SCHOOL SUPPORT
INSTITUTES

Diagnosing Unfinished Learning in Math

Presenter Name
Date

DEPARTMENT of EDUCATION
Louisiana Believes

Meet INSERT FACILITATOR NAME

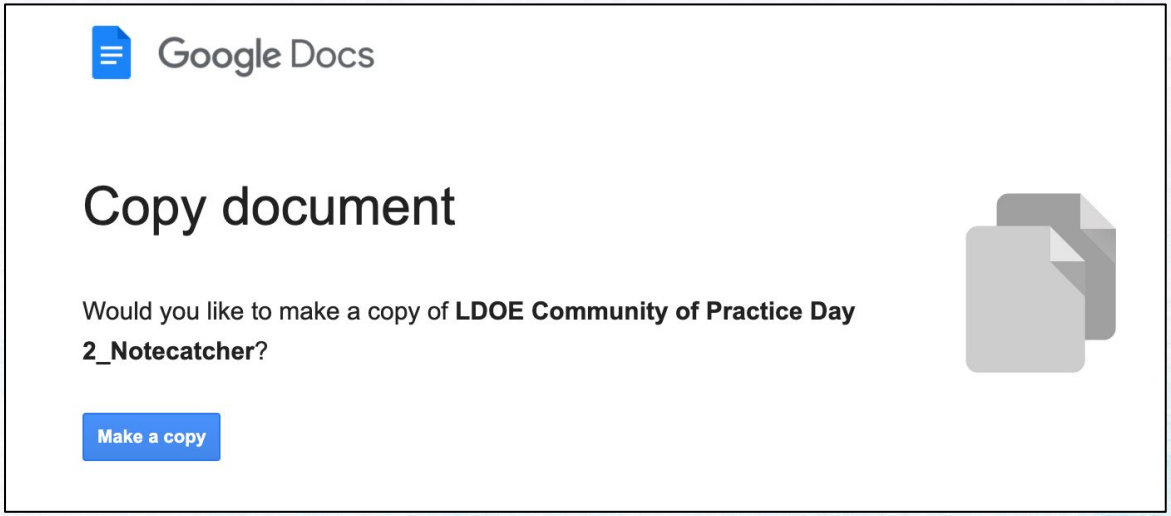
INSERT PHOTO THAT REPRESENTS SOMETHING IMPORTANT TO YOU/THE LAST BULLET IN YOUR INTRO

YOUR NAME

- Current title/org
- Brief background (i.e. former teacher, school leader, etc.)
- Based in (location)
- Fun/personal fact(s)

Access Materials….

Access today's Note Catcher at the following link:
https://tinyurl.com/LDOEMathULSession2



Zoom Norms

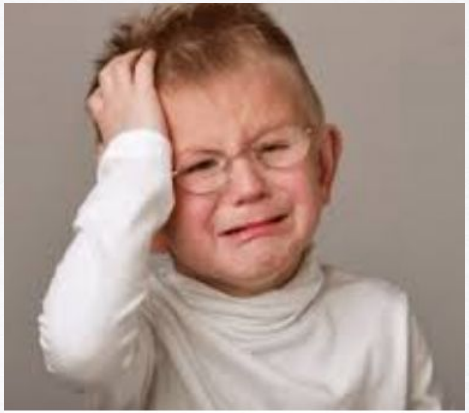
- **Be present:** keep camera on when possible
- **Audio:** stay on “mute” if you are not speaking
- **Engage with others:** Zoom Breakout Rooms feature!
- **Chat:** use the chat feature when prompted
- **Materials**: Soft copy of the note catcher; links in chat box

Which image best captures your experience in K-12 math?

1

2

3



4

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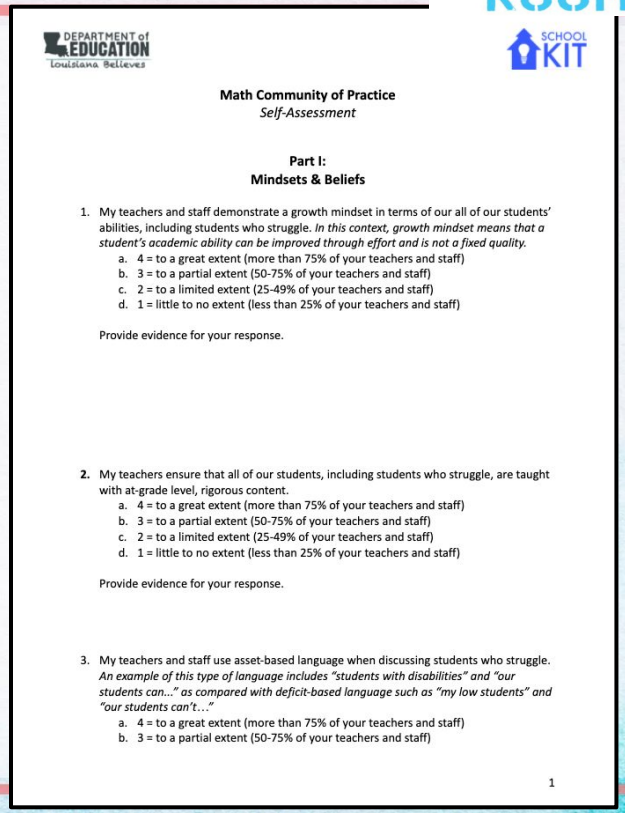
Self-Assessment Reflection

- What did you learn?
- What are your next steps?
- Discuss and get feedback on a concrete next step.



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Math Community of Practice
Self-Assessment

Part I:
Mindsets & Beliefs

1. My teachers and staff demonstrate a growth mindset in terms of our all of our students' abilities, including students who struggle. *In this context, growth mindset means that a student's academic ability can be improved through effort and is not a fixed quality.*
   a. 4 = to a great extent (more than 75% of your teachers and staff)
   b. 3 = to a partial extent (50-75% of your teachers and staff)
   c. 2 = to a limited extent (25-49% of your teachers and staff)
   d. 1 = little to no extent (less than 25% of your teachers and staff)

   Provide evidence for your response.

2. My teachers ensure that all of our students, including students who struggle, are taught with at-grade level, rigorous content.
   a. 4 = to a great extent (more than 75% of your teachers and staff)
   b. 3 = to a partial extent (50-75% of your teachers and staff)
   c. 2 = to a limited extent (25-49% of your teachers and staff)
   d. 1 = little to no extent (less than 25% of your teachers and staff)

   Provide evidence for your response.

3. My teachers and staff use asset-based language when discussing students who struggle. *An example of this type of language includes "students with disabilities" and "our students can…" as compared with deficit-based language such as "my low students" and "our students can't…"*
   a. 4 = to a great extent (more than 75% of your teachers and staff)
   b. 3 = to a partial extent (50-75% of your teachers and staff)

1

Learning Series at Glance

Session 1	Session 2	Session 3	Session 4
Defining our Approach to Addressing Unfinished Teaching and Learning in Math	Diagnosing Unfinished Learning in Math	Plan and Take Action Part I: Planning Intentional Core Supports	Team Planning Summit: Looking Ahead

What are we doing today? Why?

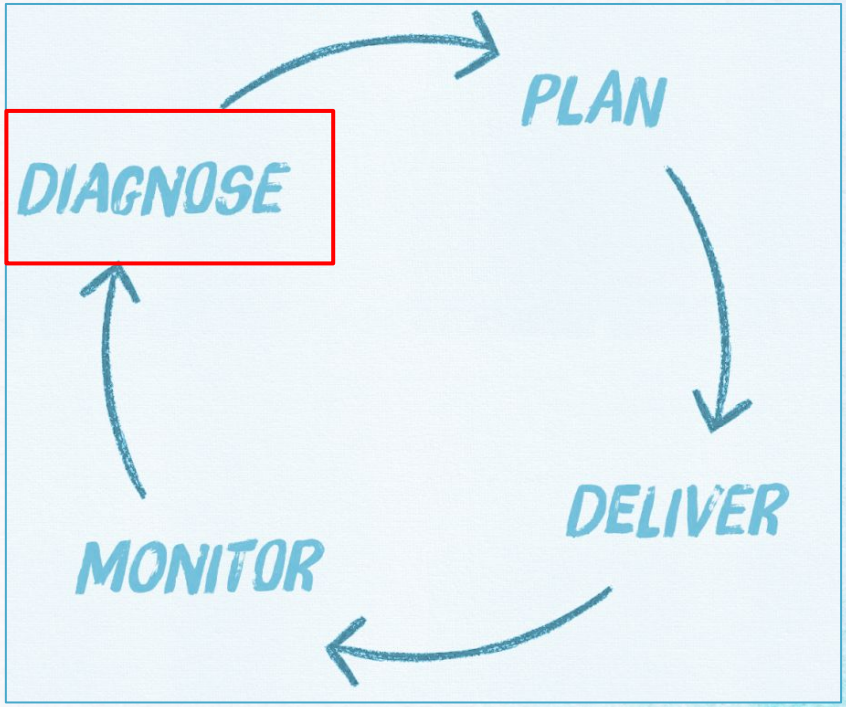
UNDERSTAND.

DIAGNOSE.

PLAN & TAKE ACTION.

Acceleration Cycle

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



Session Agenda

Time	Topic
20 min	Getting Started
25 min	Deepening Understanding of the Math We Teach
50 min	Diagnosing Unfinished Learning
15 min	Action Planning
5 min	Wrapping Up

Our Agenda

1. Getting Started
2. Deepening Understanding of the Math We Teach
3. Diagnosing Unfinished Learning
4. Reflection and Action Planning
5. Wrapping Up

The Goal of Understanding

Understanding…. “is about shifting the focus from students’ “readiness” for school, to give attention to school’s readiness to ensure productive learning opportunities for each and every student.”

Catalyzing Change In Early Childhood and Elementary Mathematics , (2020), pg. 30

Understanding is NOT an ON/OFF Switch

"Possessing deep knowledge of mathematical content means that teachers can pose good problems, ask good questions, and guide students to understanding by knowing where they want students to be."
(Taper, 2012)

Preparing to Teach

4.NF.A.2:

Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)

Ms. Hutchins

Brightwood Academy

Grade 4 Teacher

Resource Spotlight

Louisiana STUDENT STANDARDS MATHEMATICS

Grade 4

Louisiana Student Standards: Companion Document for Teachers 2.0

This document is designed to assist educators in interpreting and implementing Louisiana's new mathematics standards. It contains descriptions of each grade 4 math standard to answer questions about the standard's meaning and how it applies to student knowledge and performance. Version 2.0 has been updated to include information from LDOE's Grade 4 Remediation and Rigor documents. Some examples have been added, deleted or revised to better reflect the intent of the standard. Examples are samples only and should not be considered an exhaustive list.

This companion document is considered a "living" document as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to LouisianaStandards@la.gov so that we may use your input when updating this guide.

Additional information on the Louisiana Student Standards for Mathematics, including how to read the standards' codes, a listing of standards for each grade or course, and links to additional resources, is available at http://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning.

Updated November 7, 2019

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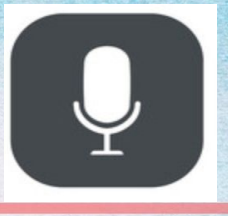
Uncovering the Standards



Review 4.NF.A.2. in the Teacher Companion Document 2.0.

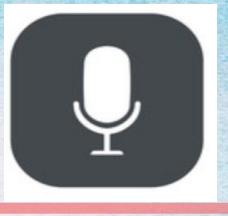
Reflect & Discuss:

- What did the Teacher Companion Document 2.0 illuminate for you about the standard?
- What in the standard may feel new or different to teachers about comparing fractions?

What did we uncover about 4.NF.A.2?

1. Different reasoning strategies are expected to be used to compare fractions including…
   - Creating common numerators or denominators
   - Using benchmark fractions
   - Using various visual fraction models *(e.g., area models and number lines)*
2. The size of the whole matters when comparing fractions!
3. Conceptual understanding is the intended aspect of rigor
4. Equivalent fractions (4.NF.A.1) are to be taught in advance

What did we uncover about 4.NF.A.2?



How does asking questions and discussing what is in the Teacher Companion Document 2.0 support teachers in thinking more deeply about the important mathematical concepts in the standards?

The Power of Progressions

Fragmenting the Standards into individual standards, or individual bits of standards, erases all these relationships and produces a sum of parts that is decidedly less than the whole.

The standards were designed from **intentional progressions**. These progressions are important to help students learn higher mathematics.

Resource Spotlight

Grade 4 Math Important Prerequisites

Prerequisite Standard Bridge up or heavy traffic from previous grade	Grade-Level Standard ■ *Major* □ *Supporting* ○ *Additional*	Standard Language	Instructional Time Preserve or reduce time in 20-21 as compared to a typical year, *per SAP guidance*	Comments related to most widely used Tier 1 Curriculum Eureka Math
3.OA.A.1, 3.OA.A.2, 3.OA.A.4, 3.OA.B.6, 3.OA.C.7	■ 4.OA.A.1 *Conceptual*	Interpret a multiplication equation as a comparison and represent verbal statements of multiplicative comparisons as multiplication equations, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.		
	■ 4.OA.A.2 *Application*	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. (Example: 6 times as many vs 6 more than.) *Table 2 found in the Louisiana Student Standards for Mathematics has been added to the end of this document.		
3.OA.C.7, 3.OA.D.8	■ 4.OA.A.3 *Conceptual Application*	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. Example: Twenty-five people are going to the movies. Four people fit in each car. How many cars are needed to get all 25 people to the theater at the same time?		
	□ 4.OA.B.4 *Conceptual, Procedural*	Using whole numbers in the range 1–100		
	□ 4.OA.B.4a *Procedural*	Find all factor pairs for a given whole number.		
	□ 4.OA.B.4b *Conceptual*	Recognize that a given whole number is a multiple of each of its factors		
	□ 4.OA.B.4c *Conceptual*	Determine whether a given whole number is a multiple of a given one-digit number.		
	□ 4.OA.B.4d *Conceptual*	Determine whether a given whole number is prime or composite.		

Resource Spotlight

Prerequisite Standard	Grade-Level Standard	Standard Language	Instructional Time	Eureka Math
3.NF.A.1 3.NF.A.2a-b 3.NF.A.3a-d	4.NF.A.1 *Conceptual, Procedural*	Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)	*Incorporate some foundational work on the meaning of the unit fraction (3.NF.A.1 & 2), especially through partitioning the whole on a number line diagram.*	
	4.NF.A.2 *Conceptual*	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)		

Resource Spotlight

Prerequisite Standard	Grade-Level Standard	Standard Language	Instructional Time	Eureka Math
3.OA.D.9	4.OA.C.5 *Conceptual, Procedural*	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*	*Eliminate lessons on generating and analyzing patterns.*	*5.41*
	4.NBT.A.1 *Conceptual*	Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right. Examples: (1) recognize that 700 ÷ 70 = 10; (2) in the number 7,246, the 2 represents 200, but in the number 7,426 the 2 represents 20, recognizing that 200 is ten times as large as 20, by applying concepts of place value and division.		
	4.NBT.A.2 *Conceptual, Procedural*	Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.		
3.NBT.A.1	4.NBT.A.3 *Conceptual*	Use place value understanding to round multi-digit whole numbers, less than or equal to 1,000,000, to any place.	*First tasks should involve rounding to tens and hundreds.*	
3.NBT.A.2	4.NBT.B.4 *Procedural*	Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm	*Emphasize problems with only one regrouping step.*	*1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19 (E) 2.1, 2.2, 2.3, 2.5*

Uncovering the Progressions

Review the prerequisite standards for 4.NF.A.2.

Reflect & Discuss:

- What connections do you notice between 4.NF.A.2 and the prerequisite standards?
- How does reviewing the prerequisite standards support teachers with diagnosing unfinished learning?

Key Point

Use available tools to support teachers in reflecting on the main ideas of the standards and the progression of learning.

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Our Agenda

1. Getting Started
2. Deepening Understanding of the Math We Teach
3. Diagnosing Unfinished Learning
4. Reflection and Action Planning
5. Wrapping Up

Diagnosing Unfinished Learning

Unrecognized incomplete understandings become permanent ways of thinking. Each new layer of mathematics knowledge is then built on flawed foundations.”

What the Research Reveals….

"It is estimated that, for every 2 years of school, children who struggle with math acquire only one year's worth of mathematical proficiency...struggling learners not subjected to early intervention may reach a learning plateau by middle school and acquire the equivalent of one year of mathematical proficiency during grades 7-12."

(PBS, Difficulties with Math)

Key Actions to Diagnose

Identify	Identify the right diagnostics.
Consider	Consider what constitutes evidence.
Interpret	Interpret the evidence.

Resource Spotlight

Eureka Acceleration Tool: Grade 4
Module 5, Topic C

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:
4.NF.A.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)

Topic Overview per the Eureka Curriculum

In Topic C, students use benchmarks and common units to compare fractions with different numerators and different denominators. The use of benchmarks is the focus of Lessons 12 and 13 and is modeled using a number line. Students use the relationship between the numerator and denominator of a fraction to compare to a known benchmark (e.g., 0, $\frac{1}{2}$, or 1) and then use that information to compare the given fractions. For example, when comparing $\frac{4}{5}$ and $\frac{2}{5}$, students reason that 4 sevenths is more than 1 half, while 2 fifths is less than 1 half. They then conclude that 4 sevenths is greater than 2 fifths.

In Lesson 14, students reason that they can also use like numerators based on what they know about the size of the fractional units. They begin at a simple level by reasoning, for example, that 3 fifths is less than 3 fourths because fifths are smaller than fourths. They then see, too, that it is easy to make like numerators at times to compare, e.g., $\frac{2}{5} < \frac{4}{9}$ because $\frac{2}{5} = \frac{4}{10}$, and $\frac{4}{10} < \frac{4}{9}$ because $\frac{1}{10} < \frac{1}{9}$. Using their experience with fractions in Grade 3, they know the larger the denominator of a unit fraction, the smaller the size of the fractional unit.

Like numerators are modeled using tape diagrams directly above each other, where one fractional unit is partitioned into smaller unit fractions. The lesson then moves to comparing fractions with related denominators, such as $\frac{2}{3}$ and $\frac{5}{6}$, wherein one denominator is a factor of the other, using both tape diagrams and the number line. In Lesson 15, students compare fractions by using an area model to express two fractions, wherein one denominator is not a factor of the other, in terms of the same unit using multiplication, e.g., $\frac{2}{3} < \frac{3}{4}$ because $\frac{2}{3} = \frac{2\times4}{3\times4} = \frac{8}{12}$ and $\frac{3}{4} = \frac{3\times3}{4\times3} = \frac{9}{12}$ and $\frac{8}{12} < \frac{9}{12}$. The area for $\frac{2}{3}$ is partitioned vertically, and the area for $\frac{3}{4}$ is partitioned horizontally.

To find the equivalent fraction and create the same size units, the areas are decomposed horizontally and vertically, respectively. Now the unit fractions are the same in each model or equation, and students can easily compare. The topic culminates with students comparing pairs of fractions and, by doing so, deciding which strategy is either necessary or efficient: reasoning using benchmarks and what they know about units, drawing a model (such as a number line, a tape diagram, or an area model), or the general method of finding like denominators through multiplication.

This Eureka Acceleration Tool is considered a "living" document as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to STEM@la.gov so that we can use your input when updating this guide.

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Eureka Acceleration Tools

- Currently available for **grades 4-8** (most major work topics)

What if we don't use Eureka or I teach a grade with no available Eureka Acceleration Tools?

- The process we are learning is **transferable** to any curriculum → focus on the key takeaways from the process!

Sources for Diagnostics

High Quality Curriculum-Embedded

- Eureka Math Equip
- IM *Check Your Readiness*
- Unit or Module pre-assessments
- Collected Student Classwork
- Previous Grade Level Tasks

Multiple Data Sources

What fraction is the greatest?

A. $\frac{0}{8}$ B. $\frac{1}{9}$ C. $\frac{6}{8}$ D. $\frac{3}{10}$

Which fraction is greater, $\frac{3}{4}$ or $\frac{1}{2}$?

Explain how you know.

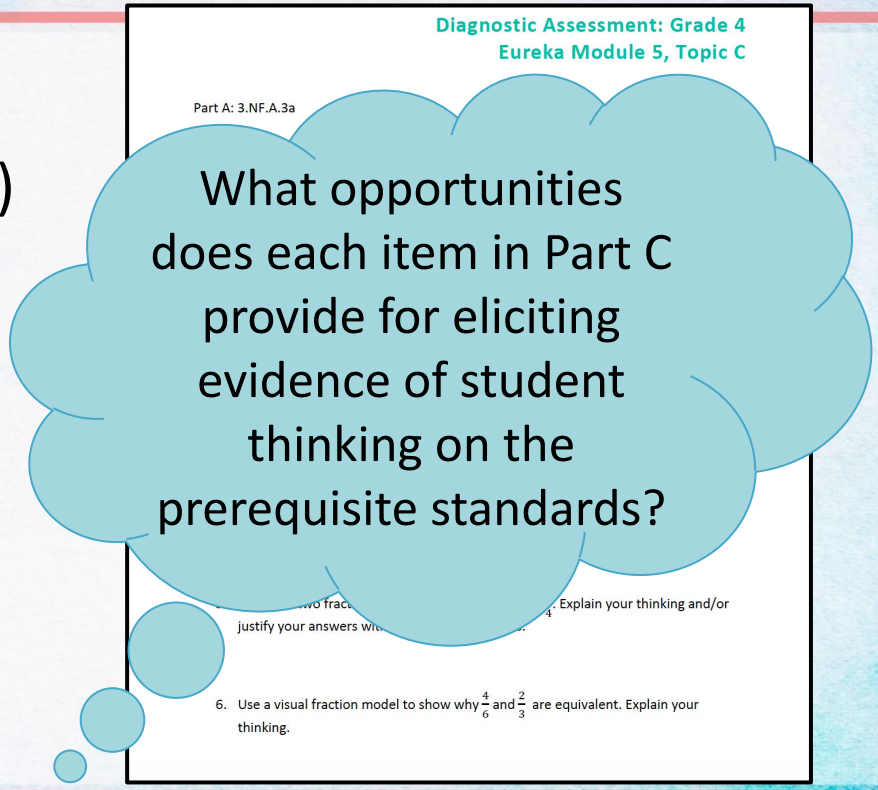
$\frac{3}{4}$ is more because 3 and 4 are bigger than 1 and 2.

Diagnostics are….

1. **TIMELY:** Happen at the unit/topic level or lesson level
2. **TARGETED:** Target the key prerequisite concepts/skills
3. **MANAGEABLE:** Can be administered without taking away from instructional time and provide a manageable amount of just in time data
4. **CURRICULUM-EMBEDDED FORMATIVE ASSESSMENT:** Assessment FOR learning, not Assessment OF learning; Used to adjust instruction, not sort students based on perceived ability

Zoom in: Diagnostic Assessment

- Organized into 2-3 parts (A, B, C)
- Each part is aligned to a foundational standard from previous grade
- Each part has three items



Key Actions to Diagnose

Identify	Identify the right diagnostics.
Consider	Consider what constitutes evidence.
Interpret	Interpret the evidence.

Define what Constitutes Evidence

Part C Focus: 3.NF.A.3d. Explain equivalence of fractions with denominators 2, 3, 4, 6, and 8 in special cases, and compare fractions by reasoning about their size.

d) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Why this is important for current grade level work:
Comparing fractions with the same numerator or the same denominator sets the foundation for comparing fractions with different numerators and different denominators, the sole focus of the target topic. Visual models also set the foundation for comparing fractions with the general method of finding equivalent fractions later.

Using the Diagnostic Assessment to identify gaps:

Problem 7:
Students must understand that for a comparison to be valid each fraction must refer to the same whole. Furthermore, it is important that students understand that the denominator does not dictate the whole, only the number of parts that comprise a whole.

Problems 8-9:
Look for students who only compare the numbers that differ and treat them as whole numbers. This will be more evident in Problem 9 If a student thinks 2/6 is less than 2/8 because 6 is less than 8. Encourage the use of visual fraction models and look for models that show equal wholes.

Remediation Resources for Targeted Instruction:

3rd Grade, Module 5, Topic F, Lesson(s) 28 - 29

Use the Concept Development portion of each Lesson and a sampling of problems from the Problem Set focused on conceptual understanding.

Review the look fors for Part C in the Topic C Diagnostic Assessment Tasks (pg. 7)

Define what Constitutes Evidence

- Create exemplar response for **ONE** of the items in Part C
- Based on Ms. Hutchins standard and progression analysis, what misconceptions and incomplete understandings might the item reveal?

Diagnostic Assessment: Grade 4
Eureka Module 5, Topic C

Part C: 3.NF.A.3d

7. For the inequality $\frac{1}{2} > \frac{1}{4}$ to be valid, what must be true?

8. Complete the sentence with >, =, or <. Explain your thinking and/or justify your choice with a visual fraction model.

   $\frac{2}{6}$ ____ $\frac{5}{6}$

9. Complete the sentence with >, =, or <. Explain your thinking and/or justify your choice with a visual fraction model.

   $\frac{2}{6}$ ____ $\frac{2}{8}$

Key Actions to Diagnose

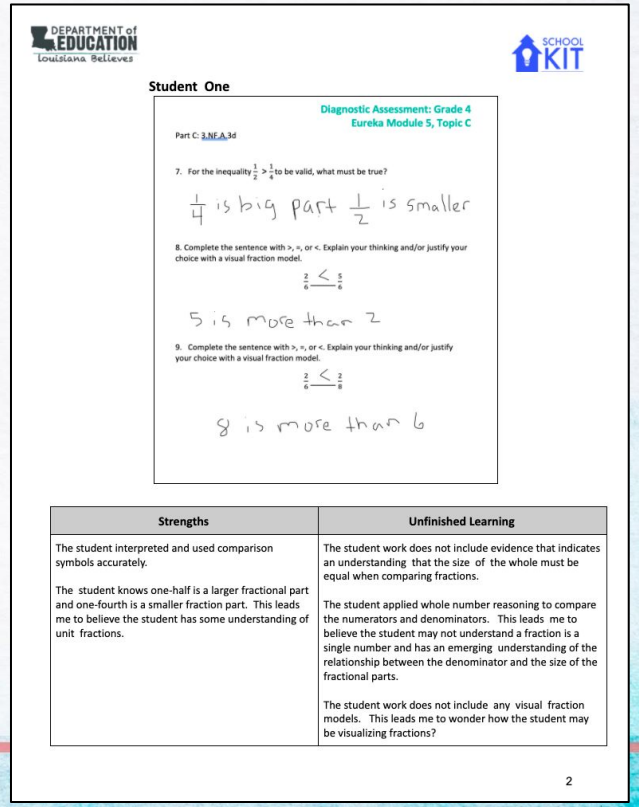
Identify	Identify the right diagnostics.
Consider	Consider what constitutes evidence.
Interpret	Interpret the evidence.

Interpret the Evidence

BREAKOUT ROOMS

Examine the student work samples.

- What stands out to you about the teacher analysis?
- How does the previous work uncovering the standards, and learning progression inform the interpretation of student work?



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Student One

Diagnostic Assessment: Grade 4
Eureka Module 5, Topic C

Part C: 3.NF.A.3d

7. For the inequality $\frac{1}{2} > \frac{1}{4}$ to be valid, what must be true?

$\frac{1}{4}$ is big part $\frac{1}{2}$ is smaller

8. Complete the sentence with >, =, or <. Explain your thinking and/or justify your choice with a visual fraction model.

$\frac{2}{6} < \frac{5}{6}$

5 is more than 2

9. Complete the sentence with >, =, or <. Explain your thinking and/or justify your choice with a visual fraction model.

$\frac{2}{6} < \frac{2}{8}$

8 is more than 6

Strengths	Unfinished Learning
The student interpreted and used comparison symbols accurately. The student knows one-half is a larger fractional part and one-fourth is a smaller fraction part. This leads me to believe the student has some understanding of unit fractions.	The student work does not include evidence that indicates an understanding that the size of the whole must be equal when comparing fractions. The student applied whole number reasoning to compare the numerators and denominators. This leads me to believe the student may not understand a fraction is a single number and has an emerging understanding of the relationship between the denominator and the size of the fractional parts. The student work does not include any visual fraction models. This leads me to wonder how the student may be visualizing fractions?

2

When we look at student work...

Looking at the Evidence

EVIDENCE looks like…

- Pictures and diagrams
- Calculations
- Justification

EVIDENCE of student understanding creates…

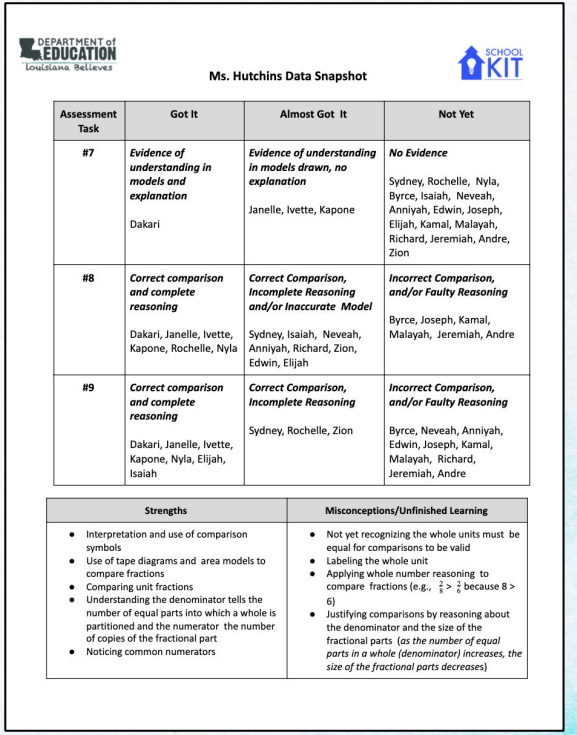
- Conclusions with confidence
- Focused, intentional next steps

Interpret the Evidence

Review the class data snapshot.

Reflect

- How does Ms. Hutchins' data snapshot equip her to begin planning to address unfinished learning?



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SCHOOL KIT

Ms. Hutchins Data Snapshot

Assessment Task	Got It	Almost Got It	Not Yet
#7	***Evidence of understanding in models and explanation*** Dakari	***Evidence of understanding in models drawn, no explanation*** Janelle, Ivette, Kapone	***No Evidence*** Sydney, Rochelle, Nyla, Byrce, Isaiah, Neveah, Anniyah, Edwin, Joseph, Elijah, Kamal, Malayah, Richard, Jeremiah, Andre, Zion
#8	***Correct comparison and complete reasoning*** Dakari, Janelle, Ivette, Kapone, Rochelle, Nyla	***Correct Comparison, Incomplete Reasoning and/or Inaccurate Model*** Sydney, Isaiah, Neveah, Anniyah, Richard, Zion, Edwin, Elijah	***Incorrect Comparison, and/or Faulty Reasoning*** Byrce, Joseph, Kamal, Malayah, Jeremiah, Andre
#9	***Correct comparison and complete reasoning*** Dakari, Janelle, Ivette, Kapone, Nyla, Elijah, Isaiah	***Correct Comparison, Incomplete Reasoning*** Sydney, Rochelle, Zion	***Incorrect Comparison, and/or Faulty Reasoning*** Byrce, Neveah, Anniyah, Edwin, Joseph, Kamal, Malayah, Richard, Jeremiah, Andre

Strengths	Misconceptions/Unfinished Learning
• Interpretation and use of comparison symbols • Use of tape diagrams and area models to compare fractions • Comparing unit fractions • Understanding the denominator tells the number of equal parts into which a whole is partitioned and the numerator the number of copies of the fractional part • Noticing common numerators	• Not yet recognizing the whole units must be equal for comparisons to be valid • Labeling the whole unit • Applying whole number reasoning to compare fractions (e.g., $\frac{2}{8} > \frac{2}{6}$ because 8 > 6) • Justifying comparisons by reasoning about the denominator and the size of the fractional parts (*as the number of equal parts in a whole (denominator) increases, the size of the fractional parts decreases*)

Evidence Based Decisions

Ready to Access

- 2 out of 3 correct solutions
- Reasoning through pictures, numbers, or words
- Justification

Tutoring

- Incomplete understanding
- Incorrect or coincidentally correct solution
- Flawed logic
- No justification

Which students would you provide small group tutoring for 3.NF.3d?

Evidence Based Decisions

Ready to Access

- Student 5
- Student 3

Tutoring

- Student 1
- Student 2
- Student 4

Review the Data Snapshot

Reflect:

Which students would you provide small group tutoring for 3.NF.3d?

Assessment Task	Got It	Almost Got It	Not Yet
#7	***Evidence of understanding in models and explanation*** Dakari	***Evidence of understanding in models drawn, no explanation*** Janelle, Ivette, Kapone	***No Evidence*** Sydney, Rochelle, Nyla, Byrce, Isaiah, Neveah, Anniyah, Edwin, Joseph, Elijah, Kamal, Malayah, Richard, Jeremiah, Andre, Zion
#8	***Correct comparison and complete reasoning*** Dakari, Janelle, Ivette, Kapone, Rochelle, Nyla	***Correct Comparison, Incomplete Reasoning and/or Inaccurate Model*** Sydney, Isaiah, Neveah, Anniyah, Richard, Zion, Edwin, Elijah, Andre	***Incorrect Comparison, and/or Faulty Reasoning*** Byrce, Joseph, Kamal, Malayah, Jeremiah
#9	***Correct comparison and complete reasoning*** Dakari, Janelle, Ivette, Kapone, Nyla, Elijah, Isaiah	***Correct Comparison, Incomplete Reasoning*** Sydney, Rochelle, Zion, Andre	***Incorrect Comparison, and/or Faulty Reasoning*** Byrce, Neveah, Anniyah, Edwin, Joseph, Kamal, Malayah, Richard, Jeremiah

Key Points

To accurately diagnose unfinished learning, we must:

- look at **bite-sized amounts** of **"just in time"** data (formative data at the topic or even lesson level)
- **Interpret evidence** of student learning and identify specifically what students currently do understand/can do and what they don't yet understand/have the ability to do

Our Agenda

1. Getting Started
2. Deepening Understanding of the Math We Teach
3. Diagnosing Unfinished Learning
4. Reflection and Action Planning
5. Wrapping Up

Pause Point

Independently Reflect:

- To what extent is this work currently happening at your school/in your classroom?

- What implications might this learning have on how you support schools or teachers with assessing and diagnosing unfinished learning in your role?

Discuss in Breakout Rooms

- To what extent is this work currently happening at your school/in your classroom?

- What implications might this learning have on how you support schools or teachers with assessing and diagnosing unfinished learning in your role?

What's next?

Before our next session…

Complete Preparing to Diagnose

Preparing for Diagnosing Unfinished Learning

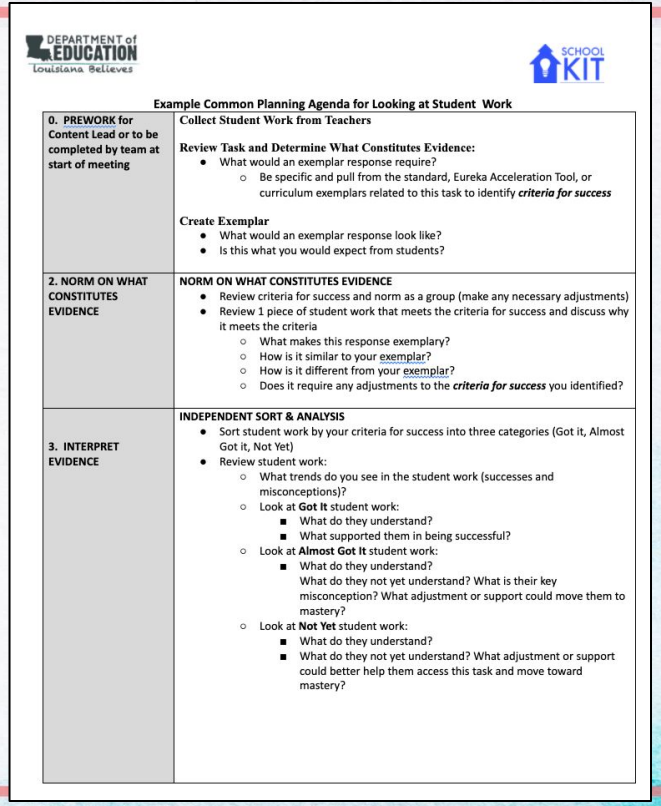
If you are...

- **School-based leaders:** collaborate to lead a common planning time meeting (with a single teacher or a group of teachers) looking at student work
- **District Leader:** observe a common planning time meeting focused on looking at student work

Preparing for Common Planning Time Meetings

Example

Looking at Student Work Agenda



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Example Common Planning Agenda for Looking at Student Work

0. PREWORK for Content Lead or to be completed by team at start of meeting	**Collect Student Work from Teachers** **Review Task and Determine What Constitutes Evidence:** • What would an exemplar response require? ○ Be specific and pull from the standard, Eureka Acceleration Tool, or curriculum exemplars related to this task to identify ***criteria for success*** **Create Exemplar** • What would an exemplar response look like? • Is this what you would expect from students?

2. NORM ON WHAT CONSTITUTES EVIDENCE	**NORM ON WHAT CONSTITUTES EVIDENCE**
	• Review criteria for success and norm as a group (make any necessary adjustments)
	• Review 1 piece of student work that meets the criteria for success and discuss why it meets the criteria
	  ○ What makes this response exemplary?
	  ○ How is it similar to your exemplar?
	  ○ How is it different from your exemplar?
	  ○ Does it require any adjustments to the ***criteria for success*** you identified?

3. INTERPRET EVIDENCE	**INDEPENDENT SORT & ANALYSIS**
	• Sort student work by your criteria for success into three categories (Got it, Almost Got it, Not Yet)
	• Review student work:
	  ○ What trends do you see in the student work (successes and misconceptions)?
	  ○ Look at **Got It** student work:
	  ■ What do they understand?
	  ■ What supported them in being successful?
	  ○ Look at **Almost Got It** student work:
	  ■ What do they understand?
	  What do they not yet understand? What is their key misconception? What adjustment or support could move them to mastery?
	  ○ Look at **Not Yet** student work:
	  ■ What do they understand?
	  ■ What do they not yet understand? What adjustment or support could better help them access this task and move toward mastery?

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Looking Ahead

Session 1	Session 2	Session 3	Session 4
Defining our Approach to Addressing Unfinished Teaching and Learning in Math	Diagnosing Unfinished Learning in Math	Plan and Take Action Part I: Planning Intentional Core Supports	Team Planning Summit: Looking Ahead

Thank You!

Please give us your feedback:

https://tinyurl.com/SSICoPSession2Survey