Wall Township Public Schools	Board Approval Date: 8/18/26
Course Title: Grade 3 Math	
Course Description: The Grade 3 i-Ready Classroom Mathematics course develops students' conceptual understanding, procedural fluency, and mathematical reasoning through the study of place value, the four operations, area, fractions, measurement, data, and geometry. Students apply mathematical models, multiple problem-solving strategies, and precise mathematical communication to solve increasingly complex real-world problems while building a strong foundation for upper elementary mathematics.	

Course Sequence & Pacing	
Unit Title	**MP/Weeks**
Unit 1: Three-Digit Numbers: Place Value, Addition, and Subtraction Students develop place value understanding by rounding numbers and using place value strategies to add and subtract three-digit numbers. They apply these skills to solve real-world problems and explain their mathematical reasoning.	MP 1 - Wks 1 - 5 (21 days)
Unit 2: Multiplication and Division: Concepts, Relationships, and Patterns Students build conceptual understanding of multiplication and division by representing equal groups, developing multiplication and division facts, exploring patterns, using properties of operations, and solving real-world multiplication and division problems.	MP 1-2 - Wks 6 - 13 (41 days)
Unit 3: Multiplication: Finding Area, Solving Word Problems, and Using Scales Graphs Students explore area as an attribute of plane figures, use multiplication to determine area, solve one- and two-step word problems using all four operations, and collect, represent, and interpret data using scaled graphs. .	MP 2 - Wks 14 - 19 (29 days)
Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data Students develop an understanding of fractions as numbers by representing fractions on number lines, identifying equivalent fractions, comparing fractions, and using line plots to organize and interpret measurement data.	MP 3 - Wks 20-24 (28 days)
Unit 5: Measurement: Time, Liquid Volume, and Mass Students solve problems involving time, liquid volume, and mass by measuring, estimating, comparing, and applying mathematical operations in real-world measurement situations.	MP 4-Wks 25-29 (16 days)
Unit 6: Shapes and Arrays: Partitioning and Tiling Shapes, Arrays, Evens and Odds Students classify shapes based on their attributes, explore relationships among quadrilaterals, solve problems involving area and perimeter, and partition shapes into equal areas while applying geometric reasoning to authentic problem-solving situations.	MP 4 - Wks 30 -34 (18 days)

Unit 1

Desired Results

Unit 1 Title: Three-Digit Numbers: Place Value, Addition, and Subtraction

Unit Summary: This unit develops students' understanding of place value, rounding, addition, and subtraction with three-digit numbers. Students use place value to round numbers, apply a variety of strategies to add and subtract within 1,000, estimate reasonable solutions, and explain their mathematical reasoning while solving real-world, multi-step problems.

Learning Standards

NJSLS:

- 3.NBT.A.1 Use place value understanding and properties of operations to perform multi-digit arithmetic.
  - 1. Use place value understanding to round whole numbers to the nearest 10 or 100.
- 3.NBT.A.2 Use place value understanding and properties of operations to perform multi-digit arithmetic.
  - 2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- 9.4.3.CI.1: Compare strengths and limitations of different types of thinking (e.g., analytical, creative, practical).
- 9.4.3.CT.2 Identify potential problems and develop possible solutions.
- 9.4.3.TL.3 Use technology to organize, share, and present ideas respectfully.

Computer Science & Design Thinking *(CS & DT)*:

- 8.1.3.AP.1 Develop algorithms (a series of ordered steps) to solve problems.
- 8.1.3.AP.2 Debug errors in an algorithm or program that includes sequencing and simple loops.
- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

English Language Arts (2023 NJSLS-ELA)

- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- RI.CR.3.1 Ask and answer questions and make relevant connections to demonstrate understanding of a text, referring explicitly to textual evidence.
- SL.PE.3.1 Participate effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts.
- SL.PI.3.4 Report on a topic or text, tell a story, or recount an experience using appropriate facts and relevant, descriptive details.
- L.VL.3.6 Acquire and accurately use grade-appropriate conversational, general academic, and domain-specific words and phrases.

Science (2020 NJSLS-Science)

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.

- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Amistad Commission

- **Connection:** Students analyze numerical data related to the achievements and contributions of African American scientists, inventors, mathematicians, and community leaders. Multi-step problems provide authentic opportunities to integrate mathematics with social studies.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students apply place value, estimation, and computation skills while exploring numerical data connected to the achievements and contributions of Asian American and Pacific Islander scientists, engineers, inventors, and mathematicians.

Learning Targets

Unit Essential Questions:

- How does place value help us understand and work with larger numbers?
- When is rounding or estimating an effective strategy for solving a problem?
- How can different addition and subtraction strategies lead to the same correct solution?
- How can mathematical models, equations, and explanations help us justify our thinking?

Unit Enduring Understandings:

- Place value provides an efficient system for representing, comparing, rounding, and computing with whole numbers.
- Flexible strategies and algorithms help solve addition and subtraction problems accurately and efficiently.
- Estimation and rounding help determine whether answers are reasonable and support effective problem solving.
- Mathematical models, equations, and precise mathematical communication help explain and justify mathematical thinking.

Mathematical Vocabulary

- algorithm
- difference
- estimate
- number line
- partial sums
- place value
- regroup
- round

Academic Vocabulary

- break apart
- combine
- discuss
- halfway
- model
- nearest
- possible

Additional

- add
- addition
- compare
- compose
- decompose
- digit
- expanded form
- hundred
- hundreds
- ones
- regrouping

Vocabulary

- standard algorithm
- subtract
- subtraction
- sum
- tens
- thousand
- three-digit number
- value

Students will be able to:

- Round two-digit and three-digit numbers to the nearest ten.
- Round three-digit numbers to the nearest hundred using place value.

- Explain why a number rounds to a particular ten or hundred.
- Add three-digit numbers using a variety of strategies.
- Use the standard algorithm and partial sums to add three-digit numbers.
- Subtract three-digit numbers using a variety of strategies.
- Use place value and regrouping to subtract within 1,000.
- Estimate sums and differences to determine whether answers are reasonable.
- Compare whole numbers using place value understanding.
- Solve one- and multi-step real-world problems involving addition and subtraction within 1,000.
- Explain and justify computational strategies using mathematical models, equations, and precise mathematical vocabulary.
- Communicate mathematical reasoning orally and in writing.

Assessment Evidence

Formative Assessments:

Ongoing Classroom Assessments

- Build Your Vocabulary activities
- Daily Number Sense routines
- Teacher observation during guided instruction
- Math discourse and partner discussions
- Exit tickets
- Whiteboard responses
- Lesson Checks

Center Activities

- Rounding Vocabulary Match
- Round Numbers
- Model Addition
- Add Within 1,000
- Model Subtraction
- Subtract Within 1,000

Enrichment Activities

- Mystery Number
- Addition Grids
- Planning a Trip

Math in Action Planning Activities

- Students apply rounding, estimation, place value, addition, subtraction, and multi-step problem-solving skills in authentic real-world contexts.

Summative Assessments:

Vocabulary Cards
Unit Review
Cumulative Practice
Unit Performance Task
Unit Assessment Form A
Unit Assessment Form B
Math in Action Performance Task
Self Reflection

Math in Action Performance Task Options

- Adopt an Animal
- Better Farms
- Ticket Sales
- Office Decorations

Common Benchmark Assessments:
• iReady Beginning of Year Diagnostic • USNS Fall Assessment

Core Instructional & Supplemental Materials

Teacher Resources
i-Ready Classroom Mathematics Teacher Guide
Teacher Toolbox
Tools for Instruction
Lesson-Level Differentiation Resources
Center Activities
Enrichment Activities
Build Your Vocabulary
STEM Story: **Mae Jemison**

Student Resources
Student Worktext
Self Check
Vocabulary Cards
Unit Review
Cumulative Practice
Math in Action Performance Task
Self Reflection

Manipulatives
- Base-Ten Blocks
- Number Line
- Place Value Charts
- Counters
- Math Toolkit manipulatives

Technology
i-Ready Personalized Instruction
Interactive Tutorials
Interactive Practice and Reports
Unit and Lesson Comprehension Checks
Diagnostic Reports

Learning Games
- Cupcake
- Hungry Fish
- Pizza
- Zoom

Digital Math Tools
- Base-Ten Blocks
- Number Line

Other Materials
Whiteboards and dry-erase markers
Pencils
Chart paper
Anchor charts
Sticky notes
Graphic organizers

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:
Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Provide additional manipulatives to support instruction
- Allow for alternative strategies to solve algorithms or tasks
- Provide the steps needed to complete the task
- Model frequently

- Use visuals to demonstrate/model the processes
- Visual Animation Plus
- Reteaching opportunities if applicable through differentiated centers
- Checklists - Immediate feedback

Specific Strategies and Practices that Support Gifted & Talented Students:

- Problem based learning
- Pre-Assess to condense curriculum in order to do more authentic problem solving/projects
- Differentiated centers with extension activities

Specific Strategies and Practices that Support English Language Learners:

- Develop basic vocabulary
- Demonstrate listening comprehension by retelling
- Use prior experience to understand meanings
- Visual learning bridge
- Visual learning Animation Plus
- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts
- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Homogeneous Grouping
- Supplemental Instruction
- Tiered Activities - Small Group Instruction
- Work Alone Choice - Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
- Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

- Homogeneous Grouping - Small Group In-Depth Instruction
- Differentiated Online Practice - Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 2

Desired Results

Unit 2 Title: Multiplication and Division: Concepts, Relationships, and Patterns

Unit Summary: This unit develops students' conceptual understanding of multiplication and division through equal groups, arrays, repeated addition, skip-counting, and fact families. Students apply the properties of multiplication, multiply by multiples of 10, recognize relationships between multiplication and division, solve word problems, and identify patterns while building fluency with multiplication and division facts within 100.

Learning Standards

NJSLS:

- 3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 ×7.
- 3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 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. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.
- 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.B.5 Apply properties of operations as strategies to multiply and divide. Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)
- 3.OA.B.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.
- 3.OA.C.7 With accuracy and efficiency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
- 3.OA.D.8 Solve two-step word problems using the four operations and assess the reasonableness of answers using mental computation and estimation strategies.
- 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.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- 9.4.3.CT.1 Compare strengths and limitations of different types of thinking.
- 9.4.3.CT.2 Identify potential problems and develop possible solutions.
- 9.4.3.TL.3 Use technology to organize, share, and present ideas respectfully.

Computer Science & Design Thinking *(CS & DT)*:

- 8.1.3.AP.1 Develop algorithms (a series of ordered steps) to solve problems.
- 8.1.3.AP.2 Debug errors in an algorithm or program that includes sequencing and simple loops.

- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

English Language Arts (2023 NJSLS-ELA)

- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
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- SL.PI.3.4 Report on a topic or text, tell a story, or recount an experience using appropriate facts and relevant, descriptive details.
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Science (2020 NJSLS-Science)

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.
- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Amistad Commission

- **Connection:** Students solve multiplication and division problems using authentic numerical data related to the achievements and contributions of African American inventors, scientists, engineers, entrepreneurs, and civic leaders.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students analyze multiplication patterns, arrays, and data while exploring the contributions of Asian American and Pacific Islander mathematicians, scientists, engineers, and innovators.

Learning Targets

Unit Essential Questions:

- How does multiplication help us represent and solve problems involving equal groups?
- How are multiplication and division related?
- How can the properties of operations help us solve multiplication and division problems more efficiently?
- How do mathematical models, arrays, equations, and patterns help us explain our thinking?

Unit Enduring Understandings:

- Multiplication represents equal groups and provides an efficient way to find the total number of objects.
- Division is related to multiplication and can be used to determine the number of groups or the number in each group.
- Properties of operations and patterns help students develop efficient multiplication and division strategies.
- Mathematical models, equations, and fact families help explain relationships between multiplication and division and justify mathematical thinking.

Mathematical Vocabulary	Academic Vocabulary	Additional Vocabulary
• array • associative property of multiplication • commutative property of multiplication • dividend • divide • division • division equation • equal groups • expression • fact family • factor • multiplication • multiplication equation • multiplication table • multiply • pattern • product • quotient • repeated addition • rule	• arrange • break apart • collect • complete • decide • each • model • pack • solve	• array model • distribute • distributive property • equal shares • equation • inverse operation • multiple • multiple of 10 • number pattern • operation • order of factors • place value • properties of operations • skip-count • unknown • word problem

Students will be able to:

- Interpret multiplication as equal groups.
- Represent multiplication using arrays, equal groups, repeated addition, skip-counting, equations, and number lines.
- Explain the meaning of factors and products in multiplication equations.
- Fluently multiply within 100 using a variety of strategies.
- Apply the distributive property to solve multiplication problems.
- Apply the commutative property to simplify multiplication problems.
- Apply the associative property to multiply three factors.
- Multiply one-digit numbers by multiples of 10 using place value strategies.
- Interpret division as sharing and grouping.
- Represent division using equal groups, arrays, models, and equations.

- Explain the relationship between multiplication and division.
- Use multiplication to solve division problems and division to solve multiplication problems.
- Find unknown numbers in multiplication and division equations.
- Use fact families to demonstrate the relationship between multiplication and division.
- Solve multiplication and division word problems involving equal groups, arrays, and measurement situations.
- Recognize and explain arithmetic patterns using addition tables, multiplication tables, and properties of operations.
- Explain mathematical reasoning using models, equations, and precise mathematical vocabulary.

Assessment Evidence

Formative Assessments:

Self Check

Build Your Vocabulary

STEM Story: **William "Bill" Hewlett**

Teacher observation

Guided practice

Daily Number Sense routines

Math discourse and partner discussions

Enrichment Activities

- Arranging Desks
- Shopping Spree
- How Many Creatures?
- Party Bags
- Display of Cans
- Push-Up Challenge

Whiteboard responses

Exit tickets

Lesson Checks

Interactive Tutorials

Interactive Practice

Digital Comprehension Checks

Math in Action Planning Activities

Students apply multiplication, division, arrays, place value, fact families, patterns, and two-step problem-solving skills to authentic real-world situations.

Center Activities

- Multiplication Vocabulary Match
- Multiplication Stories
- Multiplication Race 1
- Break Apart a Factor
- Toss and Multiply
- Multiplication Race 2
- Multiply 3 Numbers
- Multiply Multiples of 10
- Match the Product
- Division Stories
- Division Vocabulary Match
- Use a Related Fact
- Find the Missing Number
- Use Multiplication to Solve Division
- Place Missing Numbers
- Complete a Fact Family
- Pattern Vocabulary Match
- Identify Patterns

Summative Assessments:	
• Vocabulary Review • Unit Review • Cumulative Practice • Unit Performance Task • Unit Assessment Form A • Unit Assessment Form B • Math in Action Performance Task • Self Reflection	**Math in Action Performance Task Options** • Seat Set-Up • Robot Prop • Space Creatures • Monthly Gifts

Core Instructional & Supplemental Materials

Teacher Resources

i-Ready Classroom Mathematics Teacher Guide
Teacher Toolbox
Tools for Instruction
Lesson-Level Differentiation Resources
Center Activities
Enrichment Activities
Build Your Vocabulary
STEM Story: William "Bill" Hewlett

Student Resources

Student Worktext
Self Check
Vocabulary Review
Unit Review
Cumulative Practice
Math in Action Performance Task
Self Reflection

Manipulatives

- Counters
- Array cards
- Grid paper
- Base-ten blocks
- Number lines
- Multiplication models
- Hundreds chart
- Math Toolkit manipulatives

Technology

i-Ready Personalized Instruction
Interactive Tutorials
Interactive Practice and Reports
Unit and Lesson Comprehension Checks
Diagnostic Reports

Learning Games

- Cupcake
- Match
- Pizza

Digital Math Tools

- Multiplication Models
- Number Line

Other Materials

Whiteboards and dry-erase markers
Pencils
Chart paper
Anchor charts
Sticky notes
Recording sheets
Multiplication tables

Accommodations and Modifications:
Students with Disabilities, English Language Learners,
Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Provide additional manipulatives to support instruction
- Allow for alternative strategies to solve algorithms or tasks
- Provide the steps needed to complete the task
- Model frequently
- Use visuals to demonstrate/model the processes
- Visual Animation Plus
- Reteaching opportunities if applicable through differentiated centers
- Checklists - Immediate feedback

Specific Strategies and Practices that Support Gifted & Talented Students:

- Problem based learning
- Pre-Assess to condense curriculum in order to do more authentic problem solving/projects
- Differentiated centers with extension activities

Specific Strategies and Practices that Support English Language Learners:

- Develop basic vocabulary
- Demonstrate listening comprehension by retelling
- Use prior experience to understand meanings
- Visual learning bridge
- Visual learning Animation Plus
- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts
- Personal Glossary
- Extended Time

- Simplified/Verbal Instructions
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Homogeneous Grouping
- Supplemental Instruction
- Tiered Activities - Small Group Instruction
- Work Alone Choice - Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
- Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

- Homogeneous Grouping - Small Group In-Depth Instruction
- Differentiated Online Practice - Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 3

Desired Results

Unit 3 Title: Three-Digit Numbers: Place Value, Addition, and Subtraction

Unit Summary: This unit develops students' understanding of area as an attribute of plane figures and introduces the area formula for rectangles. Students use multiplication to determine area, decompose composite figures to find total area, solve one- and two-step word problems involving the four operations, and create and interpret scaled picture graphs and bar graphs to solve real-world problems.

Learning Standards

NJSLS:

- 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 using the four operations and assess the reasonableness of answers using mental computation and estimation strategies.
- 3.M.B.5a 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.
- 3.M.B.5b Relate area to the operations of multiplication and addition.
    - 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.A.7.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.A.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems.
- 3.M.A.7.c Use tiling to show that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property.
- 3.M.A.7.d Recognize area as additive. Find the areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas.
- 3.M.B.8 Solve real-world and mathematical problems involving perimeters of polygons.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- 9.4.3.CT.1 Compare strengths and limitations of different types of thinking.
- 9.4.3.CT.2 Identify potential problems and develop possible solutions.
- 9.4.3.TL.3 Use technology to organize, share, and present ideas respectfully.

Computer Science & Design Thinking (*CS & DT***):**

- 8.1.3.AP.1 Develop algorithms (a series of ordered steps) to solve problems.

- 8.1.3.AP.2 Debug errors in an algorithm or program that includes sequencing and simple loops.
- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

English Language Arts (2023 NJSLS-ELA)

- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
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- SL.PE.3.1 Participate effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts.
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- L.VL.3.6 Acquire and accurately use grade-appropriate conversational, general academic, and domain-specific words and phrases.

Science (2020 NJSLS-Science)

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- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.
- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Amistad Commission

- **Connection:** SStudents use fractions, measurement, and data displays to analyze authentic information related to the achievements and contributions of African American scientists, inventors, engineers, and mathematicians.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students apply fractional reasoning and measurement while exploring the work of Asian American and Pacific Islander scientists, engineers, mathematicians, and innovators through authentic mathematical investigations.

Learning Targets

Unit Essential Questions:

- How does multiplication help us represent and solve problems involving equal groups?
- How are multiplication and division related?
- How can the properties of operations help us solve multiplication and division problems more efficiently?
- How do mathematical models, arrays, equations, and patterns help us explain our thinking?

Unit Enduring Understandings:

- Multiplication represents equal groups and provides an efficient way to find the total number of objects.
- Division is related to multiplication and can be used to determine the number of groups or the number in each group.
- Properties of operations and patterns help students develop efficient multiplication and division strategies.
- Mathematical models, equations, and fact families help explain relationships between multiplication and division and justify mathematical thinking.

Mathematical Vocabulary

- area
- area formula
- bar graph

Academic Vocabulary

- actual
- combined

Additional Vocabulary

- additive
- array

• data • dimension • key • operation • picture graph • product • scale (graph) • scaled bar graph • scaled picture graph • square centimeter • square foot • square inch • square meter • square unit	• correct • figure • incorrect • interpret • label • overlap • possible • represent • strategy • total	• decompose • distribute • distributive property • equation • estimate • factor • length • multiply • perimeter • rectangle • row • side length • solve • variable • word problem

Students will be able to:

- Explain what a square unit is and why square units are used to measure area.
- Measure the area of plane figures by counting square units.
- Determine the area of rectangles using square centimeters, square inches, square feet, and square meters.
- Use multiplication to determine the area of rectangles.
- Apply the area formula to solve mathematical and real-world problems.
- Decompose composite figures into rectangles and find the total area by adding the areas of each part.
- Explain that area is additive.
- Solve one-step multiplication and division word problems involving equal groups, arrays, and area.
- Determine the operations needed to solve two-step word problems involving the four operations.
- Represent two-step problems using equations with variables and other mathematical models.
- Assess the reasonableness of solutions using estimation and mathematical reasoning.
- Interpret scaled picture graphs and scaled bar graphs.
- Use multiplication to interpret graph scales greater than one.
- Create scaled picture graphs and scaled bar graphs to represent data.
- Solve one- and two-step problems using information presented in scaled graphs.
- Explain mathematical reasoning using models, equations, graphs, and precise mathematical vocabulary.

Assessment Evidence

Formative Assessments:

Self Check
Build Your Vocabulary
STEM Story: **Rachel Carson**
Teacher observation
Guided practice
Daily Number Sense routines
Math discourse and partner discussions
Math in action planning activities

Whiteboard responses
Exit tickets
Lesson Checks
Interactive Tutorials
Interactive Practice
Digital Comprehension Checks

Enrichment Activities

- Building Pens
- Designing a Garden
- Tile Design
- Race Training
- Purple Coins
- Favorite Pet

Center Activities

- Area
- Square Units
- Find Area
- Area Game
- Area Problems
- Decompose to Find Area
- Solve Word Problems
- Writing Equations
- Solve Two-Step Word Problems
- Check Reasonableness
- Use Data Vocabulary
- Make a Bar Graph

Summative Assessments:

Vocabulary Cards
Unit Review
Cumulative Practice
Unit Performance Task
Unit Assessment Form A
Unit Assessment Form B
Math in Action Performance Task
Self Reflection

Math in Action Performance Task Options

- Sweet T's Tees
- Fingerboard Parts
- Skate Park
- Grip Tape

Core Instructional & Supplemental Materials

Teacher Resources	Student Resources	Manipulatives	Technology	Other Materials
i-Ready Classroom Mathematics Teacher Guide Teacher Toolbox	Student Worktext Self Check Vocabulary Cards	• Square tiles • Grid paper	i-Ready Personalized Instruction Interactive Tutorials	Whiteboards and dry-erase markers Pencils

Tools for Instruction Lesson-Level Differentiation Resources Center Activities Enrichment Activities Build Your Vocabulary STEM Story: Rachel Carson	Unit Review Cumulative Practice Math in Action Performance Task Self Reflection	• Base-Ten Blocks • Multiplication models • Number lines • Rulers • Math Toolkit manipulatives	Interactive Practice and Reports Unit and Lesson Comprehension Checks Diagnostic Reports Learning Games • Cupcake • Pizza **Digital Math Tools** • Base-Ten Blocks • Multiplication Models • Number Line • Perimeter and Area	Chart paper Anchor charts Sticky notes Recording sheets Graph paper

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Provide additional manipulatives to support instruction
- Allow for alternative strategies to solve algorithms or tasks
- Provide the steps needed to complete the task
- Model frequently
- Use visuals to demonstrate/model the processes
- Visual Animation Plus
- Reteaching opportunities if applicable through differentiated centers
- Checklists - Immediate feedback

Specific Strategies and Practices that Support Gifted & Talented Students:

- Problem based learning
- Pre-Assess to condense curriculum in order to do more authentic problem solving/projects

- Differentiated centers with extension activities

Specific Strategies and Practices that Support English Language Learners:

- Develop basic vocabulary
- Demonstrate listening comprehension by retelling
- Use prior experience to understand meanings
- Visual learning bridge
- Visual learning Animation Plus
- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts
- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Homogeneous Grouping
- Supplemental Instruction
- Tiered Activities - Small Group Instruction
- Work Alone Choice - Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
- Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

- Homogeneous Grouping - Small Group In-Depth Instruction
- Differentiated Online Practice - Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 4

Desired Results

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

Unit Summary: This unit develops students' understanding of fractions as numbers by representing fractions using area models and number lines, identifying and generating equivalent fractions, comparing fractions with the same numerator or denominator, and measuring to the nearest 1/2 and 1/4 inch. Students organize and interpret fractional measurement data using line plots while applying fraction concepts to authentic real-world situations.

Learning Standards

NJSLS:

- 3.NF.A.1 Develop understanding of fractions as numbers.
  - 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 a/b as the quantity formed by parts of size. For example: If a rectangle (i.e. the whole) is partitioned into 3 equal parts, each part is ⅓. Two of those parts would be ⅔.
- 3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  - a. Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. 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. For example, partition the number line from 0 to 1 into 3 equal parts, represent on the number line and show that each part has a size.
  - b. Understand a fraction as a number on the number line; represent fractions on a number line diagram. b. Represent a fraction a/b on a number line diagram by marking off lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
- 3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
  - a. Understand two fractions as equivalent (equal) if they are the same size. Understand two fractions as equivalent if they are located at the same point on the number line.
  - b. Recognize and generate simple equivalent fractions by reasoning about their size, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
  - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.
  - d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions with the support of a visual fraction model, e.g., by using a visual fraction model
- 3.M.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).
-

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- 9.4.3.CT.1 Compare strengths and limitations of different types of thinking.
- 9.4.3.CT.2 Identify potential problems and develop possible solutions.
- 9.4.3.TL.3 Use technology to organize, share, and present ideas respectfully.

Computer Science & Design Thinking (*CS & DT*):

- 8.1.3.AP.1 Develop algorithms (a series of ordered steps) to solve problems.
- 8.1.3.AP.2 Debug errors in an algorithm or program that includes sequencing and simple loops.
- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

English Language Arts (2023 NJSLS-ELA)

- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- RI.CR.3.1 Ask and answer questions and make relevant connections to demonstrate understanding of a text, referring explicitly to textual evidence.
- SL.PE.3.1 Participate effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts.
- SL.PI.3.4 Report on a topic or text, tell a story, or recount an experience using appropriate facts and relevant, descriptive details.
- L.VL.3.6 Acquire and accurately use grade-appropriate conversational, general academic, and domain-specific words and phrases.

Science (2020 NJSLS-Science)

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.
- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Amistad Commission

- **Connection:** Students use fractions, measurement, and data displays to analyze authentic information related to the achievements and contributions of African American scientists, inventors, engineers, and mathematicians.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students apply fractional reasoning and measurement while exploring the work of Asian American and Pacific Islander scientists, engineers, mathematicians, and innovators through authentic mathematical investigations.

Learning Targets

Unit Essential Questions:

- What does a fraction represent, and how can it be modeled in different ways?
- How can number lines and area models help us understand equivalent fractions?
- How can we determine whether one fraction is greater than, less than, or equal to another?
- How can fractional measurements and line plots help us solve real-world problems?

Unit Enduring Understandings:

- Fractions are numbers that represent equal parts of a whole and can be represented using models and number lines.
- Equivalent fractions name the same quantity even though they use different numerators and denominators.
- Fractions can be compared by reasoning about the size of the parts and the whole they represent.
- Fractional measurements and line plots provide meaningful ways to organize, analyze, and communicate real-world data.

Mathematical Vocabulary	Academic Vocabulary	Additional Vocabulary
• compare • denominator • equivalent fractions • fraction • greater than symbol (>) • less than symbol (<) • line plot • mixed number • numerator • unit fraction	• decide • diagram • label • lesser • nearest • represent • shade • symbol	• area model • benchmark fraction • compare fractions • equal parts • equal shares • fraction model • fractional part • number line • one whole • partition • quarter inch • equivalent • half inch • whole

Students will be able to:

- Explain that a fraction represents one or more equal parts of a whole.
- Identify the numerator and denominator of a fraction.
- Explain that unit fractions are the building blocks of fractions.
- Represent fractions using area models.
- Represent fractions on a number line.
- Identify fractions that are less than, equal to, and greater than one.
- Explain why two fractions are equivalent using models and number lines.
- Generate equivalent fractions.
- Represent whole numbers as fractions.
- Compare fractions with the same numerator or the same denominator.
- Use the symbols >, <, and = to compare fractions.
- Justify fraction comparisons using models and number lines.
- Measure objects to the nearest 1/2 inch and 1/4 inch.
- Create and interpret line plots using fractional measurement data.
- Solve problems using information displayed in line plots.
- Explain mathematical reasoning using fraction models, number lines, equations, and precise mathematical vocabulary.

Assessment Evidence

Formative Assessments:

Self Check Build Your Vocabulary STEM Story: **Grant Imahara** Teacher observation	Whiteboard responses Exit tickets Lesson Checks Interactive Tutorials	**Center Activities** • Write the Fraction • Show Fractions • Use Fraction Vocabulary

Guided practice Daily Number Sense routines Math discourse and partner discussions Math in planning activities	Interactive Practice Digital Comprehension Checks **Enrichment Activities** • Colorful Quilts • Number Lines • Road Race • Making Flags • What Fractions Go in the Box? • How Much Ribbon?	• Identify Fractions on a Number Line • Fraction Match • Building Equivalent Fractions • Fraction Comparison • Comparing Fractions • Measure Objects • Make a Line Plot

Summative Assessments:

Vocabulary Review Unit Review Cumulative Practice Unit Performance Task Unit Assessment Form A Unit Assessment Form B Math in Action Performance Task Self Reflection	**Math in Action Performance Task Options** • 8-Mile Trail • Flower Gardens • Drinking Fountains • Trail Signs

Core Instructional & Supplemental Materials

Teacher Resources
i-Ready Classroom Mathematics Teacher Guide
Teacher Toolbox
Tools for Instruction
Lesson-Level Differentiation Resources
Center Activities
Enrichment Activities
Build Your Vocabulary
STEM Story: Grant Imahara

Student Resources
Student Worktext
Self Check
Vocabulary Review
Unit Review
Cumulative Practice
Math in Action Performance Task
Self Reflection

Manipulatives
- Fraction circles
- Fraction strips
- Fraction tiles
- Number lines
- Rulers marked in 1/2-inch and 1/4-inch increments
- Pattern blocks
- Math Toolkit manipulatives

Technology
- i-Ready Personalized Instruction
- Interactive Tutorials
- Interactive Practice and Reports
- Unit and Lesson Comprehension Checks
- Diagnostic Reports

Learning Games
- Bounce
- Cloud Machine
- Cupcake
- Match

Digital Math Tools
- Fraction Models
- Number Line

Other Materials
Whiteboards and dry-erase markers
Pencils
Chart paper
Anchor charts
Sticky notes
Recording sheets
Graph paper

Accommodations and Modifications:
Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Provide additional manipulatives to support instruction
- Allow for alternative strategies to solve algorithms or tasks
- Provide the steps needed to complete the task
- Model frequently
- Use visuals to demonstrate/model the processes
- Visual Animation Plus
- Reteaching opportunities if applicable through differentiated centers
- Checklists - Immediate feedback

Specific Strategies and Practices that Support Gifted & Talented Students:

- Problem based learning
- Pre-Assess to condense curriculum in order to do more authentic problem solving/projects
- Differentiated centers with extension activities

Specific Strategies and Practices that Support English Language Learners:

- Develop basic vocabulary
- Demonstrate listening comprehension by retelling
- Use prior experience to understand meanings
- Visual learning bridge
- Visual learning Animation Plus
- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts
- Personal Glossary

- Extended Time
- Simplified/Verbal Instructions
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Homogeneous Grouping
- Supplemental Instruction
- Tiered Activities - Small Group Instruction
- Work Alone Choice - Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
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- Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 5

Desired Results

Unit 5 Title: Measurement: Time, Liquid Volume, and Mass

Unit Summary: This unit develops students' understanding of time, liquid volume, and mass by measuring, estimating, comparing, and solving real-world problems. Students tell time to the nearest minute, solve elapsed time problems, estimate and measure liquid volume and mass using standard metric units, and apply addition, subtraction, multiplication, estimation, and problem-solving strategies to authentic measurement situations.

Learning Standards

NJSLS:

- 3.M.B.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.B.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.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- 9.4.3.CT.1 Compare strengths and limitations of different types of thinking.
- 9.4.3.CT.2 Identify potential problems and develop possible solutions.
- 9.4.3.TL.3 Use technology to organize, share, and present ideas respectfully.

Computer Science & Design Thinking ***(****CS & DT****)*:

- 8.1.3.AP.1 Develop algorithms (a series of ordered steps) to solve problems.
- 8.1.3.AP.2 Debug errors in an algorithm or program that includes sequencing and simple loops.
- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

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- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
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Science (2020 NJSLS-Science)

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.
- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype

that can be improved.

Amistad Commission

- **Connection:** Students apply measurement, estimation, and data analysis to authentic investigations highlighting the achievements and contributions of African American scientists, engineers, inventors, and environmental leaders.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students use measurement and problem-solving skills while exploring the work of Asian American and Pacific Islander scientists, engineers, inventors, and innovators whose work relies on accurate measurement and data collection.

Diversity, Equity, and Inclusion

- Students engage in collaborative mathematical discourse, use multiple representations to demonstrate understanding, and work cooperatively while respecting diverse approaches to problem solving.

Learning Targets

Unit Essential Questions:

- How do standard units help us measure and compare objects and events accurately?
- How can estimation help us solve measurement problems more efficiently?
- How do addition, subtraction, multiplication, and division help solve real-world measurement problems?
- How can mathematical models and measurement tools help us explain our thinking?

Unit Enduring Understandings:

- Standard units of time, liquid volume, and mass allow us to measure, compare, and communicate quantities consistently.
- Estimation helps determine whether measurements and solutions are reasonable before and after solving problems.
- Mathematical operations can be applied to solve real-world problems involving time, liquid volume, and mass.
- Mathematical models, measurement tools, and precise mathematical language help explain and justify solutions.

Mathematical Vocabulary

- a.m.
- capacity
- elapsed time
- gram (g)
- hour (h)
- kilogram (kg)
- liter (L)
- liquid volume
- mass
- minute (min)
- p.m.

Academic Vocabulary

- actual
- backward
- container
- nearest
- record
- suppose

Additional Vocabulary

- analog clock
- benchmark
- compare
- digital clock
- estimate
- hour hand
- measure
- measuring tool
- minute hand
- operation
- scale
- standard unit
- time interval
- unit
- weight

Students will be able to:

- Tell and write time to the nearest minute using analog and digital clocks.
- Relate time shown on analog clocks to digital clocks.
- Express time as the number of minutes before or after the hour.
- Distinguish between a.m. and p.m.
- Measure elapsed time using clock models and number lines.
- Solve addition and subtraction word problems involving elapsed time.
- Identify objects that can be measured using liters.
- Estimate and measure liquid volume using liters.
- Solve one-step word problems involving liquid volume.
- Explain that mass describes how heavy or light an object is.
- Identify objects measured in grams and kilograms.
- Estimate the mass of objects using appropriate metric units.
- Solve one-step word problems involving mass.
- Add, subtract, multiply, and divide measurement quantities expressed in the same unit.
- Explain mathematical reasoning using models, equations, number lines, and precise mathematical vocabulary.

Assessment Evidence

Formative Assessments

- Self Check
- Build Your Vocabulary
- STEM Story: **Argelia Velez-Rodriguez**
- Teacher observation
- Guided practice
- Daily Number Sense routines
- Math discourse and partner discussions
- Whiteboard responses
- Exit tickets
- Lesson Checks
- Interactive Tutorials
- Interactive Practice
- Digital Comprehension Checks

Center Activities

- Time Match
- Solve Time Word Problems
- Word Problem Race
- Use Measurement Vocabulary
- Solve Measurement Problems

Enrichment Activities

- Class Schedule
- Fill My Fish Tank
- Balancing Act

Math In Action Planning Activities

Summative Assessments:	
• Vocabulary Review • Unit Review • Cumulative Practice • Unit Performance Task • Unit Assessment Form A • Unit Assessment Form B • Math in Action Performance Task • Self Reflection	**Math in Action Performance Task Options** • Max's Snacks • Max's Snack Bars • Soup Snacks • Chore List •
Common Benchmark Assessments: • iReady EOY	

Core Instructional & Supplemental Materials

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Center Activities
Enrichment Activities
Build Your Vocabulary
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Student Resources

Student Worktext
Self Check
Vocabulary Review
Unit Review
Cumulative Practice
Math in Action Performance Task
Self Reflection

Manipulatives

- Analog clock models
- Number lines
- Balance scales
- Gram and kilogram benchmark objects
- Liter containers
- Measuring containers
- Math Toolkit manipulatives

Technology

i-Ready Personalized Instruction
Interactive Tutorials
Interactive Practice and Reports
Unit and Lesson Comprehension Checks
Diagnostic Reports

Learning Games

- Cloud Machine
- Hungry Fish
- Match

Digital Math Tools

- Clock
- Number Line

Other Materials

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Pencils
Chart paper
Anchor charts
Sticky notes
Recording sheets
Classroom clocks
Measuring containers
Balance scales

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- Use of cognates to increase comprehension
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Unit 6

Desired Results

Unit 6 Title: Shapes and Arrays: Partitioning and Tiling Shapes, Arrays, Evens and Odds

Unit Summary: This unit develops students' understanding of geometric attributes, shape classification, perimeter, area, and partitioning. Students classify two-dimensional shapes and quadrilaterals based on shared attributes, distinguish between perimeter and area, solve real-world problems involving area and perimeter, and partition shapes into equal areas while expressing each part as a unit fraction of the whole.

Learning Standards

NJSLS:

- 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 fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.
- 3.M.B.7 Relate area to the operations of multiplication and addition.
    - 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 **a** and **b + c** is the sum of **a × b** and **a × c**. 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.M.C.8 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

Interdisciplinary Connections

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- 8.1.3.DA.1 Collect, organize, and present data in multiple visual formats.

Interdisciplinary Connections:

English Language Arts (2023 NJSLS-ELA)

- RI.IT.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- W.IW.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- RI.CR.3.1 Ask and answer questions and make relevant connections to demonstrate understanding of a text, referring explicitly to textual evidence.
- SL.PE.3.1 Participate effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts.
- SL.PI.3.4 Report on a topic or text, tell a story, or recount an experience using appropriate facts and relevant, descriptive details.
- L.VL.3.6 Acquire and accurately use grade-appropriate conversational, general academic, and domain-specific words and phrases.

Science (2020 NJSLS-Science)

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.
- 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Amistad Commission

- **Connection:** Students apply geometric reasoning, measurement, and spatial thinking while exploring the contributions of African American architects, engineers, mathematicians, inventors, and community planners through authentic mathematical investigations.

Asian American and Pacific Islander (AAPI) Curriculum

- **Connection:** Students investigate geometric patterns, architecture, engineering, and design while learning about the contributions of Asian American and Pacific Islander architects, engineers, mathematicians, and innovators.

Climate Change

- **Mathematics Standard 3.M.C.8 identifies an opportunity to integrate Climate Change Education.**
- **Connection:** Students apply perimeter and area concepts to authentic environmental design challenges, such as planning pollinator gardens, designing wildlife habitats, creating rain gardens, measuring conservation areas, or comparing land-use plans. Students solve real-world problems involving perimeter and area while considering sustainable design and environmental stewardship.

Diversity, Equity, and Inclusion

- Students engage in collaborative mathematical discourse, use multiple representations to demonstrate understanding, and work cooperatively while respecting diverse approaches to problem solving.

Learning Targets	
Unit Essential Questions: • How do the attributes of a shape determine the category to which it belongs? • What is the difference between perimeter and area, and when is each used? • How can partitioning a shape help us understand fractions and equal areas? • How do geometric models and mathematical reasoning help us solve real-world problems? •	**Unit Enduring Understandings:** • Geometric figures can be classified into categories based on shared attributes, and a single shape may belong to more than one category. • Perimeter and area measure different attributes of a figure and are used to solve different types of real-world problems. • Shapes can be partitioned into equal areas, and each equal part can be represented as a unit fraction of the whole. • Mathematical models, diagrams, and precise mathematical language help describe, compare, and justify geometric reasoning.

Mathematical Vocabulary	Academic Vocabulary	Additional Vocabulary
• area • attribute • category • parallel lines • parallelogram • perimeter • polygon • quadrilateral • rectangle • rhombus • right angle • square • trapezoid • unit fraction • vertex	• classify • describe • opposite • overlap • sort	• angle • compose • congruent • decompose • equal areas • equal parts • fraction • geometric figure • line segment • non-overlapping • partition • plane figure • side length • tile • two-dimensional shape

Students will be able to:

- Identify and describe two-dimensional shapes by their attributes.
- Draw two-dimensional shapes given specified attributes.
- Compare and contrast the attributes of two-dimensional shapes.
- Categorize shapes based on shared attributes.
- Identify shapes that do not belong to a given category.
- Identify and classify quadrilaterals by their attributes.
- Explain how shapes can belong to more than one category.
- Distinguish between rectangles, squares, rhombuses, parallelograms, and trapezoids.
- Find the perimeter of polygons using side lengths.
- Determine unknown side lengths when the perimeter is known.
- Compare figures with the same perimeter but different areas.
- Compare figures with the same area but different perimeters.
- Explain the difference between perimeter and area.
- Partition shapes into equal areas.
- Express each equal part of a shape as a unit fraction of the whole.
- Partition the same shape into equal areas in more than one way.
- Explain mathematical reasoning using diagrams, models, equations, and precise mathematical vocabulary.

Assessment Evidence

Formative Assessments

- Self Check
- Build Your Vocabulary
- STEM Story: **David Hayes-Bautista**
- Teacher observation
- Guided practice
- Daily Number Sense routines
- Math discourse and partner discussions
- Whiteboard responses
- Exit tickets
- Lesson Checks
- Interactive Tutorials
- Interactive Practice
- Digital Comprehension Checks

Center Activities

- Geometry Vocabulary Match
- Quadrilaterals
- Use Perimeter and Area Vocabulary
- Work with Perimeter
- Equal Areas
- Divide Shapes

Enrichment Activities

- Sorting Shapes
- Shape Search
- Designing an Animal Pen
- Designing a New Home

Math In Action Planning Activities

Summative Assessments:

- Vocabulary Cards
- Unit Review
- Cumulative Practice
- Unit Performance Task
- Unit Assessment Form A
- Unit Assessment Form B
- Math in Action Performance Task
- Self Reflection

Math in Action Performance Task Options

- Paper Shapes
- Cut Squares
- Rectangular Snack Mats
- Bella's Show

Common Benchmark Assessments:

- iReady EOY

Core Instructional & Supplemental Materials

Teacher Resources	Student Resources	Manipulatives	Technology	Other Materials
i-Ready Classroom Mathematics Teacher Guide Teacher Toolbox Tools for Instruction	Student Worktext Self Check Vocabulary Cards Unit Review Cumulative Practice	• Pattern blocks • Geometric shape cards • Attribute blocks	i-Ready Personalized Instruction Interactive Tutorials Interactive Practice and Reports	Whiteboards and dry-erase markers Pencils Chart paper Anchor charts

Lesson-Level Differentiation Resources Center Activities Enrichment Activities Build Your Vocabulary STEM Story: David Hayes-Bautista	Math in Action Performance Task Self Reflection	• Grid paper • Square tiles • Rulers • Fraction models • Math Toolkit manipulatives	Unit and Lesson Comprehension Checks Diagnostic Reports **Learning Games** • Match • Pizza **Digital Math Tools** • Fraction Models • Perimeter and Area	Sticky notes Recording sheets Graph paper

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Provide additional manipulatives to support instruction
- Allow for alternative strategies to solve algorithms or tasks
- Provide the steps needed to complete the task
- Model frequently
- Use visuals to demonstrate/model the processes
- Visual Animation Plus
- Reteaching opportunities if applicable through differentiated centers
- Checklists - Immediate feedback

Specific Strategies and Practices that Support Gifted & Talented Students:

- Problem based learning
- Pre-Assess to condense curriculum in order to do more authentic problem solving/projects
- Differentiated centers with extension activities

Specific Strategies and Practices that Support English Language Learners:

- Develop basic vocabulary
- Demonstrate listening comprehension by retelling
- Use prior experience to understand meanings
- Visual learning bridge
- Visual learning Animation Plus

- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts
- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Homogeneous Grouping
- Supplemental Instruction
- Tiered Activities - Small Group Instruction
- Work Alone Choice - Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
- Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

- Homogeneous Grouping - Small Group In-Depth Instruction
- Differentiated Online Practice - Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning