

<b>Course: Third Grade Math</b>	
<b>Unit 1: Three-Digit Numbers: Place Value, Addition and Subtraction</b>	
<b>Grade Level(s): Third Grade</b>	<b>Length of Unit:</b> 16 days (plus 2 days iReady Diagnostic and 5 days Lesson ) = 23 days
<p><b>Unit Rationale:</b> In this unit, students will extend their understanding of place value to round numbers to the nearest ten and hundred. They will use this understanding to apply place value and other strategies to adding and subtracting three-digit numbers.</p>	
<b>Stage 1 - Desired Results</b>	
<p><b>Enduring Understandings:</b></p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>● Rounding numbers can be useful when estimating. Knowing how to round will help you with addition and subtraction.</li> <li>● You can use what you know about place value to add or subtract using partial sums or differences and other strategies.</li> </ul>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● How is rounding numbers useful when estimating?</li> <li>● How does knowing how to round help with addition and subtraction?</li> <li>● How does using partial sums or differences and other strategies help you add or subtract within place value?</li> </ul>
<p><b>Content:</b></p> <p><i>Students will know...</i></p> <p>LESSON 0:</p> <ul style="list-style-type: none"> <li>● How to use the Try-Discuss-Connect Routine to establish best practices during a Ready Classroom Mathematics lesson.</li> <li>● To make sense of problems, explain their thinking, and discuss strategies used to solve problems.</li> <li>● To understand how to appropriately critique and compare the solution strategies.</li> <li>● To establish hand signals such as thumbs-up or thumbs-down for students to signal agreement</li> </ul>	<p><b>Skills:</b></p> <p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> <li>● Use place value to round numbers to the nearest ten and to the nearest hundred.</li> <li>● Use place value to add and subtract.</li> <li>● Solve word problems by adding and subtracting using place value.</li> </ul>

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or disagreement with strategies and student responses, as well as provide the teacher with formative feedback.

- How to develop good use of mathematical language and support sense-making as they learn to ask good questions, clearly describe their thinking to others, and reword and refine mathematical ideas.
- To apply math knowledge and modeling techniques to new, similar problems.
- To write three-digit numbers in word and expanded form.
- Compare three-digit numbers.
- Break apart numbers and use place-value understanding to add three-digit numbers.

## LESSON 1:

- Round two- and three-digit numbers to the nearest ten.
- Round three-digit numbers to the nearest hundred.
- Explain how to round numbers to the nearest ten and to the nearest hundred.

## LESSON 2:

- Use a variety of strategies to add three-digit numbers.

## LESSON 3:

- Use a variety of strategies to subtract three-digit numbers.

## MATH IN ACTION:

- Apply multiple skills from the unit to solve real-world problems.
- Understand rounding two- and three-digit numbers,
- Understand adding two- and three-digit numbers.

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- Round whole numbers.
- Compare whole numbers.
- Estimate sums.
- Add two- and three-digit numbers.
- Subtract two- and three digit numbers.
- Solve multi-step problems.

**Vocabulary:**

Round

Estimate

Number line

Place value

Algorithm

Partial sums

Regroup

Difference

Expanded form

Place value

**NJ Student Learning Standards - Mathematics**

**3.NBT.A.1:** Use place value understanding to round whole numbers to the nearest 10 and 100.

**3.NBT.A.2:** With accuracy and efficiency, add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

**The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)**

- 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

**CLKS Practices:**

1. Demonstrate creativity and innovation
2. Utilize critical thinking to make sense of problems and persevere in solving them

**Connected Careers:**

Statistician, accountant, economist

**Explanation of how 9.2 standards connect to the unit:**

Place value and rounding allow students to assess how well their skills and interests align with different career paths. For instance, if a student enjoys working with numbers and excels in math (high place value), they might consider careers in finance, accounting, or data analysis.

**Explanation of how CLKs connect to the unit:**

- **Demonstrate creativity and innovation:** While precision is crucial, rounding can stimulate creative thinking by allowing individuals to explore approximate solutions and quick estimates. This approach can foster innovative problem-solving techniques where quick assessments and comparisons are needed.
- **Utilize critical thinking to make sense of problems and persevere in solving them:** Place value and rounding support critical thinking by providing a structured approach to using numerical data. Knowing when and how to round helps in simplifying tasks without losing sight of essential details. This skill is valuable in solving real-world challenges, such as quick estimates. Students may round a cost of items at a store to estimate a total cost. Additionally, students need to practice perseverance by trying different strategies and checking their work, and changing their approach if they have struggles along the way.

**Explanation of how Connected Careers connect to the unit:**

In statistical analysis, rounding can be used to present data in a more understandable format or to simplify calculations while maintaining the overall integrity of the data.

In bookkeeping and accounting, rounding may be used to simplify financial figures for reporting or record-keeping purposes.

Economists may round figures to communicate trends more clearly without delving into overly precise numerical details.

**Interdisciplinary Standards**

3-ESS3-1 (Sci) Make a claim about the merit of a design solution that reduces the impacts of climate change and/or a weather-related hazard.

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

RI.MF.3.6. Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

**Explanation of how interdisciplinary standards connect to the unit:**

Students can use rounding to simplify figures, making them easier to understand and remember. For example, weather-related hazards often involve complex data, such as rainfall amounts and temperature readings. Students will round and ask and answer questions to make relevant connections.

**Technology Integration (9.4 Standards):**

- 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).
- 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

**Explanation of how 9.4 standards connect to the unit:**

The Technology Literacy standard “Identify the basic features of a digital tool and explain the purpose of the tool” will be addressed when students utilize the i-ready platform and its navigation on their Chromebooks. Key features such as interactive practice with technology-enhanced items, digital math tools, student bookshelf, digital assessments, and learning games will be highlighted, with explanations on how each helps in learning Math.

Additionally, students can calculate changes in environmental factors over time using addition and subtraction. For instance, they might calculate the increase in average global temperatures over the past century or changes in sea levels due to melting ice caps. Collaborating digitally as a team can often develop a better result than an individual working alone.

**Stage 2- Assessment Evidence:****Assessment:**

<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic (September)
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

### Stage 3 - Learning Plan

<p><b>Learning Activities:</b> <b>I-READY DIAGNOSTIC (2 Days)</b></p> <p><b>LESSON 0 (5 Days):</b></p> <ul style="list-style-type: none"> <li>● Session 1: Write Three-Digit Numbers Different Ways (Try-Discuss-Connect Routine introduced)</li> <li>● Session 2: Write Three-Digit Numbers Different Ways (Compare Class Strategies)</li> <li>● Session 3: Ways to Compare Three-Digit Numbers</li> <li>● Session 4: Ways to Compare Three-Digit Numbers</li> <li>● Session 5: Adding Three-Digit Numbers</li> </ul> <p><b>LESSON 1: Use Place Value to Round Numbers (4 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Using Place Value to Round Numbers</li> <li>● Session 2: Develop - Round to the Nearest</li> </ul>	<p><b>Differentiation:</b></p> <p>The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>English Language Learners:</b></p> <ul style="list-style-type: none"> <li>● Prepare/Ready Prerequisite Lessons</li> <li>● Reteach/Tools for Instruction</li> <li>● Reinforce/Math Center Activities</li> <li>● Personalize/i-Ready Lessons</li> <li>● Build Your Vocabulary activities</li> <li>● Small Group review, as needed</li> <li>● Game Centers</li> <li>● Lessons taught through group work, investigation, labs, hands-on</li> </ul> </div>
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Ten

- Session 3: Develop - Round to the Nearest Hundred
- Session 4: Refine - Using Place Value to Round Numbers

### **LESSON 2: Add Three-Digit Numbers (4 Days)**

- Session 1: Explore - Adding Three-Digit Numbers
- Session 2: Develop - Using Place-Value Strategies to Add
- Session 3: Develop - Connecting Place-Value Strategies to an Algorithm
- Session 4: Refine - Adding Three-Digit Numbers

### **LESSON 3 Subtract Three-Digit Numbers: (5 Days)**

- Session 1: Explore - Subtracting Three-Digit Numbers
- Session 2: Develop - Using Place-Value Strategies to Subtract
- Session 3: Develop - Adding On to Subtract
- Session 4: Develop - Connecting Place-Value Strategies to an Algorithm
- Session 5: Refine - Subtracting Three-Digit Numbers

### **MATH IN ACTION: Use Rounding and Operations (2 Days)**

- Session 1: Study an Example Problem and Solution
- Session 2: Persevere On Your Own

### **UNIT 1 UNIT ASSESSMENT OR COMPREHENSION CHECKS (1 Day)**

manipulatives, technology

- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Board Math: student presentations at boards

[ELL: Connect Language Development to Mathematics](#)

**LESSON 1:** See pages 4a, 8,14, 20,  
Example: Read aloud Connect It problem. Ask students to skip count by 10s to 100. Display and explain the word rounding. Explain that multiples of ten are used when rounding to the nearest ten.

**LESSON 2:** See pages 26a, 30, 36, 42  
Example: Read aloud Connect It problem 2d. Display a hill-shaped number line labeled with 370 and 380 as endpoints. Ask: What number is halfway between 0 and 10? Between 70 and 80? Between 370 and 380?

**LESSON 3:** See pages 48a, 52, 58, 64, 70  
Example: Read Connect It problem 2 aloud. Point out breaking apart numbers. Explain that numbers can be broken apart by their place values.

In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies [Click Here](#)

### **Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons

- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving

**LESSON 1:**

Grade 3, Lesson 1: Mystery Number

**LESSON 2:**

Grade 3, Lesson 2: Addition Grids

**LESSON 3:**

Grade 3, Lesson 3: Planning a Trip

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research

- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons

- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

**LESSON 1:**

- Grade 2, Lesson 12: Understanding Three-Digit Numbers
- Grade 2, Lesson 13: Read and Write Three-Digit Numbers
- Grade 2, Lesson 14: Compare Three-Digit Numbers

**LESSON 2:**

- Grade 2, Lesson 6: Add Two-Digit Numbers
- Grade 2, Lesson 15: Mental Addition and Subtraction
- Grade 2, Lesson 16: Add Three-Digit Numbers

**LESSON 3:**

- Grade 2, Lesson 7: Subtract Two-Digit Numbers
- Grade 2, Lesson 15: Mental Addition and Subtraction
- Grade 2, Lesson 17: Subtract Three-Digit Numbers

Links to [Math Differentiation Chart](#) and [Accommodations Chart](#)

### Core and Supplementary Instructional Materials

#### Teacher Pedagogical Resources:

ISBN-13: 978-1495780486 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 1

ISBN-13: 978-1495780493 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 2

Ready Classroom Mathematics [Teacher Toolbox](#) and Online Resources

#### Student Materials:

iReady Classroom Mathematics 2024 Grade 3 Math Workbook Volume A

Hands-on math manipulatives and digital manipulatives

iReady MyPath

#### Notes:

##### Inclusion of Climate Change Opportunities



Students can explore how energy consumption contributes to greenhouse gas emissions. They can calculate total energy usage for different activities or appliances at home or school. For instance, they might calculate the total energy savings from switching to energy-efficient light bulbs or appliances.

<b>Course: Third Grade Math</b>	
<b>Unit 2: Multiplication and Division: Concepts, Relationships and Patterns</b>	
<b>Grade Level(s): Third Grade</b>	<b>Length of Unit: 42 days</b>
<p><b>Unit Rationale:</b>          In this unit, students are introduced to multiplication and division. They use their understanding of place value to help them multiply. Students further their understanding of multiplication and division by using many different properties, models and strategies to help them solve problems and equations.</p>	
<b>Stage 1 - Desired Results</b>	
<p><b>Enduring Understandings:</b>  <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>• Multiplication is a way of combining equal groups. Knowing how to work with equal groups will help you with both multiplication and division problems.</li> <li>• There are many models and strategies to help you multiply. Knowing these strategies, such as breaking apart factors, will help make you more fluent with your multiplication facts.</li> <li>• You can multiply numbers in any order. You can also use place value to multiply.</li> <li>• Division means separating a total number of objects into equal sized groups. Knowing how to divide will help you find the number of groups or the number in each group.</li> </ul>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• How will knowing how to combine equal groups help with multiplication and division?</li> <li>• How will knowing the different models and strategies of multiplication make students more fluent with their multiplication facts?</li> <li>• Can you multiply in any order?</li> <li>• Can you use place value to multiply?</li> <li>• How will knowing how to divide help you find the number of groups or the number in each group?</li> </ul>
<p><b>Content:</b>  <i>Students will know...</i></p>	<p><b>Skills:</b>  <i>Students will be able to...</i></p> <ul style="list-style-type: none"> <li>• Explain multiplication using equal groups and</li> </ul>

**LESSON 4:**

Understand that the symbol  $\times$  means “groups of” and that problems such as  $5 \times 7$  refer to 5 groups of 7.

Interpret a multiplication problem situation using pictures, objects, words, numbers, and equations.

Understand that repeated addition and skip-counting are strategies for finding a product, but the meaning of multiplication is finding the total number of items in equal sized groups.

**LESSON 5:**

Use strategies such as repeated addition and skip-counting by twos, fives, and tens to solve multiplication problems involving multiplying with 0, 1, 2, 5, 10.

Use models such as arrays and equal groups to solve multiplication problems involving multiplying with 0, 1, 2, 5, 10.

Interpret a multiplication problem situation using pictures, objects, words, numbers, and equations.

**LESSON 6:**

Break apart a factor as a strategy for multiplying (distributive property).

Apply the distributive property of multiplication as a strategy to learn multiplication facts and to solve multiplication problems.

Make the multiplication problem easier to solve by reversing the order of factors (commutative property).

**LESSON 7:**

Break apart a factor as a strategy for multiplying (distributive property).

Apply the distributive property of multiplication as a strategy to learn multiplication facts and to

arrays.

- Break apart numbers to make multiplying easier.
- Use order and grouping to make multiplying easier.
- Use place-value to multiply.
- Explain division using equal groups and arrays.
- Understand division as a multiplication problem.
- Use multiplication and division facts up through the facts for 10.
- Find the rule for a pattern and explain it.

solve multiplication problems.

**LESSON 8:**

.Understand that numbers can be multiplied in any order and the product will be the same (commutative property).

Apply the commutative property of multiplication as a strategy to solve multiplication problems.

Understand that three or more factors in a problem can be grouped in different ways and the product will be the same (associative property).

Apply the associative property of multiplication as a strategy to solve problems.

**LESSON 9:**

Use place-value understanding to multiply a one-digit number by multiples of 10.

Use properties of operations to multiply a one-digit number by multiples of 10.

**LESSON 10:**

Understand division as sharing, knowing the number of equal shares or groups and finding the number in each group.

Understand division as separating equal shares of groups and finding the number of shares or groups.

Describe stories or contexts for division expressions, such as  $24 \div 4$ .

**LESSON 11:**

Understand the relationship between multiplication and division.

Demonstrate informally that related multiplication and division equations for fact families.

Find the unknown number in a whole-number

multiplication or division equation.

**LESSON 12:**

Fluently multiply and divide within 100.

Use fact families and the relationship between multiplication and division to find unknown whole numbers in multiplication and division equations.

Solve word problems using equations with the unknown whole number in different places.

**LESSON 13:**

Use hundreds charts, addition tables, and multiplication tables to model addition and multiplication patterns and explain why the patterns make sense.

Use number properties (informally) to find and explain number patterns.

Use knowledge of even and odd numbers to find and explain patterns.

**MATH IN ACTION:**

Students apply multiple skills from the unit to solve real-world problems.

Understand arrays.

Understand two-digit addition.

Understand multiplication.

Know multiplication and division facts.

Draw an array to represent multiplication.

Add two-digit numbers.

Compare whole numbers.

Use an array or equal groups to multiply.

Multiply by multiples of ten.

Add and subtract two- and three-digit numbers.

**Vocabulary:**

Expression

Factor

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Multiplication  
 Multiplication equation  
 Multiply  
 Product  
 Array  
 Equation  
 Divide  
 Division  
 Division equation  
 Quotient  
 Fact family  
 Multiplication table  
 Pattern  
 Rule  
 Addend  
 Even number  
 Odd number

**NJ Student Learning Standards - Mathematics**

3.OA.A.1

Interpret products of whole numbers e.g., interpret  $5 \times 7$  as the total number of objects in 5 groups of 7 objects each.

3.OA.A.2

Interpret whole-number quotients of whole numbers e.g., interpret  $56 \div 8$  as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.

3.OA.A.3

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.A.4

Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

3.OA.B.5

Apply properties of operations as strategies to multiply and divide.

3.OA.B.6

Understand division as an unknown-factor problem.

**3.OA.C.7**

With accuracy and efficiency, fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

**3.OA.C.8**

Solve two-step word problems, including problems involving money, using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**3.OA.D.9**

Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

**3.NBT.A.3**

Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g.,  $9 \times 80$ ,  $5 \times 60$ ) using strategies based on place value and properties of operations.

**The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)**

9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

**CLKS Practices:**

- Utilize critical thinking to make sense of problems and persevere in solving them
- Act as a responsible and contributing community members and employee
- Attend to financial well-being

**Connected Careers:**

Mathematician, meteorologist, financial planner

**Explanation of how 9.2 standards connect to the unit:**

Students will use multiplication to solve problems related to earning money. Students will understand how

multiplication can be used to calculate earnings, the cost of education, and living expenses.

**Explanation of how CLKs connect to the unit:**

This unit connects to the standard **“Utilize critical thinking to make sense of problems and persevere in solving them”** since this standard emphasizes approaching problems thoughtfully, applying logical reasoning, and persistence until a solution is found and these are skills needed when working with multiplications and division. By having a solid understanding of multiplication and division, students develop the ability to think critically about relationships among numbers, select appropriate strategies, and work with complex problems.

**Act as a responsible and contributing community member and employee:** Students will learn how multiplication and division can be used to share resources fairly and reduce waste. For example, they will practice dividing items into equal groups and using multiplication to figure out how many items are needed. This will help them understand how to use math to make the best use of resources in different activities.

**Attend to financial well-being:** Multiplication and division are essential for financial calculations such as budgeting and estimating expenses.

**Explanation of how Connected Careers connect to the unit:****Mathematician:**

- Mathematicians frequently use multiplication and division in their research to explore relationships between quantities, solve equations, and develop new theories. These operations are foundational in fields such as algebra, calculus, number theory, and geometry.

**Meteorologist:**

- Students will learn how multiplication and division are important for meteorologists who study and forecast the weather.

**Financial Planner:**

- Financial planners use multiplication and division to help people create budgets. For example, they multiply monthly expenses to find out how much money is needed for a whole year. They also divide a big amount of money by the number of months to figure out how much to spend or save each month.

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

RI.MF.3.6. Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

**Explanation of how interdisciplinary standards connect to the unit:**

Multiplication can be used to find totals or sums that help in calculating averages, for example, to find the average monthly salary or rainfall for a season. Students will sum up the quantities for each month (using multiplication if the same amount is repeated) and then divide by the number of months. Students will use information gained from text and text features, and will ask and answer questions.

**Technology Integration (9.4 Standards):**

- 9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a).
- 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

**Explanation of how 9.4 standards connect to the unit:**

When collaborating, students can use division to divide tasks or responsibilities fairly among team members. For instance, dividing research topics or sections of a project ensures that each member contributes equally to the final artifact.

Students will use digital platforms such as Google Docs, Slides, or collaborative whiteboards where students can work simultaneously on different aspects of the artifact. They can use multiplication to expand on ideas or scale content, and division to distribute workload or manage resources efficiently.

**Stage 2- Assessment Evidence:**

**Assessment:**

<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions
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	Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic (September, January, and June)
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

<b>Stage 3 - Learning Plan</b>	
<p><b>Learning Activities:</b></p> <p><b>LESSON 4: Understand the Meaning of Multiplication (3 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - The Meaning of Multiplication</li> <li>● Session 2: Develop - Understanding of Multiplication Models</li> <li>● Session 3: Refine - Ideas About the Meaning of Multiplication</li> </ul> <p><b>LESSON 5: Multiply with 0,1,2,5,10 (4 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Multiplying with 0,1,2,5,10</li> <li>● Session 2: Develop - Multiplying with 2,5,10</li> <li>● Session 3: Develop - Multiplying with 0 and 1</li> <li>● Session 4: Refine - Multiplying with 0,1,2,5,10</li> </ul> <p><b>LESSON 6: Multiply with 3,4,6 (5 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Multiplying with 3,4,6</li> <li>● Session 2: Develop - Multiplying with 3</li> <li>● Session 3: Develop - Multiplying with 4</li> <li>● Session 4: Develop - Multiplying with 6</li> <li>● Session 5: Refine - Multiplying with 3,4,6</li> </ul>	<p><b>Differentiation:</b></p> <p>The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>English Language Learners:</b></p> <ul style="list-style-type: none"> <li>● Prepare/Ready Prerequisite Lessons</li> <li>● Reteach/Tools for Instruction</li> <li>● Reinforce/Math Center Activities</li> <li>● Personalize/i-Ready Lessons</li> <li>● Build Your Vocabulary activities</li> <li>● Small Group review, as needed</li> <li>● Game Centers</li> <li>● Lessons taught through group work, investigation, labs, hands-on manipulatives, technology</li> <li>● Real world applications through lessons, projects, and research</li> </ul> </div>

**LESSON 7: Multiply with 7,8,9 (5 Days)**

- Session 1: Explore - Multiplying with 7,8,9
- Session 2: Develop - Multiplying with 7
- Session 3: Develop - Multiplying with 8
- Session 4: Develop - Multiplying with 9
- Session 5: Refine - Multiplying with 7,8,9

**LESSON 8: Use Order and Grouping to Multiply (5 Days)**

- Session 1: Explore - Using Order and Grouping to Multiply
- Session 2: Develop - Using Order to Multiply
- Session 3: Develop - Using Grouping to Multiply
- Session 4: Develop - Using Order and Grouping to Multiply
- Session 5: Refine - Using Order and Grouping to Multiply

**LESSON 9: Use Place Value to Multiply (3 Days)**

- Session 1: Explore - Use Place-Value to Multiply
- Session 2: Develop - Multiply with Tens
- Session 3: Refine - Use Place-Value to Multiply

**Mid-Unit Assessment - (1 Day)****LESSON 10: Understand the Meaning of Division (3 Days)**

- Session 1: Explore - The Meaning of Division
- Session 2: Develop - Understanding of Division Models
- Session 3: Refine - Ideas About the Meaning of Division

**LESSON 11: Understand How Multiplication and Division are Connected (3 Days)**

- Session 1: Explore - Understand How

- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Board Math: student presentations at boards

[ELL: Connect Language Development to Mathematics](#)

**LESSON 4:** See pages 92a, 96, 100,  
Example: Read aloud Model It problem 6. Use gestures to model the orientation of rows and columns. Have students replicate the movements

**LESSON 5:** See pages 104a, 108, 114, 120  
Example: Read the Try It problem aloud. Display the table shown.

**LESSON 6:** See pages 126a, 130, 136, 142  
Example: Before reading the Try It problem aloud, select students to stand and form an array of 4 rows of 3. Count the total number of students standing by skip-counting by threes.

**LESSON 7:** See pages 154a, 158, 164, 170, 176  
Example: Read the Try It problem aloud. Give each student 7 counters. Display 7 counters in one row for students to replicate.

**LESSON 8:** See pages 182a, 186, 192, 198, 204  
Example: Read the Try It problem aloud. Remind students that multiplication involves groups of equal size.

**LESSON 9:** See pages 210a, 214, 220  
Example: Prepare for the Try It problem by distributing 10 play-money dimes.

**LESSON 10:** See pages 226a, 230, 234  
Example: Prepare students by putting them in pairs and distribute 8 counters. Ask questions about sharing the counters.

**LESSON 11:** See pages 238a, 242, 246

Multiplication and Division are Connected

- Session 2: Develop - Understand How Multiplication and Division are Connected
- Session 3: Refine - Ideas About how Multiplication and Division are Connected

**LESSON 12: Multiplication and Division Facts (4 Days)**

- Session 1: Explore - Multiplication and Division Facts
- Session 2: Develop - Working with Division Facts
- Session 3: Develop - Using a Multiplication Table
- Session 4: Refine - Working with Multiplication and Division Facts

**LESSON 13: Patterns in Addition and Multiplication (3 Days)**

- Session 1: Explore - Patterns
- Session 2: Develop - Understanding of Patterns
- Session 3: Refine - Ideas About Patterns

**MATH IN ACTION: Solve Multiplication and Division Problems (2 Days)**

- Session 1: Study an Example Problem and Solution
- Session 2: Persevere On Your Own

**UNIT 2: UNIT ASSESSMENT OR COMPREHENSION CHECKS (1 Day)**

Example: Read Model It problem aloud. Give partners 20 counters to help answer questions.

**LESSON 12:** See pages 250a, 254, 260,266  
Example: Pair students and read the Try It problem aloud. Partners work together using counters to answer.

**LESSON 13:** See pages 272a, 276, 280  
Example: Read aloud Model It problem 2. Have students point and chorally say each number.

**Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving

**LESSON 4:**

Grade 3, Lesson 4: Arranging Desks

**LESSON 5:**

Grade 3, Lesson 5: Shopping Spree

**LESSON 6:**

Grade 3, Lesson 6: How Many Creatures?

**LESSON 7:**

Grade 3, Lesson 7: How Many Creatures?

**LESSON 8:**

Grade 3, Lesson 8: Arranging Desks

**LESSON 9:**

Grade 3, Lesson 9: Party Bags

**LESSON 10:**

Grade 3, Lesson 10: Party Bags

**LESSON 11:**

Grade 3, Lesson 11: Arranging Desks

**LESSON 12:**

Grade 3, Lesson 12: Display of Cans

**LESSON 13:**

Grade 3, Lesson 13: Push-Up Challenge

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving

- Workstations for struggling students
- Board Math: student presentations at boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities

- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

**LESSON 4:**

- Grade 2, Lesson 31: Using Arrays
- Grade 2, Lesson 32: Even and Odd Numbers
- Grade 3, Lesson 4: Multiplication Concepts and Equations

**LESSON 5:**

- Grade 2, Lesson 31: Using Arrays
- Grade 2, Lesson 32: Even and Odd Numbers

**LESSON 6:**

- Grade 2, Lesson 31: Adding Using Arrays
- Grade 3, Lesson 6: Multiplying with 3,4,6

**LESSON 7:**

- Grade 2, Lesson 31: Adding Using Arrays

- Grade 2, Lesson 32 Even and Odd Numbers
- Grade 3, Lesson 7: Multiplying with 7,8,9

**LESSON 8:**

- Grade 2, Lesson 31: Add Using Arrays
- Grade 2, Lesson 32: Even and Odd Numbers
- Grade 3, Lesson 8: Use Order and Grouping to Multiply

**LESSON 9:**

- Grade 2, Lesson 12: Understand three-Digit Numbers
- Grade 3, Lesson 9: Use Place Value to Multiply

**LESSON 10:**

- Grade 2, Lesson 31: Add Using Arrays
- Grade 2, Lesson 32: Even and Odd Numbers
- Grade 3, Lesson 10: Solve Problems Involving Equal Shares

**LESSON 11:**

- Grade 2, Lesson 31: Add Using Arrays
- Grade 3, Lesson 11: Relate Multiplication and Division

**LESSON 12:**

- Grade 2, Lesson 31: Add Using Arrays
- Grade 2, Lesson 32: Even and Odd Numbers
- Grade 3, Lesson 12: Write Multiplication and Division Facts

**LESSON 13:**

- Grade 2, Lesson 32: Even and Odd Numbers
- Grade 3, Lesson 13: Patterns in Addition and Multiplication

Links to [Math Differentiation](#) Chart and

	<a href="#">Accommodations Chart</a>
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<p><b>Core and Supplementary Instructional Materials</b></p>
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<p><b>Teacher Pedagogical Resources:</b></p>
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<p>ISBN-13: 978-1495780486 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 1</p>
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<p>ISBN-13: 978-1495780493 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 2</p>
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<p>Ready Classroom Mathematics <a href="#">Teacher Toolbox</a> and Online Resources</p>
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<p><b>Student Materials:</b></p>
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<p>Ready Classroom Mathematics Grade 3 Math Workbook Volume A</p>
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<p>Hands-on math manipulatives and digital manipulatives</p>
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<p>iReady</p>
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<p><b>Course: Third Grade Math</b></p>
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<p><b>Unit 3: Multiplication: Finding Area, Solving Word Problems and Using Scaled Graphs</b></p>
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<p><b>Grade Level(s): Third Grade</b></p>
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<p><b>Length of Unit: 28 days of lessons + 2 days of assessment = 30 days</b></p>
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<p><b>Unit Rationale:</b></p>
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<p>In this unit, students will apply their knowledge of multiplication to find the area of rectangular and non rectangular shapes. They will record their progress after each lesson and will reflect on their learning at the end of the lesson.</p>
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<p style="text-align: center;"><b>Stage 1 - Desired Results</b></p>
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<p><b>Enduring Understandings:</b></p>
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<p><i>Students will understand that...</i></p>
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<p><b>Essential Questions:</b></p>
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- |   |
|---|
| <ul style="list-style-type: none"> <li>● How is area measured inside of a shape?</li> </ul> |
|---|

<ul style="list-style-type: none"> <li>● Area is a measure of space inside a shape.</li> <li>● Multiplication can be used to find the areas of a rectangle.</li> <li>● Areas of rectangles can be added to find the area of a complex figure.</li> <li>● Area models can explain division and multiplication problems.</li> <li>● The scale of a graph can be greater than one</li> </ul>	<ul style="list-style-type: none"> <li>● How can multiplication be used to find the area of a rectangle?</li> <li>● How can the addition of multiple rectangle's area be used to find the area of a complex figure?</li> <li>● How does a graph's scale impact solving a problem about data?</li> </ul>
<p><b>Content:</b></p> <p><i>Students will know...</i></p> <p><b>LESSON 14:</b></p> <ul style="list-style-type: none"> <li>● Find the area of a figure.</li> <li>● Understand how to find the area of rectangular and non rectangular shapes.</li> <li>● Form ideas about how to find the area of shapes.</li> </ul> <p><b>LESSON 15:</b></p> <ul style="list-style-type: none"> <li>● <i>Multiply to find area.</i></li> <li>● <i>Solving word problems about area</i></li> </ul> <p><b>LESSON 16:</b></p> <ul style="list-style-type: none"> <li>● <i>Adding area</i></li> <li>● <i>Finding the areas of combined rectangles</i></li> <li>● <i>Finding the areas of non-rectangular shapes.</i></li> </ul> <p><b>LESSON 17:</b></p> <ul style="list-style-type: none"> <li>● <i>Solving one-step word problems using multiplication and division</i></li> <li>● <i>Solving problems about equal groups</i></li> <li>● <i>Solving problems about arrays</i></li> <li>● <i>Solving problems about area</i></li> <li>● <i>Solving one step word problem using multiplication and division.</i></li> </ul> <p><b>LESSON 18:</b></p> <ul style="list-style-type: none"> <li>● <i>Solving two step word problem using the four operations</i></li> <li>● <i>Estimating Solutions to word problems</i></li> </ul> <p><b>LESSON 19:</b></p> <ul style="list-style-type: none"> <li>● <i>Scaled graphs</i></li> </ul>	<p><b>Skills:</b></p> <p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> <li>● Understand area and find area by tiling and multiplying.</li> <li>● Find the area of a combined rectangle or a non rectangular shape by adding the areas of the rectangles that make up the shape.</li> <li>● Use multiplication or division to solve one-step word problems.</li> <li>● Use addition, subtraction, multiplication or division to solve two-step word problems.</li> <li>● Solve problems using picture graphs and bar graphs.</li> <li>● Draw picture graphs and bar graphs to show data.</li> </ul>

## BES Mathematics Grade 3 - 2024\_.docx

- *Reading and Interpreting picture graphs*
- *Drawing a scaled graph*

**MATH IN ACTION:**

- *Understand multiplication*
- *Understand two-and three-digit addition and subtraction.*
- *Interpret products of whole numbers.*
- *Write and solve equations.*
- *Make a table to organize information.*

**VOCABULARY:**

- *Collect*
- *Interesting*
- *Strategy*
- *Area*
- *Multiplication*
- *Square unit*
- *Array*
- *Division*
- *Division equation*
- *Multiplication*
- *Multiplication equation*
- *Bar graph*
- *Data*
- *Key*
- *Picture graph*
- *Scale*

**NJ Student Learning Standards - Mathematics**

**3.M.B.3** Recognize area as an attribute of plane figures and understand concepts of area measurement.

- a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
- b. A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

**3.M.B.4** Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).

**3.M.B.5** Relate area to the operations of multiplication and addition.

- a. Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.
- b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths is the sum of  $a \times b$  and  $b \times a$ . Use area models to represent the distributive property in mathematical reasoning.
- d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

**3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**3.OA.D.8** Solve two-step word problems, including problems involving money, using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

**3.M.C.6** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**3.DL.A.1** Develop data-based questions and decide what data will answer the question. (e.g. “What size shoe does a 3rd grader wear?”, “How many books does a 3rd grader read?”)

**3.DL.A.2** Collect student-centered data (e.g. collect data on students’ favorite ice cream flavor) or use existing data to answer data-based questions.

**3.DL.B.3** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.

**The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

- 9.2.5.CAP.8: Identify risks that individuals and households face.
- 9.2.5.CAP.9: Justify reasons to have insurance.

#### CLKS Practices:

Consider the environmental, social and economic impacts of decisions

Utilize critical thinking to make sense of problems and persevere in solving them

#### Connected Careers:

Architect, landscaper, city planner

#### Explanation of how 9.2 standards connect to the unit:

- Students will relate area to the operation of multiplication and find the area of a combined rectangle or a non rectangular shape by adding the areas of the rectangles that make up the shape. Understanding the area of one's home or property helps assess risks such as fire hazards and exposure to natural disasters like floods or earthquakes. Insurance provides a financial safety net.

#### Explanation of how CLKs connect to the unit:

**Consider the environmental, social, and economic impacts of decisions:** By interpreting graphs, students can assess the consequences of various decisions. Graphs help by visualizing different outcomes based on varying factors.

**Utilize critical thinking to make sense of problems and persevere in solving them:** Interpreting graphs requires critical thinking to analyze trends, outliers, and correlations. For instance, when analyzing a picture graph depicting water consumption across different regions, critical thinking helps identify factors influencing usage patterns and potential solutions for conservation.

#### Explanation of how Connected Careers connect to the unit:

##### Architect:

- **Building Design:** Architects use area measurements extensively in designing buildings and structures.

They calculate floor area, total building footprint, and usable space within structures. Understanding area helps architects optimize space utilization, ensure compliance with building codes, and create functional and aesthetically pleasing designs.

#### Landscaper:

- **Garden Design:** Landscapers use area measurements to plan and design gardens, lawns, and outdoor spaces. They calculate the area for planting beds, lawns, patios, and pathways to create harmonious and functional outdoor environments.

#### City Planner:

- **Infrastructure Planning:** Area measurements are crucial for planning infrastructure projects such as roads, parks, public spaces, and utilities. Planners use these measurements to allocate space efficiently and ensure compatibility with existing urban fabric.

### Interdisciplinary Standards

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

3-ESS2-2 Obtain and combine information to describe climates in different regions of the world.

#### Explanation of how interdisciplinary standards connect to the unit:

Literacy and Science Connection:

Read *Amanda Bean's Amazing Dream*, By Lisa Woodruff

Read *Perimeter, Area, Volume: A Monster Book of Dimensions*, By David Adler

Students will ask and answer Math questions to demonstrate understanding of the word problems and Math stories. Students will represent data in tables and various graphical displays (bar graphs and pictographs) to reveal patterns that indicate relationships (finding area / using scaled graphs). When possible and feasible, digital tools will be used. Examples of data could include average temperature and precipitation. Assessment of graphical displays is limited to pictographs and bar graphs.

### Technology Integration (9.4 Standards):

- 9.4.5.Cl.3: Participate in a brainstorming session with individuals with diverse perspectives to expand

one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

- 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).

#### Explanation of how 9.4 standards connect to the unit:

Students will use bar graphs or pictorial graphs (such as pictographs) to visually represent brainstorming ideas and perspectives. Each bar or picture can represent a different idea or viewpoint, making it easier for students to compare and discuss various possibilities during the session.

While solving area problems, students may use digital tools to display data in various ways.

#### Stage 2- Assessment Evidence:

##### Assessment:

<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

#### Stage 3 - Learning Plan

<b>Learning Activities:</b>  <b>LESSON 14 (3 days):</b> ● Session 1: Area	<b>Differentiation:</b>  The following is a list of instructional strategies used throughout the unit. Other modifications are used in
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- Session 2: Understanding of Area
- Session 3: Ideas about finding Area

**LESSON 15 (4 days):**

- Session 1: Multiplying to Find Area
- Session 2: Multiplying to Find Area
- Session 3: Solving Word Problems About Area
- Session 4: Multiplying to Find Area

**LESSON 16 (4 days):**

- Session 1: Adding Area
- Session 2: Finding Areas of Combined Rectangles
- Session 3: Finding Areas of Non-Rectangular Shapes
- Session 4: Adding Areas

**Mid Unit Assessment ( 1 Day)****LESSON 17: (5 days)**

- Session 1: Solving One-Step Word Problems Using Multiplication and Division
- Session 2: Solving Problems About Equal Groups
- Session 3: Solving Problems About Arrays
- Session 4: Solving Problem About Area
- Session 5: Solving One step Word Problems Using Multiplication and Division

**LESSON 18: ( 5 days)**

- Session 1: Solving Using Two- Step Problems Using the Four Operations
- Session 2: Solving Using Two- Step Problems Using the Two Operations
- Session 3: Solving Two-Step EWord Problems Using One Equation
- Session 4: Estimating Solutions to Word Problems
- Session 5: Solving Two-Step Word Problems Using the Four Operations

**LESSON 19: ( 5 days)**

the classroom and are noted in the teacher's lesson plans.

**English Language Learners:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Board Math: student presentations at boards

In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies [Click Here](#)

**LESSON 14:** See pages 306 and 310.

Example: Give students a slip of dot paper with three rows of six dots. Practice drawing squares and connecting those squares.

**LESSON 15:** See pages 314a, 318, 324 and 330.

Example: Read Apply it problem 10 aloud help students find useful information in the problem. Ask What are you trying to find? What do you know?

**LESSON 16:** See pages 336a, 340, 346, and 352.

- Session 1: Scaled Graphs
- Session 2: Reading and Interpreting Picture Graphs
- Session 3: Reading and Interpreting Bar Graphs
- Session 4: Drawing a Scaled Graph
- Session 5: Scaled Graphs

**MATH IN ACTION ( 2 days)**

- Session 1: Sweet T's Tees and Fingerboard Parts
- Session 2: Preserve on Your Own and Grip Tape

**UNIT ASSESSMENT (1 day)**

Example: Read Apply it problem 3. Have students in pairs find rectangles in the complex figure.

**LESSON 17:** See pages 358a, 362, 368,374, 380.

Example: Use cards on page 368 to build multiplication and division equations.

**LESSON 18:** See pages 386a, 390, 396, 402, and 408.

Example: Using real life objects model two step word problems with equations that match each model.

**LESSON 19:** See pages 414a, 418, 424, 430, 436.

Example: Use words from a word problem to label parts of the equation.  $22 + \text{month} = \text{month}$  (page 436).

**Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options

- Multiple approaches to problem solving

**LESSON 14:**

- Grade 3, Lesson 14: Building Pens

**LESSON 15:**

- Grade 3, Lesson 15: Designing a Garden

**LESSON 16:**

- Grade 3, Lesson 16: Tile Design

**LESSON 17:**

- Grade 2, Lesson 3: Solve One-Step Word Problems
- Grade 2, Lesson 3: Solve One-Step Addition and Subtraction word problems

**LESSON 18:**

- Grade 2, Lesson 9: Solve Word Problems with Two-Digit Numbers
- Grade 2, Lesson 9: Solve Subtraction Word Problems

**LESSON 19:**

- Grade 2, Draw and Use Bar Graphs and Picture Graphs
- Grade 2, Lesson 27: Read and Make Line Plots
- Grade 2, Lesson 27: Line plots

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language

## Reference Tool

- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

**LESSON 14:**

- Grade 2, Lesson 21: Measure in Feet and Meters
- Grade 2, Lesson 30: Partition Rectangles

**LESSON 15:**

- Grade 2, Lesson 30: Partition Rectangles
- Grade 2, Lesson 30: Fill in a Rectangle with Squares

**LESSON 16:**

- Grade 2, Lesson 25: Add and subtract lengths
- Grade 2, Lesson 25: Solve Length Word Problems

Links to [Math Differentiation Chart](#) and [Accommodations Chart](#)

**Core and Supplementary Instructional Materials****Teacher Pedagogical Resources:**

ISBN-13: 978-1495780486 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 1

ISBN-13: 978-1495780493 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 2

Ready Classroom Mathematics [Teacher Toolbox](#) and Online Resources

**Student Materials:**

Ready Classroom Mathematics Grade 3 Math Workbook Volume A

Hands-on math manipulatives and digital manipulatives

iReady

**Course: Third Grade Math**

**Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data**

**Grade Level(s): Third Grade**

**Length of Unit:** 28 Days (plus 2 for i-Ready Diagnostic) = 30 days

**Unit Rationale:**

In this unit, students are introduced to fractions. They use this understanding to describe fractions as wholes and as points on a number line. Students then further their understanding of fractions by naming equivalent fractions and comparing fractions with the same numerator or the same denominator.

**Stage 1 - Desired Results****Enduring Understandings:**

*Students will understand that...*

- Fractions are numbers that describe wholes divided into equal parts. Knowing how many equal parts you have will help you name fractions.
- Fractions name points on a number line. Knowing about number lines can help you compare fractions with whole numbers and other fractions.
- You can use what you know about fraction models and number lines to find different names for the same fraction, or equivalent fractions.
- You can use what you know about fractions to compare fractions that have the same numerator or the same denominator.

**Essential Questions:**

- How does knowing how many equal parts you have help you name fractions?
- How does knowing about number lines help you compare fractions with whole numbers and other fractions?
- How does using what you know about fraction models and number lines help you find equivalent fractions?
- How does using what you know about fractions help you compare fractions that have the same numerator or the same denominator?

**Content:**

*Students will know...*

**LESSON 20:**

- A fraction is a whole divided into some number of equal parts.
- The parts of a fraction.
- Unit fractions are the building blocks of fractions in the same way that 1 is the building block of whole numbers.

**LESSON 21:**

- In addition to whole numbers, number lines can

**Skills:**

*Students will be able to...*

- Use a fraction to show equal parts of a whole.
- Use a number line to show fractions.
- Find a fraction on a number line.
- Understand that equivalent fractions show the same amount and name the same point on a number line.
- Find equivalent fractions.
- Write whole numbers as fractions.
- Compare fractions with the same numerator or the same denominator, including using  $<$ ,  $>$ , and

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show equal parts of a whole, or fractions.

- Fractions are numbers on a number line.
- Number lines can be used to count and identify fractional parts.
- Fractions on a number line can be less than, equal to, or greater than one.

## LESSON 22:

- Two fractions are equivalent if they are the same size, cover the same area, or are on the same point on a number line.
- Equivalent fractions can be represented using fraction models and number lines.

## LESSON 23:

- Fraction models and number lines can be used to identify and create equivalent fractions, including those that are greater than or equal to one whole.
- Identify, model, and write equivalent fractions for whole numbers.

## LESSON 24:

- Reason about unit fractions to compare two fractions to compare two fractions using the sizes of the unit fractions shown by the denominators and the number of parts shown by the numerators.
- Determine if fractions to be compared have the same numerators or the same denominators.
- Use models or number lines to explain why one fraction is greater than or less than another.

## LESSON 25:

- Symbols can record the results of comparing fractions with the same numerator or the same denominator.
- Read comparison statements fluently and accurately.
- Models and number lines can be used to explain and justify fraction comparisons.

## LESSON 26:

- Use a ruler to measure objects to the nearest
- inch.

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- Measure length to the nearest
- or inch and show data on a line plot.

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- Use a ruler to measure objects to the nearest inch.
- Display measurement data in a line plot.
- Answer questions about data in a line plot.

## MATH IN ACTION:

- Apply multiple skills from the unit to solve real-world problems.
- Understand fractions as equal parts of a whole.
- Understand area models for fractions.
- Understand fractions on a number line.
- Use an area model to represent unit fractions.
- Recognize the relationship between a unit fraction and the whole.
- Use same-sized area models to compare unit fractions.
- Draw and label a number line with fractions.
- Use models to show equivalent fractions.
- Recognize that equivalent fractions name the same amount of the whole.
- Shade area models to represent fractions.
- Recognize the relationship between fractional parts and the whole.

## VOCABULARY:

- halves
- thirds
- fourths
- whole
- greater than symbol ( $>$ )
- less than symbol ( $<$ )
- denominator
- numerator
- fraction
- unit fraction
- mixed number
- equivalent fractions
- compare
- data
- length
- line plot

- measure

### **NJ Student Learning Standards - Mathematics**

#### **3.NF.A.1**

*Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $1/b$  as the quantity formed by  $a$  parts of size  $1/b$ .*

#### **3.NF.A.2a**

*Represent a fraction  $1/b$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $1/b$  and that the endpoint of the part based at 0 locates the number  $1/b$  on the number line.*

#### **3.NF.A.2b**

*Represent a fraction  $1/b$  on a number line diagram by marking off a lengths  $1/b$  from 0. Recognize that the resulting interval has size  $1/b$  and that its endpoint locates the number  $1/b$  on the number line.*

#### **3.NF.A.3a**

*Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.*

#### **3.NF.A.3b**

*Recognize and generate simple equivalent fractions, e.g.,  $\frac{1}{2} = \frac{2}{4}$ ,  $\frac{4}{6} = \frac{2}{3}$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model.*

#### **3.NF.A.3c**

*Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form  $3 = \frac{3}{1}$ ; recognize that  $\frac{6}{1} = 6$ ; locate  $\frac{4}{4}$  and 1 at the same point of a number line diagram.*

#### **3.NF.A.3d**

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

#### **3.G.A.2**

*Partition shapes into parts with equal areas. Express the area of each part as a unit fractions of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.*

#### **3.DL.B.4**

*Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units - whole numbers, halves, or quarters.*

**The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)**

- 9.2.5.CAP.6: Compare the characteristics of a successful entrepreneur with the traits of successful employees.

**CLKS Practices:**

Plan education and career paths aligned to personal goals

Use technology to enhance productivity increase collaboration and communicate effectively

Work productively in teams while using cultural/global competence

**Connected Careers:**

Civil engineer, software engineer, scientist

**Explanation of how 9.2 standards connect to the unit:**

Fractions can be used to calculate market share. Understanding fractions helps in interpreting data and making decisions.

**Explanation of how CLKs connect to the unit:**

**Plan education and career paths aligned to personal goals:**

- Fractions are fundamental in fields requiring quantitative skills like science, engineering, and economics. Understanding fractions helps individuals grasp concepts like percentages, ratios, and proportions, which are essential in setting educational goals and tracking progress.

**Use technology to enhance productivity, increase collaboration, and communicate effectively:**

- Understanding fractions helps in interpreting graphs and charts, enabling effective communication of findings.

**Work productively in teams while using cultural/global competence:**

- Fractions provide a common language for discussing and solving numerical problems, fostering collaboration among team members with different cultural backgrounds and perspectives.

**Explanation of how Connected Careers connect to the unit:**

**Civil Engineer:** Civil engineers use fractions extensively for precise measurements and quantities in construction and infrastructure projects. For example, when designing structures like bridges or buildings, fractions help in calculating dimensions, material quantities, and load capacities accurately.

**Software Engineer:** Software engineers use fractions in coding and algorithms where precise numerical operations are required. Fractions are used to represent and manipulate decimal numbers accurately.

**Scientist:** Scientists use fractions extensively in data analysis across various fields such as physics, chemistry, biology, and environmental science. Fractions are used to calculate concentrations, rates, and proportions.

**Interdisciplinary Standards**

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

RI.MF.3.6. Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

3-LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

**Explanation of how interdisciplinary standards connect to the unit:**

(Science) Fractions provide a clear, quantitative way to describe how variations in characteristics among individuals of the same species can lead to differences in survival, mating success, and reproduction. By using fractions, students can construct precise explanations of evolutionary advantages and better understand the dynamics of natural selection.

*“William Becknell and the Santa Fe Trail” Comparing Fractions Activity Sheet*  
*Students learn about William Becknell and his new route from Missouri to Santa Fe*

**Technology Integration (9.4 Standards):**

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).

9.4.5.IML.2: Create a visual representation to organize information about a problem or issue

**Explanation of how 9.4 standards connect to the unit:**

**Data Collection:** Use fractions to quantify and represent parts of a whole when gathering data. For example, students can conduct surveys or observations where they collect fractional data such as fractions of a group's preferences, fractions of a population affected by a problem, or fractions of resources used in different contexts.

**Fractional Allocation:** When identifying resources to solve a problem, students can use fractions to allocate resources proportionally. For instance, they can determine what fraction of available resources (e.g., time, money, materials) should be allocated to various aspects of solving the problem.

**Visual Representations of fractions:** Digital tools can be used to modify and display data in various ways that can be organized to communicate ideas.

**Stage 2- Assessment Evidence:****Assessment:**

<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment

	One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

<b>Stage 3 - Learning Plan</b>	
<p><b>Learning Activities:</b></p> <p><b>PRACTICE TEST OR I-READY DIAGNOSTIC (2 Days)</b></p> <p><b>LESSON 20: Understand What a Fraction Is (3 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - What a Fraction Is</li> <li>● Session 2: Develop - Describing Parts of a Whole with Fractions</li> <li>● Session 3: Refine - Ideas About What a Fraction Is</li> </ul> <p><b>LESSON 21: Understand Fractions on a Number Line (3 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Fractions on a Number Line</li> <li>● Session 2: Develop - Understanding of Fractions on a Number Line</li> <li>● Session 3: Refine - Ideas About Fractions on a Number Line</li> </ul> <p><b>LESSON 22: Understand Equivalent Fractions (3 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Equivalent Fractions</li> <li>● Session 2: Develop - Understanding of Equivalent Fractions</li> <li>● Session 3: Refine - Ideas About Equivalent Fractions</li> </ul> <p><b>LESSON 23: Find Equivalent Fractions (5 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Equivalent Fractions</li> <li>● Session 2: Develop - Finding Equivalent Fractions</li> <li>● Session 3: Develop - Writing a Whole Number</li> </ul>	<p><b>Differentiation:</b></p> <p>The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>English Language Learners:</b></p> <ul style="list-style-type: none"> <li>● Prepare/Ready Prerequisite Lessons</li> <li>● Reteach/Tools for Instruction</li> <li>● Reinforce/Math Center Activities</li> <li>● Personalize/i-Ready Lessons</li> <li>● Build Your Vocabulary activities</li> <li>● Small Group review, as needed</li> <li>● Game Centers</li> <li>● Lessons taught through group work, investigation, labs, hands-on manipulatives, technology</li> <li>● Real world applications through lessons, projects, and research</li> <li>● Diversified difficulty in level of problems</li> <li>● Multiple approaches to problem solving</li> <li>● Board Math: student presentations at boards</li> </ul> <p>In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies <a href="#">Click Here</a></p> </div>

as a Fraction

- Session 4: Develop - Writing a Whole Number as a Fraction with a Denominator of 1
- Session 5: Refine - Finding Equivalent Fractions

#### **UNIT 4 MID-UNIT ASSESSMENT OR COMPREHENSION CHECKS (1 Day)**

#### **LESSON 24: Understand Comparing Fractions (3 Days)**

- Session 1: Explore - Comparing Fractions
- Session 2: Develop - Understanding of Comparing Fractions
- Session 3: Refine - Ideas About Comparing Fractions

#### **LESSON 25: Use Symbols to Compare Fractions (3 Days)**

- Session 1: Explore - Using Symbols to Compare Fractions
- Session 2: Develop - Comparing Fractions Using Symbols
- Session 3: Refine - Using Symbols to Compare Fractions

#### **LESSON 26: Measure Length and Plot Data on Line Plots (4 Days)**

- Session 1: Explore - Measuring Length and Plotting Data on Line Plots
- Session 2: Develop - Measuring Length
- Session 3: Develop - Displaying Data in a Line Plot
- Session 4: Refine - Measuring Length and Plotting Data on Line Plots

#### **MATH IN ACTION: Use Fractions (2 Days)**

- Session 1: Study an example problem and solution
- Session 2: Persevere on your own

#### **UNIT 4 UNIT ASSESSMENT OR COMPREHENSION CHECKS (1 Day)**

#### **LESSON 20 Example:**

- Read Model It problem 1a aloud. Have students circle one third. Say one third and have students repeat.
- See more on pages 458a, 462, 466

#### **LESSON 21 Example:**

- Read Model It problem 1 aloud. Give each student a strip of paper folded into thirds to resemble the number line in the problem. Have students label each section one whole.
- See more on pages 470a, 474, 478

#### **LESSON 22 Example:**

- Pair students. Read Model It problem 2 aloud. Display a rectangle and a circle. Say, "These shapes represent whole candy bars. Fold each shape in half. Label each half."
- See more on pages 482a, 486, 490

#### **LESSON 23 Example:**

- Read the first two sentences of the Try It problem aloud. Have students form pairs and give each pair a square sheet of paper. Say, "This is the cake." Model how to fold the paper in half. Ask, "What unit fraction describes each part of the cake?"
- See more on pages 494a, 498, 504, 510, 516

#### **LESSON 24 Example:**

- Pair students. Read Model It problem 2. Say, "Circle the word compare. Compare means "to notice things that are the same and things that are different.""
- See more on pages 522a, 526, 530

#### **LESSON 25 Example:**

- Read Try It aloud. Draw and label two tall, same-sized rectangles. Divide them into

sixths. Ask, “How many parts does each glass have?”

- See more on pages 534a, 538, 544

**LESSON 26 Example:**

- After students measure the pencils in the Try It problem, display a line plot labeled 0-10. Ask, “Did any pencil measure 0 inches?” Repeat the process for the other numbers on the line plot.
- See more on pages 550a, 554, 560, 566

In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies [Click Here](#)

**Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving

**LESSON 20:**

- Grade 3, Lesson 20 - Colorful Quilts

## LESSON 21:

- Grade 3, Lesson 21 - Number Lines

## LESSON 22:

- Grade 3, Lesson 22 - Road Race

## LESSON 23:

- Grade 3, Lesson 23 - Colorful Quilts

## LESSON 24:

- Grade 3, Lesson 24 - Making Flags

## LESSON 25:

- Grade 3, Lesson 25 - What Fractions Go in the Box?

## LESSON 26:

- Grade 3, Lesson 26 - How Much Ribbon?

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at

boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities

- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

LESSON 20:

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 20 - Modeling Fractions

LESSON 21:

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 21 - Fractions on a Number Line

LESSON 22:

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 22 - Equivalent Fractions

**LESSON 23:**

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 23 - Find Equivalent Fractions

**LESSON 24:**

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 24 - Understand Comparing Fractions

**LESSON 25:**

- Grade 2, Lesson 29 - Understand Partitioning Shapes into Halves, Thirds, and Fourths
- Grade 2, Lesson 30 - Make Equal Shares
- Grade 3, Lesson 25 - Use Symbols to Compare Fractions

**LESSON 26:**

- Grade 2, Lesson 25 - Add and Subtract Lengths & Solve Length Word Problems
- Grade 2, Lesson 27 - Read and Make Line Plots & Line Plots
- Grade 3, Lesson 26 - Fractional Lengths Data on Line Plot

Links to [Math Differentiation Chart](#) and [Accommodations Chart](#)

**Core and Supplementary Instructional Materials****Teacher Pedagogical Resources:**

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**Student Materials:**

Ready Classroom Mathematics Grade 3 Math Workbook Volume A

Hands-on math manipulatives and digital manipulatives

iReady

**Notes:**

**Inclusion of Climate Change Opportunities**



**Fraction of Waste Recycled:** Teach students about waste management and recycling. They can explore fractions to represent the amount of waste recycled versus sent to landfills or incinerated. Discuss the environmental benefits of recycling and reducing waste.

**Course: Third Grade Math**

**Unit 5: Measurement: Time, Liquid Volume, Mass**

**Grade Level(s): Third Grade**

**Length of Unit:** 15 days of lessons + 1 day of assessment

**Unit Rationale:** In this unit, students will extend their understanding of measurement. Students will use analog and digital clocks to tell time. Knowing how to read and tell time to the nearest minute will help them solve problems involving elapsed time. Students will use what they know about measurement to estimate and measure the volume of liquid in liters and the mass of an object in grams or kilograms.

<b>Stage 1 - Desired Results</b>	
<p><b>Enduring Understandings:</b></p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>● Analog and digital clocks are used to tell time.</li> <li>● Reading clocks will help solve problems involving elapsed time.</li> <li>● Using knowledge of measurement will help you estimate the volume of liquid in liters and the mass of an object in grams or kilograms.</li> </ul>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● How can analog and digital clocks be used to tell time?</li> <li>● How does reading a clock help solving problems involving elapsed time?</li> <li>● How can you estimate the volume of a liquid in liters and the mass of an object in grams or kilograms?</li> </ul>
<p><b>Content:</b></p> <p><i>Students will know...</i></p> <p><i>Lesson 27:</i></p> <ul style="list-style-type: none"> <li>● Use an analog clock to tell and write time to the nearest minute.</li> <li>● Relate time on analog and digital clocks</li> <li>● Express time as the number of minutes before the hour.</li> <li>● Understand the difference between AM and PM.</li> <li>● Measure time intervals in minutes using clock models and number lines.</li> <li>● Solve word problems involving addition or subtraction of time intervals in minutes.</li> </ul> <p><i>Lesson 28:</i></p> <ul style="list-style-type: none"> <li>● Identify items that can be measured in liquid volume units.</li> <li>● Understand the relative size of 1 liter.</li> <li>● Used unit size to estimate liquid volume (capacity).</li> <li>● Solve one-step word problems involving liquid</li> </ul>	<p><b>Skills:</b></p> <p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> <li>● Tell and write time to the nearest minute on digital clocks and clocks with hands and solve problems about time.</li> <li>● Estimate liquid volume and solve problems about liquid volume.</li> <li>● Estimate mass and solve problems about mass. .</li> </ul>

volume.

- 

*Lesson 29:*

- Understand one way objects can be measured is by how heavy or light they are.
- Identify items that can be measured in mass units.
- Understand the relative masses of gram and kilogram.
- Use unit size to estimate mass.
- Solve one-step word problems involving mass.

**MATH IN ACTION**

- Understand gram as a unit of mass.
- Understanding adding and subtracting units of mass.
- Understand comparing units of mass.
- Add and subtract units of mass.
- Compare units of mass.
- Round to the nearest 10 or 100 to estimate.
- Solve problems involving grams.
- Add and subtract two and three digit numbers.
- Compare two and three digit numbers.
- Solve problems involving liters.
- Recognize multiplication as combining equal groups.
- Use multiplication facts.
- Add and subtract.

**VOCABULARY**

- AM
- PM
- Hour (h)
- Hand
- Minute (m)
- Minute hand
- Liquid volume
- Liter (l)
- Measure

- Estimate
- Gram
- Kilogram
- Mass

### **NJ Student Learning Standards - Mathematics**

**3.M.A.1.** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

**3.M.A.2.** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.)

#### **The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### **Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)**

- 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.

#### **CLKS Practices:**

Act as a responsible and contributing community members and employee  
 Attend to financial well-being  
 Consider the environmental, social and economic impacts of decisions

**Connected Careers:**

Chef, businessperson, technician

**Explanation of how 9.2 standards connect to the unit:**

Time management is critical for healthcare professionals such as doctors and nurses. They must manage patient appointments, surgeries, and treatment schedules efficiently. Understanding time helps in prioritizing tasks and ensuring timely patient care. Lifeguards require specific training in water safety, CPR (Cardiopulmonary Resuscitation), first aid, and rescue techniques. This training prepares them to respond effectively to emergencies and ensure swimmer safety.

**Explanation of how CLKs connect to the unit:****Act as a responsible and contributing community member and employee:**

- **Time Management:** Effective time management is crucial for both personal productivity and contributing to community initiatives or workplace projects. Understanding time allows individuals to prioritize tasks, meet deadlines, and allocate resources efficiently, thereby contributing to the overall success of community endeavors or organizational goals.
- **Resource Allocation (Liquid, Volume, Mass):** In community projects or workplace tasks that involve handling liquids, volumes, or masses (such as construction, sanitation projects, or manufacturing), responsible resource management is essential. This includes using resources efficiently, minimizing waste, and ensuring safety and environmental sustainability.

**Attend to financial well-being:**

- **Cost Management:** Time, liquid, volume, and mass all have financial implications. For instance, in manufacturing or construction projects, managing time effectively can reduce labor costs. Controlling liquid usage and optimizing volume and mass measurements can lower material costs. Understanding these factors contributes to financial stability and profitability, both personally and within organizations.

**Consider the environmental, social, and economic impacts of decisions:**

- **Environmental Impact:** Time, liquid, volume, and mass management influence environmental sustainability. Efficient use of resources (such as water and materials), waste reduction strategies, and energy conservation initiatives contribute positively to environmental health.
- **Social Impact:** Community projects and workplace decisions involving time, resources, and material management can impact local communities socially. For instance, responsible water management (liquid), waste reduction (volume), and sustainable sourcing (mass) can enhance community well-being and quality of life.

**Explanation of how Connected Careers connect to the unit:****Chef:**

- Volume: Chefs use volume measurements extensively in culinary arts to portion ingredients accurately. Understanding volume ensures consistency in recipes, whether it's measuring liquids (like water or broth) or dry ingredients (such as flour or sugar).

**Businessperson:** Time management is essential for businessmen to prioritize tasks, meet deadlines, and maximize productivity. Effective time management strategies lead to improved business operations and decision-making.

**Technician:**

- **Volume:** Technicians in fields such as HVAC (Heating, Ventilation, and Air Conditioning) use volume calculations to determine air flow rates, system capacities, and space requirements for installations.

**Interdisciplinary Standards**

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

RI.MF.3.6. Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

SL.ES.3.3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

3-PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

[ns](#)

**Explanation of how interdisciplinary standards connect to the unit:**

Measurement is a fundamental tool in science for providing evidence and making predictions. It allows for the accurate collection of data, which can then be analyzed to identify patterns and make informed predictions about future events. Students can also measure a plant's growth at regular intervals (daily, weekly, etc.). Record the data consistently to ensure accuracy. This could include height, number of leaves, or the size of fruits/flowers. Students will ask and answer questions, and make relevant connections.

Foss Climate and Weather Unit/Life Cycle (measuring rain, plant growth): Read *How Tall How Short, How Far Away*, by David Adler

**Technology Integration (9.4 Standards):**

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
  - 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
- 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).

**Explanation of how 9.4 standards connect to the unit:**

**Scheduling Tasks:** Use digital calendars or scheduling apps to organize daily activities and assignments based on time intervals. Students can set reminders and allocate specific amounts of time for different tasks, enhancing time management skills.

**Virtual Measurements / representations:** Explore digital simulations or apps that allow students to measure and compare liquid volumes. They can practice pouring liquids into virtual containers and estimate or calculate volumes using digital measuring tools.

**Stage 2- Assessment Evidence:****Assessment:**

<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

### Stage 3 - Learning Plan

#### Learning Activities:

##### Lesson 27 (5 days):

- Session1: Working with Time
- Session 2: Telling Time to the Minute
- Session 3: Finding the End Time in Word Problems
- Session 4: Finding the Start Time in Word Problems
- Session 5: Understanding Time

##### LESSON 28 (4 days):

- Session1: Working Liquid Volume
- Session 2: Estimating Liquid Volume
- Session 3: Solving Word Problems About Liquid Volume
- Session 4: Understanding Liquid Volume

##### LESSON 29 (4 days)

- Session1: Working with Mass
- Session 2: Estimating Mass
- Session 3: Solving Word Problems About Mass
- Session 4: Understanding Mass

##### MATH IN ACTION (2 days):

- Session1: Max's Snacks
- Session 2: Soup Snacks

##### UNIT ASSESSMENT (1 day)

#### Differentiation:

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans.

#### English Language Learners:

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Board Math: student presentations at boards

In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies [Click Here](#)

**LESSON 27:** See pages 588a, 592, 598, 604, 610.  
Example: Circle the minute and hour hand. Model how to align a straightedge with the hour hand, do the same for the minute hand.

**LESSON 28:** See pages 616a, 620, 626, 632.

Example: Display sentence frames on page 626.  
Start sentences with 'there are' and 'we need...'

**LESSON 29:** See pages 638a, 642, 648, 654

Example: Use sentence starters to guide and frame students' thinking. Use verbs like "drawn, found, divided, and added"

**Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving

**LESSON 27:**

- Class Schedule

**LESSON 28:**

- Fill My Fish Tank

**LESSON 29:**

- Balancing Act

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology

- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the

Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

Links to [Math Differentiation Chart](#) and [Accommodations Chart](#)

### Core and Supplementary Instructional Materials

#### Teacher Pedagogical Resources:

ISBN-13: 978-1495780486 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 1

ISBN-13: 978-1495780493 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 2

Ready Classroom Mathematics [Teacher Toolbox](#) and Online Resources

#### Student Materials:

Ready Classroom Mathematics Grade 3 Math Workbook Volume B

Hands-on math manipulatives and digital manipulatives

iReady

#### Notes:

##### Inclusion of Climate Change Opportunities



**Ocean Plastic Pollution:** Discuss the volume of plastic waste in oceans and its impact on marine ecosystems. Students can explore concepts of volume to understand the scale of plastic pollution and discuss solutions for reducing plastic waste.

<b>Course: Third Grade Math</b>	
<b>Unit 6: Shapes Attributes and Categories, Perimeter and Area, and Partitioning</b>	
<b>Grade Level(s): Third Grade</b>	<b>Length of Unit: 18 Days (plus 2 for iReady Diagnostic) =20 days</b>
<b>Unit Rationale:</b> In this unit, students extend their understanding of two-dimensional shapes. They learn that two-dimensional shapes have many attributes and they understand that knowing these attributes help categorize shapes. Students further their understanding of perimeter and area and they understand that perimeter is the sum of a shape's side lengths while area measures the space inside a shape. In this unit, students also relate dividing shapes into equal parts to showing the fractional parts of a whole.	

<b>Stage 1 - Desired Results</b>	
<p><b>Enduring Understandings:</b></p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>● Two-dimensional shapes have many attributes. Knowing about these attributes will help you categorize shapes.</li> <li>● Perimeter is the sum of a shape's side lengths, and area measures the space inside the shape. Knowing a rectangle's perimeter or area can help you reason about its shape.</li> <li>● You can divide shapes into equal parts to show fractional parts of a whole.</li> </ul>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>● How does knowing about the attributes of two-dimensional shapes help you categorize shapes?</li> <li>● How does knowing a rectangle's perimeter or area help you reason about its shape?</li> <li>● How can you divide shapes into equal parts to show fractional parts of a whole?</li> </ul>
<p><b>Content:</b></p> <p><i>Students will know...</i></p> <p>LESSON 30:</p> <ul style="list-style-type: none"> <li>● Identify two-dimensional shapes and their attributes.</li> <li>● Draw two-dimensional shapes, given attributes.</li> <li>● Compare and contrast attributes of two-dimensional shapes.</li> <li>● Categorize two-dimensional shapes according to attributes.</li> <li>● Identify and draw two-dimensional shapes that do not belong to a given category.</li> </ul> <p>LESSON 31:</p> <ul style="list-style-type: none"> <li>● Identify quadrilaterals and their attributes.</li> <li>● Draw quadrilaterals, given attributes.</li> <li>● Compare and contrast attributes of quadrilaterals.</li> <li>● Identify shared attributes of different quadrilaterals.</li> </ul>	<p><b>Skills:</b></p> <p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> <li>● Describe shapes, compare them, and put them in groups that tell how they are alike, for example, by the number of sides or by whether they have right angles.</li> <li>● Compare quadrilaterals and put them in groups based on their attributes, for example: all 4 sides are the same length or there are 2 pairs of parallel sides.</li> <li>● Solve problems involving perimeters, including finding an unknown side length, and finding rectangles with the same perimeter and different areas, or with the same area and different perimeters.</li> <li>● Divide rectangles into parts with equal area and name the area of shaded parts using unit fractions.</li> </ul>

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- Categorize quadrilaterals according to attributes.
- Identify and draw quadrilaterals that do not belong to a given category.

## LESSON 32:

- Understand the difference between perimeter and area.
- Use side lengths to find the perimeter of a shape.
- Find an unknown side length given the perimeter of a shape.
- Understand that rectangles with the same area can have different perimeters.
- Understand that rectangles with the same perimeter can have different areas.

## LESSON 33

- Partition a shape into equal parts.
- Express the area of each equal part as a unit fraction of the whole shape.
- Partition the same shape in different ways.

## MATH IN ACTION:

- Apply multiple skills from the unit to solve real-world problems.
- Understand that shapes can be sorted in different ways.
- Understand that a shape can belong to more than one category.
- Describe shapes by numbers and length of sides and number of square vertices.
- Sort shapes into groups based on attributes.
- Divide a shape into equal parts.
- Know that equal parts can be different shapes.
- Name unit fractions for equal parts.
- Understand area and perimeter.
- Find the area and perimeter of a rectangle.
- Find side lengths of a rectangle with a given area.
- Tile a rectangle with same-sized squares.
- Use multiplication facts.
- Use an array to model multiplication.

**VOCABULARY:**

- rectangle
- right angle
- angle
- hexagon
- pentagon
- rhombus
- attribute
- parallel
- parallelogram
- quadrilateral
- perimeter
- area
- equivalent fractions
- fraction
- unit fraction

**NJ Student Learning Standards - Mathematics****3.G.A.1**

*Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals).*

*Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.*

**3.G.A.2**

*Partition shapes into parts with equal areas. Express the area of each part as a unit fractions of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.*

**3.M.B.3a**

*A square with side length 1 unit, called a “unit square,” is said to have “one square unit” of area, and can be used to measure area.*

**3.M.B.3b**

*A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.*

**3.M.B.4**

*Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).*

**3.M.B.5.a**

*Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.*

**3.M.B.5.b**

*Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.*

**3.M.C.6**

Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**3.NF.A.1**

*Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $1/b$  as the quantity formed by  $a$  parts of size  $1/b$ .*

**The Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)**

- 9.2.5.CAP.2: Identify how you might like to earn an income.

**CLKS Practices:**

- Plan education and career paths aligned to personal goals
- Work productively in teams while using cultural/global competence

**Connected Careers:**

Graphic Designer, Game Developer

**Explanation of how 9.2 standards connect to the unit:**

For example, geometry is essential in assessing property values. Understanding geometric principles like area and perimeter helps individuals evaluate real estate rent or rental income based on property size. Interior designers use geometry to optimize space and create aesthetically pleasing environments.

**Explanation of how CLKs connect to the unit:****Plan education and career paths aligned to personal goals:**

- STEM and Quantitative Fields: Perimeter and area are fundamental concepts in mathematics and engineering. Understanding these concepts is crucial for pursuing careers in fields such as architecture, civil engineering, urban planning, and construction management. For example, architects use area calculations to design floor plans, while civil engineers consider perimeter in designing roadways and structures.
- Educational Planning: Proficiency in perimeter and area supports academic success in STEM disciplines. Mastery of these concepts ensures readiness for higher education programs that require quantitative skills. It enables individuals to choose courses and majors aligned with their career aspirations, whether in mathematics, engineering, environmental sciences, or related fields.

**Work productively in teams while using cultural/global competence:**

- Perimeter and area calculations are essential in planning and management, particularly in industries involving design and construction. Team members with a solid grasp of these concepts can contribute effectively to discussions on spatial layouts and resource allocation, fostering teamwork.

**Explanation of how Connected Careers connect to the unit:**

**Graphic Designer:** Graphic designers use geometry to create visually appealing designs for advertisements, websites, logos, and illustrations. They apply geometric principles such as symmetry, proportion, and spatial relationships to achieve balance and harmony in their designs.

**Game Developer:** Game developers use geometry to design virtual environments, characters, and objects in video games. They apply geometric principles to create 3D models, animations, and interactive simulations that define gameplay and user experiences.

RI.CR.3.1. Ask and answer questions and make relevant connections to demonstrate understanding of an informational text, referring explicitly to textual evidence as the basis for the answers.

SL.ES.3.3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

**Explanation of how interdisciplinary standards connect to the unit:**

Students will ask and answer questions about Math information presented.

The perimeter of a habitat represents its boundary or edge. Within this boundary, the conditions and resources available can vary significantly from those outside it. Understanding the perimeter helps in identifying the limits within which organisms must live and interact with their environment.

- Teacher's Guide pg. 763:

*"The Buzz on Sniffer Bees" Perimeter and Area Activity Sheet*  
*Students learn about sniffer bees and their keen sense of smell.*

**Technology Integration /9.4 Standards:**

- 9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2). Digital identities must be managed in order to create a positive digital footprint.
- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

**Explanation of how 9.4 standards connect to the unit:**

**Responsible Use:** Encourage students to use geometric understanding to navigate online platforms safely and ethically. For example, understanding the layout of websites or apps can help students identify safe links, avoid inappropriate content, and respect digital boundaries.

Students can organize and transform data into different visual representations and communicate insights gained from the data (by geometrical attributes, etc.)

<b>Assessment:</b>	
<b>Formative</b>	Lesson Quizzes Small Group Assessment Conferring Sessions Independent Practice Additional Practice Pages Exit Ticket
<b>Summative</b>	Mid-Unit & Unit Assessments
<b>Alternative</b>	Small Group Assessment One-to-One Assessment
<b>Benchmark</b>	iReady diagnostic
<b>Other</b> (optional)	Multimodal projects (posters, board games, presentations)

<b>Stage 3 - Learning Plan</b>	
<p><b>Learning Activities:</b></p> <p><b>LESSON 30: Understand Categories of Shapes (3 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Categories of Shapes</li> <li>● Session 2: Develop - Understanding of Comparing Shapes</li> <li>● Session 3: Refine - Ideas About Comparing Shapes</li> </ul> <p><b>LESSON 31: Classify Quadrilaterals (4 Days)</b></p> <ul style="list-style-type: none"> <li>● Session 1: Explore - Classifying Quadrilaterals</li> <li>● Session 2: Develop - Comparing Quadrilaterals</li> <li>● Session 3: Develop - Naming and Drawing Quadrilaterals</li> <li>● Session 4: Refine - Classifying Quadrilaterals</li> </ul> <p><b>LESSON 32: Area and Perimeter of Shapes (5 Days)</b></p>	<p><b>Differentiation:</b></p> <p>The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>English Language Learners:</b></p> <ul style="list-style-type: none"> <li>● Prepare/Ready Prerequisite Lessons</li> <li>● Reteach/Tools for Instruction</li> <li>● Reinforce/Math Center Activities</li> <li>● Personalize/i-Ready Lessons</li> <li>● Build Your Vocabulary activities</li> <li>● Small Group review, as needed</li> <li>● Game Centers</li> <li>● Lessons taught through group work,</li> </ul> </div>

- Session 1: Explore - Area and Perimeter of Shapes
- Session 2: Develop - Finding and Unknown Side Length
- Session 3: Develop - Finding Same Area with Different Perimeter
- Session 4: Develop - Finding Same Perimeter with Different Area
- Session 5: Refine - Working with Area and Perimeter of Shapes

### **LESSON 33: Partition Shapes into Parts with Equal Areas (3 Days)**

- Session 1: Explore - Partitioning Shapes into Parts with Equal Areas
- Session 2: Develop - Partitioning Shapes into Equal Parts
- Session 3: Refine - Partitioning Shapes into Parts with Equal Areas

### **MATH IN ACTION: Work with Shapes (2 Days)**

- Session 1: Study an example problem and solution
- Session 2: Persevere on your own

### **UNIT 6 UNIT ASSESSMENT OR COMPREHENSION CHECKS (1 Day)**

### **PRACTICE TEST OR I-READY DIAGNOSTIC (2 Days)**

investigation, labs, hands-on manipulatives, technology

- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Board Math: student presentations at boards

In addition to the strategies above, a variety of strategies are used to reach all types of learners. For an additional list of differentiation strategies [Click Here](#)

#### LESSON 30 Example:

- Read Model It problem 2. Display a triangle with exactly two sides the same length and side labels X, Y, Z (X and Y the same length) and the sentence frames: "Side X is the same length as side Y. Side Z is not the same length as side X or Y. The shape has some sides the same length."
- See more on pages 676a, 680, 684

#### LESSON 31 Example:

- Read Connect It problem 2a. Have students circle the word parallel. Gesture with your arms to model horizontal and vertical parallel lines. Have students replicate your gesture. Say, "Parallel sides stay an equal distance apart. Parallel sides do not intersect, or touch."
- See more on pages 688a, 692, 698, 704,

#### LESSON 32 Example:

- Pair students. Read Try It. Display a diagram of the field. Use your finger to show that Claire runs around the field. Say, "This is the perimeter of the field. Draw an X on one of the corners. From the X, draw the path Claire runs. Circle the numbers you pass as you draw. Ask, "How can you

find the total distance Claire runs?"

- See more on pages 710a, 714, 720, 726, 732

**LESSON 33 Example:**

- Pair students. Read Try It. Give three square sticky notes to each student. Say, "The notes are squares like on your page." Model how to fold a square horizontally, vertically, and diagonally and have students replicate. Unfold and trace the crease from the fold. Ask, "What unit fraction describes each part of the square?"
- See more on pages 738a, 742, 748

**Gifted and Talented:**

Follow Reteach, Extend, Reinforce, and Personalize lessons and activities as stated in the Teacher Guide on Lesson Pacing Guide page and at the end of each Lesson Quiz page. Utilize Extend Activities.

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities
- Personalize/i-Ready Lessons
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving

**LESSON 30:**

- Grade 3, Lesson 30 - Sorting Shapes

**LESSON 31:**

- Grade 3, Lesson 31 - Shape Search

**LESSON 32:**

- Grade 3, Lesson 32 - Designing an Animal Pen

**LESSON 33:**

- Grade 3, Lesson 33 - Designing a New Home

**Special Education Students:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students with 504 plans:**

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Extend/Enrichment Activities

- Personalize/i-Ready Lessons
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

**Students at Risk of school failure:**

The following is a list of instructional strategies used throughout the unit. Other modifications are used in the classroom and are noted in the teacher's lesson plans

- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Build Your Vocabulary activities
- Student Handbook Mathematical Language Reference Tool
- Small Group review, as needed
- Game Centers
- Lessons taught through group work, investigation, labs, hands-on manipulatives, technology
- Real world applications through lessons, projects, and research

- Diversified difficulty in level of problems
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Additional Practice pages as prescribed in the Lesson Pacing Guides using Prepare prerequisite lessons and Reteach tools for instruction

**LESSON 30:**

- Grade 2, Lesson 28 - Recognize and Draw Shapes
- Grade 2, Lesson 28 - Draw and Describe Shapes
- Grade 3, Lesson 30 - Categories of Shapes

**LESSON 31:**

- Grade 2, Lesson 28 - Recognize and Draw Shapes
- Grade 2, Lesson 28 - Draw and Describe Shapes
- Grade 3, Lesson 31 - Categories of Plane Figures

**LESSON 32:**

- Grade 2, Lesson 21 - Measure in Feet and Meters
- Grade 2, Lesson 30 - Partition Rectangles & Fill a Rectangle with Squares
- Grade 3, Lesson 32 - Relating Area and Perimeter

**LESSON 33:**

- Grade 2, Lesson 30 - Partition Rectangles & Fill a Rectangle with Squares
- Grade 3, Lesson 33 - Partitioning Shapes

Links to [Math Differentiation Chart](#) and [Accommodations Chart](#)

**Core and Supplementary Instructional Materials****Teacher Pedagogical Resources:**

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ISBN-13: 978-1495780493 - Ready Classroom Mathematics Grade 3 Teacher Guide Volume 2

Ready Classroom Mathematics [Teacher Toolbox](#) and Online Resources

**Student Materials:**

Ready Classroom Mathematics Grade 3 Math Workbook Volume B

Hands-on math manipulatives and digital manipulatives

iReady

**Notes:****Inclusion of Climate Change Opportunities**

**Calculating Area and Perimeter:** Use geometric shapes to measure and calculate areas affected by environmental changes. Students can estimate the area of natural habitats or calculate the perimeter of land affected by coastal erosion.