



Park Hill School District

Building Successful Futures • Each Student • Every Day

3rd Grade Math Curriculum

Scope and Sequence:

Quarter	Instructional Units
1	Unit 1: Math Is... Unit 2: Use Place Value to Fluently Add and Subtract within 1,000 Unit 3: Multiplication and Division
2	Unit 4: Use Patterns to Multiply by 0, 1, 2, 5, and 10 Unit 5: Use Properties to Multiply by 3, 4, 6, 7, 8, and 9 Unit 6: Connect Area and Multiplication
3	Unit 7: Fractions Unit 8: Fraction Equivalence and Comparison Unit 9: Use Multiplication to Divide Unit 10: Use Properties and Strategies to Multiply and Divide (Start in Q3 but end in Q4)
4	Unit 11: Perimeter Unit 12: Measurement and Data Unit 13: Describe and Analyze 2-Dimensional Shapes

Curriculum Revision Tracking

Spring 2026: Revised Unit 1. Updated for clarity, pacing and standards reporting to fit the 2026-2027 calendar. Updated for accessibility.

Unit 1: Math Is

Subject: Math

Grade: 3rd Grade

Name of Unit: Math Is

Length of Unit: 7 days

Overview of Unit: This unit replaces the *Math Is* unit found in your Teacher's Manual, Volume 1. Please use this one.

This unit aims to help students and teachers see math as problem-solving strategies rather than just computation. We encourage students to see that math is part of our daily lives and shows up in almost every activity. It is important that students see themselves as skilled doers of math, so we want to help them understand that math is much more than carrying out operations and calculations. Rather, doing math is more accurately making sense of and solving problems and finding relationships and patterns among quantities and numbers. Students define a productive and positive classroom environment where all students can:

- Share ideas and collaborate freely
- Find success in math and become doers of mathematics
- Apply their math thinking and practices to problem solving
- Take ownership of their personal learning journey
- Become the creative problem solvers of tomorrow

Getting Ready for the Unit:

- Read through the 7 EEs to understand what you will be teaching and why.
- *The Magical Yet* is referenced in EE 1 with a link to show the story. If you would prefer the book, find a copy in your library.
- *Hidden Figures: The True Story of Four Black Women and the Space Race* is referenced in EE 3 with a link. If you would prefer the book, find a copy in your library.
- Print the [5 Math Norms](#) for EE 4 and decide where you will hang them after the lesson for reference all year. See Coaches' Corner in Schoology in your Math folder for more versions of the Math Norms.
- Print and prepare the [Measurement Station Cards](#) for the activity for EE 4.
- You will need a deck of cards for EE 5. You will also decide whether or not to try vertical surfaces for students to work.
- For EE 6 you will be setting up expectations for how your students will use ALEKS Adventure. Read through that EE and practice finding the student view in ALEKS Adventure before doing this lesson (directions in EE 6).
- Print Greg Tang's Six Step Problem Solving [Model](#) for EE 7.
- Print and display the Mathematical Practices Posters found in your Math folder in Coaches' Corner in Schoology. Plan to refer to these frequently throughout the year.

Essential Questions:

- What does it mean to do math?
- What is my math identity?

Enduring Understandings:

- Wise learners value the struggle of learning new content and skills.
- Math communities support each other through struggle.
- Errors are gifts that promote discussion and help us to learn.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
struggle community identity norm strategy representation task	mathematician

Engaging Experience 1

Teaching Point: *Today I want to teach you that wise mathematicians value struggle.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to share struggle stories. You could read aloud [The Magical Yet](#) and discuss the following questions:

- What is something you can't do... yet?
- How does it feel to add that yet?
- Did the girl in the story learn how to ride her bike overnight or did it take practice?
- What is something you had to practice to learn?
- How did it feel when you learned how to do it?
- If you are having a hard time with something--like the girl did with her bike--what is something encouraging you could tell yourself?
- Tell about a time you made a mistake and tried again even though it was hard. How did it turn out? How did it feel?

Another way to do this, in combination with the first option or instead of, is to share stories of famous people who struggled, such as Colonel Sanders, J.K. Rowling, Stephen Curry, Michael Jordan, etc. You can get ideas from the article "[Famous Failures For Kids - And How to Teach Them Mindset](#)"

Suggestions: *Research shows that productive struggle is necessary for our brains to learn new content. It is the grappling of new ideas that makes the new learning "stick" in our long term memories. The goal of this lesson is to help your students understand that struggling with something is good because it grows our brains. You can learn more about how productive struggle can help our students learn from this article [What is Productive Struggle](#).*

Engaging Experience 2

Teaching Point: *Today I want to teach you how we can become a community of mathematicians who support each other through our struggles.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to start by asking students, “What do we need in our math community?” Chart their answers. Some possible answers might include:

- *Our math tools need to be available and organized.*
- *We need to encourage each other when we get stuck.*
- *We need to encourage each other to follow through with action steps to reach our goals.*
- *We can coach each other without giving the answer.*

Another way to do this is to write on a piece of chart paper “In our math community, we promise to...” Then, as a class, brainstorm ways to support each other (e.g, encouraging words, explaining different ways, celebrating mistakes as learning opportunities). Turn this into a classroom **Math Community Promise** and display it.

After this has been created, you can provide students with a challenging (but accessible) math problem, such as the Work Together problem on page 9 of the student edition workbook and coaching prompts, such as: “I see what you’re trying - let’s think it through together.” “Can you explain what you’re thinking?” “Let’s try breaking this down step by step.” Students should try to use these as they work in pairs.

At the end, you can ask students to write on a sticky note one thing they learned about being part of a math community and add it to their **Math Community Promise**.

Suggestions: *Relationships are at the heart of all instruction. We know that students learn best when we work to build a community of learners because it creates a low-stress, high-trust environment. The activity in this engaging experience is meant to help your students work to build the relationships that will enable them to work together as mathematicians. We strongly encourage you to post and refer often to the chart that you create with your students throughout this unit and the school year.*

Engaging Experience 3

Teaching Point: *Today I want to teach you that we all have identities in our heads. We want to be aware of our math identities.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to start by having your students draw a picture of what a mathematician looks like. It will be interesting to note if the drawings look varied like the students or tend to look one way, such as adult men. After students draw and share their pictures and their thinking behind them, read or show the story of [*Hidden Figures: The True Story of Four Black Women and the Space Race*](#).

Another way to do this is to have students write about their Math Superpowers. You can use [*My Math Superpowers*](#) that also has brainstorming options on the back.

Suggestions: *You may teach students that wise learners use the learning habits of visualizing and imagining to help when learning how to connect new ideas to old ones.*

Engaging Experience 4

Teaching Point: *Today I want to teach you about the Math Norms we will use this year in our math community.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to create an anchor chart with students explaining that capacity is used to find out how much liquid a container holds. Add pictures of everyday objects used for estimating capacity. Ask students the following question: Chris says his water bottle is about a gallon. Is Chris correct? Guide students to discuss the math norm of **errors are gifts that promote discussion** through the error. Then add that weight is used to find out how heavy an object is and add pictures of everyday objects used for estimating weight. Pose the following question: Corina says her backpack weighs five pounds. Is Corina correct? Discuss as a class and highlight the math norm of **talking about each other's thinking**. Have students work with a partner and 2-3 everyday objects to estimate the capacity or weight of their objects. Encourage students to **ask questions until it makes sense** and **use multiple representations and strategies** as they work. Debrief as a whole group and make a point of valuing all of the different work you saw and stress the final math norm: **Answers are important, but they are not the math**. For the independent practice portion of this lesson, students could answer questions such as:

- Estimate how many cups of water are needed to fill a gallon container.
- Does an apple weigh closer to a few ounces or a pound? Explain your reasoning.
- Choose an object in the classroom. Estimate and then measure its weight or capacity. (This would be dependent on what objects and manipulatives you have in your classroom.)

Finally, discuss the following questions with the whole group: How did estimating help you before measuring? What did you learn from an error today? How did talking with a partner help your understanding?

Another way to do this is to let your students know they are going to be math detectives! Their mission is to uncover the habits that make great mathematicians successful and use customary units of measurement. Say to the students, *"A container holds some cups of water. The amount is doubled then 2 cups are added. The total is 10 cups."* Have students share different strategies to solve (drawings, equations, guessing and checking). Ask, *"Why was it helpful to hear different ways to solve this?"*

Introduce the idea that good mathematicians use norms to help them think, talk, and learn. Create/share an [anchor chart](#) that shows customary capacity and mass units of measurement. Then, divide students into small groups and explain the [4 Measurement Mystery Stations](#). Each station should have:

1. A math detective mission (hands on activity)
2. A mystery problem (strategies problem)
3. A mistake (mistake to solve and discuss)
4. A discussion prompt

Student groups work together to complete each station to answer questions, correct errors, and explain their thinking.

After the groups have had time to complete the task, gather together. Review math norms and customary units of measurement. End by having students reflect: *"Which norm helped you the most today? Why?"*

Suggestions:

- *This lesson requires materials. Please gather them prior to the lesson. Needs include: various everyday objects to measure and estimate weight and capacity. The “another way” option specifically needs 2 one cup measuring cups, 1 gallon container; 1 container of your choice, 2-3 various objects to estimate weight compared to a pencil for an ounce and 2-3 various objects to estimate weight compared to a math workbook for a pound.*
- *Print the Math Norms to have them handy for this lesson then designate a space in your classroom where the Math Norms will be posted all year. You may also refer to the poster you created during EE2 about your math community.*

Engaging Experience 5

Teaching Point: *Today I want to give you an opportunity to experience some possible math struggles.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to start by reviewing the Math Norm “**Talk about each other’s thinking.**” Tell students you are going to put them in random groups of 3 and give them a task to work on.

To get students into random groups of 3, use a deck of playing cards. Ahead of time, take cards out of the deck so that there are only 3 of each type of card possible. Let students pick a card. Let students know that the expectation of a supportive math community is to be happy to work with anyone and never boo or cheer when they learn who is in their group, because that would hurt people’s feelings. You might want to refer to the work done as a class in EE 2 before beginning the task.

Decide where each student group will work. Peter Liljedahl’s work in *Building Thinking Classrooms* talks about the cognitive value of having students stand and work on vertical surfaces. If you wanted to try this, you could hang chart paper or 11 x 17 sheets around the room for each group. If you don’t want to try vertical work, you could have students work in designated spots around the room.

Have each group start by sharing the pen and writing their names. Each person should take a turn writing someone else’s name, passing the pen. After that as they start working, they should share the pen every 2-3 minutes. Some possible tasks you could give students are linked below.

Once students are finished, debrief the math and let students share their work. Debrief how students felt and how they were able to support each other. Let students know that they will be doing something similar tomorrow with another group of 3.

Options for tasks: [Going Bowling](#), [Jellybeans](#), [Ice Cream Cones](#)

Another way to do this is to use the Math Circles Collaborative Inquiry structure with the options for problems listed above.

1. **Launch the problem for the whole class** - Ask, “*What do you notice? What do you wonder?*” to generate curiosity and allow students to make predictions or share initial thoughts.
2. **Small group exploration** - Group students into groups of 3 or 4 to explore the problem. Encourage discussion among the groups and for students to try

multiple strategies. Groups should record their thinking using visuals or manipulatives. Everyone in the group should be able to explain the reasoning. The teacher walks around listening and asking guiding questions such as, “How did you start? Can you explain that in a different way? What patterns do you see?” The teacher should avoid giving direct answers and encourage deeper exploration.

3. **Whole-class discussion and sharing** - Groups share their strategies and thinking. Groups compare different methods and representations. The teacher should encourage students to ask each other questions.
4. **Reflection** - The teacher asks students to reflect on these questions, “What did you learn? What questions do you still have?”

Suggestions: *The goal of this engaging experience is to allow students to struggle as they work through an open-ended task and to reinforce the math norm, “Talk About Each Other’s Thinking.” We suggest that you do more listening than talking as you move through the groups. If students ask a question, respond with a question that guides them back to their thinking and/or conversation. Spending too much time with any group will, more than likely, cause teachers to guide the work so we suggest you move quickly from group to group. You can choose some of the questions found in this document that shares [100 Questions to Promote Mathematical Discourse](#) as you interact with students.*

Engaging Experience 6

Teaching Point: *Today I am going to show you how to use ALEKS Adventure to grow your math thinking.*

Suggested length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Math Norm “**Answers are important, but they are not the math.**” This norm will help give the rationale for the expectation you are going to set that students write down their thinking and their work as they do ALEKS Adventure lessons. Use this example of an [ALEKS Adventure notebook](#) to show your students how they might keep track of their work in their notebooks. Student notebook work should include working out the problems. They can also include notes about how to do things, reflections, and goals.

Another way to do this is to use the ALEKS Adventure student view to help students set up their work space in their notebooks as shown in the ALEKS Adventure student sample linked above. To do this follow these steps:

1. On the top drop bar menu in ALEKS Adventure, click on your class
2. Click “Class tools” located towards the top right hand corner (in Classic view or along the top in New ALEKS view).
3. Click “Student view”
4. Click the “Enter student view” button.

Suggestions: *Showing students a set way for them to keep track of their learning in a notebook will facilitate the students being able to refer to their learning as they progress through it. It will also provide a means for the teacher to figure out misconceptions that students may develop when they struggle with a lesson or to see their progression of skills.*

Engaging Experience 7

Teaching Point: *Today I am going to teach you how mathematicians use problem solving steps to make sense of word problems.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to discuss how mathematicians often have to solve challenging word problems. Then ask the students if they know about how using a checklist of steps helps learners complete difficult tasks. Model how to use the Six Step Problem Solving [Model](#) to solve a word problem and challenge students to track your completion of each step. Next, provide students a visual of the model and prepare to guide students through using the steps to complete a word problem in a “We Do” process. This is a wonderful time to use observation to begin learning the students’ ability and comfort in using this model. During the students’ independent work, try to center your encouragement on using the steps and making sense of the situation more than achieving the answer.

A possible word problem you could use is: *Last week nine cats were adopted from the animal shelter. There were three times as many dogs adopted as cats. How many dogs were adopted from the animal shelter last week?*

Another way to do this is to use a numberless word problem to walk the students through the steps in the Six Step Problem Solving [Model](#). Using a numberless word problem such as, *There are two gray wolves at the zoo. The weight of the younger wolf is a certain number of pounds. The older wolf weighs a certain number of pounds. How much more does the older wolf weigh?*

In this problem, you could walk the students through the Six Step Problem Solving Model steps as follows:

1. **Read the entire problem.**
2. **Rewrite the question as a statement.** *The older wolf weighs ____ more pounds than the younger wolf.*
3. **Who or what is the problem about?** Write it! *The problem is about two wolves at the zoo.*
4. **Draw your model.** *In this model, there will be three unknowns. One for how much the younger wolf weighs, a second for how much more the older wolf weighs, and a third for the difference. Have the students use blanks, question marks, or variables for these missing numbers in the equation.*
5. **Write an equation.** *At this point in time, students can choose any reasonable number for how much the younger wolf weighs and how much the older wolf weighs. Each student can choose a different number.*
6. **Solve it.** *Students solve the problem with the numbers they chose.*

Provide students with other word problems to try the steps in pairs or random groups of 3. As you interact with the students, try to center your encouragement on using the steps and making sense of the situation more than achieving the answer. You can find more numberless word problems at numberlesswp.com.

Suggestions: *Many of the “tips and tricks” we once learned and use to teach students to help them solve word problems can cause misconceptions that are difficult for them to discard as they move up through the grades. If you would like to know more about Math Rules That Expire, read this article: [13 Rules That Expire](#).*

Also, this may be a wise time to revisit the student drawings and ideas shared from Engaging Experience 3 about perceived math identities. It will be interesting to see if the students have a revised perception around what mathematicians look like as a result of learning through this unit.

The second way to teach this engaging experience uses numberless word problems. These problems help students focus on the math and understanding the problems instead of the students' likely choice of jumping to "do" something with the numbers without knowing what the problem is asking them to do. You can learn more about numberless word problems in [this article](#) from the numberlesswp website.

Unit 2: Use Place Value to Fluently Add and Subtract within 1,000

Subject: Math

Grade: 3rd

Name of Unit: Use Place Value to Fluently Add and Subtract within 1,000

Length of Unit: 17 days

Overview of Unit:

In this unit, students extend their knowledge of place value to 3- and 4-digit numbers and apply this knowledge to adding and subtracting 3-digit numbers. Students use place value to form estimates of sums and differences by rounding and using compatible numbers. They will extend their understanding of addition properties by discovering the order or grouping of three addends does not change the sum. Students also identify even and odd addition patterns to help check whether a sum is accurate.

Students use their understanding of place value to learn strategies, such as decomposing and adjusting, and then apply these strategies to help add/subtract more fluently. They also use their understanding of addition and subtraction to solve two-step word problems.

Students will extend their understanding of place value, addition, and subtraction learned in previous grades, including:

- **Place Value:** Students represent 3- and 4-digit numbers using standard form, expanded form, and word form.
- **Round multi-digit numbers:** Students round multi-digit numbers to the nearest 10 and nearest 100.
- **Addition:** Students use addition properties and strategies to add 3-digit numbers.
- **Subtraction:** Students use strategies to subtract 3-digit numbers.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Base ten blocks
 - Blank number cubes
 - Counters
 - Grid paper
 - Paper money (1\$ bills, \$10 bills, \$100 bills)
 - [*Number Cards 0-10*](#) Teaching Resource
 - Transparent spinner
 - [*Problem Solving Tool*](#) Teaching Resource

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When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Questions:

- How can I use strategies to add and subtract fluently?
- How does place value affect addition and subtraction?

Enduring Understandings:

- The expanded algorithm for adding 3-digit numbers breaks the addition problem into a series of easier problems based on place value. Answers to the simpler problems are then used to find the final sum.
- The process for regrouping and adding 3-digit numbers is an extension of the process for regrouping and adding 2-digit numbers.
- The addition of three or more numbers is an extension of adding two numbers.
- The expanded algorithm for subtracting multi-digit numbers breaks a larger subtraction problem into a series of easier problems based on place value. Answers to the simpler problems are then used to find the final difference.
- The process for regrouping and subtracting 3-digit numbers is an extension of the process for regrouping and subtracting 2-digit numbers.
- There are a variety of strategies that can be used to add or subtract 3-digit numbers.
- Good math thinkers use math to explain why they are right. They can also talk about the math that others do.

Priority Standard:

- 3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.
 - 3.NBT.A.3 Demonstrate fluency with addition and subtraction within 1,000.

Supporting Standards:

- 3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.
 - 3.NBT.A.1 Round numbers to the nearest 10 or 100
 - 3.NBT.A.2 Read, write and identify whole numbers within one hundred thousand, using base-ten numerals, number names and expanded form

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.NBT.A.3	How to use place value to add and subtract within 1,000.	Fluently add and subtract with numbers and results within 1,000 using strategies based on place value and the relationships between addition and subtraction. Use properties of operations (associative, commutative, distributive, identity). Use and explain multiple strategies to solve problems with or without context.	Apply	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Unit Assessment Form A. <i>This is editable.</i> • Exit Ticket • Math Probe • Fluency Check	• Performance Task • Unit Assessments Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
determine represent discuss identify comparison reason justify strategy analyze support defend adjust process conclude response	expanded form standard form word form compatible numbers estimate round even/odd number addend sum decompose partial sum difference bar diagram unknown

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 4: Information Gap
- MLR 5: Co-Craft Questions and Problems
- MLR 6: Three Reads
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- Find the Pattern, Make a Pattern
- Mystery Number
- Decompose It
- Where Does It Go?
- Would You Rather?

Sense-Making Routines:

- Notice & Wonder
- Numberless Word Problem
- Is It Always True?
- Notice & Wonder: How are they the same? How are they different?
- Which Doesn't Belong?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Physical Application Station (Use It!) • Online Application Station-Extension Activity • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about addition and subtraction.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 2 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about addition and subtraction by posing the Focus Question: How can I use strategies to add and subtract fluently? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 2 Unit Assessment Form A as a pretest of the material in Unit 2. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 31G in the Teacher's Edition to prepare.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 3

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful in Unit 2.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using the Teacher's Edition, page 32, step 1. Then have students work through steps 2-5 independently when not working with the teacher in small groups. You will conduct

small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 2>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: Use *Teacher's Edition* page 32A to develop workstations or have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing the Ignite! activity.

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 1: 2-1 Represent 4-Digit Numbers

Teaching Point: *Today I'm going to teach you to explore ways to represent 4-digit numbers.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-1 to help students explore representations of 4-digit numbers. Remind students that place value identifies the value of a digit, and verify they understand that a 3-digit number has digits in the hundreds, tens, and ones places. Then explain that a cube is a base-ten block that has a value of 1,000.

Another way to do this is to use the Activity- Based Exploration for 2-1 to help students explore ways to represent 4-digit numbers.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* Blank number cubes or digital dice, base-ten blocks, [Place-Value Charts to 1,000](#).
- *Closure Opportunities:* Exit Ticket and/or Question: How does place value help you write a number in word form.
- *Differentiation Options:* *Teacher's Edition Volume 1* pages 36B-36C

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 2: 2-2 Round Multi-Digit Numbers

Teaching Point: *Today I'm going to teach you to round numbers to the nearest 10 and 100.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 2-2 to help students explore strategies and tools to round 3-digit numbers to the nearest 10 or nearest 100.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-2 to help students explore rounding 3-digit numbers to the nearest 10 and the nearest 100.

Suggestions:

- *2nd grade teaches students to add on a number line, but they do not teach students how to put endpoints on the number line. Teaching students how to do this would be helpful for students when they round.*
- *Activity Based Exploration materials to prepare prior to lesson: Counters, [Number Chart 401-500](#).*
- *Closure Opportunities: Exit Ticket and/or Question: When might you want to round to the nearest 10 instead of the nearest 100?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 40B-40C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 2 Math Probe: Rounding Numbers. Use Teacher's Edition Volume 1 page 42A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume page 32A.

Suggestions: *You can use today after the math probe as a review day for 2-2 if needed.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 2-3 Estimate Sums and Differences

Teaching Point: *Today I'm going to teach you to round and use compatible numbers when estimating sums and differences.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for 2-3 to help students explore using rounding and compatible numbers to estimate sums and differences. When might you need to estimate a sum or difference in your life?

Another way to do this (DAY 2) is to use the Activity-Based Exploration for 2-3 to help students explore estimating using rounding and compatible numbers.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Blank number cubes or digital dice.*
- *Closure Opportunities: Exit Ticket and/or Question: When might you need to estimate a sum or difference in your life?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 46B-46C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 4: 2-4 Use Addition Properties to Add (*Optional*)

Teaching Point: *Today I'm going to teach you how to apply addition properties as strategies to help add more efficiently.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 2-4 to help students explore using properties of addition, such as the Commutative Property of Addition and the Associative Property of Addition, to add two or more addends. While students need to understand and apply the properties, they do not need to know their formal names.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-4 explore adding three addends by grouping them or changing the order.

Suggestions:

- *2nd grade teaches students to add on a number line, but they do not teach students how to put endpoints on the number line. Teaching students how to do this would be helpful for students when they round.*
- *Activity Based Exploration materials to prepare prior to lesson: Counters, [Number Chart 401-500](#).*
- *Closure Opportunities: Exit Ticket and/or Question: How can changing the order of three addends help you add more efficiently?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 50B-50C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 5: 2-5 Addition Patterns

Teaching Point: *Today I'm going to teach you addition patterns and how they relate to even and odd addends.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-5 to help students explore addition patterns and understand that when adding two 3-digit numbers, they can use even and odd patterns to determine the reasonableness of their sums.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-5 to help students explore addition patterns of even and odd sums.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the counters and [Number Chart 401-500](#).*
- *Closure Opportunities: Exit Ticket and/or Question: How can knowing that the sum of two even numbers is always even help you check your work?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 54B-54C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 6: 2-6 Use Partial Sums to Add

Teaching Point: *Today I'm going to teach you to use horizontal and vertical formats to add partial sums.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-6 to help students explore adding two 3-digit addends using the partial-sums strategy in both horizontal and vertical formats. Students will also estimate the sum and check their accuracy.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-6 to help students explore partial-sums addition with 3-digit addends in horizontal or vertical formats.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the base-ten blocks and grid paper.*
- *Closure Opportunities: Exit Ticket and/or Question: Why is understanding place value important when using the partial sums strategy to add?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 58B-58C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 7: 2-7 Decompose to Subtract

Teaching Point: *Today I'm going to teach you to think about how the same whole can be decomposed into parts of different sizes.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration 2-7 to help students explore decomposing in different ways to subtract two 3-digit numbers. Students will also estimate the difference and check the accuracy of their estimate

Another way to do this is to use the Activity-Based Exploration to help students explore decomposing to help build fluency in subtraction.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the base-ten blocks and [Number Cards 0-10](#).*
- *Closure Opportunities: Exit Ticket and/or Question: How do you decide how to decompose one number to subtract?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 62B-62C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 8: 2-8 Adjust Numbers to Add or Subtract

Teaching Point: *Today I'm going to teach you to adjust numbers to add or subtract more easily.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for 2-8 to help students understand that they can adjust numbers in addition and subtraction equations to make the equations easier to solve.

Another way to do this (DAY 2) is to use the Activity-Based Exploration for Lesson 2-8 to help students explore adjusting addition and subtraction equations to help them work more efficiently.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the [Number Cards 0-10](#).*
- *Closure Opportunities: Exit Ticket and/or Question: How can adjusting just one number affect the addition or subtraction equation?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 66B-66C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 9: 2-9 Use Addition to Subtract

Teaching Point: *Today I'm going to teach you how addition and subtraction are related.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-9 to help students explore the relationship between addition and subtraction and understand that a subtraction equation can be rewritten as an unknown addend problem.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-9 to help students solve a problem using a related addition equation.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the [Number Cards 0-10](#).*
- *Closure Opportunities: Exit Ticket and/or Question: How are addition and subtraction related?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 70B-70C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 10: 2-10 Fluently Add within 1,000 *(Optional)*

Teaching Point: *Today I'm going to teach you to use different strategies to add 3-digit numbers.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-10 to help students review addition strategies they have learned. Students will also think about which strategy they find to be the most efficient.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-10 to help students solve an addition problem using different strategies.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the blank number cubes.*
- *Closure Opportunities: Exit Ticket and/or Question: How do you decide which addition strategy to use when solving a problem?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 74B-74C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 11: 2-11 Fluently Subtract within 1,000 *(Optional)*

Teaching Point: *Today I'm going to teach you strategies to subtract two 3-digit numbers.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 2-11 to help students identify the numbers and operations needed to solve a word problem. Then students discuss different strategies they can use to solve the problem, such as decomposing, adjusting, or relating addition to subtraction.

Another way to do this is to use the Activity-Based Exploration for Lesson 2-11 to help students explore adjusting addition and subtraction equations to help them work more efficiently.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the blank number cubes.*
- *Closure Opportunities: Exit Ticket and/or Question: How do you determine if a subtraction strategy is efficient?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 78B-79C*
- *Use the second day to respond to the particular skill needs of your learners and reinforce effective use of the addition/subtraction strategies.*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 12: 2-12 Solve Two-Step Problems Involving Addition and Subtraction

Teaching Point: *Today I'm going to teach you to solve problems that have more than one step.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for 2-12 to help students understand that two-step word problems can be solved using an equation to represent each of the steps and a letter can be used to represent each unknown.

Another way to do this (DAY 2) is to use the Activity-Based Exploration for Lesson 2-12 to help students explore strategies for solving a two-step problem.

Suggestions:

- *One suggestion if using the Activity Based Exploration is to prepare ahead of time the [Problem-Solving Tool](#) Teaching Resource.*
- *Closure Opportunities: Exit Ticket and/or Question: How can you make sense of a two-step problem?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 82B-83C*

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 2*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to assign the digital Unit 2 Review found in ConnectED to review Unit 2 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the print Unit Review and Fluency Practice found on student pages 83-88 to review unit 2 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Apply

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 2.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NBT.A.3

Supporting: 3.NBT.A.1, 3.NBT.A.2

Detailed Description/Instructions:

One way to do this is to assign the Unit 2 Unit Assessment form A or B through

ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 2 Unit Assessment paper form A or B In addition to the assessment, you could print the Performance Task (Engaging Scenario).

Suggestions:

- *You are reporting out on: Demonstrate fluency with addition and subtraction within 1,000 (3.NBT.A.3)*
- *One way to do this is to give the paper Unit Assessment and use the item analysis in the Teacher's Edition on page 88B. The standards do not match, because they are Common Core standards rather than Missouri Learning Standards.*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 2

Performance Task: Number Card Reasoning
Teacher's Edition page 88A

This five-part task asks students to apply all the skills and standards taught in Unit 2. Students will have to use six cards with numbers 0 - 9 to create 3-digit numbers, manipulate those numbers to create the greatest possible sum and difference, and explain their processes.

Unit 3: Multiplication and Division

Subject: Math

Grade: 3rd

Name of Unit: Multiplication and Division

Length of Unit: 14 days

Overview of Unit: In this unit, students use a variety of representations to show multiplication and division situations. Visual representations of equal groups lay the foundation for multiplication and division. Real-life objects are used first, with students moving to representing multiplication and division with manipulatives and then with numbers and symbols.

By the end of this unit, students should recognize whether a problem should be thought of as a multiplication or division situation depending on how it is written. They also recognize that multiplication and division relate to each other because they represent the same number of objects and the same number of groups.

Students extend their understanding of addition and equal-group concepts learned in previous grades. These include:

- **Repeated addition:** Students use equal groups to find the product in multiplication equations.
- **Arrays:** Students use arrays to represent equal groups and can help solve multiplication and division equations.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Blank number cubes
 - Counters
 - String
 - Geoboards ([Toy Theater](#) or [Didax](#))
 - Dot cube
 - Paper plates
 - Index cards
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- What does it mean to multiply and divide?

Enduring Understandings:

- Multiplication represents the total number of objects in equal groups.
- Division can represent equal sharing or equal grouping.
- Representations can be used to understand the relationship between multiplication and division.

Priority Standards:

- 3.RA.A Represent and solve problems involving multiplication and division.
 - 3.RA.A.1 Interpret products of whole numbers.
 - 3.RA.A.2 Interpret quotients of whole numbers.
 - 3.RA.A.3 Describe in words or drawings a problem that illustrates a multiplication or division situation.

Supporting Standards:

- 3.RA.A Represent and solve problems involving multiplication and division.
 - 3.RA.A.4 Use multiplication and division within 100 to solve problems.
 - 3.RA.A.5 Determine the unknown number in a multiplication or division equation relating three whole numbers.
- 3.RA.B Understand properties of multiplication and the relationship between multiplication and division.
 - 3.RA.B.6 Apply properties of operations as strategies to multiply and divide.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.RA.A.1	The meaning of multiplication	Make sense of what the product means. Describe what an array shows	Apply	2
3.RA.A.2	The meaning of division	Make sense of what the quotient means. Describe what the sharing arrangement shows. Describe what the measurement arrangement shows.	Apply	2
3.RA.A.3	How to describe multiplication or division in words or drawings.	Describe in words/drawings a problem that illustrates a multiplication/division situation.	Apply	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Unit Assessment Form A. <i>This is editable.</i> • Exit Ticket • Math Probe • Fluency Check	• Performance Task • Unit Assessments Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
create determine represent strategy conclude structure context contrast compare characterize identify	equal groups multiplication array factor product division dividend divisor quotient associative property commutative property unknown

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 5: Co-Craft Questions and Problems
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- Would You Rather?
- Decompose It
- Find the Pattern, Make a Pattern

Sense-Making Routines:

- Notice & Wonder
- Notice & Wonder: How are they the same? How are they different?
- Is It Always True?
- Numberless Word Problem
- Which Doesn't Belong?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
● Small Group Activity Lesson ● Online Take Another Look Lesson ● Reinforce Understanding Page from Differentiation Resource Book ● ALEKS Adventure	● Print & Digital Games ● Online Interactive Additional Practice ● Additional Practice page from Student Practice Book ● Print or Digital Spiral Review ● ALEKS Adventure	● Online Application Station-Extension Activity ● Physical Application Station (Use It!) ● Extend Thinking Page from Differentiation Resource Book ● ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about addition and subtraction.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 3 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about addition and subtraction by posing the Focus Question: What does it mean to multiply and divide? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 3 Unit Assessment Form A as a pretest of the material in Unit 3. This test can be assigned digitally or printed. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 89G in the Teacher's Edition to prepare.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 3

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful in Unit 3.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 90. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 3>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use Teacher's Edition page 90A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity. (You will want to add commutative and associative property to the vocabulary cards)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 1: 3-1 Understand Equal Groups

Teaching Point: *Today I'm going to teach you to explore strategies for determining the total number of a large quantity of items.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.3

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for 3-1 to help students build an understanding of one meaning of multiplication as equal groups.

Another way to do this is to use the Activity-Based Exploration for 3-1 to help students explore and use equal groups to find the total number of objects.

Suggestions:

- *Activity- Based Exploration materials to prepare prior for the lesson: Counters or other countable manipulatives, yarn or string.*
- *Closure Opportunities: Exit Ticket and/or Question: How does multiplication represent equal groups?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 94B-94C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 2: 3-2 Use Arrays to Multiply

Teaching Point: *Today I'm going to teach you to represent multiplication using arrays.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.3

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for Lesson 3-2 to help students build an understanding that the rows of equal groups in an array can represent multiplication.

Another way to do this (DAY 2) is to use the Activity-Based Exploration for Lesson 3-2 to help students explore making an array to represent equal groups.

Suggestions:

- *Activity Based Exploration materials to prepare prior to lesson: Blank number cubes, counters*
- *Closure Opportunities: Exit Ticket and/or Question: How can arrays represent multiplication?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 98B-98C*

Bloom's Levels: Apply

Webb's DOK: 3

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.3, 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 3 Math Probe: Ways to Show 6 X 3. Use Teacher's Edition Volume 1 page 100A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume page 90A.

Suggestions: *Prior to lesson: Explore math activities to use with students.*

Bloom's Levels: Understanding

Webb's DOK: 2

Engaging Experience 3: 3-3 Understand the Commutative Property

Teaching Point: *Today I'm going to teach you that the order of two factors in multiplication does not change the product.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.3, 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 3-3 to have students extend their understanding of multiplication by noticing the orientation of an array does not change the total, leading to the generalization that the order of the factors in the multiplication equation does not change the product. Explicitly teach this as the Commutative Property. The DESE item specifications for 3.RA.B.6 states, “While students will be learning how to use properties of operations, i.e., associative, commutative, distributive, the focus is not on identifying or naming the properties.”

Another way to do this is to use the Activity- Based Exploration for Lesson 3-3 to have students explore different arrangements of arrays to determine whether the orientation of the array changes the total number of objects in the array.

Suggestions:

- *Make sure students understand that while the order of the factors in a multiplication equation does not change the product, it does change how the array looks and what the multiplication sentence says. For example $3 \times 5 = 15$ says “3 groups of 5 is the same as 15.” $5 \times 3 = 15$ says, “5 groups of 3 is the same as 15.”*
- *Activity Based Exploration materials to prepare prior to lesson: counters, geoboards, (you can use [Toy Theater](#) or [Didax](#) for virtual) rubber bands*
- *Closure Opportunities: Exit Ticket and/or Question: How does knowing that the order of the factors does not change the product help you multiply?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 104B-104C*

Bloom’s Levels: Apply

Webb’s DOK: 3

Engaging Experience 4: 3-4 Understand Equal Sharing

Teaching Point: *Today I’m going to teach you to represent division using equal sharing.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 3-4 to help students build an understanding of division in terms of equal sharing to determine the number of objects in each group.

Another way to do this is to use the Activity- Based Exploration for Lesson 3-4 to help students create representations to explore equal sharing.

Suggestions:

- *There are two types of division--equal shares (also known as quotative or dealing) and equal groups (also known as partitive or scooping). Today’s lesson addresses equal shares. If you need more clarification, watch the Expert Insights video in ConnectEd’s Unit Resources for Unit 3.*
- *Activity- Based Exploration materials to prepare prior to lesson: Counters, paper plates, or circles drawn on paper*
- *Closure Opportunities: Exit Ticket and/or Question: How does equal sharing represent division?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 108B-108C*

Bloom’s Levels: Analyze

Webb’s DOK: 3

Engaging Experience 5: 3-5 Understand Equal Grouping

Teaching Point: *Today I'm going to teach you to represent division using equal grouping.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 3-5 to help students build an understanding of division in terms of equal grouping to determine the number of objects in each group. Students will develop an understanding of another meaning of division.

Another way to do this is to use the Activity- Based Exploration for Lesson 3-5 to help students explore creating representations to explore equal grouping

Suggestions:

- *There are two types of division--equal shares (also known as quotative or dealing) and equal groups (also known as partitive or scooping). Today's lesson addresses equal groups. If you need more clarification, watch the Expert Insights video in ConnectEd's Unit Resources for Unit 3.*
- *Activity- Based Exploration materials to prepare prior to lesson: Blank cubes, counters, index cards.*
- *Closure Opportunities: Exit Ticket and/or Question: How is division with equal grouping different than division with equal sharing?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 112B-112C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 6: 3-6 Relate Multiplication and Division

Teaching Point: *Today I'm going to teach you to use arrays and equal groups to identify the relationship between multiplication and division.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4, 3.RA.A.5

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 3-6 to help students extend their understanding of multiplication and division by relating the two operations.

Another way to do this is to use the Activity- Based Exploration for Lesson 3-6 to help students explore the relationship between multiplication and division.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Counters*
- *Closure Opportunities: Exit Ticket and/or Question: How are multiplication and division related?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 116B-116C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 7: 3-7 Find the Unknown

Teaching Point: *Today I'm going to teach you to use a representation to identify an unknown in a multiplication or division equation.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4, 3.RA.A.5

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for Lesson 3-7 to help students extend their understanding of multiplication and division by identifying an unknown using equal groups and an array.

Another way to do this (DAY 2) is to use the Activity- Based Exploration for Lesson 3-7 to help students explore how to find the unknown using multiplication or division.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank number cubes, counters*
- *Closure Opportunities: Exit Ticket and/or Question: How can you find the unknown in a word problem?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 120B-120C*

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 3*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the digital Unit 3 Review found in ConnectED to review Unit 3 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 121-126 to review Unit 3 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 3.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.A.1, 3.RA.A.2, 3.RA.A.3

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the Unit 3 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 3 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Interpret products of whole numbers (3.RA.A.1)*
 - *Interpret quotients of whole numbers (3.RA.A.2)*
 - *Describe in words or drawings problems a problem that illustrates a multiplication and division situation (3.RA.A.3)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 3

Performance Task: Kids' Might Run
Teacher's Edition page 126A

This four-part task asks students to apply all the skills and standards taught in Unit 3. Students will explain which team they would join after analyzing various run schedules.

Unit 4: Use Patterns to Multiply by 0, 1, 2, 5, and 10

Subject: Math

Grade: 3rd

Name of Unit: Use Patterns to Multiply by 0, 1, 2, 5, and 10

Length of Unit: 12 days

Overview of Unit: Starting in Grade 3, students begin to delve into a variety of multiplication problems. In the previous unit, students were introduced to multiplication and division representations.

In this unit, students discover patterns in products involving the numbers 0, 1, 2, 5, and 10. Products of 2 have 0, 2, 4, 6, or 8 in the ones place. Products of 5 have either a 5 or a 0 in the ones place. Products of 10 have a 0 in the ones place. When multiplying by 1, the product is the same as the other factor, and when a number is multiplied by 0, the product is always 0. Knowing about patterns can help students determine whether a product is reasonable or accurate.

Students use varying methods and representations to remember multiplication with the factors 2, 5, and 10. They relate multiplying by 2 as doubling or twice as much. They also refer back to what they have previously learned about equal groups and repeated addition. In order to connect multiplication to addition, doubling can be thought of as adding two equal groups. To multiply by 5, students use arrays with rows of 5. Students also skip count to multiply by 10. A multiplication fact table is also used to find patterns in the products that can help students recall multiplication facts.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Transparent spinner
 - Counters
 - Blank cubes
 - Base-ten blocks
 - Index cards
 - [Number Cards 0-10](#) Teaching Resource
 - [Multiplication Fact Table to 10](#) Teaching Resource
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I recall facts that multiply by 0, 1, 2, 5, and 10?

Enduring Understandings:

- Multiplication is a way to find the total when equal groups are combined.
- Repeated addition, skip counting, and patterns help us understand and solve multiplication problems.
- The numbers 0, 1, 2, 5, and 10 create patterns in multiplication facts that can help us solve problems quickly and accurately.
- Multiplying by 2 is just like doubling.

Priority Standards:

- 3.RA.C Multiply and divide within 100.
 - 3.RA.C.7 Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.
 - 3.RA.C.8 Demonstrate fluency with products within 100.

Supporting Standards:

- 3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.
 - 3.NBT.A.4 Multiply whole numbers by multiples of 10 in the range 10-90.
- 3.RA.A. Represent and solve problems involving multiplication and division.
 - 3.RA.A.4 Use multiplication and division within 100 to solve problems.
 - 3.RA.A.5 Determine the unknown number in a multiplication or division equation relating three whole numbers.
- 3.RA.B Understand properties of multiplication and the relationship between multiplication and division.
 - 3.RA.B.6 Apply properties of operations as strategies to multiply and divide.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.RA.C.7	Know all products of 2 one-digit numbers.	Describe the inverse relationship between multiplication and division	Understand	2
3.RA.C.8	Know all products of 2 one-digit numbers. Strategies for fluency.	Use and explain multiple strategies to solve problems with or without context with products within 100. Know strategies to find solutions within a reasonable amount of time.	Apply	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessments Form B. <i>This is editable.</i> • Benchmark Assessment 1 (Summative information for Units 1-4)

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
conclude recognize determine strategy identify value process reasoning apply explain	multiple multiplication fact table pattern product skip count equal groups unknown

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 5: Co-Craft Questions and Problems
- MLR 6: Three Reads
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- About How Much?
- Mystery Number
- Find the Pattern, Make a Pattern

Sense-Making Routines:

- Notice and Wonder: How are they the same? How are they different?
- Notice & Wonder: What do you notice? What do you wonder?
- Is It Always True?
- Which Doesn't Belong?
- Numberless Word Problem

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about patterns of multiplication*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 4 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about addition and subtraction by posing the Focus Question: How can I recall facts that multiply by 0, 1, 2, 5, and 10? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 4 Unit Assessment Form A as a pretest of the material in Unit 4. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 127G.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Understand

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful using multiplication patterns*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 128. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the

Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 4>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: Use *Teacher's Edition* page 128A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.

Bloom's Levels: Understand

Webb's DOK: 2

Engaging Experience 1: 4-1 Use Patterns to Multiply by 2

Teaching Point: *Today I'm going to teach you to use patterns to multiply by 2*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 4-1 to help students build on their understanding of multiplication to multiply by 2. They will also notice patterns in the products of 2.

Another way to do this is to use the Activity- Based Exploration for Lesson 4-1 to help students explore the relationship between doubling and multiplying by 2.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: counters multiplication fact table*
- *Closure Opportunities: Exit Ticket and/or Question: What patterns can you use to recall multiplication facts with 2?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 132B-132C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2: 4-2 Use Patterns to Multiply by 5

Teaching Point: *Today I'm going to teach you to use patterns to multiply with 5.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 4-2 to help students build on their understanding of multiplication to multiply by 5.

Another way to do this is to use the Activity-Based Exploration for Lesson 4-2 to help students explore patterns with products of 5.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: counters, [Multiplication Fact Table to 10](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: What patterns can you use to recall multiplication facts with 5?*

- Differentiation Options: Teacher's Edition Volume 1 pages 136B-136C

Bloom's Levels: Analyze

Webb's DOK: 3

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 4 Math Probe: Multiply by 2 and 5. Use Teacher's Edition Volume 1 page 138A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume page 128A.

Suggestions: *Prior to lesson: Explore math activities to use with students. If using workstations, prepare materials needed for those.*

Bloom's Levels: Understanding

Webb's DOK: 2

Engaging Experience 3: 4-3 Use Patterns to Multiply by 10

Teaching Point: *Today I'm going to teach you to use patterns to multiply with 10.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.NBT.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 4-3 to help students build on their understanding of multiplication to multiply by 10. Students are expected to use precise language when talking about place value patterns

Another way to do this is to use the Activity-Based Exploration for Lesson 4-3 to help students explore patterns when multiplying with 10.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: base 10 blocks, [Multiplication Fact Table to 10](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: What patterns can you use to recall multiplication facts with 10?*
- Differentiation Options: Teacher's Edition Volume 1 pages 142B-142C

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 4: 4-4 Use Patterns to Multiply by 1 and 0

Teaching Point: *Today I'm going to teach you to use patterns to multiply with 1 and 0.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 4-4 to help students build an understanding of the patterns in the products of 0 and 1.

Another way to do this is to use the Activity-Based Exploration for Lesson 4-4 to help students use physical and mathematical modeling to connect their answers to the broader patterns that apply to the products when multiplying by 1 or 0.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: blank cubes (labeled 2-7), counters*
- *Closure Opportunities: Exit Ticket and/or Question: What patterns can you use to recall multiplication facts with 1 and 0? Explain.*
- *Differentiation Options: Teacher's Edition Volume 1 pages 146B-146C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 4-5 Multiply Fluently by 0, 1, 2, 5, and 10

Teaching Point: *Today I'm going to teach you to use patterns to help you multiply.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6, 3.NBT.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 4-5 to help students use their knowledge of multiplication patterns to help recall facts and solve real-world problems.

Another way to do this is to use the Activity-Based Exploration for Lesson 4-5 to help students use multiplication patterns to complete multiplication facts.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: blank cubes (labeled 0,1,2,5,5,10), [Number Cards 0-10](#)*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe the patterns when multiplying by 0, 1, 2, 5, or 10?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 150B-150C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 6: 4-6 Solve Problems Involving Equal Groups

Teaching Point: *Today I'm going to teach you to use multiplication and division to solve problems involving equal groups.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for Lesson 4-6 to help students apply their understanding of multiplication and division to represent and solve word problems involving equal groups.

Another way to do this (DAY 2) is to use the Activity-Based Exploration for Lesson 4-6 to help students apply their understanding of multiplication and division to solve a problem involving equal groups.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: counters, [Multiplication Fact Table to 10](#) (Teaching Resource)*
- *Closure Opportunities: Exit Ticket and/or Question: How can you solve word problems involving equal groups?*
- *[Differentiation Options](#): Teacher's Edition Volume 1 pages 154B-154C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 4*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.NBT.A.4, 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Unit 4 Review found in ConnectED to review Unit 4 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 155-160 to review Unit 4 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Apply

Webb's DOK: 2

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 4.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.NBT.A.4, 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the Benchmark Assessment 1. You can assess the priority standards of this unit while also spiraling in concepts from the first four units. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to assign the Unit 4 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking.

Another way to do this is to use the Unit 4 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging

Scenario)

Suggestions:

- *You are reporting out on:*
 - *Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers. (3.RA.C.7) **NOTE: Unit 5 also addresses this standard.***
 - *Demonstrate fluency with products within 100 (3.RA.C.8) **NOTE: Unit 5 also addresses this standard.***

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 4

Performance Task: Product Reasoning
Teacher's Edition page 160A

This four-part task asks students to apply all the skills and standards taught in Unit 4. Students will use single digits only once to get as close to 100 without going over.

Unit 5: Use Properties to Multiply by 3, 4, 6, 7, 8, and 9

Subject: Math

Grade: 3rd

Name of Unit: Use Properties to Multiply by 3, 4, 6, 7, 8, and 9

Length of Unit: 13 Days

Overview of Unit: As students progress through Grade 3, they learn more strategies to solve multiplication problems. One multiplication strategy that this unit emphasizes is doubling. Students learn that when a factor doubles, the product also doubles.

Students are first introduced to the doubling strategy when relating products of 2s to products of 4s using the Multiplication Fact Table and patterns from equations. Students know that 2 is half of 4, which means 4 is double 2. This is when they discover they can double products of 2s to find the products of 4s. Students learn that they can double a 2s product to find a 4s product by using representations. They conclude that when a factor doubles, the product also doubles.

Similarly the factor 6 is double 3, so a 3s product can be doubled to get a 6s product for the same other factor. Then, arrays are used to represent the doubling of products of 4s to get products of 8s. Students can visually see how the dimensions of two 4 x 5 arrays equal one 8 x 5 array.

To find the unknown 3s facts, students can also use the known 2s facts and then add one more group. For example, they can combine the products of 2 groups of 4 and 1 group of 4 to make 3 groups of 4.

The same methods are used to multiply by 6 as students learn to decompose the factor of 6 into 5 and 1, which means $6 \times 7 = (5 \times 7) + (1 \times 7)$.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Color tiles
 - Glue
 - Grid paper
 - Scissors
 - Geoboards ([Toy Theater](#) or [Didax](#))
 - Blank cubes
 - Colored pencils

- Counters
- Pattern blocks
- Index cards

When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Questions:

- How can I recall facts that multiply by 3, 4, 6, 7, 8, and 9?
- How can you represent multiplication problems?

Enduring Understandings:

- The Distributive Property can be used to decompose facts in different ways and find products.
- Using known facts can help you solve new problems.
- You can double the product of a 2s fact to find a product of 4 and double the product of a 3s fact to find a product of 6. You can use this pattern for any products.
- Arrays, equal groups, number lines, and area models are all strategies for multiplication.

Priority Standards:

- 3.RA.C Multiply and divide within 100.
 - 3.RA.C.7 Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.
 - 3.RA.C.8 Demonstrate fluency with products within 100.

Supporting Standards:

- 3.RA.A. Represent and solve problems involving multiplication and division.
 - 3.RA.A.4 Use multiplication and division within 100 to solve problems.
 - 3.RA.A.5 Determine the unknown number in a multiplication or division equation relating three whole numbers.
- 3.RA.B Understand properties of multiplication and the relationship between multiplication and division.
 - 3.RA.B.6 Apply properties of operations as strategies to multiply and divide.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.RA.C.7	Know all products of 2 one-digit numbers.	Explain how to use known multiplication facts to solve division problems.	Understand	2
3.RA.C.8	Know all products of 2 one-digit numbers. Strategies for fluency.	Use and explain multiple strategies to solve problems with or without context with products within 100. Know strategies to find solutions within a reasonable amount of time.	Apply	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
analyze strategy create discuss process summarize comparison contrast determine investigate defend	array decompose multiplication product unknown

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 4: Information Gap
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 8: Discussion Supports

Number Routines:

- About How Much?
- Find the Pattern, Make a Pattern
- Let's Count

Sense-Making Routines:

- Notice & Wonder: What do you notice? What do you wonder?
- Notice & Wonder: How are they the same? How are they different?
- Is It Always True?
- Numberless Word Problem

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
● Small Group Activity Lesson ● Online Take Another Look Lesson ● Reinforce Understanding Page from Differentiation Resource Book ● ALEKS Adventure	● Print & Digital Games ● Online Interactive Additional Practice ● Additional Practice page from Student Practice Book ● Print or Digital Spiral Review ● ALEKS Adventure	● Online Application Station-Extension Activity ● Physical Application Station (Use It!) ● Extend Thinking Page from Differentiation Resource Book ● ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about patterns of multiplication*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 5 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about addition and subtraction by posing the Focus Question: How can I recall facts that multiply by 3, 4, 6, 7, 8, and 9? Introduce

and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 5 Unit Assessment Form A as a pretest of the material in Unit 5. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 161G*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 3

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful using multiplication properties.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using the Teacher's Edition page 162. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 5>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use Teacher's Edition page 162A to develop workstations for students to do after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 5-1 Understand the Distributive Property

Teaching Point: *Today I'm going to teach you to decompose a factor to multiple.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for Lesson 5-1 to help students understand the Distributive Property by decomposing a factor to help multiply. Students should be using parentheses in the problems when learning this property.

- $4 \times 7 = (4 \times 5) + (4 \times 2)$

Another way to do this (DAY 2) is to use the Activity-Based Exploration for Lesson 5-1 to help students explore the Distributive Property by decomposing a factor and representing the strategy with an array. Additionally students should be using parentheses in the problems when learning this property.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Color tiles, grid paper.*
- *Closure Opportunities: Exit Ticket and/or Question: How can decomposing a factor help solve a multiplication equation?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 166B-166C*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 2: 5-2 Use Properties to Multiply by 3

Teaching Point: *Today I'm going to teach you to use properties to recall multiplication facts with 3.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 5-2 to help students decompose a 3s fact by finding the product of a 2s fact and adding one more group to find the product of the 3s fact. Please, reiterate this is utilizing the Distributive Property and model writing these problems with parentheses.

Another way to do this is to use the Activity-Based Exploration for Lesson 5-2 to help students explore the relationship between 2s facts and 3s facts to understand how to decompose a 3s fact into a 2s fact to help find the product. Please, reiterate this is utilizing the distributive property and model writing these problems with parentheses.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: geoboards, rubber bands (one option for virtual geoboards is [Toy Theater](#) or [Didax](#))*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use properties to recall facts that multiply with 3?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 170B-170C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 5-3 Use Properties to Multiply by 4

Teaching Point: *Today I'm going to teach you to use properties to recall multiplication facts with 4.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 5-3 to help students decompose a factor using the Distributive Property to develop a strategy for recalling 4s facts

Another way to do this is to use the Activity-Based Exploration for Lesson 5-3 to

help students discover that to find the product of a 4s fact they can double a related 2s fact.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Counters, grid paper, colored pencils*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use a 2s fact to find a 4s fact?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 174B-174C*

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Experience 4: 5-4 Use Properties to Multiply by 6

Teaching Point: *Today I'm going to teach you to use properties to recall multiplication facts with 6.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 5-4 to help students use the Distributive Property to decompose 6 in different ways to find a product of 6.

Another way to do this is to use the Activity-Based Exploration for Lesson 5-4 to help students use triangles, pentagons, and hexagons to explore the relationship between 3 and 6 and 5 and 6.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Dice, pattern blocks, (one option for virtual pattern blocks is [Toy Theater](#))*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use a property of multiplication to find the product of 6×7 in two different ways? Show your thinking.*
- *Differentiation Options: Teacher's Edition Volume 1 pages 178B-178C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 5-5 Use Properties to Multiply by 8

Teaching Point: *Today I'm going to teach you to use properties to recall multiplication facts with 8.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 5-5 to help students use the Distributive Property to decompose 8 in different ways to find a product of 8.

Another way to do this is to use the Activity-Based Exploration for Lesson 5-5 to help students explore the Distributive Property to decompose 8s facts into facts they know.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Counters, grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use different properties of multiplication to recall 8s facts.*
- *Differentiation Options: Teacher's Edition Volume 1 pages 182B-182C*

Bloom's Levels: Apply**Webb's DOK:** 2**Engaging Experience 6:** 5-6 Use Properties to Multiply by 7 and 9**Teaching Point:** *Today I'm going to teach you to use properties to recall multiplication facts with 7 and 9.***Suggested Length of Time:** 1 day**Standards Addressed****Priority:** 3.RA.C.7, 3.RA.C.8**Supporting:** 3.RA.A.4, 3.RA.B.6**Detailed Description/Instructions:**

One way to do this is to use the Guided Exploration for Lesson 5-6 to help students use the Distributive Property by decomposing an array in different ways to multiply with 7 and 9.

Another way to do this is to use the Activity-Based Exploration for Lesson 5-6 to help students investigate the Distributive Property by creating arrays representing either a 7s fact or 9s fact.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Dice, grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: What is a strategy you can use to recall a 7s fact and a 9s fact?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 186B-186C*

Bloom's Levels: Apply**Webb's DOK:** 2**Math Probe****Teaching Point:** *Today you are going to show your learning.***Suggested Length of Time:** 1 day**Standards Addressed****Priority:** 3.RA.C.7, 3.RA.C.8**Supporting:** 3.RA.A.4, 3.RA.B.6**Detailed Description/Instructions:**

One way to do this is to begin by giving the Unit 5 Math Probe: Multiply by 7 and 9. Use Teacher's Edition Volume 1 page 188A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume page 162A.

Suggestions: *Prior to lesson: Explore math activities to use with students. If using workstations, prepare materials needed for those.*

Bloom's Levels: Understanding**Webb's DOK:** 2

Engaging Experience 7: 5-7 Solve Problems Involving Arrays

Teaching Point: *Today I'm going to teach you how to use arrays to represent and solve problems.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 5-7 to help students represent a real-world problem with an array and a multiplication equation.

Another way to do this is to use the Activity-Based Exploration for Lesson 5-7 to help students use learned strategies to solve a real-world problem involving an array.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Counters*
- *Closure Opportunities: Exit Ticket and/or Question: What is a strategy you can use to solve a multiplication problem with an array?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 192B-192C*

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 5*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Unit 5 Review found in ConnectED to review Unit 5 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 193-198 to review Unit 5 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 5.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.C.8

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the Unit 5 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign

the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 5 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers. (3.RA.C.7)*
 - *Demonstrate fluency with products within 100 (3.RA.C.8)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 5

Performance Task: Mr. Lee's Market
Teacher's Edition page 198A

This six-part task asks students to apply all the skills and standards taught in Unit 5. Students work through various ways to organize shelves in the market.

Unit 6: Connect Area and Multiplication

Subject: Math

Grade: 3rd Grade

Name of Unit: Connect Area and Multiplication

Length of Unit: 13 days

Overview of Unit: Students begin to explore different ways to use their multiplication skills. In this unit, students discover strategies for finding the areas of rectangles and composite rectilinear figures. They are introduced to the concept of finding the area of a 2-dimensional figure by covering it with unit squares without gaps or overlaps and counting the number of unit squares, a process known as *tiling*.

Students find the area of a figure by identifying the number of rows and columns of unit squares it takes to tile it completely. They then represent the situation with a multiplication equation. This process leads students to make explicit connections between counting units of area with arrays and multiplication. Rather than counting individual square units or skip counting by rows or columns, students discover that they can multiply the number of columns by the number of rows to find the area of a rectangle.

Students then apply the Distributive Property as they discover that they can decompose a larger rectangle into two smaller rectangles and that the area of the larger rectangle is the sum of the areas of the smaller rectangles. This understanding is extended to the area of composite figures, where students decompose a rectilinear figure into rectangles, find the area of each of the rectangles, and then add them to find the total area of the composite figure.

Finally, students apply their understanding of area to find the area of figures in real-world situations.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Color tiles (a virtual option can be found on [Polypad](#))
 - [Tiling Figures](#) Teaching Resource
 - [Grid paper](#)
 - Markers
 - Blank cubes
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I find area?

Enduring Understandings:

- Area is a measure of space inside a two-dimensional shape.
- Tiling is a strategy for finding the area of a two-dimensional shape.
- Area can be found by multiplying the length and width of a shape.
- Larger shapes can be broken down to find the area of smaller shapes and then added together to find the total area.

Priority Standards:

- 3.GM.C Understand concepts of area.
 - 3.GM.C.13 Find rectangular arrangements that can be formed for a given area.
 - 3.GM.C.14 Decompose a rectangle into smaller rectangles to find the area of the original rectangle.

Supporting Standards:

- 3.GM.C Understand concepts of area.
 - 3.GM.C.9 Calculate area by using unit squares to cover a plane figure with no gaps or overlaps.
 - 3.GM.C.10 Label area measurements with squared units.
 - 3.GM.C.11 Demonstrate that tiling a rectangle to find the area and multiplying the side lengths result in the same value.
 - 3.GM.C.12 Multiply whole-number side lengths to solve problems involving the area of rectangles.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.GM.C.13	Area is measured in square units. Area is the amount of space inside a shape. Rectangles have opposite sides of the same length.	Find and/or create rectangular arrangements that can be formed for a given area. Use and explain multiple strategies to solve problems with or without context involving finding rectangular arrangements for a given area.	Analyze	2
3.GM.C.14	Decompose means to take apart.	Decompose a rectangle into two smaller rectangles, find the area of each smaller rectangle and add the areas of the smaller rectangles to find the area of the original rectangle. Apply the Distributive Property.	Create	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
discuss strategy define reason claim strategy comparison identify process summarize determine reasoning	area square units unit square multiplication composite figure decompose

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 3: Critique, Correct, and Clarify
- MLR 4: Information Gap
- MLR 5: Co-Craft Problems
- MLR 6: Three Reads
- MLR 7: Compare and Connect

Number Routines:

- About How Much?
- Decompose It
- Where Does It Go?
- Would You Rather?

Sense-Making Routines:

- Which Doesn't Belong?
- Notice & Wonder: What do you notice? What do you wonder?
- Notice & Wonder: What question could you ask?
- Is It Always True?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about area.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 6 Readiness Diagnostic digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about area by posing the Focus Question: How can I find area? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 6 Unit Assessment Form A as a pretest of the material in Unit 6. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 199G*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful calculating area.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using the Teacher's Edition page 200. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 6>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: Use Teacher's Edition page 200A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 6-1 Understand Area

Teaching Point: *Today I'm going to teach you to find the area of a figure using tiling*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 6-1 to help students explore the concept of area and use unit squares to tile a figure and find its area.

Another way to do this is to use the Activity-Based Exploration for Lesson 6-1 to help students explore the concept of area by using square tiles to cover figures and count the tiles used.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Color tiles (one option for virtual color tiles is [Polypad](#)), [Tiling Figures](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How does tiling a figure help you find the area of a figure?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 204B-204C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2: 6-2 Count Unit Squares to Determine Area

Teaching Point: *Today I'm going to teach you to find the area of a figure by counting the unit squares that cover a figure.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 6-2 to help students use tiling to compare the areas of two real-world objects and discuss the correct unit to use for the situation.

Another way to do this is to use the Activity- Based Exploration for Lesson 6-2 to help students explore different representations of area by using square tiles to create rectangles with the same area but different side lengths.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Color tiles (one option for virtual color tiles is [Polypad](#))*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use unit squares to determine the area of a rectangle?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 208B-208C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 6-3 Use Multiplication to Determine Area

Teaching Point: *Today I'm going to teach you to use multiplication to find the area of a rectangle*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 6-3 to help students use the number of rows and number of tiles in one row to help multiply to find the area of a rectangle

Another way to do this is to use the Activity- Based Exploration for Lesson 6-3 to help students explore different strategies and patterns to find areas beyond tiling.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use multiplication to find the area of a rectangle?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 212B-212C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 6-4 Determine the Area of a Composite Figure

Teaching Point: *Today I'm going to teach you to decompose a composite figure into rectangles to find its area.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 6-4 to help students extend strategies for finding area to composite figures and understand that a

composite figure can be decomposed to find its area.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Grid paper, markers*
- *Closure Opportunities: Exit Ticket and/or Question: How do you determine how to decompose a composite figure to find its area?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 216B-216C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 6 Math Probe: Area. Use Teacher's Edition Volume 1 page 218A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume 1 page 200A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students. If using workstations, prepare materials needed for those*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 6-5 Use the Distributive Property to Determine Area

Teaching Point: *Today I'm going to teach you to decompose a side length of a rectangle to find the area.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this (Day 1) is to use the Guided Exploration for Lesson 6-5 to help students extend their understanding of area and use the Distributive Property to find one of the sides of a rectangle.

Another way to do this (Day 2) is to use the Activity-Based Exploration for Lesson 6-5 to help students explore area and use their knowledge of the Distributive Property to decompose side lengths.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How can you decompose to find the area of a rectangle?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 222B-222C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 6: 6-6 Solve Area Problems

Teaching Point: *Today I'm going to teach you to solve real-world problems involving the area of rectangles.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.10, 3.GM.C.12

Detailed Description/Instructions:

One way to do this (DAY 1) is to use the Guided Exploration for Lesson 6-6 to help students extend their understanding of finding area by decomposing a composite figure to solve a real-world problem.

Another way to do this (DAY 2) is to use the Activity- Based Exploration for Lesson 6-6 to help students create a composite figure and find its area to solve a real-world problem.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: When might you decompose a side length to find the area of a rectangle?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 226B-226C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 6*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this is to use the Unit 6 Review found in ConnectED to review Unit 6 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 227-232 to review Unit 6 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 6.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.C.13, 3.GM.C.14

Supporting: 3.GM.C.9, 3.GM.C.10, 3.GM.C.11, 3.GM.C.12

Detailed Description/Instructions:

One way to do this is to assign the Unit 6 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 6 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Find rectangular arrangements that can be formed for a given area (3.GM.C.13)*
 - *Decompose a rectangle into smaller rectangles to find the area of the original rectangle (3.GM.C.14)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 6

Performance Task: Area Patterns

Teacher's Edition page 232A

This four-part task asks students to apply all the skills and standards taught in Unit 6. Students will explore patterns using the area of rectangles.

Unit 7: Fractions

Subject: Math

Grade: 3rd Grade

Name of Unit: Fractions

Length of Unit: 11 days

Overview of Unit: Starting in grade 3, students begin to explore fractions. They experiment with different ways to partition a whole into equal parts with equal areas. Students divide a 2-dimensional shape into equal parts and learn that they can use a fraction to represent one or more of those parts. The denominator is the bottom number of the fraction, and it represents the total number of equal parts of the whole. The numerator is the top number of the fraction, and it represents the number of equal parts being discussed. Students learn that the interval between two whole numbers on a number line represents one whole. They can partition the interval into equal parts. Each equal part can be represented by using a unit fraction.

Students learn that a unit fraction has a numerator of one. Iterations of unit fractions can be used to write a fraction that represents more than one part of a whole.

Whole numbers can also be represented as fractions. Fraction tiles, fraction circles, shapes, and number lines can be used to model, and skip counting, repeated addition, and multiplication can be used to determine how to write whole numbers. When a fraction is equal to a whole number, the numerator is the product of the denominator and the whole number.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Blank cubes
 - Grid paper
 - Index cards
 - Scissors
 - Fraction circles
 - Rulers
 - Markers
 - Whiteboards
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- What are fractions and how can I represent them?

Enduring Understandings:

- Fractions represent equal parts of a whole or a set.
- Unit fractions are the building blocks of all fractions.
- The numerator is the top number in the fraction, and it represents the number of equal parts being discussed.
- The denominator is the bottom number in the fraction, and it represents the total number of equal parts in the whole.
- Fractions can be represented with number lines, shapes, sets, and written symbols.

Priority Standards:

- 3.NF.A Develop understanding of fractions as numbers.
 - 3.NF.A.1 Understand a unit fraction as the quantity formed by one part when a whole is partitioned into equal parts.
 - 3.NF.A.2 Understand that when a whole is partitioned equally, a fraction can be used to represent a portion of the whole.
 - 3.NF.A.2.a Describe the numerator as representing the number of pieces being considered.
 - 3.NF.A.2.b Describe the denominator as the number of pieces that makes the whole.
- 3.GM.A Reason with shapes and their attributes.
 - 3.GM.A.3 Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.

Supporting Standards:

- 3.NF.A Develop understanding of fractions as numbers.
 - 3.NF.A.3 Represent fractions on a number line.
 - 3.NF.A.3.a Understand the whole is the interval from 0 to 1.
 - 3.NF.A.3.b Understand the whole is partitioned into equal parts.
 - 3.NF.A.3.c Understand a fraction represents the endpoint of the length of a given number of partitions from 0.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.NF.A.1	A unit fraction is the quantity formed by one part when a whole is partitioned into equal parts.	Describe characteristics that make a fraction a unit fraction. Name a unit fraction.	Evaluate	3
3.NF.A.2	When a whole is partitioned equally, a fraction can be used to represent part of the whole. The numerator of the fraction represents the number of pieces being considered. The denominator of the fraction represents the number of pieces that make the whole.	Determine if a whole has been partitioned equally. Identify the numerator and denominator. Label equal parts of a model with a unit fraction.	Analyze	2
3.GM.A.3	A unit fraction is the quantity formed by one part when a whole is partitioned into equal parts.	Partition shapes into equal parts with equal areas. Express the area of each part as a fraction of the whole.	Analyze	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
defend	partition
support	denominator
comparison	fraction
identify	numerator
determine	unit fraction
conclusion	number line
investigate	fraction tiles
analyze	whole number
strategy	

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 4: Information Gap
- MLR 6: Critique, Correct, and Clarify
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- Would You Rather?
- About How Much?
- Decompose It

Sense-Making Routines:

- Is It Always True?
- Notice & Wonder: How are they the same? How are they different?
- Notice & Wonder: Tell me everything you can.
- Notice & Wonder: What do you notice? What do you wonder?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
● Small Group Activity Lesson ● Online Take Another Look Lesson ● Reinforce Understanding Page from Differentiation Resource Book ● ALEKS Adventure	● Print & Digital Games ● Online Interactive Additional Practice ● Additional Practice page from Student Practice Book ● Print or Digital Spiral Review ● ALEKS Adventure	● Online Application Station-Extension Activity ● Physical Application Station (Use It!) ● Extend Thinking Page from Differentiation Resource Book ● ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about fractions.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 7 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about fractions by posing the Focus Question: What are fractions and how can I represent them? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 7 Unit Assessment Form A as a pretest of the material in Unit 7. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 1G in the Teacher's Edition (volume 2) to prepare.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful using fractions.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 2. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 7>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use Teacher's Edition page 2A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 7-1 Partition Shapes into Equal Parts

Teaching Point: *Today I'm going to teach you to partition a shape into equal parts.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-1 to help students understand partitioning shapes into fourths, sixths, and eighths and determining whether shapes are divided into equal parts.

Another way to do this is to use the Activity-Based Exploration for Lesson 7-1 where students partition different shapes into a different number of equal parts to explore how they can determine equal parts.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank cubes (labeled 2,3,4,4,6,8) grid paper, scissors*
- *Closure Opportunities: Exit Ticket and/or Question: How can you partition shapes into equal parts?*
- *Differentiation Options: Teacher's Edition Volume 1 pages 6B-6C*

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 2: 7-2 Understand Fractions

Teaching Point: *Today I'm going to teach you to use a fraction to represent one or more parts of a whole.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-2 to help students partition a shape equally and identify the unit fraction that represents each equal part.

Another way to do this is to use the Activity-Based Exploration for Lesson 7-2 to help students explore how to write a fraction to represent a part of a fraction circle.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Fraction circles (one option for virtual fraction circles is [Polypad](#))*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe a fraction that represents one or more parts of a whole?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 10B-10C*

Bloom's Levels: Understand

Webb's DOK: 1

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2

Supporting: 3.NF.A.3.b

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 7 Math Probe: Representing Fractions. Use Teacher's Edition Volume 2 page 12A to assess student work. After finishing the math probe, students will build math proficiency by working on workstations from Teacher's Edition Volume page 10C.

Suggestions: *Prior to lesson: Explore math activities to use with students. If using workstations, prepare materials needed for those.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 7-3 Represent Fractions on a Number Line

Teaching Point: *Today I'm going to teach you to represent a fraction on a number line.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-3 to help students partition a number line using the denominator of a fraction, then use the numerator to count the intervals needed to represent the fraction

Another way to do this is to use the Activity- Based Exploration for Lesson 7-3 to help students explore how to partition a number line into equal parts and label a number line with fractions

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Rulers*
- *Closure Opportunities: Exit Ticket and/or Question: How can you represent fractions on a number line?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 16B-16C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 7-4 Represent One Whole as a Fraction

Teaching Point: *Today I'm going to teach you to write 1 as a fraction*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-4 to help students partition a number line and use the intervals to identify fractions equal to one whole.

Another way to do this is to use the Activity-Based Exploration for Lesson 7-4 to help students use fraction tiles to investigate the pattern among fractions equal to one whole and draw conclusions.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Fraction tiles*
- *Closure Opportunities: Exit Ticket and/or Question: How can a fraction represent one whole?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 20B-20C*

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 5: 7-5 Represent Whole Numbers as Fractions

Teaching Point: *Today I'm going to teach you to write any whole number as a fraction.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-5 to help students represent whole numbers with fraction tiles and then apply their previous understanding of fractions to write whole numbers as fractions.

Another way to do this is to use the Activity-Based Exploration for Lesson 7-4 to help students represent whole numbers with fraction tiles. Then they write the fraction that they have modeled.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Fraction tiles*
- *Closure Opportunities: Exit Ticket and/or Question: Why is a fraction with a denominator of 1 equal to a whole number?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 24B-24C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 6: 7-6 Represent a Fraction Greater Than One on a Number Line

Teaching Point: *Today I'm going to teach you to represent fractions that are greater than 1 in different ways*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 7-6 to help students represent fractions greater than 1 on a number line.

Another way to do this is to use the Activity-Based Exploration for Lesson 7-6 to help students use tools to represent fractions greater than 1 to identify patterns.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Fraction tiles, fraction circles (one option for virtual fraction circles and tiles is [Polypad](#))*

- *Closure Opportunities: Exit Ticket and/or Question: How can you use the numerator and denominator to determine whether a fraction is less than or greater than 1?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 28B-28C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 7.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to use the Unit 7 Review found in ConnectED to review Unit 7 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 29-34 to review Unit 7 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to begin by using the Unit 7 Skills Support: Equal Shares of the Same Whole (ConnectEd→Unit 7:Fractions→Targeted Intervention→Skills Support: [Equal Parts of a Whole](#)).

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Apply

Webb's DOK: 2

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 7.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.1, 3.NF.A.2, 3.GM.A.3

Supporting: 3.NF.A.3

Detailed Description/Instructions:

One way to do this is to assign the Benchmark Assessment 2. You can assess the priority standards of this unit while also spiraling in concepts from the earlier units. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to assign Unit 7 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking.

Another way to do this is to use the Unit 7 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Understand a unit fraction as the quantity formed by one part when a whole is partitioned into equal parts (3.NF.A.1)*
 - *Understand that when a whole is partitioned equally, a fraction can be used to represent a portion of the whole (3.NF.A.2)*
 - *Describe the numerator as representing the number of pieces being considered (3.NF.A.2.a)*
 - *Describe the denominator as the number of pieces that makes the whole (3.NF.A.2.b)*
 - *Partition shapes into parts with equal areas, and express the area of each part as a unit fraction to the whole. (3.GM.A.3)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 7

Performance Task: Ms. Claire Sells Lasagna
Teacher's Edition page 34A

This four-part task asks students to apply all the skills and standards taught in Unit 7. Students will explain various ways to divide pans of lasagna.

Unit 8: Fraction Equivalence and Comparison

Subject: Math

Grade: 3rd Grade

Name of Unit: Fraction Equivalence and Comparison

Length of Unit: 12 days

Overview of Unit: In this unit, students continue their study of fractions as they develop strategies for comparing two fractions. They learn that fractions can only be compared when they come from wholes of the same size. When they refer to different-size wholes, the lesser fraction, in reference to a larger whole, might actually refer to a greater quantity. This idea helps students learn about equivalent fractions. Two or more fractions that represent the same amount of the same-size whole are equivalent fractions. Representations such as pizzas, circles, rectangles, and fraction models all help students to visually understand how two fractions can be equivalent.

Two or more fractions are also equivalent if they represent the same point on a number line when the wholes are the same length. This means the distance from 0 to 1 on each number line is the same for the fractions being compared.

Another way to determine whether fractions are equivalent is to use fraction tiles. These show that two fractions are equivalent when they represent the same amount of the same-size whole.

Fractions with the same denominator can be compared by comparing their numerators. Because the denominators are the same, the size of the parts is the same. Students conclude that when the denominators are the same, the greater the numerator, the greater the fraction.

The greater the number of parts in the whole, the smaller the size of each part. So, when two fractions have the same numerator, the one with the greater denominator has the smaller parts and is therefore, the lesser fraction. This is because the smaller pieces are being compared to the same number of larger pieces.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Dominoes or index cards
 - Fraction tiles
 - Index cards
 - Grid paper
 - Blank cubes
 - *Spinning Numbers* Teaching Resource
 - Transparent spinners
 - Fraction circles

- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I compare fractions?

Enduring Understandings:

- Fractions can only be compared when they come from wholes of the same size.
- Equivalent fractions represent the same amount of the same-size whole.
- If two fractions have the same denominator, the fraction with the greater numerator is the larger fraction.
- If two fractions have the same numerator, it depends on the denominator for which is larger.
- The larger the denominator, the more pieces the whole is divided into.

Priority Standards:

- 3.NF.A Develop understanding of fractions as numbers.
 - 3.NF.A.5 Recognize and generate equivalent fractions using visual models, and justify why the fractions are equivalent.
 - 3.NF.A.6 Compare two fractions with the same numerator or denominator using the symbols $>$, $=$ or $<$, and justify the solution..
 - 3.NF.A.7 Explain why fraction comparisons are only valid when the two fractions refer to the same whole.

Supporting Standards:

- 3.NF.A Develop understanding of fractions as numbers.
 - 3.NF.A.4 Demonstrate that two fractions are equivalent if they are the same size, or the same point on a number line.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.NF.A.5	To be equivalent, the number or the model must represent the same fraction for the same-size whole	Use visual models to recognize and generate equivalent fractions. Justify why fractions of the same whole are equivalent, e.g. $\frac{3}{3}=1$	Evaluate	3
3.NF.A.6	Know that compare means to see how different fractions are alike, different, and which one is bigger or smaller. Tools to justify comparisons can be number lines, models, and/or manipulatives.	Compare two fractions with the same numerator or same denominator using the same-sized whole by: Reasoning about their quantity (value and size) using number lines, models, manipulatives, or words. Justify their comparison, then communicate the results of the comparison using the symbols $<$, $>$, $=$.	Evaluate	3
3.NF.A.7	Fraction comparisons are only valid when the two fractions refer to the same-size whole. Comparisons can be proven with numbers, words, manipulatives and/or models.	Explain why fraction comparisons are only valid when the two fractions refer to the same-size whole.	Evaluate	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
determine process indicate contrast identify comparison create evidence justify process strategy	equivalent denominator numerator

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 4: Information Gap
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 8: Discussion Supports

Number Routines:

- Decompose It
- Greater Than or Less Than
- Find the Missing Values
- What's Another Way to Write It?

Sense-Making Routines:

- Which Doesn't Belong?
- Notice & Wonder: What do you notice? What do you wonder?
- Notice & Wonder: How are they the same? How are they different?
- Is It Always True?
- Numberless Word Problem

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about fraction comparison.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 8 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about fraction equivalence and comparison by posing the Focus Question: How can I compare fractions? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 8 Unit Assessment Form A as a pretest of the material in Unit 8. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 35G.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Understand

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful comparing fractions.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using the Teacher's Edition page 36. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit.

There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 8>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: Use *Teacher's Edition* page 36A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.

Bloom's Levels: Understand

Webb's DOK: 2

Engaging Experience 1: 8-1 Understand Equivalent Fractions

Teaching Point: *Today I'm going to teach you to represent equivalent fractions.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-1 to help students represent a real world problem using fraction models. Students will compare shaded portions of each model to determine fraction equivalency.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-1 to help students explore how to decide if two fractions are equivalent.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Fraction tiles, fraction circles (one option for virtual fraction tiles and circles is [Polypad](#))*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use representations to determine if fractions are equivalent?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 40B-40C*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 2: 8-2 Represent Equivalent Fractions

Teaching Point: *Today I'm going to teach you to use fraction models to generate equivalent fractions.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-2 to help students learn to create a fraction model to represent a real-world situation and use that model to find equivalent fractions.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-2 to help students explore equivalent fractions by creating a fraction with fraction tiles and modeling an equivalent fraction.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Fraction tiles,*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use representations*

to make equivalent fractions?

- Differentiation Options: Teacher's Edition Volume 2 pages 44B-44C

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 8-3 Represent Equivalent Fractions on a Number Line

Teaching Point: *Today I'm going to teach you to represent equivalent fractions on a number line*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-3 to help students learn to use number lines to identify an equivalent fraction.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-3 to help students to model equivalent fractions using fraction tiles and number lines

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Fraction tiles, grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How can number lines help you determine equivalent fractions?*
- Differentiation Options: Teacher's Edition Volume 2 pages 48B-48C

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 4: 8-4 Understand Fractions of Different Wholes

Teaching Point: *Today I'm going to teach you to compare fractions when they refer to the same whole.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-4 to help students compare fraction representations when the wholes are different shapes or sizes.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-4 to help students explore whether a unit fraction of one model represents the same amount as the same unit fraction represented by another model.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Fraction tiles, grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: Why can you only compare fractions when the wholes are the same size?*
- Differentiation Options: Teacher's Edition Volume 2 pages 52B-52C

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 8-5 Compare Fractions with the Same Denominator

Teaching Point: *Today I'm going to teach you to compare fractions with the same denominators and different numerators*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-5 to help students compare two fractions with the same denominator by examining a fraction model, a number line, and using comparison symbols

Another way to do this is to use the Activity-Based Exploration for Lesson 8-5 to help students explore how they can compare fractions when the denominators are the same. Students then use tools to model and compare the fractions.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* [Spinner Numbers](#) teaching resource, fraction tiles (one option for virtual tiles is [Polypad](#)), blank cubes (labeled 1, 2, 3, 4, 6, 8), transparent spinners
- *Closure Opportunities: Exit Ticket and/or Question:* How can you compare fractions with the same denominator and different numerators?
- *Differentiation Options:* Teacher's Edition Volume 2 pages 56B-56C

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 6: 8-6 Compare Fractions with the Same Numerator

Teaching Point: *Today I'm going to teach you to compare fractions with the same numerators and different denominators.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-6 to help students use fraction circles, fraction tiles, and number lines to compare two fractions with the same numerator and different denominators using $<$, $>$, and $=$.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-6 to help students create two fractions with the same numerator, compare the fractions, and discuss conclusions based on their results.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* [Spinner Numbers](#) teaching resource, fraction tiles or circles, (labeled 1-4, 6, 8), transparent spinners (one virtual option for spinners is [Polypad](#))
- *Closure Opportunities: Exit Ticket and/or Question:* How can you compare fractions with the same numerator and different denominators?
- *Differentiation Options:* Teacher's Edition Volume 2 pages 60B-60C

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 7: 8-7 Compare Fractions

Teaching Point: *Today I'm going to teach you to use fraction models and number lines to justify comparisons between two fractions.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 8-7 to help students use representations to compare fractions. Students write comparison statements with comparison symbols.

Another way to do this is to use the Activity-Based Exploration for Lesson 8-7 to help students create and compare two fractions using comparison symbols.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank cubes (labeled 1, 2, 3, 4, 6, 8), fractions circles, fraction tiles, grid paper, index cards*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use fraction models and number lines to justify comparisons between two fractions?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 64B-64C*

Bloom's Levels: Analyze

Webb's DOK: 3

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 8 Math Probe: Equivalent Fractions Card Sort. Use the Teacher's Edition Volume 2 pages 65-68A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from the Teacher's Edition Volume page 36A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students and prepare work stations if needed*

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 8.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to use the Unit 8 Review found in ConnectED to review Unit 8 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit 8 Review and Fluency Practice found on student pages 69-74 to review Unit 8 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 8.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.NF.A.5, 3.NF.A.6, 3.NF.A.7

Supporting: 3.NF.A.4

Detailed Description/Instructions:

One way to do this is to assign the Unit 8 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 8 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Recognize and generate equivalent fractions using visual models, and justify why the fractions are equivalent. (3.NF.A.5)*
 - *Compare two fractions with the same numerator or denominator using the symbols $>$, $=$ or $<$, and justify the solution. (3.NF.A.6)*
 - *Explain why fraction comparisons are only valid when the two fractions refer to the same whole. (3.NF.A.7)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 8

Performance Task: Ms. Walton's Science Club
Teacher's Edition page 74A

This four-part task asks students to apply all the skills and standards taught in Unit 8. Students will compare and contrast various mealworm lengths.

Unit 9: Use Multiplication to Divide

Subject: Math

Grade: 3rd Grade

Name of Unit: Use Multiplication to Divide

Length of Unit: 14 days

Overview of Unit: Starting in Grade 3, students begin to delve into a variety of multiplication and division problems. Previously, students were introduced to multiplication and division representations. In this unit, students use patterns and the relationship between multiplication and division to help determine whether a quotient is reasonable and accurate.

Students will discover patterns when dividing by 1. When multiplying by 1, the product is the same as the other factor. So when dividing a number by itself, the quotient is 1. When dividing by 1, the quotient is the same as the dividend.

Students will also discover patterns when dividing using 0. When a number is multiplied by 0, the product is always 0. When 0 is divided by a non-zero number, the quotient is always 0. A non-zero number can never be divided by 0 because there is no number that can be multiplied by 0 to equal that number.

Equal groups are helpful to students both when multiplying and dividing. Arrays can be used to help students visualize these equal groups. Pennies can be placed into arrays to help with dividing by 5 and 10. Students should also be aware that multiplication and division are related operations. For example, the equation $2 \times 10 = 20$ can be thought of as 2 groups of 10 equals 20. Students can use this equation to find $20 \div 2$. Students can also use multiplication facts to remember related division facts. The related multiplication and division equations can be represented by the same array.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Blank cubes
 - [Blank Fact Triangles](#) Teaching Resource
 - Index cards
 - Dimes
 - Nickels
 - Pennies
 - Counters
 - Craft sticks
 - Colored pencils
 - [Multiplication Fact Table to 10](#) Teaching Resource

- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I use multiplication to recall division facts?

Enduring Understandings:

- Division can be thought of as an unknown-factor problem.
- You can divide by using multiplication facts, because division is the opposite of multiplication.
- Division can be either equal groups or equal sharing.

Priority Standards:

- 3.RA.C Multiply and divide within 100.
 - 3.RA.C.7 Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.

Supporting Standards:

- 3.RA.A Represent and solve problems involving multiplication and division.
 - 3.RA.A.4 Use multiplication and division within 100 to solve problems.
 - 3.RA.A.5 Determine the unknown number in a multiplication or division equation relating three whole numbers.
- 3.RA.B Understand properties of multiplication and the relationship between multiplication and division.
 - 3.RA.B.6 Apply properties of operations as strategies to multiply and divide.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.RA.C.7	An inverse relationship exists between multiplication and division. All products of 2 1-digit numbers.	Explain how to use known multiplication facts to solve division problems.	Understand	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
justify	fact family
strategy	fact triangle
determine	quotient
discuss	unknown
organize	dividend
summarize	divisor
create	multiplication fact
support	table
analyze	decompose
conclusion	pattern

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- What's Another Way to Write It?
- Let's Count
- Greater Than, Less Than
- Would You Rather?

Sense-Making Routines:

- Notice & Wonder: What do you notice? What do you wonder?
- Notice & Wonder: Tell me everything you can
- Notice & Wonder: How are they the same? How are they different?
- Numberless Word Problem
- Which Doesn't Belong?
- Is It Always True?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
● Small Group Activity Lesson ● Online Take Another Look Lesson ● Reinforce Understanding Page from Differentiation Resource Book ● ALEKS Adventure	● Print & Digital Games ● Online Interactive Additional Practice ● Additional Practice page from Student Practice Book ● Print or Digital Spiral Review ● ALEKS Adventure	● Online Application Station-Extension Activity ● Physical Application Station (Use It!) ● Extend Thinking Page from Differentiation Resource Book ● ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about division.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 9 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about division by posing the Focus Question: How can I use multiplication to recall division facts? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 9 Unit Assessment Form A as a pretest of the material in Unit 9. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 75G.*

The Readiness Diagnostic shows how students have mastered prerequisite skills. The pre-assessment addresses the skills they are about to learn. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful dividing.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using the Teacher's Edition page 76. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 9>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use Teacher's Edition page 76A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 9-1 Use Multiplication to Solve Division Equations

Teaching Point: *Today I'm going to teach you to use an unknown-factor problem to solve a division equation.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-1 to help students use the relationship between multiplication and division to understand division as an unknown-factor problem.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-1 to help students explore fact families using fact triangles and develop an understanding of division as an unknown-factor problem.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: [Blank Fact Triangles Teaching Resource](#)*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use an unknown-factor problem to solve a division equation?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 80B-80C*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 2: 9-2 Divide by 2

Teaching Point: *Today I'm going to teach you to use multiplication facts for dividing by 2.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-2 to help students write a division equation to represent dividing by 2.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-2 to help students explore different strategies to find the unknown quotient in a division fact with 2, including a related multiplication fact.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Blank cubes (labeled 2, 4, 6, 8, 8), index cards*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different strategies used to recall division facts with 2?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 84B-84C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 9-3 Divide by 5 and 10

Teaching Point: *Today I'm going to teach you to use related multiplication facts to recall division facts with 5 and 10.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-3 to help students use an array to model dividing by 5 and 10.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-3 to help students explore dividing by 5 and 10 by considering the value of coins.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Dimes, nickels, pennies*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different strategies used to recall division facts with 5 and 10?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 88B-88C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 9-4 Understand Division with 1 and 0

Teaching Point: *Today I'm going to teach you to use patterns and rules to recall division facts with 1 and 0.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-4 to help students walk through examples of division when 0 is the dividend, when 0 is the divisor, when 1 is the divisor, and when 1 is the quotient. Dividing by 0 is not possible.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-4 to help students explore division involving 0 and 1 by modeling each situation and looking for patterns.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Counters*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different patterns and rules to recall division facts with 1 and 0?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 92B-92C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 9-5 Divide by 3 and 6

Teaching Point: *Today I'm going to teach you to use related multiplication facts to recall division facts with 3 and 6.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-5 to help students use an array and a fact triangle to model division with 3 and 6.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-5 to help students explore the relationship between dividing by 3 or 6 and multiplying by 3 or 6 through creating models and writing equations.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Craft sticks*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different strategies used to recall division facts with 3 and 6?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 96B-96C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 6: 9-6 Divide by 4 and 8

Teaching Point: *Today I'm going to teach you to use related multiplication facts to recall division facts with 4 and 8.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-6 to help students use fact triangles to model the relationship between multiplication and division with 4s and 8s facts, including division equations with a quotient and a related unknown-factor problem.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-6 to help students explore dividing by 4 and 8 by using fact triangles to model the relationship between multiplication and division.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Blank Fact Triangles Teaching Resource in ConnectED](#).
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you describe different strategies using recall division facts with 4 and 8?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 100B-100C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 9 Math Probe: Word Problems. Use the Teacher's Edition Volume 2 pages 102A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from the Teacher's Edition Volume page 100B-C.

Suggestions:

- *Prior to lesson:* *Explore math activities to use with students and prepare work stations if needed*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 7: 9-7 Divide by 9

Teaching Point: *Today I'm going to teach you to use related multiplication facts to recall division facts with 9.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-7 to help students write related multiplication equations from a division equation. Students will use the given numbers in equations to locate the unknown on a multiplication fact table and understand the unknown is the same in both equations

Another way to do this is to use the Activity-Based Exploration for Lesson 9-7 to have students investigate relating division by 9 to multiplication by 9 with a multiplication fact table and related multiplication equations.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Colored pencils [Multiplication Fact Table to 10](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different strategies used to recall division facts with 9?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 106B-106C*

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 8: 9-8 Divide by 7

Teaching Point: *Today I'm going to teach you to recall division facts with 7.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-8 to help students use the real-world relationship between days and weeks to evaluate division facts with 7.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-8 to help students explore dividing by 7 through relating division to the real-world relationship between days and weeks.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank cube (labeled 21, 28, 35, 42, 49, 56), [Multiplication Fact Table to 10](#) Teaching Resource, one-year wall calendar*
- *Closure Opportunities: Exit Ticket and/or Question: How can you describe different strategies used to recall division facts with 7?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 110B-110C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 9: 9-9 Multiply and Divide Fluently within 100

Teaching Point: *Today I'm going to teach you to use multiplication and division strategies to recall facts.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 9-9 to help students explore how to solve a multiplication and division problem using tools, such as a multiplication fact table, and strategies, such as decomposing a factor and writing a related equation.

Another way to do this is to use the Activity-Based Exploration for Lesson 9-9 to have students choose tools and strategies to solve a problem set involving both multiplication and division.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Blank Fact Triangle Teaching Resource](#), counters
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you explain how to use multiplication and division strategies to recall facts?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 114B-114C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 9.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Unit 9 Review found in ConnectED to review unit 9 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit Review and Fluency Practice found on student pages 115-120 to review unit 9 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to begin by giving the Unit 9 Math Probe: Word Problems. Use Teacher's Edition Volume 2 pages 101-102A to assess student work.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 9.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the Unit 9 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 9 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Multiply and divide with numbers within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers. (3.RA.C.7)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 9

Performance Task: Family Math Night at School

Teacher's Edition page 120A

This four-part task asks students to apply all the skills and standards taught in Unit 9. Students will work through various tasks related to hosting a family math night.

Unit 10: Use Properties and Strategies to Multiply and Divide

Subject: Math

Grade: 3rd Grade

Name of Unit: Use Properties and Strategies to Multiply and Divide

Length of Unit: 13 days

Overview of Unit: As students progress through this unit, they use their previous knowledge of patterns to lay the foundation of their work with identifying multiplication patterns. Students learn about how place value, patterns, and properties can be used to help multiply. Students discover that when multiplying with three or more factors, they can group the factors in any order and the product will be the same.

Students can use previously-learned place value concepts to help them multiply larger numbers. Students write an equation to determine the number of cards there are in an album: 8 cards per page $\times$ 60 pages = ? Because 60 is a multiple of 10 and $8 \times 6 = 48$ is a basic fact, students are encouraged to think about the problem as 8 $\times$ 6 tens. Students place a zero in the in the ones column as a placeholder and shift the other numbers left to get the product of 480.

Students discover how to solve two-step word problems involving multiplication and division, using representations and equations to solve the problem. They then progress to solving two-step word problems that involve any of the four operations. Students solve one equation at a time and use a letter to represent the unknown in each equation, even when the problem includes more than just multiplication and division.

Finally, students determine whether an answer is reasonable. They learn that mental math and estimation strategies can be used to find an approximate answer. If the given answer is close to their approximation, then the answer is reasonable.

Due to calendar pacing this unit will begin in Quarter 3 and will be completed in Quarter 4. You will report on the two step word problem standard (3.RA.D.9) in Quarter 4. Please see suggestions on the bottom of lessons to know where to break the unit.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Blank cubes
 - Base-ten blocks
 - Colored pencils
 - [*Multiplication Fact Table to 10*](#) Teaching Resource
 - Index cards
 - Fact cards
 - [*Problem-Solving Tool*](#) Teaching Resource
 - Counters
 - [*Spinner Numbers*](#) Teaching Resource

- Transparent spinners
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I use properties and strategies to multiply and divide?

Enduring Understandings:

- There is more than one way to solve a multiplication or division problem.
- Multiplication and division are related operations that can be solved using strategies and properties.
- Fact fluency supports problem solving.
- You can use what you know about multiplying by 10 to multiply larger numbers by 10.
- You can solve two-step word problems involving the four operations using a problem solving process.

Priority Standards:

- 3.RA.C Multiply and divide within 100.
 - 3.RA.C.7 Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.
- 3.RA.D Use the four operations to solve word problems.
 - 3.RA.D.9 Write and solve two-step word problems involving variables using any of the four operations.
 - 3.RA.D.10 Interpret the reasonableness of answers using mental computation and estimation strategies including rounding.
- 3.RA.E Identify and explain arithmetic patterns.
 - 3.RA.E.11 Identify arithmetic patterns and explain the patterns using properties of operations.

Supporting Standards:

- 3.RA.A Represent and solve problems involving multiplication and division.
 - 3.RA.A.4 Use multiplication and division within 100 to solve problems.
- 3.RA.B Understand properties of multiplication and the relationship between multiplication and division.
 - 3.RA.B.6 Apply properties of operations as strategies to multiply and divide.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.RA.C.7	An inverse relationship exists between multiplication and division. All products of 2 1-digit numbers.	Explain how to use known multiplication facts to solve division problems.	Understand	2
3.RA.D.9	A letter can be used as a symbol for an unknown quantity. In equations, the variable can be found on either side of the equal sign.	Write and solve two-step word problems involving any of the four operations. Model the situation with physical manipulatives or pictorial representations.	Analyze	3
3.RA.D.10	How to use an appropriate strategy to solve a problem in a reasonable time (fluency). How to explain a strategy used to solve a problem.	Use the four operations to solve problems. Interpret the reasonableness of answers using mental computation and estimation strategies including rounding.	Analyze	3
3.RA.E.11	Patterns can be extended and a rule dictates how the quantities will change.	Identify patterns and continue patterns with the next quantity. Explain patterns using properties of operations (associative, commutative, distributive)	Apply	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
multiple	strategy
factor	structure
pattern	identify
product	justify
bar diagram	process
unknown	determine
estimate	represent
	conclude
	analyze
	reasonable

Math Language Routines:

- MLR 1: Stronger and Clearer Each Time
- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 8: Discussion Supports

Number Routines:

- About How Much?
- Greater Than or Less Than

Sense-Making Routines:

- Which Doesn't Belong?
- Is It Always True?
- Notice & Wonder: What do you notice? What do you wonder?
- Numberless Word Problem

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
● Small Group Activity Lesson ● Online Take Another Look Lesson ● Reinforce Understanding Page from Differentiation Resource Book ● ALEKS Adventure	● Print & Digital Games ● Online Interactive Additional Practice ● Additional Practice page from Student Practice Book ● Print or Digital Spiral Review ● ALEKS Adventure	● Online Application Station-Extension Activity ● Physical Application Station (Use It!) ● Extend Thinking Page from Differentiation Resource Book ● ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you remember about properties and strategies to multiply and divide.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 10 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about multiplication and division properties and strategies by posing the Focus Question: How can I use properties and strategies to multiply and divide? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 10 Unit Assessment Form

A as a pretest of the material in Unit 10. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from Teacher's Edition volume 2, page 121G.*

The Readiness Diagnostic shows how students have mastered prerequisite skills. The pre-assessment addresses the skills they are about to learn. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful in multiplying and dividing.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 122. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 10>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from the Teacher's Edition volume 2, page 121G. Use the Teacher's Edition page 122A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 10-1 Patterns with multiples of 10

Teaching Point: *Today I'm going to teach you to multiply by multiples of 10*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 10-1 to have students extend strategies they learned previously for finding multiplication facts to include facts with multiples of 10. They will apply place value reasoning and patterns to find products.

Another way to do this is to use the Activity-Based Exploration for Lesson 10-1 to have students explore multiplying with multiples of 10. They will use their place value understanding, as well as models to write multiplication equations and look for patterns.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank cubes, base-ten blocks*
- *Closure Opportunities: Exit Ticket and/or Question: How can you find the product of a 1 digit number and a multiple of 10?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 126B- 126C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2: 10-2 More Multiplication Patterns

Teaching Point: *Today I'm going to teach you to identify patterns in the multiplication fact table.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 10-2 to help students discover patterns with factors and products in the multiplication fact table.

Another way to do this is to use the Activity-Based Exploration for Lesson 10-2 to help students explore patterns in multiplication facts in the multiplication fact table and work together to explain the patterns.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Colored pencils, [Multiplication Fact Table to 10](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How can knowing whether a product will be even or odd help you?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 130B-130C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 10-3 Understand the Associative Property

Teaching Point: *Today I'm going to teach you to group three factors in different ways to multiply.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 10-3 to help students apply the Associative property of multiplication as they multiply three factors and understand that grouping the factors in different ways does not change the product.

Another way to do this is to use the Activity-Based Exploration for Lesson 10-3 to help students explore different ways to multiply three factors and investigate whether the product changes based on the grouping of factors

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Blank cubes labeled 2, 2, 3, 3, 4, 5*
- *Closure Opportunities: Exit Ticket and/or Question: Why might you group the factors in different ways when multiplying three numbers?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 134B-134C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 10 Math Probe: Multiplication Equations. Use Teacher's Edition Volume 2 pages 135-136A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from Teacher's Edition Volume page 122A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students and prepare work stations if needed.*
- *Due to calendar pacing we recommend splitting the unit after the Math Probe Lesson, please refer to the overview.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 10-4 Two-Step Problems Involving Multiplication and Division.

Teaching Point: *Today I'm going to teach you to solve two-step word problems involving multiplication and division.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.D.9, 3.RA.D.10

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 10-4 to help students represent and solve a two-step multiplication and division problem using bar diagrams and equations that use a letter for the unknown.

Another way to do this is to use the Activity-Based Exploration for Lesson 10-4 to help students choose a strategy to represent and solve a two-step word problem.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Problem-Solving Tool](#) Teaching Resource
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you solve a two-step word problem involving multiplication and division?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 140B-140C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 10-5 Solve Two-Step Problems

Teaching Point: *Today I'm going to teach you to solve two-step word problems involving any of the four operations.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.C.7, 3.RA.D.9, 3.RA.D.10

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this (Day 1) is to use the Guided Exploration for Lesson 10-5 to help students identify which operations are needed to solve a two-step word problem. They then represent and solve the problem using bar diagrams and equations that use a letter for the unknown.

Another way to do this (Day 2) is to use the Activity-Based Exploration for Lesson 10-5 to help students use a model to solve a problem and represent each step of their process with an equation.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Problem-Solving Tool](#) teaching resource
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you solve a two-step word problem involving any of the four operations?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 144B-144C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 6: 10-6 Explain the Reasonableness of a Solution

Teaching Point: *Today I'm going to teach you to determine whether a solution is reasonable.*

Suggested Length of Time: 2 days

Standards Addressed

Priority: 3.RA.C.7, 3.RA.D.9, 3.RA.D.10

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this (day 1) is to use the Guided Exploration for Lesson 10-6 to help students extend their understanding of two-step word problems with all operations by determining whether a given answer is reasonable.

Another way to do this (day 2) is to use the Activity-Based Exploration for Lesson 10-6 to help students analyze the answer to a two-step word problem to determine whether it is reasonable.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Spinner Numbers](#) teaching resource, transparent spinners.
- *Closure Opportunities: Exit Ticket and/or Question:* How can you explain the reasonableness of a solution?
- *Differentiation Options:* Teacher's Edition Volume 2 pages 148B-148C

Bloom's Levels: Evaluate

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 10.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.D.9, 3.RA.D.10, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Unit 10 Review found in ConnectED to review Unit 10 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit 10 Review and Fluency Practice found on student pages 149-154 to review unit 10 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 10.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7, 3.RA.D.9, 3.RA.D.10, 3.RA.E.11

Supporting: 3.RA.A.4, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to assign the Benchmark Assessment 3. You can assess the priority standards of this unit while also spiraling in concepts from the earlier units.

Another way to do this is to assign Unit 10 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 10 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers. (3.RA.C.7)*
 - *Write and solve two-step word problems involving variables using any of the four operations. (3.RA.D.9)*
 - *Interpret the reasonableness of answers using mental computation and estimation strategies including rounding. (3.RA.D.10)*
 - *Identify arithmetic patterns and explain the patterns using properties of operations. (3.RA.E.11)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 10

Performance Task: Planting a Vegetable Garden

Teacher's Edition page 154A

This five-part task asks students to apply all the skills and standards taught in Unit 10. Students will explore various constructions for a vegetable garden.

Unit 11: Perimeter

Subject: Math

Grade: 3rd Grade

Name of Unit: Perimeter

Length of Unit: 9 days

Overview of Unit: Starting in Grade 3, students begin to explore different ways to use their addition and multiplication skills. In this unit, students discover strategies for finding the perimeter of figures, including work with composite figures.

Students are introduced to the concept of perimeter by finding the distance around a rectangle and then a rectangular garden. The perimeter is the distance around the boundary of a 2-dimensional figure. After finding the perimeter of rectangles, students continue to find the perimeter of irregular and composite figures. Knowledge of perimeter leads students to finding missing, or unknown side lengths. They write addition equations to represent the perimeter. Then, they find the missing side lengths of figures with known perimeters. One process is to add the known side lengths together, and then subtract the total from the perimeter.

Students explore rectangular rugs to discover that two rectangles can have the same perimeter, but can have different areas. For example, a rug with side lengths of 4 feet and 3 feet has an area of 12 square feet, which is the same as the area of a rug with side lengths of 6 feet and 2 feet. However, the perimeter of the first rug is 14 feet and the second rug has a perimeter of 16 feet. Rectangles can also have the same area with different perimeters. This work reinforces that area and perimeter are measured differently and helps students distinguish perimeter from area.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Color tiles
 - [Grid paper](#)
 - Playing cards
 - Precut shapes labeled with missing side length and total perimeter
 - Blank cubes
 - Counters
 - String
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I solve perimeter problems?

Enduring Understandings:

- The perimeter is the total distance around a 2-dimensional figure.
- You can find the perimeter by adding the lengths of all sides of a figure.
- Figures can have the same perimeter but different areas.
- Perimeter helps us solve real-world problems.

Priority Standards:

- 3.GM.D Understand concepts of perimeter.
 - 3.GM.D.15 Solve problems involving perimeters of polygons.
 - 3.GM.D.16 Understand that rectangles can have equal perimeters but different areas, or rectangles can have equal areas but different perimeters.

Supporting Standards:

- 3.GM.B Solve problems involving the measurement of time, liquid volumes, and weights of objects.
 - 3.GM.B.8 Use the four operations to solve problems involving lengths, liquid volumes or weight given in the same units.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.GM.D.15	Perimeter is the distance around the outside of a figure. Mathematicians use known side lengths and perimeter to find missing side lengths.	Solve problems involving the perimeter of polygons. Use and explain multiple strategies to solve problems with or without context involving solving perimeter problems of polygons.	Apply	2
3.GM.D.16	Area is the amount of space inside a figure. Perimeter is the distance around the outside of a figure.	Demonstrate that rectangles can have equal perimeters but different areas and that rectangles can have equal areas but different perimeters.	Analyze	3

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
● Readiness Diagnostic ● Exit Ticket ● Math Probe ● Fluency Practice ● Unit Assessment Form A. <i>This is editable.</i>	● Performance Task ● Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
investigate strategy support comparison conclude discuss	perimeter area unknown bar diagram length

Math Language Routines:

- MLR 3: Critique, Correct, and Clarify
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- What's Another Way to Write It?
- Find the Missing Values
- Mystery Number

Sense-Making Routines:

- Notice & Wonder: What do you notice? What do you wonder?
- Which Doesn't Belong?
- Is it Always True?
- Numberless Word Problem

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about perimeter.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 11 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about perimeter by posing the Focus Question: How can I solve perimeter problems? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 11 Unit Assessment Form A as a pretest of the material in Unit 11. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from page 155G.*

The Readiness Diagnostic shows how students have mastered prerequisite skills. The pre-assessment addresses the skills they are about to learn. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful in finding and using perimeter.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 156. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 11>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from Teacher's Edition volume 2, page 155G. Use Teacher's Edition page 156A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 11-1 Understand Perimeter

Teaching Point: *Today I'm going to teach you how to explain when a measurement describes perimeter.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 11-1 to help students understand how to find the distance around a figure by using two strategies. Students learn the definition of perimeter and how to find the perimeter of a figure.

Another way to do this is to use the Activity-Based Exploration for Lesson 11-1. Students explore the definition of perimeter and how to find it using color tiles to model rectangles.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Color tiles, grid paper.*
- *Closure Opportunities: Exit Ticket and/or Question: How can you explain perimeter and how to find it?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 160B-160C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2: 11-2 Determine Perimeter of Figures

Teaching Point: *Today I'm going to teach you to use different strategies to find the perimeter of a figure.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 11-2 to help students walk through steps to identify the unknown side lengths of a rectangle and a square, and then use the strategies to find the perimeter of both figures.

Another way to do this is to use the Activity-Based Exploration for Lesson 11-2 to help students explore strategies to find the perimeter of squares and rectangles by comparing strategy ideas with the known method of counting around the figure.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: What different strategies can you use to find the perimeter of a figure?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 164B-164C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 11-3 Determine an Unknown Side Length

Teaching Point: *Today I'm going to teach you how to find an unknown side length of a figure if a perimeter is known.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 11-3 to help students use the given perimeter to write an addition equation with the known side lengths. Then they solve the equation for an unknown side length

Another way to do this is to use the Activity-Based Exploration for Lesson 11-3 to help students explore strategies to find an unknown side length, and then test their strategies with other figures.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How can you explain how to find an unknown side length if the perimeter is known?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 168B-168C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 11-4 Solve Problems Involving Area and Perimeter

Teaching Point: *Today I'm going to teach you to solve problems involving area and perimeter.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 11-4 to help students use addition and multiplication equations to find the areas and perimeters of rectangles and then make comparisons.

Another way to do this is to use the Activity-Based Exploration for Lesson 11-4 to help students explore the relationship between areas and perimeters of rectangles.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Color tiles, grid paper*
- *Closure Opportunities: Exit Ticket and/or Question: How did you think like a mathematician when solving problems involving area and perimeter?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 172B-172C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 11 Math Probe: Expressions for Perimeter and Area. Use Teacher's Edition Volume 2 pages 173-174A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from Teacher's Edition Volume 2 page 156A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students. If using workstations, prepare materials needed for those.*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 5: 11-5 Solve Problems Involving Measurement *(Optional)*

Teaching Point: *Today I'm going to teach you to solve multiplication and division problems involving length measurements.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.RA.C.7

Supporting: 3.RA.A.4, 3.RA.A.5, 3.RA.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 11-5 to help students

use models and equations to represent and solve word problems involving length measurements.

Another way to do this is to use the Activity-Based Exploration for Lesson 11-5 to help students think about ways to represent and solve word problems involving length measurements.

Suggestions:

- *This lesson is a good review of multiplication and division but does not address the perimeter standard.*
- *Activity-Based Exploration materials to prepare prior to lesson: Blank cubes labeled 4-9*
- *Closure Opportunities: Exit Ticket and/or Question: How can you solve problems involving measurement?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 178B-178C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 11.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to use the Unit 11 Review found in ConnectED to review Unit 11 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit 11 Review and Fluency Practice found on student pages 179-184 to review Unit 11 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 11.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.D.15, 3.GM.D.16

Supporting: 3.GM.D.8

Detailed Description/Instructions:

One way to do this is to assign the Unit 11 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 11 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Solve problems involving perimeters of polygons. (3.GM.D.15)*
 - *Understand that rectangles can have equal perimeters but different areas, or rectangles can have equal areas but different perimeters. (3.GM.D.16)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 11

Performance Task: Mr. Chiru's Service Club Challenge
Teacher's Edition page 184A

This five-part task asks students to apply all the skills and standards taught in Unit 11. Students will explore various areas and perimeters to determine which box to use for their service project.

Unit 12: Measurement and Data

Subject: Math

Grade: 3rd Grade

Name of Unit: Measurement and Data

Length of Unit: 18 days

Overview of Unit: In this unit, students explore a variety of measurement and data topics while applying skills with the four operations to solve problems related to those topics. Students work with liquid volume and mass, tell time to the minute and determine time intervals, and collect/record data and create/analyze scaled picture and bar graphs. Students also measure to halves and fourths of an inch and show such measurement data on a line plot.

Liquid volume is the amount of liquid in a container. Students estimate and measure liquid volume using the metric units liter (L) and milliliter (mL). For reference, 1 liter is a little more than 1 quart and 1 milliliter is about the size of 20 drops from an eyedropper. Through hands-on experience, students establish benchmarks for liquid volume that they should be able to use in the real world. They also compare volume and learn that different shaped containers may have the same volume.

Students estimate and measure mass using the metric units gram (g) and kilogram (kg). Mass is a measure of how much matter is in an object. Students use the mass of one object to estimate whether another object is greater or less than 1 gram or 1 kilogram.

Students tell time and determine time intervals to the minute using both an analog clock and a digital clock. Another term for time interval is elapsed time. It is the amount of time that passes from the start of an activity to the end of an activity.

Students also collect, record, and organize data. Students create and analyze scaled picture graphs and scaled bar graphs. A scaled picture graph uses pictures or symbols to represent data where each symbol stands for more than one data point as indicated by the key. A scaled bar graph uses the length of bars to represent data where the intervals on the frequency scale are greater than 1. Students also use the graphs to solve one- and two-step “how many more” and “how many less” problems.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - Everyday containers (1 mL, 250 mL, 500 mL, 1 L)
 - Metric measuring cup (1L)
 - Metric measuring cups (500mL)
 - Water
 - Balance scale
 - Classroom objects
 - Apple
 - Everyday objects (1 g, 100 g, 1 kg) ([common items that weigh 1 gram](#), 1 deck of playing cards weighs about 100 g, a laptop weighs about 1 kg)
 - Student clocks
 - Number lines
 - [Picture Graph](#) Teaching Resource
 - Playing cards
 - [Bar Graphs](#) Teaching Resource
 - Connecting cubes
 - Grid paper
 - [Quarter-Inch Rulers](#) Teaching Resource
 - Quarter-Inch rulers
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).
- Note that standard 3.GM.B.7 refers to estimating and measuring both metric and customary units of measurement. However, the 3rd grade Reveal resource does not have lessons that contain work with the customary units of cup, gallon, ounce or pound. Be advised to include necessary learning experiences to review the measurement content that was introduced in Unit 1, Engaging Experience 4, including this [Capacity/Mass customary units anchor chart](#).

Essential Question:

- How can I measure and record data?

Enduring Understandings:

- Standard units of measure provide a common language for measurement.
- Different measurement tools and units are used for different purposes.
- Time and time intervals can be measured to the minute.
- Data can be collected, organized, and represented in picture graphs, bar graphs, and line plots to communicate information.

Priority Standards:

- 3.GM.B Solve problems involving the measurement of time, liquid volumes and weights of objects.
 - 3.GM.B.7 Measure or estimate length, liquid volume and weight of objects.
- 3.DS.A Represent and analyze data.
 - 3.DS.A.4 Use data shown in a line plot to answer questions.

Supporting Standards:

- 3.GM.B Solve problems involving the measurement of time, liquid volumes and weights of objects.
 - 3.GM.B.4 Tell and write time to the nearest minute.
 - 3.GM.B.5 Estimate time intervals in minutes.
 - 3.GM.B.6 Solve problems involving addition and subtraction of minutes.
 - 3.GM.B. 8 Use the four operations to solve problems involving lengths, liquid volumes or weights given in the same units.
- 3.DS.A Represent and analyze data.
 - 3.DS.A.1 Create frequency tables, scaled picture graphs and bar graphs to represent a data set with several categories.
 - 3.DS.A.2 Solve one- and two-step problems using information presented in bar and/or picture graphs.
 - 3.DS.A.3 Create a line plot to represent data.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.GM.B.7	Mathematicians use rulers, meter sticks, and yardsticks to measure length using units to the nearest centimeter, meter, kilometer, inch, foot, yard or mile Mathematicians use marked containers and graduated cylinders to measure liquid volume using units milliliters, liters, cups and gallons. Mathematicians use scales to measure weight using ounces, pounds, grams and kilograms.	Measure or estimate length, liquid volume and weight of objects. Choose the appropriate measuring tool and/or unit. Accurately measure a given item with a metric and/or customary unit.	Evaluate	3
3.DS.A.4	Line plots are displays that show a distribution of data. Data in line plots can answer questions.	Use data shown in a line plot to answer questions. Identify the frequency of responses for each column.	Apply	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
● Readiness Diagnostic ● Exit Ticket ● Math Probe ● Fluency Practice ● Unit Assessment Form A. <i>This is editable.</i>	● Performance Task ● Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
liquid volume liter (L) milliliter (mL) estimate balance scale gram (g) kilogram (kg) mass analog clock digital clock number line key picture graph scale bar graph ruler line plot	compare strategy discuss effect indicate organize contrast interval collect label analyze information summarize identify create

Math Language Routines:

- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 4: Information Gap
- MLR 5: Co-Craft Questions
- MLR 6: Three Reads
- MLR 7: Compare and Connect
- MLR 8: Discussion Supports

Number Routines:

- What's Another Way to Write It?
- Where Does it Go?
- Let's Count
- Mystery Number

Sense-Making Routines:

- Notice & Wonder: What do you notice? What do you wonder?
- Notice & Wonder: What question could you ask?
- Which Doesn't Belong?
- Notice & Wonder: How are they the same? How are they different?
- Is It Always True?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about measurement and data.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 12 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about measurement and data by posing the Focus Question: How can I measure and record data? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 12 Unit Assessment Form A as a pretest of the material in Unit 12. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from Teacher's Edition volume 2, page 185G.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful with measurement and data.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 186. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 12>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from Teacher's Edition volume 2, page 185G. Use Teacher's Edition page 186A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 12-1 Measure Liquid Volume

Teaching Point: *Today I'm going to teach you how to measure liquid volume in milliliters and liters*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-1 to help students understand how to measure liquid volume in milliliters and liters. Students will also learn the definition of liquid volume.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-1 students explore the definition of liquid volume and practice determining the liquid volume of water in various containers

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Everyday containers, metric measuring cups 1 liter and 500 mL, water.*
- *Closure Opportunities: Exit Ticket and/or Question: How can you explain liquid volume and when it might be useful in your life?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 190B- 190C*

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 2: 12-2 Estimate and Solve Problems with Liquid Volume

Teaching Point: *Today I'm going to teach you to estimate and solve problems with liquid volume.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-2 to help students extend their understanding of measuring liquid volume to estimate and solve problems with liquid volume.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-2 to help students explore ways to estimate liquid volume and solve problems.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Volume containers (1L, 500 mL, 250 mL, 1 mL), metric measuring cups, water*
- *Closure Opportunities: Exit Ticket and/or Question: What are some ways you can estimate liquid volume?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 194B-194C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 3: 12-3 Measure Mass

Teaching Point: *Today I'm going to teach you how to measure mass in grams and kilograms*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to use the Activity-Based Exploration for Lesson 12-3 and have students work in small groups to use balance scales to measure the mass of various classroom objects

Another way to do this is to use the Guided Exploration for Lesson 12-3 to help students explore using a balance scale to compare masses of three different balls. Students will learn about mass measured in grams (g) and kilograms (kg). (Note: this lesson asks students to find which ball has the greatest mass but only walks them through finding the mass of the baseball. You could bring a tennis ball and a golf ball to lead them through finding those masses as well to fully answer the question.)

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Balance scales, classroom objects, gram stackers*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use a balance scale to measure the mass of an object?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 198B-198C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 4: 12-4 Estimate and Solve Problems with Mass

Teaching Point: *Today I'm going to teach you to estimate and solve problems with mass.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-4 to help students use the given mass of objects to estimate the mass of other objects.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-4 to help students use everyday objects equal to 5 grams and 1 kilogram as nonstandard units of measure to estimate the mass of other objects.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Everyday objects, balance scale, gram stackers*
- *Closure Opportunities: Exit Ticket and/or Question: How can using everyday objects help you estimate mass?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 202B-202C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 5: 12-5 Tell Time to the Nearest Minute

Teaching Point: *Today I'm going to teach you to tell time to the nearest minute on an analog clock.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B Missouri does not include time as a priority standard, however it is included on the MAP blueprint.

Supporting: 3.GM.B.4, 3.GM.B.5, 3.GM.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-5 to help students learn to identify the tick marks on an analog clock. Students will count by 5s to determine the 5-minute interval in which a time falls, and then count by 1s to read the exact minute.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-5 and have students represent times on an analog clock and explore how to read the time. Students learn multiple ways to read the time aloud and discuss efficient strategies for telling time.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Student clocks*
- *Closure Opportunities: Exit Ticket and/or Question: How can you tell time to the nearest minute?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 206B-206C*

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 6: 12-6 Solve Problems Involving Time

Teaching Point: *Today I'm going to teach you to solve problems involving time intervals.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B

Supporting: 3.GM.B.4, 3.GM.B.5, 3.GM.B.6

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-6 to help students use number lines, analog clocks, and counting strategies to determine time intervals.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-6 to help students use a clock and other tools to determine end times with a known start time and duration.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: Student clocks*
- *Closure Opportunities: Exit Ticket and/or Question: How can you determine how much time has passed from the start of an activity to the end of an activity?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 210B-210C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 7: 12-7 Understand Scaled Picture Graphs

Teaching Point: *Today I'm going to teach you to interpret data in a scaled picture graph.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.DS.A Missouri does not include picture graphs as a priority standard, however it is included on the MAP blueprint.

Supporting: 3.DS.A.1, 3.DS.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-7 to help students interpret how a given data set is populated in a scaled picture graph. Students will understand that a key with a scale is used to represent more than one data point with a picture or a symbol.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-7 to help students collect data and explore different ways to represent the data using pictures or symbols in a graph

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: [Picture Graph Teaching Resource](#)*
- *Closure Opportunities: Exit Ticket and/or Question: How can you display data using a scaled picture graph?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 214B-214C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 8: 12-8 Understand Scaled Bar Graphs

Teaching Point: *Today I'm going to teach you to draw a scaled bar graph to represent a data set.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.DS.A Missouri does not include picture graphs as a priority standard, however it is included on the MAP blueprint.

Supporting: 3.DS.A.1, 3.DS.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-8 to help students extend their understanding of bar graphs with single-unit scales to create and describe scaled bar graphs.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-8 to help students explore ways to draw and describe scaled bar graphs.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* [Bar Graphs Teaching Resource](#), connecting cubes
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you display data in a scaled bar graph?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 218B-218C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 9: 12-9 Solve Problems Involving Scaled Graphs

Teaching Point: *Today I'm going to teach you to solve problems involving scaled graphs*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.DS.A Missouri does not include picture graphs as a priority standard, however it is included on the MAP blueprint.

Supporting: 3.DS.A.1, 3.DS.A.2

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 12-9 to help students use a scaled bar graph to identify the scale and the value of each category. Students then use the data to solve a two-step word problem.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-9 to have students interpret a scaled bar graph and how to use the data to solve problems.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* *Grid paper*
- *Closure Opportunities: Exit Ticket and/or Question:* *How can you find the difference between two data points on a scaled graph?*
- *Differentiation Options:* *Teacher's Edition Volume 2 pages 222B-222C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 10: 12-10 Measure to Halves or Fourths of an Inch

Teaching Point: *Today I'm going to teach you to measure to the nearest half and fourth of an inch.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to use the Activity-Based Exploration for Lesson 12-10 to help students use rulers to measure classroom items and explore the appropriate level of precision for items.

Another way to do this is to use the Guided Exploration for Lesson 12-10 to help students identify the half- and quarter-inch marks on an inch ruler.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson: [Rulers or Quarter-Inch Rulers](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How can you measure an object to a half or a fourth of an inch?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 226B-226C*

Bloom's Levels: Apply

Webb's DOK: 2

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7

Supporting: 3.GM.B.8

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 12 Math Probe: Measuring Length. Use Teacher's Edition Volume 2 page 227-228A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from Teacher's Edition Volume page 186A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students and prepare work stations if needed.*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 11: 12-11 Show Measurement Data on a Line Plot

Teaching Point: *Today I'm going to teach you to generate and represent data on a line plot*

Suggested Length of Time: 3 days

Standards Addressed

Priority: 3.DS.A.4

Supporting: 3.DS.A.3

Detailed Description/Instructions:

One way to do this (Day 1) is to use the Line Plots presentation from Coaches' Corner to teach students how to generate and represent data on line plots.

Another way to do this (Day 2) is to use the Activity-Based Exploration for Lesson 12-11 to help students measure classroom items and explore how to create a line plot using the data.

Another way to do this (Day 3) is to use the Guided Exploration for Lesson 12-11 to help students learn how to draw and partition a number line and represent each measurement with an X on the number line to create a line plot.

Suggestions:

- *Day 1 suggestion: Look at the teacher notes on slide one of the presentation for independent practice possibilities.*
- *Activity-Based Exploration materials to prepare prior to lesson: Rulers or [Quarter-Inch Rulers](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How can you explain how to create a line plot from length measurements?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 232B-232C*

Bloom's Levels: Apply

Webb's DOK: 2

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 12.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7, 3.DS.A.4

Supporting: 3.GM.B.4, 3.GM.B.5, 3.GM.B.6, 3.GM.B.8, 3.DS.A.1, 3.DS.A.2, 3.DS.A.3

Detailed Description/Instructions:

One way to do this is to use the Unit 12 Review found in ConnectED to review Unit 12 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit 12 Review and Fluency Practice found on student pages 233-238 to review Unit 12 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 12.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.B.7, 3.DS.A.4

Supporting: 3.GM.B.4, 3.GM.B.5, 3.GM.B.6, 3.GM.B.8, 3.DS.A.1, 3.DS.A.2, 3.DS.A.3

Detailed Description/Instructions:

One way to do this is to assign the Unit 12 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 12 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Measure or estimate length, liquid volume, and weight of objects (3.GM.B.7)*
 - *Use data shown in a line plot to answer questions (3.DS.A.4)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 12

Performance Task: Mr. Keating's Science Station Challenge
Teacher's Edition page 238A

This five-part task asks students to apply all the skills and standards taught in Unit 12. Students will explore various "stations" related to measurement.

Unit 13: Describe and Analyze 2-Dimensional Shapes

Subject: Math

Grade: 3rd Grade

Name of Unit: Describe and Analyze 2-Dimensional Shapes

Length of Unit: 9 days

Overview of Unit: In this unit, students explore categories and relationships among 2-dimensional shapes and their attributes. An *attribute* is a characteristic or property of an object. Figures can be labeled with the broad name of *polygons*. Before students use polygon prefixes to determine the number of sides and angles and how to identify them, students are tasked with identifying whether shapes are polygons. A polygon is a closed 2-dimensional shape formed by three or more sides that do not cross, so shapes with curved lines, lines that cross, or open sides are not polygons.

Students learn that a polygon with four sides is called a quadrilateral. Students label 2-dimensional shapes based on right angles and equal side lengths.

In this unit, students learn that a right angle is an angle that forms a square corner. In Grade 4, however, students will learn about perpendicular lines and 90-degree angles.

Students also discuss attributes that quadrilaterals share. Students learn that different shapes such as squares and rectangles have attributes in common, such as having four sides. These shared attributes can define a larger category: quadrilaterals.

Getting Ready for the Unit:

- Before each topic, watch the Expert Insights video to learn additional important information about the content of the unit. Send home the Unit Family Letter to give your families insight on the upcoming unit. These can be found within the online Unit Resources within each unit.
- See Engaging Experiences Suggestions for other materials that may be needed.
 - pattern blocks
 - [Polygons](#) Teaching Resource
 - Geoboards (see [Toy Theater](#) or [Didax](#) Geoboards for virtual options)
 - Grid paper
 - [Quadrilaterals](#) Teaching Resource
 - Rulers
- When planning, be intentional about what you will assign each day--choose tasks that truly reveal students' understanding, not just their ability to complete work. Thoughtful selection of daily practice (On My Own) and assessment items helps ensure students move closer to mastering key math skills/concepts of the standard(s).

Essential Question:

- How can I identify, classify, and draw 2-dimensional shapes?

Enduring Understandings:

- Shapes in different categories may share attributes and the attributes that shapes share can define a larger category of figures.
- Attributes such as number of sides, angles, and symmetry help describe and classify shapes.
- Shapes can be in the same category but look different.
- Rhombuses, rectangles, and squares are examples of quadrilaterals.

Priority Standards:

- 3.GM.A Reason with shapes and their attributes.
 - 3.GM.A.1 Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category.
 - 3.GM.A.2 Distinguish between rhombuses and rectangles as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to these subcategories.

Supporting Standards:

*There are no Supporting Standards for these Priority Standards.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
3.GM.A.1	That shapes in different categories may share attributes and that the shared attributes can define a larger category.	Compare and contrast shapes by attributes. Place shapes into larger categories. Identify 2-dimensional shapes by name and according to attributes.	Apply	2
3.GM.A.2	Rhombuses and rectangles are examples of quadrilaterals. A square is both a rectangle and a rhombus.	Draw examples of quadrilaterals that do not fit the subcategories of rhombuses and rectangles.	Apply	2

Assessment Options:

Formative Assessment Options <i>(Administered before or during a unit, topic or lesson to guide instruction and give feedback to students.)</i>	Summative Assessment Options <i>(Administered at the end of a unit or topic to assess mastery of learning objectives.)</i>
• Readiness Diagnostic • Exit Ticket • Math Probe • Fluency Practice • Unit Assessment Form A. <i>This is editable.</i>	• Performance Task • Unit Assessment Form B. <i>This is editable.</i>

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
octagon	attribute
pentagon	determine
polygon	compare
quadrilateral	classify
right angle	define
rhombus	create
	include

Math Language Routines:

- MLR 2: Collect and Display
- MLR 3: Critique, Correct, and Clarify
- MLR 6: Three Reads
- MLR 8: Discussion Supports

Number Routines:

- Greater Than, Less Than
- Find the Missing Values
- Mystery Number

Sense-Making Routines:

- Notice & Wonder: How are they the same? How are they different?
- Which Doesn't Belong?
- Is it Always True?
- Notice & Wonder: What do you notice? What do you wonder?

Differentiated Practice and Application Suggestions:

<i>Reinforce Understanding</i>	<i>Build Proficiency</i>	<i>Extend Thinking</i>
• Small Group Activity Lesson • Online Take Another Look Lesson • Reinforce Understanding Page from Differentiation Resource Book • ALEKS Adventure	• Print & Digital Games • Online Interactive Additional Practice • Additional Practice page from Student Practice Book • Print or Digital Spiral Review • ALEKS Adventure	• Online Application Station-Extension Activity • Physical Application Station (Use It!) • Extend Thinking Page from Differentiation Resource Book • ALEKS Adventure

Diagnostic Assessment

Teaching Point: *Today we will explore what you already know about 2-dimensional shapes.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to have students take the Unit 13 Readiness Diagnostic, digitally or on paper. If assigning digitally, give students paper to show their work so you can analyze their work/thinking. Provide students a reasonable amount of time (ex: 30 minutes) for students to complete the assessment. Reassure them that it is okay if they do not finish this pre-assessment.

After students have completed their Readiness Diagnostic, proceed to have students think about what they already know about 2-dimensional shapes by posing the Focus Question: How can I identify, classify, and draw 2-dimensional shapes? Introduce and discuss the Video under STEM in Action. If time allows students can complete the STEM Project Card or Adventure.

Another way to do this is to have students take the Unit 13 Unit Assessment Form A as a pretest of the material in Unit 13. This test can be assigned digitally or printed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from the Teacher's Edition volume 2, page 239G.*

The Readiness Diagnostic shows how students have mastered the skills from 2nd grade. The pre-assessment addresses the skills they are about to learn in 3rd grade. You can assign either the Readiness Diagnostic or the Form A assessment online so data goes into MH Plus.

Bloom's Levels: Apply

Webb's DOK: 2

Ignite!

Teaching Point: *Today I'm going to review with you in small groups the skills that you will need to be successful with 2-dimensional shapes.*

Suggested Length of Time: 1 day

Detailed Description/Instructions:

One way to do this is to introduce the Ignite! activity to the whole class using Teacher's Edition page 240. Students will work on this independently when not working with the teacher in small groups. You will conduct small groups based on the Readiness Diagnostic to teach students the missing skills to be successful in this unit. There are targeted intervention teacher directed lessons and worksheets in ConnectEd>Browse This Course>Unit 13>Targeted Intervention. This small group work can continue throughout the unit during Intervention times as needed.

Suggestions: *Use the information gathered from the Readiness Diagnostic to prepare groups and instruction for Day 2. You can use the Item Analysis from the Teacher's Edition volume 2, page 239G. Use the Teacher's Edition page 240A to develop workstations and have students complete [AVID 3-column notes](#) or [Frayer Models](#) for the [vocabulary cards](#) to be completed when not working with the teacher after completing their Ignite! Activity.*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 1: 13-1 Describe and Classify Polygons

Teaching Point: *Today I'm going to teach you how to describe and classify polygons*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 13-1 to help students examine groups of shapes to learn what classifies a shape as a polygon. Students will identify the number of sides and angles of a polygon to further classify it as a triangle, quadrilateral, pentagon, hexagon, or octagon.

Another way to do this is to use the Activity-Based Exploration for Lesson 13-1 to help students explore the similarities and differences among shapes to identify and classify polygons.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: [Polygons](#) Teaching Resource*
- *Closure Opportunities: Exit Ticket and/or Question: How can you classify and describe polygons?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 244B-244C*

Bloom's Levels: Apply

Webb's DOK: 2

Engaging Experience 2: 13-2 Describe Quadrilaterals

Teaching Point: *Today I'm going to teach you to describe quadrilaterals by their attributes.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 13-2 to help students compare different quadrilaterals to understand the attributes of equal side lengths and right angles.

Another way to do this is to use the Activity-Based Exploration for Lesson 13-2 to help students create quadrilaterals and identify the attributes of each quadrilateral to compare the shapes.

Suggestions:

- *Activity-Based Exploration materials to prepare prior to lesson:* Geoboards, rubber bands, grid paper (you can use [Toy Theater Virtual Geoboards](#) or [Didax](#))
- *Closure Opportunities: Exit Ticket and/or Question:* How can you use the attributes of a quadrilateral to describe it?
- *Differentiation Options:* Teacher's Edition Volume 2 pages 248B-248C

Bloom's Levels: Understand

Webb's DOK: 1

Engaging Experience 3: 12-3 Classify Quadrilaterals

Teaching Point: *Today I'm going to teach you how to classify quadrilaterals by their attributes.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 13-3 to help students examine a group of quadrilaterals and learn how to classify and subdivide the shapes into more specific categories.

Another way to do this is to use the Activity-Based Exploration for Lesson 12-3 and have students attempt to classify the quadrilaterals according the the attributes that define each category

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson:* [Quadrilaterals Teaching Resource](#), rulers
- *Closure Opportunities: Exit Ticket and/or Question:* How can you classify quadrilaterals by their attributes?
- *Differentiation Options:* Teacher's Edition Volume 2 pages 252B-252C

Bloom's Levels: Understand

Webb's DOK: 1

Math Probe

Teaching Point: *Today you are going to show your learning.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to begin by giving the Unit 13 Math Probe: Classifying Shapes. Use the Teacher's Edition Volume 2 page 254A to assess student work. After finishing the math probe, students build math proficiency by working on workstations from the Teacher's Edition Volume page 240A.

Suggestions:

- *Prior to lesson: Explore math activities to use with students and prepare work stations if needed.*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Experience 4: 13-4 Draw Quadrilaterals with Specific Attributes

Teaching Point: *Today I'm going to teach you to use an understanding of quadrilateral categories and specific attributes to draw quadrilaterals.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to use the Guided Exploration for Lesson 13-4 to help students examine a description of a quadrilateral and use the attributes to create shapes that meet the given description.

Another way to do this is to use the Activity-Based Exploration for Lesson 13-4 to help students create quadrilaterals based on a description that includes key attributes.

Suggestions:

- *Activity- Based Exploration materials to prepare prior to lesson: Grid paper, rulers*
- *Closure Opportunities: Exit Ticket and/or Question: How can you use your understanding of attributes to draw quadrilaterals?*
- *Differentiation Options: Teacher's Edition Volume 2 pages 258B-258C*

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Review and Fluency Check

Teaching Point: *Today I'm going to teach you to review what you have learned in Unit 13.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to use the Unit 13 Review found in ConnectED to review Unit 13 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Another way to do this is to use the Unit 13 Review and Fluency Practice found on student pages 259-264 to review Unit 13 concepts. Review questions should be strategically chosen to emphasize key unit concepts.

Note: Both Unit Review and Fluency check can be completed on this day

Bloom's Levels: Analyze

Webb's DOK: 3

Unit Assessment and Performance Task

Teaching Point: *Today you're going to showcase all your learning from Unit 13.*

Suggested Length of Time: 1 day

Standards Addressed

Priority: 3.GM.A.1, 3.GM.A.2

Supporting: N/A

Detailed Description/Instructions:

One way to do this is to assign the Summative Assessment. You can assess the priority standards of this unit while also spiraling in concepts from the earlier units.

Another way to do this is to assign Unit 13 Unit Assessment form A or B through ConnectED. Students can show their work on paper and turn it in so that teachers can analyze their work/thinking. In addition to the assessment, you could digitally assign the Performance Task (Engaging Scenario).

Another way to do this is to use the Unit 13 Unit Assessment paper form A or B. In addition to the assessment, you could print the Performance Task (Engaging Scenario)

Suggestions:

- *You are reporting out on:*
 - *Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category. (3.GM.A.1)*
 - *Distinguish rhombuses and rectangles as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to these subcategories. (3.GM.A.2)*

Bloom's Levels: Analyze

Webb's DOK: 3

Engaging Scenario - Unit 13

Performance Task: Ms. Ingall's Shape Challenges
Teacher's Edition page 264A

This five-part task asks students to apply all the skills and standards taught in Unit 13. Students will explore how many quadrilaterals they can find and name from a given complex design.