

Ocean Academy Charter School
Curriculum Guide
Grade 5 - Mathematics



Original Adoption:	August 2025
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OCEAN ACADEMY CHARTER SCHOOL Mathematics Curriculum	
Content Area: Mathematics	
Course Title: Elementary Mathematics	
Grade Level: Grade 5	
Trimester 1 Unit 0: Program Overview Unit Plan 1: Whole Number Operations Unit Plan 2: Decimals (Lessons 6-11)	10 Days 25 Days 25 Days
Trimester 2 Unit Plan 2: Fractions (Lessons 12-14) Unit Plan 3: Decimals and Fractions	14 Days 46 Days
Trimester 3 Unit Plan 4: Measurement, Data, and Geometry Unit Plan 5: Algebraic Thinking and Coordinate Plane	33 Days 27 Days

OCEAN ACADEMY CHARTER SCHOOL Unit 1 Overview	
Content Area: Mathematics	
Unit Title: Unit 1: Whole Number Operations (Including Unit 0: Program Overview)	Duration: 25 Days
Target Course/Grade Level: Grade 5	
Introduction/Unit Focus: In this unit, fifth-grade students will develop a foundational understanding of volume as a measurable attribute of three-dimensional figures. They will explore how volume relates to	

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multiplication and addition, extending their knowledge of area from two-dimensional figures to the space that three-dimensional figures occupy. Students will distinguish between two- and three-dimensional shapes and understand that volume is measured using unit cubes. Each unit cube, having dimensions of 1 unit by 1 unit by 1 unit, represents a volume of one cubic unit. This concept lays the groundwork for calculating volume using both concrete models and abstract formulas.

Building on their prior understanding of area, students will apply the volume formula for rectangular prisms: $\text{length} \times \text{width} \times \text{height}$ and recognize how multiplication can be used to find volume efficiently. They will also decompose complex solid figures into smaller rectangular prisms to calculate total volume. Estimating and determining the correct units when measuring volume will be emphasized, along with developing fluency in interpreting and applying standard volume formulas. This requires students to demonstrate understanding of place value, apply regrouping strategies, and confidently multiply and divide multi-digit whole numbers.

As students progress through the unit, they will also revisit and extend their understanding of multiplication and division. They will multiply multi-digit whole numbers, including four-digit by one-digit and two-digit by two-digit numbers, and divide multi-digit numbers by one- or two-digit divisors. These skills will support their ability to solve increasingly complex volume problems as well as apply mathematical reasoning to real-world contexts.

Additionally, students will convert between like units of measurement within the same system, such as converting cubic inches to cubic feet or liters to milliliters, to solve word problems that involve volume. This deepens their understanding of the metric and customary systems while strengthening their operational fluency.

Finally, students will review and refine their ability to classify two-dimensional figures based on their properties. This includes understanding attributes such as sides, angles, and symmetry. By the end of the unit, students will be equipped to solve problems that integrate geometric reasoning with volume, multiplication, and division, as well as make accurate conversions within a measurement system.

Disciplinary Concepts for the Unit

Standard 9.1 Personal Financial Literacy

This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

Standard 9.2 Career Awareness, Exploration, Preparation and Training

This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

Standard 9.4 Life Literacies and Key Skills

This standard outline key literacies and technical skills such as critical thinking, global and cultural awareness, and technology literacy* that are critical for students to develop to live and work in an interconnected global economy.

Standard 8.1 Computer Science

Computer Science outlines a comprehensive set of concepts and skills, such as data and analysis, algorithms and programming, and computing systems.

Standard 8.2 Design Thinking

Technology, outlines the technological design concepts and skills essential for technological and engineering literacy. The framework design includes Engineering Design, Ethics and Culture, and the Effects of Technology on the Natural world among the disciplinary concepts

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocide in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Diversity and Inclusion: C.18A:35-4.36a Curriculum to include instruction on diversity and inclusion.

The instruction shall:

- (1) highlight and promote diversity, including economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and ethnicity, disabilities, and religious tolerance;
- (2) examine the impact that unconscious bias and economic disparities have at both an individual level and on society as a whole; and
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Asian Americans and Pacific Islanders (AAPI)

Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416).

21st Century Themes and Skills

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“Twenty-first century themes and skills” means themes such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; learning and innovation skills, including creativity and innovation, critical thinking and problem solving, and communication and collaboration; information, media, and technology skills; and life and career skills, including flexibility. Career readiness, life literacies, and key skills education provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.”

Content Statements

This unit introduces students to finding volume and extends students’ understanding of multiplication and division of whole numbers.

Standards/Learning Targets: New Jersey Student Learning Standards for Mathematics, Reading/Language Arts, Technology

Focus Standards (Major Standards) <https://www.nj.gov/education/cccs/>

Content Standards	Suggested Mathematical Practices	Critical Knowledge & Skills
5.M.B. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 2. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP6. Attend to precision. MP7. Look for and make use of structure.	Concept(s): ➤ Volume is the amount of space inside a solid (3-dimensional) figure. ➤ Cubes with side length of 1 unit, called “a unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. ➤ Solid figures which can be packed without gaps or overlaps using n unit cubes are said to have a volume of n cubic units. ➤ Volume of a solid can be determined using unit cubes of other dimensions. Students are able to: ➤ Count unit cubes in order to measure the volume of a solid. ➤ Use unit cubes of centimeters, inches,

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		and/or other units to measure volume. Learning Goal 5: Measure volume by counting the total number of cubic units required to fill a figure without gaps or overlaps.
5.M.B.3.. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units. 5.M.B.4. Relate volume to the operations of multiplication and Addition and solve real world And mathematical problems involving volume. 5.M.B.4a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. 5.M.B.4b. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP3. Construct viable arguments and critique the reasoning of others. MP5. Use appropriate tools strategically. MP6. Attend to precision. MP7. Look for and make use of structure.	Concept(s): ➤ Volume is additive: volumes of composite solids can be determined by adding the volumes of each solid. Students are able to: ➤ Pack right rectangular prisms with cubes to find volume and multiply side lengths of the right rectangular prism to find volume, showing that they are the same. ➤ Pack right rectangular prisms with cubes to find volume and multiply height by the area of the base, showing that they are the same. ➤ Explain how both volume formulas relate to counting the cubes in one layer and multiplying that value by the number of layers (height). ➤ Write the volume of an object as the product of three whole numbers. ➤ Solve real-world and mathematical problems using the formulas $V = l \times w \times h$ and $V = B \times h$. ➤ Find the volume of a composite solid

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real world and mathematical problems. 5.M.B.4c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.		composed of two right rectangular prisms. Learning Goal 6: Show that the volume of a right rectangular prism found by counting all the unit cubes is the same as the formulas $V = l \times w \times h$ or $V = B \times h$. Learning Goal 7: Apply formulas to solve real world and mathematical problems involving volumes of right rectangular prisms that have whole number edge lengths. Learning Goal 8: Find the volume of a composite solid figure composed of two non-overlapping right rectangular prisms, applying this strategy to solve real-world problems.
5.NBT.B.5. With accuracy and efficiency multiply multi-digit whole numbers using the standard algorithm.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP6. Attend to precision.	Concept(s): No new concept(s) introduced Students are able to: ➤ Multiply a whole number of up to four digits by a whole number of up to two digits using the standard algorithm with accuracy and efficiency. Learning Goal 3: Use the standard algorithm to multiply a whole number of up to four digits by a whole number of up to two digits.

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	MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning	
5.NBT.B.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ➤ Divide to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, properties of operations, and the relationship between multiplication and division. ➤ Represent these operations with equations, rectangular arrays, and area models. ➤ Explain the calculation by referring to the model (equation, array, or area model). Learning Goal 4: Calculate whole number quotients of whole numbers with 4-digit dividends and 2-digit divisors; explain and represent calculations with equations, rectangular arrays, and area models.

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New Jersey Student Learning Standards: Interdisciplinary Connections

W.IW.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

W.RW.5.7. Write routinely over extended time frames (time for research and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

SL.PE.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

SL.II.5.2. Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally).

RI.MF.5.6. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.

L.VL.5.2. Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

New Jersey Student Learning Standards: [Career Readiness, Life Literacies, and Key Skills Articulation Guide](#)

Core Ideas	Performance Expectations (Identified with Standard Number and statement)
Taxes are collected on a variety of goods and services at the local, state, and federal levels.	9.1.5.EG.1: Explain and give examples of what is meant by the term "tax."
Spending choices and their intended and unintended consequences impact financial outcomes and personal wellbeing.	9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences.
Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.	9.4.5.CI.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).
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.	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.CT.4: Apply critical thinking and problem-solving strategies to different types of

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	problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
New Jersey Student Learning Standards: Computer Science and Design Thinking Articulation Guide	
Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Shared features allow for common troubleshooting strategies that can be effective for many systems.	8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
Data can be organized, displayed, and presented to highlight relationships.	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
New Jersey Student Learning Standards: Climate Change Mandate	
Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

Knowledge and Skills
Unit Learning Targets (Objectives): <i>Students will be able to...</i> Content Objectives: ➤ Understand volume as a measurable attribute of solid figures. ➤ Find the volume of rectangular prisms with whole number side lengths by counting unit cubes that fill the prism without gaps or overlaps. ➤ Use addition and multiplication strategies to calculate the volume of rectangular prisms. ➤ Determine volume in various cubic units by filling prisms with unit cubes or by multiplying the number of cubes in one layer by the number of layers.

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- Recognize that the volume of a unit cube depends on the measurement unit of its dimensions.
- Calculate the missing dimension of a rectangular prism when given its volume and two dimensions.
- Find the volume of a rectangular prism by multiplying the area of its base by its height using the formulas $V = L \times W \times H$ and $V = B \times H$.
- Solve real-world and mathematical problems involving volumes of rectangular prisms.
- Use addition to find the total volume of solid figures composed of two non-overlapping rectangular prisms.
- Apply the distributive property to break apart factors for solving multi-digit multiplication problems.
- Multiply three-, four-, and five-digit numbers by two-digit numbers using the standard algorithm.
- Divide three- and four-digit dividends by two-digit divisors using strategies such as area models, place-value understanding, estimating quotients, and partial quotients.
- Use the relationship between multiplication and division to estimate quotients.

Language Objectives:

- Summarize the similarities and differences between volume and area, and between cubic units and square units.
- Describe orally or in writing the connection between volume, layers, and unit cubes filling a rectangular prism without gaps or overlaps.
- Summarize the similarities and differences between volume, area, length, and the units used to measure them.
- Explain the relationship between the volume formulas $V = L \times W \times H$ and $V = B \times H$, and describe how to use these formulas.
- List volume-related information given in diagrams of rectangular prisms.
- Write and use appropriate formulas to solve word problems involving volume.
- Draw lines on diagrams to divide solid figures into two non-overlapping rectangular prisms.
- Listen to and engage with others' arguments about volume by asking clarifying or extending questions.
- Define and use terms such as partial products and partial quotients in discussions with peers.
- Draw area models to represent multi-digit multiplication and division problems, and explain their relationship to partial products, partial quotients, and the overall product or quotient.
- Explain the inverse relationship between multiplication and division.

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- Construct and present arguments using objects, diagrams, and models to support mathematical reasoning.

Unit Enduring Understandings:

Students will know...

- Volume is the amount of space inside a three-dimensional figure.
- The volume of a figure is determined by how many unit cubes fit inside it.
- Finding the area of rectangles is an important first step in calculating the volume of rectangular prisms.
- Place value, area models, and other strategies can be used to multiply multi-digit numbers and divide by two-digit divisors.

Unit Essential Questions:

- How does the number of unit cubes inside a figure help you determine its volume?
- How would you describe or define volume?
- What connection exists between the area of a rectangle and the volume of a rectangular prism?
- What strategies can you use to multiply and divide larger multi-digit numbers?

Instructional Plan

Suggested Activities

- *Ready Classroom Mathematics* uses a discourse-based instructional routine. Lessons are divided into Explore, Develop, and Refine sessions where students engage in a Try-Discuss-Connect routine. Small Group differentiation activities are designed to Prepare, Reteach, Reinforce, or Extend the learning. Independent Learning Activities personalize instruction to all learners.

Whole Group Instruction

- Session Activities
 - Explore--Students draw on prior knowledge and make connections to new concepts
 - Develop--Students develop strategies and understanding through problem solving and discourse
 - Refine--Students deepen their understanding and strengthen their skills
- What Happens In the Classroom
 - Students make sense of problems and attempt their own representations and solution strategies.
 - Hints are provided to students in the form of questions to consider as they solve each problem
 - Students partner with another student to explain their thinking, representations, and solutions. Pair/Share questions in the worktexts support partner conversations.

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- Students make connections between their strategies and those of their partner. They discuss similarities and differences and compare their representations, strategies, and answers
- The teacher circulates to assess student understanding and provide differentiated support. The teacher observes student thinking and student work.
- Whole group discussion allows for students to show their thinking
- Try-Discuss Connect Routine
 - Try
 - Make sense of the problem
 - Solve and support your thinking
 - Discuss
 - Share your thinking with a partner
 - Compare Strategies
 - Connect
 - Make connections and reflect on what you have learned
 - Apply your thinking to a new problem

Resources And Text

- Ready Classroom Teacher Toolkit
 - Instruction and Practice
 - Editable Powerpoint
 - Interactive Tutorial
 - Student Worktext
 - Discourse Cards
 - Digital Manipulatives
 - Math Journal
 - Lesson Vocabulary Activities
 - Editable Assessments
 - Unit Game
 - Exit Ticket

Small Group Differentiation

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

Independent Learning

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Math Center Activities

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- Additional Practice Activities
- Online Fluency Games

Standards for Mathematical Practice

- Mathematical Practices help students use math thinking to solve problems. Students learn how to develop Mathematical habits through the instructional design which blends content and practice standards.

Mathematical Practice	Habit
Make sense of problems and persevere in solving them	Solve problems
Reason abstractly and quantitatively	Think and reason
Construct viable arguments and critique the reasoning of others	Show and explain
Model with Mathematics	Use math in the real world
Use appropriate tools strategically	Choose a tool
Attend to precision	Be clear and precise
Look for and make use of structure	Zoom in and out
Look for and express regularity in repeated reasoning	Use patterns

Evidence of Student Learning

Formative Assessments:

- Teacher Observation
- Games
- Performance Assessment
- Anecdotal Records
- Exit Slips
- Self Checks
- Oral Assessment/Conferencing
- Portfolios/Journals
- Daily Classwork
- Mid-Unit Assessment

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Summative Assessments

- Unit Tests
- Lesson Quizzes
- Writing Samples

Benchmark Assessments:

- Unit Assessments
- iReady Diagnostic Assessments

Alternative Assessments

- Portfolio review
- Anecdotal Notes

Performance Tasks:

- Lesson Performance Tasks
- Math In Action Activity

Suggested Options for Differentiation and Modifications

Special Education

- Follow all IEP modifications.
- Provide visuals, graphic organizers, and manipulatives.
- Pre-teach and review vocabulary and concepts.
- Offer summaries, word banks, and visual glossaries.
- Use leveled texts and scaffolds for complex tasks.
- Provide small-group guided instruction.
- Use peer tutoring or a supportive “buddy.”
- Allow preferential seating.
- Give extra time on tasks and assessments.
- Accept oral or dictated responses.
- Shorten or adjust the number and types of questions.
- Provide large-print, Braille, or digital text with audio supports.
- Use scribes or communication devices when needed.

Students with 504 Plans

- Follow the 504 plan.
- Provide extra time for assignments/tests.
- Offer small-group settings.
- Accept oral or dictated responses.
- Provide large-print, Braille, or digital text.
- Allow use of a scribe or communication device.

Students at Risk of School Failure

- Use visuals and hands-on supports.
 - Pre-teach vocabulary and key concepts.
 - Provide small-group instruction and guided practice.
 - Read aloud directions; model steps.
 - Assign peer tutors or partners.
 - Offer preferential seating.
 - Break down multi-step tasks into smaller parts.
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Gifted and Talented

- Ask open-ended, higher-order questions (analyze, evaluate, create).
 - Use “why” and “what if” prompts to deepen thinking.
 - Provide extension activities based on interests.
 - Offer advanced reading lists or enrichment projects.
 - Group flexibly by ability, interest, or project choice.
 - Use organizers, puzzles, and independent research tasks.
 - Provide options and choice in assignments.
 - Encourage participation in simulations and problem-solving challenges.
 - Include opportunities for reflection and debriefing.
-

Multilingual Learners

- Collaborate with ESL/MLL specialists.
 - Provide small-group instruction with language scaffolds.
 - Pre-teach vocabulary; label classroom items and visuals.
 - Use visual glossaries, cognates, and graphic organizers.
 - Offer sentence frames and speaking supports.
 - Allow oral responses and extra time on assignments.
 - Provide audio books, recorded directions, or read-aloud support.
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Diversity and Inclusion

- Respect and incorporate cultural traditions.
- Provide alternative assignments when appropriate.
- Use visuals and clear, direct language.
- Collaborate with language and support staff.
- Maintain a structured, inclusive classroom environment.

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- Build strong connections with families and caregivers.

Supplemental Resources

Instructional Materials:

- Ready Classroom Teacher Toolkit

Supplemental Materials:

- Ready Prerequisite Lessons
- Tools for Instruction
- Differentiated Math Center Activities
- Enrichment Activities

Intervention Materials:

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Illustrative Mathematics

OCEAN ACADEMY CHARTER SCHOOL Unit 2 Overview

Content Area: Mathematics

Unit Title: Unit 2: Decimals and Fractions

Duration: 39 Days

Target Course/Grade Level: Grade 5

Introduction/Unit Focus:

In this unit, fifth-grade students will deepen their understanding of the base-ten number system, numerical expressions, and operations with whole numbers, decimals, and fractions. The unit begins with an emphasis on place value, helping students recognize that the value of a digit in a number is determined by its position. Students will explore how each place in a number represents ten times as much as the place to its right and one-tenth of the place to its left. This understanding will support their ability to interpret and manipulate numbers across a wide range, from millions to hundredths.

Students will build on their ability to read and write whole numbers and decimals in standard, word, and expanded forms. They will develop fluency in comparing and rounding decimals to any place and will apply this skill in real-world problem-solving contexts. Throughout the unit, students will also extend their understanding of the properties of multiplication and division, using patterns and powers of ten to multiply and divide whole numbers and decimals efficiently.

The unit also introduces students to writing and interpreting numerical expressions. They will analyze numerical expressions without necessarily evaluating them, focusing on understanding

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how grouping symbols and operations convey meaning. Estimation strategies will be used regularly to assess the reasonableness of answers and reinforce number sense.

As students progress, they will transition into working with fractions and decimals in more complex ways. They will add and subtract fractions and mixed numbers with unlike denominators by finding equivalent fractions and using common benchmarks. Additionally, they will regroup fractions greater than one into mixed numbers and vice versa, applying this knowledge when solving real-world and mathematical problems. Decimals will also be added and subtracted to the hundredths place, with students estimating and justifying their results based on place-value understanding and rounding strategies.

Throughout the unit, students will be expected to recall and apply basic addition and subtraction facts, as well as multiplication and division strategies, to support the development of more advanced skills. By the end of the unit, students will be proficient in performing operations with multi-digit whole numbers and decimals, interpreting and writing numerical expressions, and applying their understanding of place value and equivalent fractions to solve a variety of mathematical problems.

Disciplinary Concepts for the Unit

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Content Statements

This unit extends students’ understanding of addition and subtraction of decimals and fractions.

Standards/Learning Targets: New Jersey Student Learning Standards for Mathematics, Reading/Language Arts, Technology

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Content Standards	Suggested Mathematical Practices	Critical Knowledge & Skills
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5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP6. Attend to precision. MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.	Concept(s): ➤ Quantitative relationships exist between the digits in place value positions of a multi-digit number. Students are able to: ➤ explain that a digit in one place represents 1/10 of what it would represent in the place to its left. ➤ explain that a digit in one place represents ten times what it would represent in the place to its right. Learning Goal 1: Explain that a digit in one place represents 1/10 of what it would represent in the place to its left and ten times what it would represent in the place to its right.
5.NBT.A.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP3. Construct viable arguments and critique the reasoning of others. MP6. Attend to precision.	Concept(s): ➤ Scientific notation and exponents Students are able to: ➤ Explain patterns in the number of zeros of the product when multiplying a whole number by powers of 10. ➤ Write powers of 10 using whole-number exponents.

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	MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.	Learning Goal 2: Explain patterns in the number of zeros in the product when a whole number is multiplied by a power of 10; represent powers of 10 using whole-number exponents.
5.NBT.A.3. Read, write, and compare decimals to thousandths. 5.NBT.A.3a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. 5.NBT.A.3b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP5. Use appropriate tools strategically. MP6. Attend to precision. MP7. Look for and make use of structure.	Concept(s): ➤ Multiple representations of whole numbers Students are able to: ➤ Read and write decimals to thousandths using base-ten numerals. ➤ Read and write decimals to thousandths using number names. ➤ Read and write decimals to thousandths using expanded form. ➤ Compare two decimals to thousandths using $>$, $=$, and $<$ symbols. ➤ Compare decimals when each is presented in a different form (base-ten numeral, number name, and expanded form). Learning Goal 5: Compare two decimals to thousandths using $>$, $=$, and $<$ for numbers presented as base ten numerals, number names, and/or in expanded form.
5.NBT.A.4. Use place value understanding to round decimals to any place.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine.	Concept(s): No new concept(s) introduced Students are able to: ➤ Round decimals to any place value.

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	MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP5. Use appropriate tools strategically. MP6. Attend to precision. MP7. Look for and make use of structure.	Learning Goal 6: Round decimals to any place value.
5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Students are able to: ➤ Add and subtract decimals to hundredths using concrete models and drawings. ➤ Multiply and divide decimals to hundredths using concrete models and drawings. ➤ Add, subtract, multiply, and divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ➤ Relate the strategy to the written method and explain the reasoning used. Learning Goal 7: Add, subtract, multiply, and divide

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		decimals to hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; explain the reasoning used, relating the strategy to the written method.
5.NF.A.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$ (in general, $a/b + c/d = (ad + bc)/bd$).</i>	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Concept(s): ➤ Equivalent fractions can be used to add and subtract fractions. Students are able to: ➤ produce an equivalent sum (or difference) of fractions with like denominators from the original sum (or difference) of fractions that has unlike denominators. ➤ add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions. Learning Goal 1: Add and subtract fractions (including mixed numbers) with unlike denominators by replacing the given fractions with equivalent fractions having like denominators
5.NF.A.2. Solve word problems involving addition and subtraction of fractions referring to the same whole including cases of unlike denominators, e.g., by using visual fraction models or equations to	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them.	Concept(s): No new concept(s) introduced Students are able to: ➤ Add and subtract fractions, including mixed numbers, with unlike denominators to solve word problems.

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represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</i>	MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	➤ Represent calculations and solutions with visual fraction models and equations ➤ Estimate answers using benchmark fractions and explain whether the answer is reasonable. ➤ Estimate answers by reasoning about the size of the fractions and explain whether the answer is reasonable. Learning Goal 2: Solve word problems involving adding or subtracting fractions with unlike denominators, and determine if the answer to the word problem is reasonable, using estimations with benchmark fractions.
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New Jersey Student Learning Standards: Interdisciplinary Connections

W.IW.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

W.RW.5.7. Write routinely over extended time frames (time for research and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

SL.PE.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

SL.II.5.2. Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally).

RI.MF.5.6. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.

L.VL.5.2. Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly

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from a range of strategies.	
New Jersey Student Learning Standards: Career Readiness, Life Literacies, and Key Skills Articulation Guide	
Core Ideas	Performance Expectations (Identified with Standard Number and statement)
Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.	9.4.5.CI.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).
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.	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.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).
New Jersey Student Learning Standards: Computer Science and Design Thinking Articulation Guide	
Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Shared features allow for common troubleshooting strategies that can be effective for many systems.	8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
Data can be organized, displayed, and presented to highlight relationships.	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
New Jersey Student Learning Standards: Climate Change Mandate	
Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

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Knowledge and Skills

Unit Learning Targets (Objectives):

Students will be able to...

Content Objectives:

- Understand that place value in decimal numbers follows the same base-ten concepts as whole numbers.
- Identify the value of a digit as 10 times the value of the digit to its right and $\frac{1}{10}$ the value of the digit to its left.
- Explain how multiplying or dividing by powers of 10 affects the value and placement of decimals.
- Read and write decimals to the thousandths place using numerals, number names, and expanded form.
- Compare decimals to the thousandths place using inequality symbols ($<$, $>$, $=$).
- Round decimals to the nearest whole number, tenth, and hundredth using place value understanding.
- Add and subtract decimals to the hundredths place using a variety of strategies.
- Write equivalent fractions with common denominators to add and subtract fractions and mixed numbers with unlike denominators.
- Use visual models to represent addition and subtraction of fractions with unlike denominators.
- Solve word problems involving addition and subtraction of fractions, mixed numbers, and decimals, using benchmark fractions and rounded decimals to estimate and check solutions.

Language Objectives:

- Name the place value of digits in decimals up to the thousandths place.
- Use base-ten blocks or diagrams to represent decimals in tenths and hundredths.
- Place decimals less than one on a number line and explain changes in digit values when moving left or right in place value.
- Record and extend place value patterns with models and equations.
- Use the language of equivalent fractions to describe decimal equivalencies.
- Read and write powers of 10 using exponents and explain their effect on decimal placement.
- Read aloud decimals written in numerals, number names, and expanded form, and write decimals from spoken word forms.

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- Use models such as base-ten blocks, number lines, and fraction diagrams to explain addition and subtraction of decimals and fractions.
- Define and use terms such as “common denominator” and “equivalent fractions” in discussions with peers.
- Write inequality statements comparing decimals and explain rounding decisions.
- Draw diagrams or write equations to represent addition and subtraction word problems involving decimals and fractions.
- Estimate sums and differences using benchmark fractions or rounded decimals and justify the reasonableness of solutions through comparison to estimates.

Unit Enduring Understandings:

Students will know...

- Place value in decimals follows the same base-ten patterns as whole numbers. Understanding this helps you read, write, round decimals, and recognize how much larger or smaller one decimal place is compared to another. You can use your knowledge of patterns when multiplying by 10 to understand multiplying and dividing by powers of ten.
- Knowing how to add and subtract whole numbers supports adding and subtracting decimals.

Unit Essential Questions:

- How can understanding place value help you read, write, compare, and round decimals?
- Why is it important to understand adding and subtracting whole numbers when working with decimals?
- How can patterns help you multiply and divide by powers of ten?
- How do equivalent fractions help you add and subtract fractions with unlike denominators?

Instructional Plan

Suggested Activities

- *Ready Classroom Mathematics* uses a discourse-based instructional routine. Lessons are divided into Explore, Develop, and Refine sessions where students engage in a Try-Discuss-Connect routine. Small Group differentiation activities are designed to Prepare, Reteach, Reinforce, or Extend the learning. Independent Learning Activities personalize instruction to all learners.

Whole Group Instruction

- Session Activities
 - Explore--Students draw on prior knowledge and make connections to new concepts
 - Develop--Students develop strategies and understanding through problem solving and discourse
 - Refine--Students deepen their understanding and strengthen their skills

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- What Happens In the Classroom
 - Students make sense of problems and attempt their own representations and solution strategies.
 - Hints are provided to students in the form of questions to consider as they solve each problem
 - Students partner with another student to explain their thinking, representations, and solutions. Pair/Share questions in the worktexts support partner conversations.
 - Students make connections between their strategies and those of their partner. They discuss similarities and differences and compare their representations, strategies, and answers
 - The teacher circulates to assess student understanding and provide differentiated support. The teacher observes student thinking and student work.
 - Whole group discussion allows for students to show their thinking
- Try-Discuss Connect Routine
 - Try
 - Make sense of the problem
 - Solve and support your thinking
 - Discuss
 - Share your thinking with a partner
 - Compare Strategies
 - Connect
 - Make connections and reflect on what you have learned
 - Apply your thinking to a new problem

Resources And Text

- Ready Classroom Teacher Toolkit
 - Instruction and Practice
 - Editable Powerpoint
 - Interactive Tutorial
 - Student Worktext
 - Discourse Cards
 - Digital Manipulatives
 - Math Journal
 - Lesson Vocabulary Activities
 - Editable Assessments
 - Unit Game
 - Exit Ticket

Small Group Differentiation

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

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- Extend
 - Enrichment Activities

Independent Learning

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Math Center Activities
- Additional Practice Activities
- Online Fluency Games

Standards for Mathematical Practice

- Mathematical Practices help students use math thinking to solve problems. Students learn how to develop Mathematical habits through the instructional design which blends content and practice standards.

Mathematical Practice	Habit
Make sense of problems and persevere in solving them	Solve problems
Reason abstractly and quantitatively	Think and reason
Construct viable arguments and critique the reasoning of others	Show and explain
Model with Mathematics	Use math in the real world
Use appropriate tools strategically	Choose a tool
Attend to precision	Be clear and precise
Look for and make use of structure	Zoom in and out
Look for and express regularity in repeated reasoning	Use patterns

Evidence of Student Learning

Formative Assessments:

- Teacher Observation
- Games
- Performance Assessment

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- Anecdotal Records
- Exit Slips
- Self Checks
- Oral Assessment/Conferencing
- Portfolios/Journals
- Daily Classwork
- Mid-Unit Assessment

Summative Assessments

- Unit Tests
- Lesson Quizzes
- Writing Samples

Benchmark Assessments:

- Unit Assessments
- iReady Diagnostic Assessments

Alternative Assessments

- Portfolio review
- Anecdotal Notes

Performance Tasks:

- Lesson Performance Tasks
- Math In Action Activity

Suggested Options for Differentiation and Modifications

Special Education

- Follow all IEP modifications.
- Provide visuals, graphic organizers, and manipulatives.
- Pre-teach and review vocabulary and concepts.
- Offer summaries, word banks, and visual glossaries.
- Use leveled texts and scaffolds for complex tasks.
- Provide small-group guided instruction.
- Use peer tutoring or a supportive “buddy.”
- Allow preferential seating.
- Give extra time on tasks and assessments.
- Accept oral or dictated responses.
- Shorten or adjust the number and types of questions.
- Provide large-print, Braille, or digital text with audio supports.
- Use scribes or communication devices when needed.

Students with 504 Plans

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- Follow the 504 plan.
 - Provide extra time for assignments/tests.
 - Offer small-group settings.
 - Accept oral or dictated responses.
 - Provide large-print, Braille, or digital text.
 - Allow use of a scribe or communication device.
-

Students at Risk of School Failure

- Use visuals and hands-on supports.
 - Pre-teach vocabulary and key concepts.
 - Provide small-group instruction and guided practice.
 - Read aloud directions; model steps.
 - Assign peer tutors or partners.
 - Offer preferential seating.
 - Break down multi-step tasks into smaller parts.
-

Gifted and Talented

- Ask open-ended, higher-order questions (analyze, evaluate, create).
 - Use “why” and “what if” prompts to deepen thinking.
 - Provide extension activities based on interests.
 - Offer advanced reading lists or enrichment projects.
 - Group flexibly by ability, interest, or project choice.
 - Use organizers, puzzles, and independent research tasks.
 - Provide options and choice in assignments.
 - Encourage participation in simulations and problem-solving challenges.
 - Include opportunities for reflection and debriefing.
-

Multilingual Learners

- Collaborate with ESL/MLL specialists.
 - Provide small-group instruction with language scaffolds.
 - Pre-teach vocabulary; label classroom items and visuals.
 - Use visual glossaries, cognates, and graphic organizers.
 - Offer sentence frames and speaking supports.
 - Allow oral responses and extra time on assignments.
 - Provide audio books, recorded directions, or read-aloud support.
-

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Diversity and Inclusion

- Respect and incorporate cultural traditions.
- Provide alternative assignments when appropriate.
- Use visuals and clear, direct language.
- Collaborate with language and support staff.
- Maintain a structured, inclusive classroom environment.
- Build strong connections with families and caregivers.

Supplemental Resources

Instructional Materials:

- Ready Classroom Teacher Toolkit

Supplemental Materials:

- Ready Prerequisite Lessons
- Tools for Instruction
- Differentiated Math Center Activities
- Enrichment Activities

Intervention Materials:

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Illustrative Mathematics

OCEAN ACADEMY CHARTER SCHOOL
Unit 3 Overview

Content Area: Mathematics

Unit Title: Unit 3: More Decimals and Fractions

Duration: 46 Days

Target Course/Grade Level: Grade 5

Introduction/Unit Focus:

In this unit, fifth-grade students will build on their previous understanding of place value, multiplication, and division to perform operations with multi-digit whole numbers and decimals to the hundredths. Students will develop fluency with both multiplication and division algorithms, applying them to increasingly complex problems involving decimals and whole numbers. They will use place-value understanding, properties of operations, and various

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models such as partial products, area models, and equations to explain and justify their calculations.

The unit emphasizes the deepening of place-value knowledge, especially as it relates to decimals. Students will multiply and divide decimals by whole numbers and by other decimals, using both standard algorithms and conceptual models to support their understanding. This work requires familiarity with properties of operations, as well as the ability to interpret how moving digits within a decimal affects the value of the number.

Another major focus of this unit is the multiplication and division of fractions. Students will learn to interpret a fraction as division and use this understanding to solve real-world problems. They will multiply fractions by whole numbers, multiply a fraction by another fraction, and divide whole numbers by unit fractions and vice versa. Visual models such as fraction bars, area models, and number lines are used throughout the unit to help students reason about fractional operations conceptually before applying standard procedures.

Students will also explore the concept of area in new ways, using multiplication to find the area of rectangles with fractional side lengths. Through hands-on practice and visual reasoning, they will understand how tiling and area models connect to the formula for area and how that formula can be extended to include fractional measurements. This exploration reinforces the link between geometry and operations.

In addition, the unit introduces students to multiplication as scaling, where they interpret the size of a product in relation to the size of one of its factors, helping to develop number sense and support proportional reasoning. They will analyze patterns in multiplication and division, identify relationships between numbers, and apply this reasoning to solve a variety of mathematical problems.

Throughout the unit, students rely on foundational skills developed in earlier grades, such as understanding of basic multiplication and division facts, familiarity with fractions, and the ability to use equations and models to represent and solve problems. As they progress through the lessons, they will grow increasingly confident in applying their understanding of multiplication and division to a wide range of number types and problem contexts, setting a strong foundation for more advanced math in later grades.

Disciplinary Concepts for the Unit

Standard 9.1 Personal Financial Literacy

This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

Standard 9.2 Career Awareness, Exploration, Preparation and Training

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This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

Standard 9.4 Life Literacies and Key Skills

This standard outline key literacies and technical skills such as critical thinking, global and cultural awareness, and technology literacy* that are critical for students to develop to live and work in an interconnected global economy.

Standard 8.1 Computer Science

Computer Science outlines a comprehensive set of concepts and skills, such as data and analysis, algorithms and programming, and computing systems.

Standard 8.2 Design Thinking

Technology, outlines the technological design concepts and skills essential for technological and engineering literacy. The framework design includes Engineering Design, Ethics and Culture, and the Effects of Technology on the Natural world among the disciplinary concepts

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocide in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Diversity and Inclusion: C.18A:35-4.36a Curriculum to include instruction on diversity and inclusion.

The instruction shall:

- (1) highlight and promote diversity, including economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and ethnicity, disabilities, and religious tolerance;
- (2) examine the impact that unconscious bias and economic disparities have at both an individual level and on society as a whole; and
- (3) encourage safe, welcoming, and inclusive environments for all students regardless of race or ethnicity, sexual and gender identities, mental and physical disabilities, and religious beliefs.

Asian Americans and Pacific Islanders (AAPI)

Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in

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kindergarten through Grade 12 (P.L.2021, c.416).

21st Century Themes and Skills

“Twenty-first century themes and skills” means themes such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; learning and innovation skills, including creativity and innovation, critical thinking and problem solving, and communication and collaboration; information, media, and technology skills; and life and career skills, including flexibility. Career readiness, life literacies, and key skills education provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.”

Content Statements

This unit introduces students to multiplication and division of decimals and fractions.

Standards/Learning Targets: New Jersey Student Learning Standards for Mathematics, Reading/Language Arts, Technology

Focus Standards (Major Standards) <https://www.nj.gov/education/cccs/>

Content Standards	Suggested Mathematical Practices	Critical Knowledge & Skills
5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ➤ Add and subtract decimals to hundredths using concrete models and drawings. ➤ Multiply and divide decimals to hundredths using concrete models and drawings. ➤ Add, subtract, multiply, and divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship

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		between addition and subtraction. ➤ Relate the strategy to the written method and explain the reasoning used. Learning Goal 7: Add, subtract, multiply, and divide decimals to hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; explain the reasoning used, relating the strategy to the written method.
5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Concept(s): ➤ Quantitative relationships exist between the digits in place value positions of a multi-digit number. Students are able to: ➤ Explain that a digit in one place represents 1/10 of what it would represent in the place to its left. ➤ Explain that a digit in one place represents ten times what it would represent in the place to its right. Learning Goal 1: Explain that a digit in one place represents

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		1/10 of what it would represent in the place to its left and ten times what it would represent in the place to its right.
5.NF.B.3. Interpret a fraction as division of the numerator by the denominator (i.e., $a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure.	Concept(s): Fractions represent division. ➤ Students are able to: Represent a fraction as a Division statement ($a/b = a \div b$). ➤ Divide whole numbers in order to solve real world problems, representing the quotient as a fraction or a mixed number. ➤ Represent word problems involving division of whole numbers using visual fraction models and equations. Learning Goal 3: Interpret a fraction as a division of the numerator by the denominator; solve word problems in which division of whole numbers leads to fractions or mixed numbers as solutions.
5.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine.	Concept(s): No new concept(s) introduced Students are able to:

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5.NF.B.4a. Interpret the product $(a/b) \times q$ as a part of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. <i>For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)</i> 5.NF.B.4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP6. Attend to precision. MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.	➤ For whole number or fraction q, represent $(a/b) \times q$ as a parts of a partition of q into b equal parts [e.g. using a visual fraction model, $(3/4) \times 5$ can be represented by 3 parts, after partitioning 5 objects into 4 equal parts]. ➤ For whole number or fraction q, represent $(a/b) \times q$ as $a \times q \div b$ [e.g. showing that $(2/5) \times 3$ is equivalent to $(2 \times 3) \div 5$]. ➤ From a story context, interpret $(a/b) \times q$ as a part of a partition of q into b equal parts. ➤ Tile a rectangle having fractional side lengths using unit squares of the appropriate unit fraction [e.g. given a $3 \frac{1}{4}$ inch $\times$ $7 \frac{3}{4}$ inch rectangle, tile the rectangle using $\frac{1}{4}$ inch tiles]. ➤ Show that the area found by tiling with unit fraction tiles is the same as would be found by multiplying the side lengths. Learning Goal 9: For whole number or fraction q, interpret the product $(a/b) \times q$ as a part of a whole
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		partitioned into b equal parts added q times (e.g. using a visual fraction model). Learning Goal 10: Tile a rectangle with unit fraction squares to find the area and multiply side lengths to find the area of the rectangle, showing that the areas are the same.
5.NF.B.5. Interpret multiplication as scaling (resizing), by: 5.NF.B.5a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. 5.NF.B.5b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP6. Attend to precision. MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.	Concept(s): ➤ Multiplication as resizing (scaling) Students are able to: ➤ Compare the size of a product to the size of one of its factors, considering the size of the other factor (at least one factor is a fraction). ➤ Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number. ➤ Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. ➤ Explain that multiplying a given number by a fraction equivalent to 1

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		does not change the product. Learning Goal 5: Explain how a product is related to the magnitude of the factors, including cases in which one factor is a fraction greater than 1 and cases in which one factor is a fraction less than 1.
5.NF.B.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP6. Attend to precision. MP7. Look for and make use of structure	5.NF.B.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. Learning Goal 6: Solve real-world problems involving multiplication of fractions (including mixed numbers), using visual fraction models or equations to represent the problem.
5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. *(benchmarked) 5.NF.B.7a. Interpret division of a unit fraction by a non-zero whole number, and compute such	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively.	Concept(s): No new concept(s) introduced Students are able to: ➤ Use a story context to interpret division of a unit fraction by a whole number. ➤ Divide a unit fraction by a whole number and

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quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$. 5.NF.B.7b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$. 5.NF.B.7c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$-cup servings are in 2 cups of raisins?	MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.	represent with visual fraction models. ➤ Use a story context to interpret division of a whole number by a unit fraction. ➤ Divide a whole number by a unit fraction and represent with visual fraction models. ➤ Divide unit fractions by whole numbers to solve real-world problems, using visual fraction models and equations to represent the problem. ➤ Divide whole numbers by unit fractions to solve real-world problems, using visual fraction models and equations to represent the problem. Learning Goal 7: Divide a unit fraction by a non-zero whole number and interpret by creating a story context or visual fraction model. Learning Goal 8: Divide a whole number by a unit fraction and interpret by creating a story context or visual fraction model. Learning Goal 9: Solve real-world problems involving division of unit fractions by
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		whole numbers or whole numbers by unit fractions.
New Jersey Student Learning Standards: Interdisciplinary Connections		
W.IW.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.RW.5.7. Write routinely over extended time frames (time for research and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. SL.PE.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others’ ideas and expressing their own clearly. SL.II.5.2. Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally). RI.MF.5.6. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears. L.VL.5.2. Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.		
New Jersey Student Learning Standards: Career Readiness, Life Literacies, and Key Skills Articulation Guide		
Core Ideas	Performance Expectations (Identified with Standard Number and statement)	
Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.	9.4.5.CI.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).	
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.	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.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).	
New Jersey Student Learning Standards: Computer Science and Design Thinking Articulation Guide		

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Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Shared features allow for common troubleshooting strategies that can be effective for many systems.	8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
Data can be organized, displayed, and presented to highlight relationships.	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
New Jersey Student Learning Standards: Climate Change Mandate	
Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

Knowledge and Skills
Unit Learning Targets (Objectives): <i>Students will be able to...</i> Content Objectives: ➤ Estimate and multiply decimals to the hundredths place by whole numbers using place-value reasoning. ➤ Multiply decimals to the hundredths with products extending to thousandths. ➤ Divide decimals to the hundredths place and explain the reasoning behind decimal division. ➤ Represent fractions as division using visual fraction models and solve related word problems where quotients are fractions or mixed numbers. ➤ Understand the meaning of multiplying by a fraction and use visual models to multiply whole numbers and fractions. ➤ Find the area of rectangles with fractional side lengths by tiling and by multiplying fractional side lengths, demonstrating the connection between tiling and multiplication. ➤ Understand multiplication as scaling, recognizing how multiplying by numbers greater

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than 1 or less than 1 affects the size of the product.

- Represent and solve real-world problems involving multiplication of fractions and mixed numbers using visual models and equations.
- Identify and solve division problems involving unit fractions divided by whole numbers and whole numbers divided by unit fractions, using visual fraction models.
- Use the inverse relationship between multiplication and division to write related multiplication equations for division problems involving unit fractions.

Language Objectives:

- Use concrete models, drawings, decimal grids, and area models to multiply decimals and explain the relationship between models, factors, and products.
- Estimate products and quotients involving decimals and justify reasoning using place-value concepts.
- Describe orally or in writing the connection between fractions and division using visual fraction models.
- Draw visual fraction models and write equations to represent division word problems where quotients are fractions.
- Explain orally phrases like “one half of” or “one fourth of” as multiplication by fractions.
- Create and explain area models illustrating the multiplication of fractions and how they relate to factors and products.
- Compare and critique reasoning about fraction multiplication with peers.
- Use visual models to compare methods of finding area by tiling and multiplying fractional side lengths and write equations that represent these area models.
- Demonstrate the concept of scaling with visual models and describe how multiplying by factors greater than or less than one affects the product size.
- Draw pictures and write equations to represent multiplication word problems involving fractions and mixed numbers, and compare visual models with equations.
- Illustrate division involving unit fractions and whole numbers through visual models, explaining how multiplication relates to finding quotients.
- Draw visual models and write equations for word problems involving division with unit fractions, describing the connections between models and equations.
- Write multiplication equations to verify quotients found in division problems involving unit fractions.

Unit Enduring Understandings:

Students will know...

- Fractions can be understood as division expressions, where the numerator is divided by the denominator.
- You can use your knowledge of multiplying whole numbers to multiply decimals and fractions.
- Understanding how factors greater than or less than 1 affect a product helps you reason about multiplication outcomes.
- The relationship between multiplication and division can be used to divide whole numbers by unit fractions and to divide unit fractions by whole numbers.

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Unit Essential Questions:

- How do multiplication and division relate to each other in solving problems?
- In what ways is multiplying decimals and fractions similar to multiplying whole numbers?
- How can comparing quantities help you understand their relationships?
- How can you use the connection between multiplication and division to divide whole numbers by unit fractions and unit fractions by whole numbers?

Instructional Plan

Suggested Activities

- *Ready Classroom Mathematics* uses a discourse-based instructional routine. Lessons are divided into Explore, Develop, and Refine sessions where students engage in a Try-Discuss-Connect routine. Small Group differentiation activities are designed to Prepare, Reteach, Reinforce, or Extend the learning. Independent Learning Activities personalize instruction to all learners.

Whole Group Instruction

- Session Activities
 - Explore--Students draw on prior knowledge and make connections to new concepts
 - Develop--Students develop strategies and understanding through problem solving and discourse
 - Refine--Students deepen their understanding and strengthen their skills
- What Happens In the Classroom
 - Students make sense of problems and attempt their own representations and solution strategies.
 - Hints are provided to students in the form of questions to consider as they solve each problem
 - Students partner with another student to explain their thinking, representations, and solutions. Pair/Share questions in the worktexts support partner conversations.
 - Students make connections between their strategies and those of their partner. They discuss similarities and differences and compare their representations, strategies, and answers
 - The teacher circulates to assess student understanding and provide differentiated support. The teacher observes student thinking and student work.
 - Whole group discussion allows for students to show their thinking
- Try-Discuss Connect Routine
 - Try
 - Make sense of the problem
 - Solve and support your thinking
 - Discuss
 - Share your thinking with a partner
 - Compare Strategies
 - Connect
 - Make connections and reflect on what you have learned
 - Apply your thinking to a new problem

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Resources And Text

- Ready Classroom Teacher Toolkit
 - Instruction and Practice
 - Editable Powerpoint
 - Interactive Tutorial
 - Student Worktext
 - Discourse Cards
 - Digital Manipulatives
 - Math Journal
 - Lesson Vocabulary Activities
 - Editable Assessments
 - Unit Game
 - Exit Ticket

Small Group Differentiation

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

Independent Learning

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Math Center Activities
- Additional Practice Activities
- Online Fluency Games

Standards for Mathematical Practice

- Mathematical Practices help students use math thinking to solve problems. Students learn how to develop Mathematical habits through the instructional design which blends content and practice standards.

Mathematical Practice	Habit
Make sense of problems and persevere in solving them	Solve problems
Reason abstractly and quantitatively	Think and reason

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Construct viable arguments and critique the reasoning of others	Show and explain
Model with Mathematics	Use math in the real world
Use appropriate tools strategically	Choose a tool
Attend to precision	Be clear and precise
Look for and make use of structure	Zoom in and out
Look for and express regularity in repeated reasoning	Use patterns

Evidence of Student Learning

Formative Assessments:

- Teacher Observation
- Games
- Performance Assessment
- Anecdotal Records
- Exit Slips
- Self Checks
- Oral Assessment/Conferencing
- Portfolios/ Journals
- Daily Classwork
- Mid-Unit Assessment

Summative Assessments

- Unit Tests
- Lesson Quizzes
- Writing Samples

Benchmark Assessments:

- Unit Assessments
- iReady Diagnostic Assessments

Alternative Assessments

- Portfolio review
- Anecdotal Notes

Performance Tasks:

- Lesson Performance Tasks
- Math In Action Activity

Suggested Options for Differentiation and Modifications

Special Education

- Follow all IEP modifications.
 - Provide visuals, graphic organizers, and manipulatives.
 - Pre-teach and review vocabulary and concepts.
 - Offer summaries, word banks, and visual glossaries.
 - Use leveled texts and scaffolds for complex tasks.
 - Provide small-group guided instruction.
 - Use peer tutoring or a supportive “buddy.”
 - Allow preferential seating.
 - Give extra time on tasks and assessments.
 - Accept oral or dictated responses.
 - Shorten or adjust the number and types of questions.
 - Provide large-print, Braille, or digital text with audio supports.
 - Use scribes or communication devices when needed.
-

Students with 504 Plans

- Follow the 504 plan.
 - Provide extra time for assignments/tests.
 - Offer small-group settings.
 - Accept oral or dictated responses.
 - Provide large-print, Braille, or digital text.
 - Allow use of a scribe or communication device.
-

Students at Risk of School Failure

- Use visuals and hands-on supports.
 - Pre-teach vocabulary and key concepts.
 - Provide small-group instruction and guided practice.
 - Read aloud directions; model steps.
 - Assign peer tutors or partners.
 - Offer preferential seating.
 - Break down multi-step tasks into smaller parts.
-

Gifted and Talented

- Ask open-ended, higher-order questions (analyze, evaluate, create).
- Use “why” and “what if” prompts to deepen thinking.

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- Provide extension activities based on interests.
 - Offer advanced reading lists or enrichment projects.
 - Group flexibly by ability, interest, or project choice.
 - Use organizers, puzzles, and independent research tasks.
 - Provide options and choice in assignments.
 - Encourage participation in simulations and problem-solving challenges.
 - Include opportunities for reflection and debriefing.
-

Multilingual Learners

- Collaborate with ESL/MLL specialists.
 - Provide small-group instruction with language scaffolds.
 - Pre-teach vocabulary; label classroom items and visuals.
 - Use visual glossaries, cognates, and graphic organizers.
 - Offer sentence frames and speaking supports.
 - Allow oral responses and extra time on assignments.
 - Provide audio books, recorded directions, or read-aloud support.
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Diversity and Inclusion

- Respect and incorporate cultural traditions.
- Provide alternative assignments when appropriate.
- Use visuals and clear, direct language.
- Collaborate with language and support staff.
- Maintain a structured, inclusive classroom environment.
- Build strong connections with families and caregivers.

Supplemental Resources

Instructional Materials:

- Ready Classroom Teacher Toolkit

Supplemental Materials:

- Ready Prerequisite Lessons
- Tools for Instruction
- Differentiated Math Center Activities
- Enrichment Activities

Intervention Materials:

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)

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➤ Illustrative Mathematics

OCEAN ACADEMY CHARTER SCHOOL Unit 4 Overview	
Content Area: Mathematics	
Unit Title: Unit 4: Measurement, Data, and Geometry	Duration: 33 Days
Target Course/Grade Level: Grade 5	
Introduction/Unit Focus: In this unit, fifth-grade students explore a range of concepts spanning measurement, data representation, geometry, and the continued application of multiplication and division skills. A primary focus is developing students' ability to convert like measurement units within the same system. Students deepen their understanding of both customary and metric systems and learn how to convert between larger and smaller units, including those for length, mass, liquid volume, and time. These skills are applied in multi-step word problems that require the use of whole numbers, decimals, and fractions, promoting real-world problem-solving and mathematical reasoning. Students also engage in interpreting and representing data using line plots. Building on their understanding of fractions, they create line plots with data expressed in fractional units and use them to solve problems involving addition and subtraction of fractions with like denominators. This work reinforces number sense and supports students in making sense of quantitative data through visual representation. Through this process, they strengthen their ability to draw conclusions and communicate findings using mathematical language. The unit also emphasizes the classification of two-dimensional figures based on their properties. Students analyze and sort shapes according to attributes such as side lengths, angle types, and the presence of parallel or perpendicular lines. They use geometric vocabulary to describe and categorize figures, including various types of triangles and quadrilaterals and apply reasoning strategies to identify shared and unique properties. Venn diagrams and tree diagrams are introduced as tools to organize figures by their attributes and to visually represent category-subcategory relationships, helping students build logical thinking and organizational skills. Throughout the unit, students apply and extend prior understanding of multiplication and division, particularly as it relates to solving measurement and geometry problems. Foundational skills such as working with whole numbers and fractions, identifying place value, and interpreting basic geometric figures are critical to success in this unit. As students solve increasingly complex problems, they are encouraged to explain their reasoning, use precise mathematical vocabulary, and apply multiple strategies to verify their work. By integrating measurement, data, and geometry, this unit reinforces key mathematical practices while helping students make meaningful connections between concepts. It supports	

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the development of critical thinking and sets the stage for more abstract mathematical work in upper grades.

Disciplinary Concepts for the Unit

Standard 9.1 Personal Financial Literacy

This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

Standard 9.2 Career Awareness, Exploration, Preparation and Training

This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

Standard 9.4 Life Literacies and Key Skills

This standard outline key literacies and technical skills such as critical thinking, global and cultural awareness, and technology literacy* that are critical for students to develop to live and work in an interconnected global economy.

Standard 8.1 Computer Science

Computer Science outlines a comprehensive set of concepts and skills, such as data and analysis, algorithms and programming, and computing systems.

Standard 8.2 Design Thinking

Technology, outlines the technological design concepts and skills essential for technological and engineering literacy. The framework design includes Engineering Design, Ethics and Culture, and the Effects of Technology on the Natural world among the disciplinary concepts

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocide in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Diversity and Inclusion: C.18A:35-4.36a Curriculum to include instruction on diversity and inclusion.

The instruction shall:

- (1) highlight and promote diversity, including economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and

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- ethnicity, disabilities, and religious tolerance;
- (2) examine the impact that unconscious bias and economic disparities have at both an individual level and on society as a whole; and
- (3) encourage safe, welcoming, and inclusive environments for all students regardless of race or ethnicity, sexual and gender identities, mental and physical disabilities, and religious beliefs.

Asian Americans and Pacific Islanders (AAPI)

Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416).

21st Century Themes and Skills

“Twenty-first century themes and skills” means themes such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; learning and innovation skills, including creativity and innovation, critical thinking and problem solving, and communication and collaboration; information, media, and technology skills; and life and career skills, including flexibility. Career readiness, life literacies, and key skills education provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.”

Content Statements

This unit extends students’ understanding of measurement, data, and geometry.

Standards/Learning Targets: New Jersey Student Learning Standards for Mathematics, Reading/Language Arts, Technology

Focus Standards (Major Standards) <https://www.nj.gov/education/cccs/>

Content Standards	Suggested Mathematical Practices	Critical Knowledge & Skills
5.M.A.1. Convert among different-sized standard Measurement units within a Given measurement system (e.g., convert 5 cm to 0.05m), and use these conversions in solving multi-step, real world problems.	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively.	Concept(s): Measurement units can be converted within a given measurement system. Students are able to: ➤ Convert from one measurement unit to another within a given measurement system (e.g., convert 5 cm to 0.05 m, convert minutes to hours).

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	MP4: Model with mathematics. MP5: Use appropriate tools strategically. MP6: Attend to precision. MP7: Look for and make use of structure.	➤ Solve multi-step, real world problems that require conversions. Learning Goal: Convert standard measurement units within the same system (e.g., centimeters to meters) in order to solve multi-step problems.
5.DL.B.5. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP1: Make sense of problems and persevere in solving them. MP2: Reason abstractly and quantitatively. MP5: Use appropriate tools strategically.	Concept(s): No new concept(s) introduced Students are able to: ➤ Use measurement information to create a line plot. ➤ Using measurement information presented in line plots, add, subtract, multiply and divide fractions in order to solve problems. Learning Goal: Make a line plot to display a data set in measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$) and use it to solve problems involving the four operations on fractions with unlike denominators.
5.G.B.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so</i>	*SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the <i>Try-Discuss-Connect</i> routine. MP5: Use appropriate tools strategically.	Concept(s): ➤ Attributes belonging to a category of two-dimensional figures also belong to <i>all</i> subcategories of that category. Students are able to:

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<i>all squares have four right angles.</i>	MP6: Attend to precision. MP7: Look for and make use of structure.	➤ Classify two-dimensional figures (triangles, quadrilaterals) based on shared attributes (e.g. parallel sides, number of sides, angle size, side length, etc.). ➤ Arrange the categories/subcategories of figures (e.g. squares, rectangles, trapezoids, etc) in a hierarchy based on attributes. ➤ Identify attributes of a two-dimensional shape based on attributes of the categories to which it belongs. Learning Goal: Classify two-dimensional figures in a hierarchy based on properties.
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**New Jersey Student Learning Standards: Interdisciplinary Connections
(Reading/Language Arts and Technology)**

W.IW.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

W.RW.5.7. Write routinely over extended time frames (time for research and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

SL.PE.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

SL.II.5.2. Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally).

RI.MF.5.6. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.

L.VL.5.2. Determine or clarify the meaning of unknown and multiple-meaning academic and

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domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

New Jersey Student Learning Standards: [Career Readiness, Life Literacies, and Key Skills Articulation Guide](#)

Core Ideas	Performance Expectations (Identified with Standard Number and statement)
Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.	9.4.5.CI.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).
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.	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.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).

New Jersey Student Learning Standards: [Computer Science and Design Thinking Articulation Guide](#)

Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Shared features allow for common troubleshooting strategies that can be effective for many systems.	8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
Data can be organized, displayed, and presented to highlight relationships.	8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

New Jersey Student Learning Standards: [Climate Change Mandate](#)

Core Ideas	Performance Expectations (Identified with Standard Number and Statement)
Individuals can select, organize, and transform data into different visual representations and communicate insights gained	8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.

from the data.

Knowledge and Skills

Unit Learning Targets (Objectives):

Students will be able to...

Content Objectives:

- Convert measurements from larger units to smaller units and from smaller units to larger units within the same measurement system.
- Solve multi-step word problems involving conversions between different units within a measurement system.
- Write measurements given in different units using the same unit to solve problems.
- Create line plots to display measurement data expressed in fractions with unlike denominators.
- Use line plots to analyze and solve word problems related to fractional measurement data.
- Recognize that two-dimensional figures can be classified into categories based on their attributes.
- Understand that subcategories inherit all attributes of their broader categories.
- Use Venn diagrams and tree diagrams to illustrate relationships among categories and subcategories of polygons and other two-dimensional figures.

Language Objectives:

- List and explain mathematical relationships between measurement units within the same system, such as ounces and pounds or centimeters, meters, and kilometers.
- Record and communicate unit conversions between different-sized measurement units accurately.
- Draw diagrams or write equations to represent word problems involving measurement conversions.
- Recognize and discuss when a problem's solution can be expressed using either of the units given.
- Create and interpret line plots that present measurement data expressed in fractions with unlike denominators.
- Communicate clearly about conclusions drawn from data displayed in line plots.
- Use and explain key terms such as attribute, category, subcategory, and hierarchy in discussions about two-dimensional figures.
- Explain how Venn diagrams and tree diagrams illustrate relationships between categories and subcategories of shapes.
- Discuss and describe the relationships among two-dimensional figures as shown in Venn and tree diagrams.

Unit Enduring Understandings:

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Students will know...

- Two-dimensional figures can be classified into categories and subcategories based on their properties.
- Division can be used to convert between smaller and larger units within the same measurement system.
- Understanding operations with fractions helps you solve problems involving data on line plots.

Unit Essential Questions:

- In what ways can you categorize two-dimensional shapes based on their characteristics?
- How can you use division to convert measurements between smaller and larger units within the same system?
- How does understanding fraction operations help you interpret and solve problems using data from line plots?

Instructional Plan

Suggested Activities

- *Ready Classroom Mathematics* uses a discourse-based instructional routine. Lessons are divided into Explore, Develop, and Refine sessions where students engage in a Try-Discuss-Connect routine. Small Group differentiation activities are designed to Prepare, Reteach, Reinforce, or Extend the learning. Independent Learning Activities personalize instruction to all learners.

Whole Group Instruction

- Session Activities
 - Explore--Students draw on prior knowledge and make connections to new concepts
 - Develop--Students develop strategies and understanding through problem solving and discourse
 - Refine--Students deepen their understanding and strengthen their skills
- What Happens In the Classroom
 - Students make sense of problems and attempt their own representations and solution strategies.
 - Hints are provided to students in the form of questions to consider as they solve each problem
 - Students partner with another student to explain their thinking, representations, and solutions. Pair/Share questions in the worktexts support partner conversations.
 - Students make connections between their strategies and those of their partner. They discuss similarities and differences and compare their representations, strategies, and answers
 - The teacher circulates to assess student understanding and provide differentiated support. The teacher observes student thinking and student work.
 - Whole group discussion allows for students to show their thinking

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- Try-Discuss Connect Routine
 - Try
 - Make sense of the problem
 - Solve and support your thinking
 - Discuss
 - Share your thinking with a partner
 - Compare Strategies
 - Connect
 - Make connections and reflect on what you have learned
 - Apply your thinking to a new problem

Resources And Text

- Ready Classroom Teacher Toolkit
 - Instruction and Practice
 - Editable Powerpoint
 - Interactive Tutorial
 - Student Worktext
 - Discourse Cards
 - Digital Manipulatives
 - Math Journal
 - Lesson Vocabulary Activities
 - Editable Assessments
 - Unit Game
 - Exit Ticket

Small Group Differentiation

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

Independent Learning

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Math Center Activities
- Additional Practice Activities
- Online Fluency Games

Standards for Mathematical Practice

- Mathematical Practices help students use math thinking to solve problems. Students learn how to develop Mathematical habits through the instructional design which blends content and practice standards.

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Mathematical Practice	Habit
Make sense of problems and persevere in solving them	Solve problems
Reason abstractly and quantitatively	Think and reason
Construct viable arguments and critique the reasoning of others	Show and explain
Model with Mathematics	Use math in the real world
Use appropriate tools strategically	Choose a tool
Attend to precision	Be clear and precise
Look for and make use of structure	Zoom in and out
Look for and express regularity in repeated reasoning	Use patterns

Evidence of Student Learning

Formative Assessments:

- Teacher Observation
- Games
- Performance Assessment
- Anecdotal Records
- Exit Slips
- Self Checks
- Oral Assessment/Conferencing
- Portfolios/ Journals
- Daily Classwork
- Mid-Unit Assessment

Summative Assessments

- Unit Tests
- Lesson Quizzes
- Writing Samples

Benchmark Assessments:

- Unit Assessments

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- iReady Diagnostic Assessments

Alternative Assessments

- Portfolio review
- Anecdotal Notes

Performance Tasks:

- Lesson Performance Tasks
- Math In Action Activity

Suggested Options for Differentiation and Modifications

Special Education

- Follow all IEP modifications.
 - Provide visuals, graphic organizers, and manipulatives.
 - Pre-teach and review vocabulary and concepts.
 - Offer summaries, word banks, and visual glossaries.
 - Use leveled texts and scaffolds for complex tasks.
 - Provide small-group guided instruction.
 - Use peer tutoring or a supportive “buddy.”
 - Allow preferential seating.
 - Give extra time on tasks and assessments.
 - Accept oral or dictated responses.
 - Shorten or adjust the number and types of questions.
 - Provide large-print, Braille, or digital text with audio supports.
 - Use scribes or communication devices when needed.
-

Students with 504 Plans

- Follow the 504 plan.
 - Provide extra time for assignments/tests.
 - Offer small-group settings.
 - Accept oral or dictated responses.
 - Provide large-print, Braille, or digital text.
 - Allow use of a scribe or communication device.
-

Students at Risk of School Failure

- Use visuals and hands-on supports.
- Pre-teach vocabulary and key concepts.
- Provide small-group instruction and guided practice.
- Read aloud directions; model steps.

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- Assign peer tutors or partners.
 - Offer preferential seating.
 - Break down multi-step tasks into smaller parts.
-

Gifted and Talented

- Ask open-ended, higher-order questions (analyze, evaluate, create).
 - Use “why” and “what if” prompts to deepen thinking.
 - Provide extension activities based on interests.
 - Offer advanced reading lists or enrichment projects.
 - Group flexibly by ability, interest, or project choice.
 - Use organizers, puzzles, and independent research tasks.
 - Provide options and choice in assignments.
 - Encourage participation in simulations and problem-solving challenges.
 - Include opportunities for reflection and debriefing.
-

Multilingual Learners

- Collaborate with ESL/MLL specialists.
 - Provide small-group instruction with language scaffolds.
 - Pre-teach vocabulary; label classroom items and visuals.
 - Use visual glossaries, cognates, and graphic organizers.
 - Offer sentence frames and speaking supports.
 - Allow oral responses and extra time on assignments.
 - Provide audio books, recorded directions, or read-aloud support.
-

Diversity and Inclusion

- Respect and incorporate cultural traditions.
- Provide alternative assignments when appropriate.
- Use visuals and clear, direct language.
- Collaborate with language and support staff.
- Maintain a structured, inclusive classroom environment.
- Build strong connections with families and caregivers.

Supplemental Resources

Instructional Materials:

- Ready Classroom Teacher Toolkit

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Supplemental Materials:

- Ready Prerequisite Lessons
- Tools for Instruction
- Differentiated Math Center Activities
- Enrichment Activities

Intervention Materials:

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Illustrative Mathematics

OCEAN ACADEMY CHARTER SCHOOL

Unit 5 Overview

Content Area: Mathematics

Unit Title: Unit 5: Algebraic Thinking and the Coordinate Plane

Target Course/Grade Level: Grade 5

Introduction/Unit Focus:

In this unit, fifth-grade students build upon their foundational knowledge of multiplication and division to explore more advanced applications involving numerical expressions, coordinate graphing, and the analysis of patterns and relationships. The unit begins by introducing students to numerical expressions and the use of parentheses to structure mathematical operations. Students learn to evaluate expressions and to write mathematical phrases as numerical expressions, developing precision and fluency with symbolic representation.

A key component of the unit involves graphing points on the coordinate plane. Students extend their understanding of number lines and spatial reasoning by locating and plotting points in the first quadrant. They write ordered pairs and interpret the horizontal and vertical positions of points. Using real-world contexts, students graph quantities and analyze coordinate points to describe meaningful relationships, such as tracking movement over time or comparing quantities. They also calculate the horizontal and vertical distances between points, reinforcing measurement concepts and spatial awareness.

Another focus of the unit is analyzing and generating numerical patterns. Students identify rules that govern numerical sequences and generate patterns based on those rules. They describe the relationships between terms in a single sequence and compare corresponding terms in two related sequences. Through these tasks, students deepen their ability to recognize structure and regularity in mathematics, which supports algebraic thinking.

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Prior to this unit, students should be familiar with basic operations involving whole numbers and fractions, understand how to read and interpret number lines, and recognize the significance of parentheses in mathematical expressions. They should also have experience identifying perpendicular lines and distinguishing between horizontal and vertical directions. Additionally, familiarity with plotting points and understanding the attributes of geometric shapes will support their work with coordinate graphing.

By the end of the unit, students will have a stronger grasp of how to model real-world and mathematical problems using expressions, coordinate planes, and patterns. They will refine their problem-solving strategies, strengthen their mathematical reasoning, and continue to develop the ability to communicate their thinking with clarity and precision.

Disciplinary Concepts for the Unit

Standard 9.1 Personal Financial Literacy

This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

Standard 9.2 Career Awareness, Exploration, Preparation and Training

This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

Standard 9.4 Life Literacies and Key Skills

This standard outline key literacies and technical skills such as critical thinking, global and cultural awareness, and technology literacy* that are critical for students to develop to live and work in an interconnected global economy.

Standard 8.1 Computer Science

Computer Science outlines a comprehensive set of concepts and skills, such as data and analysis, algorithms and programming, and computing systems.

Standard 8.2 Design Thinking

Technology, outlines the technological design concepts and skills essential for technological and engineering literacy. The framework design includes Engineering Design, Ethics and Culture, and the Effects of Technology on the Natural world among the disciplinary concepts

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

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Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocide in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Diversity and Inclusion: C.18A:35-4.36a Curriculum to include instruction on diversity and inclusion.

The instruction shall:

- (1) highlight and promote diversity, including economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and ethnicity, disabilities, and religious tolerance;
- (2) examine the impact that unconscious bias and economic disparities have at both an individual level and on society as a whole; and
- (3) encourage safe, welcoming, and inclusive environments for all students regardless of race or ethnicity, sexual and gender identities, mental and physical disabilities, and religious beliefs.

Asian Americans and Pacific Islanders (AAPI)

Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416).

21st Century Themes and Skills

“Twenty-first century themes and skills” means themes such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; learning and innovation skills, including creativity and innovation, critical thinking and problem solving, and communication and collaboration; information, media, and technology skills; and life and career skills, including flexibility. Career readiness, life literacies, and key skills education provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.”

Content Statements

This unit extends students’ understanding of interpreting numerical expressions and introduces students to the coordinate plane.

Standards/Learning Targets: New Jersey Student Learning Standards for Mathematics, Reading/Language Arts, Technology

Focus Standards (Major Standards) <https://www.nj.gov/education/cccs/>

Content Standards

5.OA.A.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

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For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$.

Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.

5.G.A.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

5.G.A.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane

**New Jersey Student Learning Standards: Interdisciplinary Connections
(Reading/Language Arts and Technology)**

W.IW.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

W.RW.5.7. Write routinely over extended time frames (time for research and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

SL.PE.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others’ ideas and expressing their own clearly.

SL.II.5.2. Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally).

RI.MF.5.6. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.

L.VL.5.2. Determine or clarify the meaning of unknown and multiple-meaning academic and domain-specific words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

New Jersey Student Learning Standards: [Career Readiness, Life Literacies, and Key Skills Articulation Guide](#)

Core Ideas

Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the

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development of creativity and innovation skills.
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
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Core Ideas
Shared features allow for common troubleshooting strategies that can be effective for many systems.
Data can be organized, displayed, and presented to highlight relationships.
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.
New Jersey Student Learning Standards: Climate Change Mandate
Core Ideas
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.

Knowledge and Skills
Unit Learning Targets (Objectives): <i>Students will be able to...</i> Content Objectives: ➤ Evaluate numerical expressions that include grouping symbols and write expressions containing grouping symbols. ➤ Interpret numerical expressions without necessarily evaluating them. ➤ Understand the coordinate plane as a two-dimensional space formed by the intersection of horizontal and vertical number lines. ➤ Identify and plot points using their x- and y-coordinates on the coordinate plane. ➤ Graph points to represent real-world and mathematical problems and interpret coordinates in context. ➤ Find horizontal and vertical distances between points in the first quadrant and use these distances to solve problems. ➤ Generate numerical patterns based on a given rule and identify relationships between corresponding terms in two patterns. ➤ Graph corresponding terms of two numerical patterns as ordered pairs in the first quadrant of the coordinate plane. Language Objectives: ➤ Use vocabulary terms such as evaluate, expression, and grouping symbols accurately in discussions.

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- Insert parentheses into expressions to change their values and read aloud expressions containing grouping symbols.
- Write numerical expressions from verbal phrases and explain their meaning.
- Define and use key coordinate plane terms including coordinate plane, x-axis, y-axis, origin, ordered pair, x-coordinate, and y-coordinate in conversation.
- Name points on the coordinate plane using ordered pairs and locate points based on ordered pairs.
- Describe how to move between points on the coordinate plane and explain the meaning of coordinates in real-world contexts.
- Plot points to represent problem situations and explain the significance of their coordinates.
- List sequences based on verbal rules and identify corresponding terms between two numerical patterns.
- Describe the relationship between corresponding terms of two patterns and locate points in the coordinate plane formed from these terms.

Unit Enduring Understandings:

Students will know...

- The coordinate plane is created by two perpendicular number lines and provides a two-dimensional space for graphing points. Understanding this helps you plot and interpret points to solve mathematical and real-world problems.
- Grouping symbols, such as parentheses, brackets, and braces, indicate the order in which parts of an expression should be evaluated. Knowing how to use these symbols along with the order of operations enables you to correctly write, evaluate, and interpret mathematical expressions.

Unit Essential Questions:

- How can understanding the coordinate plane help you plot and interpret points to solve real-world and math problems?
- In what ways does knowing how to use grouping symbols and the order of operations help you write, evaluate, and interpret expressions correctly?

Instructional Plan

Suggested Activities

- *Ready Classroom Mathematics* uses a discourse-based instructional routine. Lessons are divided into Explore, Develop, and Refine sessions where students engage in a Try-Discuss-Connect routine. Small Group differentiation activities are designed to Prepare, Reteach, Reinforce, or Extend the learning. Independent Learning Activities personalize instruction to all learners.

Whole Group Instruction

- Session Activities
 - Explore--Students draw on prior knowledge and make connections to new concepts

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- Develop--Students develop strategies and understanding through problem solving and discourse
- Refine--Students deepen their understanding and strengthen their skills
- What Happens In the Classroom
 - Students make sense of problems and attempt their own representations and solution strategies.
 - Hints are provided to students in the form of questions to consider as they solve each problem
 - Students partner with another student to explain their thinking, representations, and solutions. Pair/Share questions in the worktexts support partner conversations.
 - Students make connections between their strategies and those of their partner. They discuss similarities and differences and compare their representations, strategies, and answers
 - The teacher circulates to assess student understanding and provide differentiated support. The teacher observes student thinking and student work.
 - Whole group discussion allows for students to show their thinking
- Try-Discuss Connect Routine
 - Try
 - Make sense of the problem
 - Solve and support your thinking
 - Discuss
 - Share your thinking with a partner
 - Compare Strategies
 - Connect
 - Make connections and reflect on what you have learned
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Resources And Text

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 - Instruction and Practice
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 - Discourse Cards
 - Digital Manipulatives
 - Math Journal
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 - Editable Assessments
 - Unit Game
 - Exit Ticket

Small Group Differentiation

- Prepare
 - Ready Prerequisite Lessons
- Reteach

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- Tools for Instruction
- Reinforce
 - Differentiated Math Center Activities
- Extend
 - Enrichment Activities

Independent Learning

- iReady online personalized instruction generated from iReady Diagnostic assessment
- Fluency and skills practice
- Interactive Tutorials (Lesson, Prerequisite, or Extend)
- Math Center Activities
- Additional Practice Activities
- Online Fluency Games

Standards for Mathematical Practice

- Mathematical Practices help students use math thinking to solve problems. Students learn how to develop Mathematical habits through the instructional design which blends content and practice standards.

Mathematical Practice	Habit
Make sense of problems and persevere in solving them	Solve problems
Reason abstractly and quantitatively	Think and reason
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Model with Mathematics	Use math in the real world
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Look for and make use of structure	Zoom in and out
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Evidence of Student Learning

Formative Assessments:

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- Teacher Observation
- Games
- Performance Assessment
- Anecdotal Records
- Exit Slips
- Self Checks
- Oral Assessment/Conferencing
- Portfolios/Journals
- Daily Classwork
- Mid-Unit Assessment

Summative Assessments

- Unit Tests
- Lesson Quizzes
- Writing Samples

Benchmark Assessments:

- Unit Assessments
- iReady Diagnostic Assessments

Alternative Assessments

- Portfolio review
- Anecdotal Notes

Performance Tasks:

- Lesson Performance Tasks
- Math In Action Activity

Suggested Options for Differentiation and Modifications

Special Education

- Follow all IEP modifications.
- Provide visuals, graphic organizers, and manipulatives.
- Pre-teach and review vocabulary and concepts.
- Offer summaries, word banks, and visual glossaries.
- Use leveled texts and scaffolds for complex tasks.
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- Give extra time on tasks and assessments.
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- Shorten or adjust the number and types of questions.
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- Use scribes or communication devices when needed.

Students with 504 Plans

- Follow the 504 plan.
 - Provide extra time for assignments/tests.
 - Offer small-group settings.
 - Accept oral or dictated responses.
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Students at Risk of School Failure

- Use visuals and hands-on supports.
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 - Read aloud directions; model steps.
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Gifted and Talented

- Ask open-ended, higher-order questions (analyze, evaluate, create).
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 - Encourage participation in simulations and problem-solving challenges.
 - Include opportunities for reflection and debriefing.
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Multilingual Learners

- Collaborate with ESL/MLL specialists.
- Provide small-group instruction with language scaffolds.
- Pre-teach vocabulary; label classroom items and visuals.
- Use visual glossaries, cognates, and graphic organizers.
- Offer sentence frames and speaking supports.
- Allow oral responses and extra time on assignments.

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- Provide audio books, recorded directions, or read-aloud support.
-

Diversity and Inclusion

- Respect and incorporate cultural traditions.
- Provide alternative assignments when appropriate.
- Use visuals and clear, direct language.
- Collaborate with language and support staff.
- Maintain a structured, inclusive classroom environment.
- Build strong connections with families and caregivers.

Supplemental Resources

Instructional Materials:

- Ready Classroom Teacher Toolkit

Supplemental Materials:

- Ready Prerequisite Lessons
- Tools for Instruction
- Differentiated Math Center Activities
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Intervention Materials:

- iReady online personalized instruction generated from iReady Diagnostic assessment
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