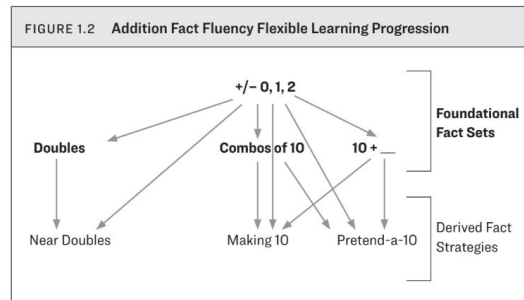
# Fluency Defined continued

## Foundational Facts



It is essential when defining fluency that we consider the progression from **foundational** to **derived** facts.

- A **foundational fact set** is a set of facts that illustrate a specific pattern or number relationship. For example, one less facts can be connected to counting, the number line, and the idea of taking away one.



[Math Fact Fluency](#) (ASCD, NCTM)



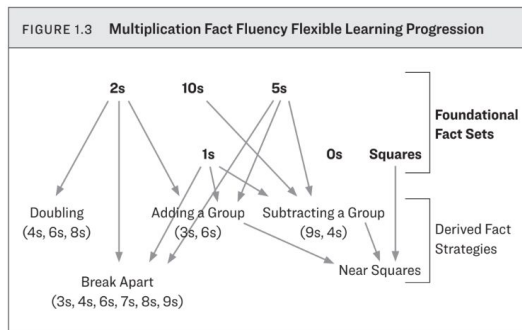
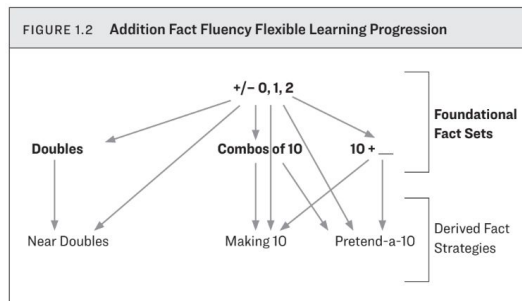
# Fluency Defined continued

## Derived Facts



It is essential when defining fluency that we consider the progression from foundational to derived facts.

- **Derived facts** are facts that students come to know through strategy application.



[Math Fact Fluency](#) (ASCD, NCTM)



# Grade Level Fluency

Refer to the chart.

What do you notice about the progressions?

What surprises you?

K	1	2	3	4	5
<b>Counting</b>					
Count to 100 by tens and ones	Given a two digit number, mentally find 10 more or 10 less than the number	Count within 100, skip count by 5s, 10s, and 100s			
Count to answer "how many?"		Read and write numbers to 1000			
		Mentally add 10 or 100 to a given number 100-900			
		Measure to determine how much longer one object is than another			
<b>Add and subtract within 20</b>					
add and subtract within 5	Understand the meaning of the equal sign	Add and subtract within 20 using mental strategies			
compare numbers between 1 and 10	Determine unknown number in an addition or subtraction equation				
write numbers 0 to 20		Add and subtract within 100 using strategies			
			<b>Add, subtract, multiply, and divide</b>		
			Multiply and divide within 100	Add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000	Multiply multi-digit whole numbers using the standard algorithm
			Add and subtract within 100		

**Introducing  
Foundational Resources for  
Accelerating Math Education  
(FLAME)**



# Foundational Lessons for Accelerating Math Education (FLAME)

FLAME activities complement high-quality instructional materials by building students' accuracy, efficiency, and flexibility with grade-appropriate fluency skills.

FLAME resources will provide

- activities designed to build grade-level foundations alongside high-quality resources;
- formative tools for teachers to understand students' learning; and
- tools to communicate to parents.

# How to Use FLAME Resources



## FLAME Resources

- can be used as a supplement to your Tier 1 curriculum;
- are designed to be used as just-in-time supports for students who struggle with mastery of a standard because of their lack of fluency;
- are not intended to be used with every student;
- include lessons that are about five to ten minutes with a built-in assessment to help teachers determine next steps for individual students and instruction; and
- is not a substitute for strong classroom instruction provided through high-quality instructional materials or meant to replace the fluency-building activities within those materials.



# What's Included in a FLAME Unit



Each **unit** of FLAME will include

- **Lessons**
- **Formative Assessments**
- **Tracking Tools**
- **Parent Reports**



# What's Included in a FLAME Lesson



Each **lesson** of FLAME will include

- The **title** of the lesson
- The **approximate time** the lesson will take for completion
- **Materials** that will be needed for the lesson
- The anticipated **student outcome** of the lesson
- The **standard** addressed in the lesson
- The **future standard** that the lesson aligns to
- **Notes** and suggestions for teachers
- A **vignette** for the lesson
- An **assessment** of the lesson with suggested next steps

Fluency Activity	Count Coins
Approximate Time	3 minutes
Materials	Pennies, nickels, dimes, quarters, ones, fives, and tens with coins.
Student Outcome	Students will practice counting coins, fives, and tens with coins.
Standard Addressed	<b>1.OA.A.8</b> Count within 100, skip counting by 5s and 10s.
Future Standard Connection	<b>1.OA.D.8</b> Understand the meaning of the operations of addition and subtraction within 20.
Notes	If coins are not available to distribute to students, for tactile learners, students may benefit from using coins to practice. In this activity, students will use coins to practice adding and subtracting within 20.
	1. Hold up a nickel. Name my coin. a. A nickel. b. How much is it worth? c. 5 cents. 2. Count carefully as I drop coins in my can. Count along in your minds. (Drop four nickels.) How many nickels did I drop? a. 4. b. What is the value of 4 nickels? c. 20 cents. 3. Now, we're going to count aloud as I drop each nickel in my can. Let's only count the value. Ready? (Drop one nickel into the can.) a. 5 cents. b. Drop a second nickel into the can. c. Ten cents.

Adapted from Form K-2 M7-12

Item	Assessment
Item 1	1. How many nickels are there? 2. How much is it worth? 3. How much will I have if I take away 10 cents? 4. How much will I have if I take away 20 cents? 5. How much will I have if I take away 30 cents? 6. How much will I have if I take away 40 cents? 7. How much will I have if I take away 50 cents? 8. How much will I have if I take away 60 cents? 9. How much will I have if I take away 70 cents? 10. How much will I have if I take away 80 cents? 11. How much will I have if I take away 90 cents? 12. How much will I have if I take away 100 cents?
Item 2	1. Hold up two dimes. How much is it worth? 2. How much is it worth if I take away 1 dime? 3. How much is it worth if I take away 2 dimes? 4. How much is it worth if I take away 3 dimes? 5. How much is it worth if I take away 4 dimes? 6. How much is it worth if I take away 5 dimes? 7. How much is it worth if I take away 6 dimes? 8. How much is it worth if I take away 7 dimes? 9. How much is it worth if I take away 8 dimes? 10. How much is it worth if I take away 9 dimes? 11. How much is it worth if I take away 10 dimes?

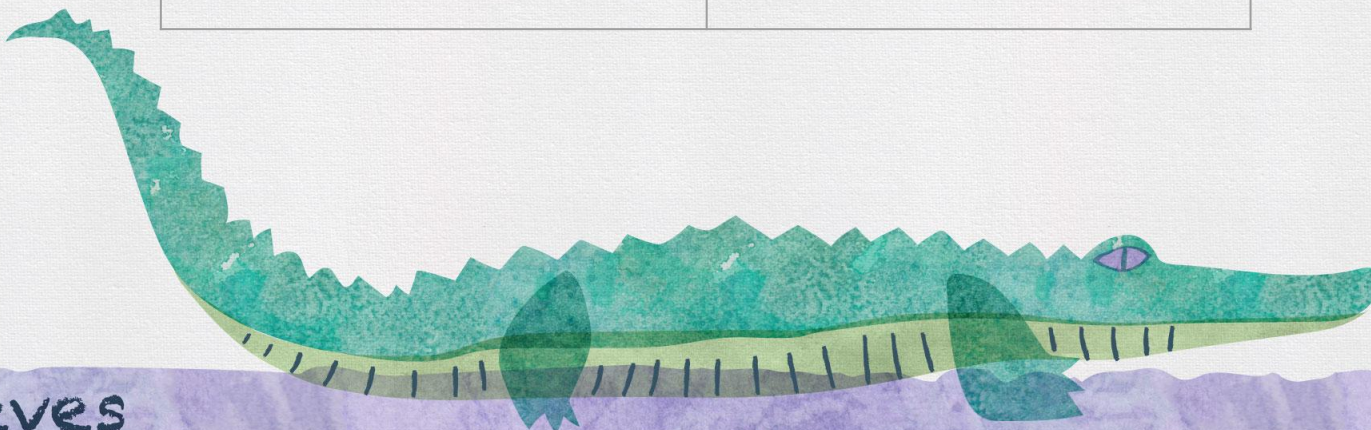




# FLAME Resource Release Schedule



Unit 1	September 2023
Unit 2	Fall 2023
Unit 3	Winter 2023



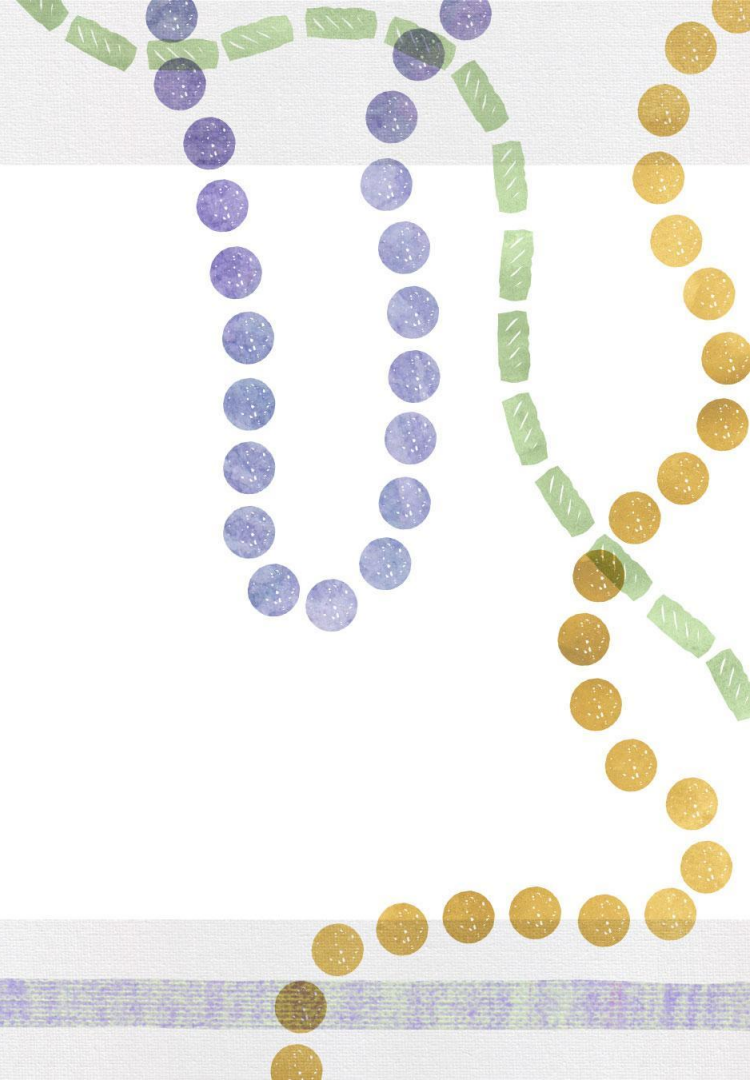


## Next Steps



- Plan for how sharing and training instructional staff on FLAME
- Plan for when these lessons can be implemented in your instructional day
- Register for the [Teacher Leader Newsletter](#) so you can stay informed on specific release dates and updates to materials

**Questions?**



# Contact Information

Please contact [STEM@la.gov](mailto:STEM@la.gov) with any questions or to request an individualized call to support your implementation planning efforts.

