

MS Materials Matter

Translating Great Materials into Great Instruction

mdek12.org

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MISSISSIPPI
DEPARTMENT OF
EDUCATION



1

ALL Students Proficient and Showing Growth in All Assessed Areas



2

EVERY Student Graduates from High School and is Ready for College and Career



3

EVERY Child Has Access to a High-Quality Early Childhood Program

EVERY School Has Effective Teachers and Leaders

4



EVERY Community Effectively Uses a World-Class Data System to Improve Student Outcomes

5



EVERY School and District is Rated "C" or Higher

6



VISION

To create a world-class educational system that gives students the knowledge and skills to be successful in college and the workforce, and to flourish as parents and citizens



MISSION

To provide leadership through the development of policy and accountability systems so that all students are prepared to compete in the global community



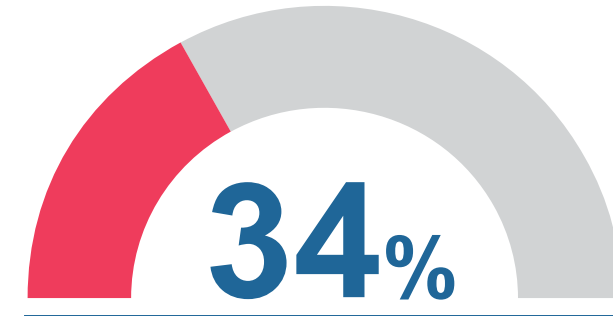
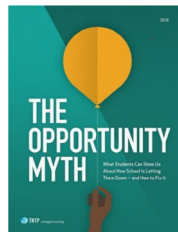
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visit site**



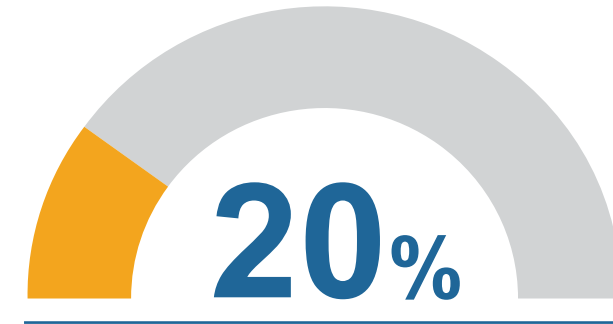
FAR TOO FEW
students leave their
K–12 experience equipped
with the knowledge
and skills to succeed.

TNTP. (2018). The Opportunity Myth: What Students Can Show Us About How School Is Letting Them Down—and How to Fix It.

https://tntp.org/assets/documents/TNTP_The-Opportunity-Myth_Web.pdf



District assignments
are on grade level



Teacher created/selected
assignments are on grade level

Overview & Goals

Purpose of the Series

Session 1

Key Messages
and the 8
Elements of
Effective
Implementation

Session 2

Deep Dive into
Elements 3-5
and 8

Session 3

Deep Dive into
Elements 6
and 7


Sessions 4-5

Demo Unit
Unpackings:
ELA and Math

UNIT INTERNALIZATION

HIGH-QUALITY INSTRUCTIONAL MATERIALS

ELEMENT 6: The system and school team supports collaborative planning using HQIM.



PURPOSE

Teacher planning and preparation has a significant impact on student achievement. This resource provides a process for internalizing the goals of mathematics unit, understanding the big ideas of the unit, how the content progresses and what strategies, models and representations are being used to build student understanding.

OUTCOMES

Teachers will deepen their understanding of a unit in order to prepare for and deliver high-quality instruction by:

- articulating the unit's focus (content and skill);
- analyzing the unit's assessments and determining what students need to know and do to be successful; and
- deeply examining the problems through the lens of a student and a teacher.

KEY RESOURCES

- [Unit Unpacking Template](#) (for reference)
- [Jamboard Link](#)
- [Math Background Grade 3 Topic 3](#)

- [Standards Document](#)
- [Topic Planner](#)
- [End of Topic Assessment](#)


PROCESS

STEP 1: UNDERSTAND THE BIG IDEAS OF THE UNIT

Action Steps:

- Read the unit overview and identify how the unit progresses to building student learning from lesson to lesson
- Review the district scope and sequence and note which days you will be teaching lessons and administering assessments
- Write 1-2 sentences to describe the key mathematical understandings for each big topic within the unit

Guiding Questions and Considerations	Notes
What seems to be the big ideas of this unit?	
What strategies, models and/or representations will students be using in this unit to build their understanding?	



Math Unit Internalization > 1

Page 1

What possible connections do you see between the content of this unit and the content of previous or upcoming units?

How does the order of the learning support students in understanding the big ideas of the unit?

STEP 2: DO THE MATH

Action Steps:

- Take the module assessment like a student and note which questions you anticipate will be challenging, moderate, or easy for students
- Create a K.U.D. chart to describe what students need to KNOW, UNDERSTAND, and DO to be successful on the end-of-unit assessment
- Locate where in the unit students will encounter especially challenging content


Guiding Questions and Considerations	Notes
Based on the data we reviewed and the progression of content for this unit, where do we anticipate students will struggle in this unit? Why?	
What content or unfinished learning from previous units or years do we think will be a barrier to students learning the content in this unit? Why?	

STEP 3: REVIEW THE MODULE STRATEGIES, MODELS, AND LANGUAGE

Action Steps:

- Represent the key strategies and models used to develop student understanding within the unit
- Show or describe the key strategies that develop conceptual understanding and procedural skill
- Note the terminology that is essential for students to access the grade level content

Guiding Questions and Considerations	Notes
What are the different strategies, models and/or representations that students are using in this unit to build their understanding?	
How do each of those strategies, models and/or representations support students in understanding the big ideas?	
How can we use these strategies, models, and/or representations to provide grade level access for all students?	



Math Unit Internalization > 2


Page 2

STEP 4: ORGANIZE YOUR RESOURCES

Action Steps:

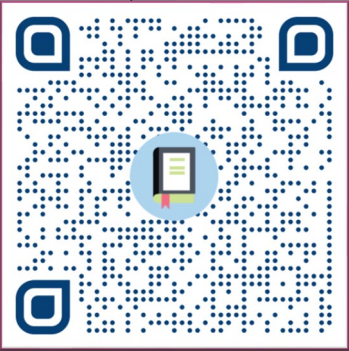
- Locate key materials and suggested tools
- Determine supports for students who will need additional scaffolds to access grade level learning


Guiding Questions and Considerations	Notes
What do students need to know or understand to remove the unfinished learning barriers we identified above?	
What scaffolds can be provided for students to support removing those barriers?	



Math Unit Internalization > 3

Page 3



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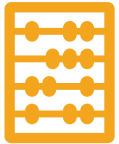
Link msinstructionalmaterials.org/selecting-materials

Introduction to the Unit Internalization

The Teacher Experience



Happens 1-2 weeks prior to teaching each unit



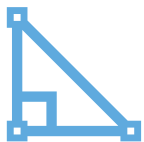
An opportunity to do important math tasks



Get clear on student outcomes for the unit





Gain understanding of how the learning will build over the unit



Gain understanding of the models, representations, and strategies that will be used



TURN & TALK

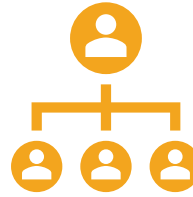
-  In your building previously, what have teachers done to prepare for teaching an upcoming unit?
-  What do you hope might be different about unit internalization if teachers planned for a unit in the way laid out here?



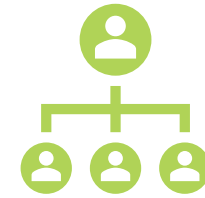
Put Comments and Additional Questions in Chat



Teachers: Better understanding leads to better decision making



Leaders: Helping to build a vision



Leaders: Better understanding leads to better decision making



ELEMENT 6: The system and school team supports collaborative planning using high-quality instructional materials



Link msinstructionalmaterials.org/selecting-materials

Outcome 1

To understand the big ideas of the topic

Outcome 2

To be able to articulate how learning progresses across the lessons of the topic

Outcome 3

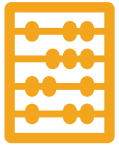
To gain an understanding of how the strategies, representations, and models are used to build understanding of **ALL** students

Outcome 4

To reflect on the impact of unit unpacking on teaching and learning



Unit Internalization Template



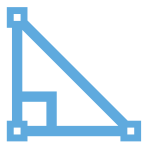
Math Background and Focus for Grade 3 Topic 3



MS Grade 3 Math Standards



Topic Planner for Topic 3



End of Topic Assessment for Topic 3



SCAN for
documents



Link msinstructionalmaterials.org/selecting-materials

Diving into the Protocol

DIRECTIONS

1. Read the following: Math Background
2. In Breakout Rooms: Discuss and capture notes on discussion questions
3. Record your group's thinking in the Jamboard

Grade 3 Topic 3 Math Background: Focus, Coherence, & Rigor

TOPIC 3 Math Background: Focus
Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8

Topic 3 focuses on using known facts and properties of multiplication to learn the multiplication facts with factors of 3, 4, 6, 7, and 8.

USE KNOWN FACTS

- **Break Apart a Fact into Known Facts** The Distributive Property is used extensively in Topic 3. It is an important property that students will use throughout their mathematics education. It says that multiplying a sum (or difference) by a factor is the same as multiplying each number in the sum (or difference) by that factor and adding (or subtracting) the products.

Distributive Property: $a(b + c) = ab + ac$
Example: $3 \times (5 + 2) = (3 \times 5) + (3 \times 2)$

Students use the Distributive Property to find products by breaking apart the product into the sum of two smaller multiplication facts they already know. Arrays are used to illustrate this strategy.

7×8

$5 \times 8 = 40$

$2 \times 8 = 16$

$40 + 16 = 56$
So, $7 \times 8 = 56$.

Students learn the Distributive Property in Lesson 3-1. Then, they use the property and the breaking apart strategy for facts with 3 and 4 in Lesson 3-2, facts with 6 and 7 in Lesson 3-3, and facts with 8 in Lesson 3-4. They practice all these facts in Lesson 3-5.

MULTIPLY WITH 3 FACTORS

- **Associative Property of Multiplication** Students use the Associative (Grouping) Property of Multiplication in Lesson 3-6 to multiply with three factors. This property says that three or more factors can be grouped in any way.

Associative Property of Multiplication: $ab(c) = a(bc)$
Example: $(2 \times 3) \times 5 = 2 \times (3 \times 5)$

EQUAL GROUPS

- **Situations Involving Equal Groups** Throughout Topic 3, real-world contexts involve the equal-groups meaning of multiplication.

Reasoning There are 7 mockingbird nests at a park with eggs in them. What is the greatest number of eggs there could be at this park? What is the least number of eggs there could be?

Mockingbirds lay 3 to 5 eggs.

Professional Development Videos Topic Overview Videos and Listen and Look For Lesson Videos present additional important information about the content of this topic.

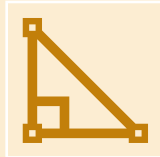
15 min



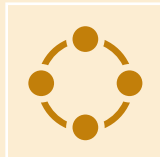
JAMBORD Link <https://tinyurl.com/HQIM5jamboard>



What are the big ideas of the topic (unit)?



What strategies, models and/or representations will students be using in this unit to build their understanding?



What possible connections do you see between the content of this topic (unit) and the content of previous or upcoming topics?



TURN & TALK

- How did synthesizing the unit narrative, talking through the big ideas and connecting those to the standards give you a clearer picture of the unit as a whole?



Put Comments and Additional Questions in Chat



TEACHERS:

- Anticipate possible student strategies and misconceptions
- Ensures they are clear on the math themselves



LEADERS:

- Ensures a clear vision for the process, and understanding of the “why”

DIRECTIONS

1. Read lesson objectives in Topic Planner
2. Do the math of the Topic 3 assessment (2, 3, 6, 8, 11 & 12)
3. Discuss in breakout rooms

TOPIC 3 Topic Planner Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8						
Lesson	Mathematics Objective	Essential Understanding	Vocabulary	Materials	Technology and Activity Centers	Standards
3-1 The Distributive Property	Use the Distributive Property to solve problems involving multiplication within 100.	The Distributive Property can be used to break a large array into smaller arrays.	• Distributive Property	• Two-color counters (or TT 9) • Pieces of string • Index cards	• Math Tools • Problem-Solving Reading Activity	3.OA.B.5, 3.OA.A.3, 3.OA.C.7 Mathematical Practices MP.3, MP.6, MP.7
3-2 Apply Properties: 3 and 4 as Factors	Use the Distributive Property to break apart unknown facts with 3 or 4 as a factor.	Basic multiplication facts with 3 or 4 as a factor can be found by breaking apart the unknown fact into known facts. The answers to the known facts are added to find the final product.	None	• Two-color counters (or TT 9) • Pencils	• Math Tools • enVision® STEM Activity	3.OA.B.5, 3.OA.A.3, 3.OA.C.7, 3.OA.D.9 Mathematical Practices MP.1, MP.5, MP.7



JAMBOARD Link <https://tinyurl.com/HQIM5jamboard>

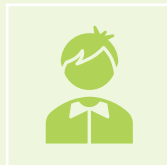


Select 2-3 problems to discuss

How did we approach the problems? How might students approach the problems?



How do we see the big ideas being developed in this topic?



How does the progression of learning support students in understanding the big ideas of the unit?



TURN & TALK

- How did doing the math help your group to have a better understanding of the progression of learning in the unit?



Put Comments and Additional Questions in Chat

One Way

B One Way

Draw a picture to find 9×3 .

9×3 means 9 groups of 3.
Combine the groups to find the product.

Dragon's body length ?

3 feet each section
 $9 \times 3 = 27$
The dragon's body is 27 feet long.

Another Way

C Another Way

Use known facts to find 9×3 .

Use 4s facts and 5s facts to help.

$4 \times 3 = 12$

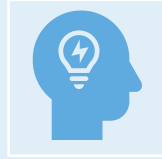
$5 \times 3 = 15$

$12 + 15 = 27$
The dragon's body is 27 feet long.

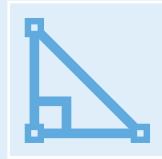
Expressions and Equations

$$(4 \times 3) + (5 \times 3) = 27$$

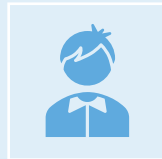
$$9 \times 3 = 27$$



How do each of the strategies, models and/or representations support students in understanding the big ideas?



How can we use these strategies, models, and/or representations to provide grade level access for all students?



What additional scaffolds might students need to access this topic?



TURN & TALK

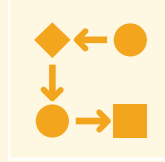
- How did this portion of the protocol help you to better understand the ways in which the representations, strategies, and/or models build across the unit?



Put Comments and Additional Questions in Chat

Wrap-Up Talk

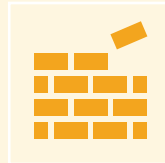
Things to Consider



How would going through that process help you to feel more prepared to go teach this unit?



What impact would going through this process have on teachers and students in your building?



What might be some obstacles to implementing this structure with teachers in your building?

CCSSO
Council of Chief State School Officers®

  INSTRUCTION
PARTNERS

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