Wall Township Public Schools	Board Approval Date: 8/20/25
Course Title: Grade 5 - Mathematics	
Course Description: This course focuses on building fluency with multi-digit and decimal multiplication, and division, analyzing patterns, writing and interpreting numerical expressions, and applying these skills in word problems.This course is aligned with the New Jersey Student Learning Standards, instruction emphasizes problem-solving, real-world applications, and mathematical reasoning to prepare students for success in upper elementary grades.	

New Jersey Student Learning Standards

Standards for Mathematical Practice

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

Structure and Content Summary K-5

1. Counting and Cardinality
2. Operations and Algebraic Thinking
3. Number and Operations in Base Ten
4. Measurement and Data
5. Number and Operation — Fractions
6. Geometry

Course Sequence & Pacing

Unit Title	Instructional Periods
Unit 1: Whole Number Operations and Applications: Volume, Multiplication, and Division	27
Unit 2: Decimals and Fractions: Place Value, Addition, and Subtraction	37
Unit 3: More Decimals and Fractions: Multiplication and Division	41
Unit 4: Measurement, Data, and Geometry: Converting Units, Using Data, and Classifying Figures	23
Unit 5: Algebraic Thinking & the Coordinate Plane: Expressions, Graphing Points, Patterns and Relationships	18

Unit 1

Desired Results

Unit 1 Title: Whole Number Operations and Applications: Volume, Multiplication, and Division

Unit Summary: This unit introduces students to finding volume and extends students' understanding of multiplication and division of whole numbers.

Learning Standards

NJSLS

5.M.B. 2.a - Recognize volume as an attribute of solid figures and understand concepts of volume measurement. - 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.
5.M.B. 2.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.
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.a - 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.4.b – Apply the V = l x w x h formulas and V = B x h for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.
5.M.B.4.c – 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.
5.NBT.B.5 - With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.
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.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

Computer Science & Design Thinking

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data. 8.1.5.DA.4: Organize and present climate change data visually to highlight relationships or support a claim.

Interdisciplinary Connections

NJSLS - ELA 2023

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.

SL.PE.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

NJSLS - SCIENCE 2020

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Learning Targets

Unit Essential Questions:

- How can understanding area help us find the volume of a rectangular prism?
- What strategies can we use to multiply and divide multi-digit numbers accurately when solving volume problems?
- Why is it important to measure volume using unit cubes, and what does that tell us about the space inside a 3D figure?

Unit Enduring Understandings:

- Volume is the amount of space inside a three-dimensional figure. Knowing how many unit cubes fit inside a figure determines its volume.
- You can use what you know about finding the area of rectangles as the first step in calculating the volume of rectangular prisms.
- You can use place value, area models, and other strategies to multiply multi-digit numbers and divide by two-digit divisors.

Vocabulary:

dividend divisor	factor product	quotient remainder

Students will be able to:

- Find the volume of a solid figure by counting unit cubes.
- Find volume by using a formula.
- Break apart a solid figure into rectangular prisms to find its volume.
- Multiply multi-digit whole numbers, for example: 410 X 16 = 6,560.

- Divide a multi-digit whole number by a two-digit number for example: 2,812 / 38 = 74.
- Listen carefully during discussion in order to understand another person's ideas and ask questions about what I do not understand.

Learning Activities: *(Holocaust & Genocides, Amistad, Asian American & Pacific Islanders, Diversity & Inclusion [DEI],* Climate Change*)*

Climate Change Alignment

Focus: Introduce the Purpose of STEM as a Tool for Problem Solving

- Connection: Frame STEM not just as "techy stuff" but as a way to help people and the planet.
- Instructional Tie-In: Ask students to brainstorm environmental problems they care about (e.g., too much plastic, energy waste, endangered animals). (Math in Action-Composting)

Diversity & Inclusion Alignment (N.J.S.A. 18A:35-4.36a)

- Highlight diverse contributions in STEM
  Include daily or weekly spotlights honoring STEM pioneers from various backgrounds (e.g., African American, Indigenous, women, scientists with disabilities), sharing diverse perspectives and demonstrating that innovation comes from all communities.
  - (STEM Story: Abe Nemeth-Inventor or Nemeth Code)
- Promote inclusive collaboration
  Emphasize team roles, respectful communication, and diverse thinking in hands-on tasks. Encourage students to notice and respect diverse approaches during group planning and problem-solving.
  - STEM Story: Abe Nemeth-Inventor or Nemeth Code
  - Connect to Culture (African hair jewelry, Japanese bento box, Kwanzaa

Assessment Evidence
Formative Assessments: Comprehension Checks, Standard Mastery, Mid Unit Assessments, NJ Assessment Practice Tests
Summative Assessments: Unit 1 Assessment
Common Benchmark Assessments: BOY i-Ready Diagnostic, Universal Screener for Number Sense (USNS)
Alternative Assessments: Unit 1 Math Project- Dream School Supply Box Project

Core Instructional & Supplemental Materials
i-Ready Math Gr. 5 Textbook
iReady My Path
Fluency Skills and Practice

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

Specific Strategies and Practices that Support Students with Disabilities:

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

- Small group/One to one
- Additional time - Review of directions
- Student restates information
- Space for movement or breaks
- Extra visual and verbal cues and prompts, Verbal and visual cues regarding directions and staying on task
- Preferential seating
- Follow a routine/schedule, Rest breaks
- Checklists, Immediate feedback

Specific Strategies and Practices that Support English Language Learners

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

- Pre-teaching of vocabulary and concepts, Teacher modeling
- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning- including graphic organizers

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Leveled Rubrics and Tiered Activities
- Work Alone Choice, Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student’s 504 Plan.

- 504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way.
- Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

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

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

Unit 2

Desired Results

Unit 2 Title: Decimals and Fractions: Place Value, Addition, and Subtraction

Unit Summary: This unit extends students' understanding of addition and subtraction of decimals and fractions.

Learning Standards

NJSLS:

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.

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.
5.NBT.A.3a – Read, write, and compare decimals to thousandths.
Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., .
5.NBT.A.3.b – Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
5.NBT.A.4 – Use place value understanding to round decimals to any place.
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.
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.
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 represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

Computer Science & Design Thinking

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

Interdisciplinary Connections

NJSLS – ELA 2023

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. SL.PE.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. **NJSLS - SCIENCE 2020** 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
• How does the place value system extend to decimals, and how can understanding it help you compare and round decimal numbers? • What patterns do you notice when multiplying and dividing numbers by powers of 10, and how can these patterns help solve problems efficiently? • How can your understanding of whole number operations help you add and subtract decimals accurately? • How does understanding equivalent fractions help you add and subtract fractions with unlike denominators?	• Place value in decimals follows the same base-ten patterns as whole numbers. Knowing about place value will help you understand how many times more or less one decimal place is than another and will help you read, write, and round decimals. • You can use what you know about patterns when multiplying by 10 to understand multiplying and dividing by powers of 10. • Knowing about adding and subtracting whole numbers will help you add and subtract decimals. • You can use what you know about equivalent fractions to add and subtract fractions with unlike denominators.

Vocabulary:

ones tenths	tens hundredths	hundreds thousandths

Students will be able to:

- Recognize that 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.

- Use patterns to understand multiplying and dividing whole numbers and decimals by powers of 10.
- Read and write decimals in different forms.
- Compare and round decimals.
- Add and subtract decimals, for example: 20.08 1 5.15 5 25.23.
- Add and subtract fractions with unlike denominators.
- Estimate sums and differences of fractions or decimals.
- Justify solutions to problems about decimals and fractions by telling what I noticed and what I decided to do as a result.

Learning Activities & Differentiation:
Climate Change Alignment
Focus: Introduce the Purpose of STEM as a Tool for Problem Solving

- Connection: Frame STEM not just as "techy stuff" but as a way to help people and the planet.
- Instructional Tie-In: Ask students to brainstorm environmental problems they care about (e.g., too much plastic, energy waste, endangered animals). (Literacy Connection-Hydroelectric Power)

Diversity & Inclusion Alignment (N.J.S.A. 18A:35-4.36a)

- Highlight diverse contributions in STEM
  Include daily or weekly spotlights honoring STEM pioneers from various backgrounds (e.g., African American, Indigenous, women, scientists with disabilities), sharing diverse perspectives and demonstrating that innovation comes from all communities.
    - STEM Story: Native Alaskan fishing and farming
- Promote inclusive collaboration
  Emphasize team roles, respectful communication, and diverse thinking in hands-on tasks. Encourage students to notice and respect diverse approaches during group planning and problem-solving.
    - STEM Story: Native Alaskan fishing and farming
    - Connect to Culture (Afro-Cuban Jazz, Native American Pueblos, Cuisine of Thailand, Para-athletic competition, Dominican Cuisine, Filipino American gift boxes-balikbayan, Cinco de Mayo

Assessment Evidence
Formative Assessments: Comprehension Checks, Standard Mastery, Mid Unit Assessments, NJ Assessment Practice Tests
Summative Assessments: Unit 2 Assessment
Common Benchmark Assessments: BOY i-Ready Diagnostic, Universal Screener for Number Sense (USNS)
Alternative Assessments: Unit 2 Math Project- (In Class) Plan a Class Snack Party

Core Instructional & Supplemental Materials
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iReady My Path
Fluency Skills and Practice

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

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- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning- including graphic organizers

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts

- Leveled Rubrics and Tiered Activities
- Work Alone Choice, Group Work Choice

Students with 504 Plans

- Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
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- Small Group In-Depth Instruction
- Differentiated Online Practice
- Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning
- Supplemental Reading
- Engaging projects

Unit 3

Desired Results

Unit 3 Title: More Decimals and Fractions: Multiplication and Division

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

Learning Standards

NJSLS:

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.
5.NF.B.3 - Interpret a fraction as division of the numerator by the denominator.. 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.
5.NF.B.4 – Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
5.NF.B.4a – Interpret the product of a fraction and a whole number as parts of a partition of *a whole* into equal parts; equivalently, as the result of a sequence of operations
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.
5.NF.B.5 – Interpret multiplication as scaling (resizing)
5.NF.B.5.a – 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.5.b – 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
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.
5.NF.B.7- Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
5.NF.B.7a-Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
5.NF.B.7b - Interpret division of a whole number by a unit fraction, and compute such quotients.
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.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

Computer Science & Design Thinking • **8.2.5.ED.2:** Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
Interdisciplinary Connections ***NJSLS - ELA 2023*** 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. SL.PE.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. **NJSLS - SCIENCE 2020** 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources, environment, and address climate change issues. 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Learning Targets	
Unit Essential Questions: • How can understanding multiplication of whole numbers help us multiply decimals and fractions? • How does thinking of a fraction as a division expression help you solve problems? • How does the size of a factor—greater than, less than, or equal to 1—affect the size of the product? • What strategies can you use to divide whole numbers by unit fractions and unit fractions by whole numbers?	**Unit Enduring Understandings:** • You can use what you know about multiplying whole numbers to help you multiply decimals and fractions. • You can think of fractions as division expressions where the numerator is divided by the denominator. • Reasoning about the size of the factors helps you reason about the size of a product: how does a factor greater or less than 1 affects a product? • You can use relationships between multiplication and division to help you divide whole numbers by unit fractions and unit fractions by whole numbers.

Vocabulary:			
estimate	fraction	decimal	round

Students will be able to:

- Multiply decimals, for example: 7.25 x 9.4 = 68.15.
- Divide decimals, for example: 1.2 ÷ 0.6 = 2.
- Understand fractions as division, for example: $\frac{3}{4} = 3 \div 4$
- Multiply fractions, for example: $\frac{2}{3} \times \frac{5}{6} = \frac{10}{18}$ or $\frac{5}{9}$
- Find the area of a rectangle with fractional side lengths by tiling and by multiplying.
- Understand multiplication as scaling.
- Multiply fractions and divide with unit fractions in word problems.
- Divide with unit fractions, for example: $4 \div \frac{1}{7} = 28$
- Agree or disagree with ideas in discussions about multiplying and dividing with decimals and fractions and explain why.

Learning Activities:

Climate Change Alignment

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  - (STEM Story: Gerald "Jerry" Lawson- Electronics Engineer)
- Promote inclusive collaboration
  Emphasize team roles, respectful communication, and diverse thinking in hands-on tasks. Encourage students to notice and respect diverse approaches during group planning and problem-solving.
  - STEM Story: Gerald "Jerry" Lawson- Electronics Engineer
  - Connect to Culture (Tap dance, Variety of dance early 20th century, The Ocarina- type of flute played by Incas, Ancient

Instruments) ○ Literacy Connection (Ancient Saharan Trade Routes)

Assessment Evidence
Formative Assessments: Comprehension Checks, Standard Mastery, Mid Unit Assessments, NJ Assessment Practice Tests
Summative Assessments: Unit 3 Mid Assessments and Unit Assessment
Common Benchmark Assessments: MOY i-Ready Diagnostic
Alternative Assessments: Unit Project- Bake Sale Budge Boss (In Class)

Core Instructional & Supplemental Materials
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iReady My Path
Fluency Skills and Practice

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- Checklists, Immediate feedback

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- Small Group In-Depth Instruction
- Differentiated Online Practice
- Alternative Assessments
- Pre-Assess to provide Differentiated Instruction to Accelerate Learning
- Supplemental Reading
- Engaging projects

Unit 4

Desired Results

Unit 4 Title: Measurement, Data, and Geometry: Converting Units, Using Data, and Classifying Figures

Unit Summary: This unit extends students' understanding of measurement, data, and geometry.

Learning Standards

NJSLS:

5.M.A.1 – Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

5.DL.A.1 – Understand how different visualizations can highlight different aspects of data. Ask questions and interpret data visualizations to describe and analyze patterns.

5.DL.A.2 – Develop strategies to collect, organize and represent data of various types and from various sources. Communicate results digitally through a data visual (e.g. chart, storyboard, video presentation).

5.DL.A.3– Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data

5.DL.A.4– Using appropriate visualizations (i.e. double line plot, double bar graph), analyze data across samples.

5.DL.B.5 – Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). Use operations on fractions for this grade to solve problems involving information presented in line plots.

5.G.B.3 - Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

5.G.B.4 - Classify two-dimensional figures in a hierarchy based on properties.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills

9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process

9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

Computer Science & Design Thinking

8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.

8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Interdisciplinary Connections

NJSLS – ELA 2023

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.

SL.PE.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

NJSLS – SCIENCE 2020

5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Learning Targets		
Unit Essential Questions: • How do I decide which graph to use to display my data?		**Unit Enduring Understandings:** • Students will understand that the type of graph they choose depends on the kind of data they have and what they want to show—different graphs highlight different patterns, comparisons, and relationships.
Vocabulary:		
cup foot gram	customary system meter ounce	liter metric system

Students will be able to:

- Use division to convert from smaller to larger units within the same measurement system.
- Use understanding of operations on fractions to solve problems about data to solve in line plots.
- Classify two-dimensional figures into categories and subcategories based on their properties.

Learning Activities:

Climate Change Alignment

Focus: Introduce the Purpose of STEM as a Tool for Problem Solving

- Connection: Frame STEM not just as "techy stuff" but as a way to help people and the planet.
- Instructional Tie-In: Ask students to brainstorm environmental problems they care about (e.g., too much plastic, energy waste, endangered animals). (Math in Action-Composting)

Diversity & Inclusion Alignment

- Highlight diverse contributions in STEM
  Include daily or weekly spotlights honoring STEM pioneers from various backgrounds (e.g., African American, Indigenous, women, scientists with disabilities), sharing diverse perspectives and demonstrating that innovation comes from all communities.
  - (STEM Story: Swati Mohan- born in India and work at NASA on missions for spacecrafts to the Moon,Saturn, and Mars)
- Promote inclusive collaboration

Emphasize team roles, respectful communication, and diverse thinking in hands-on tasks. Encourage students to notice and respect diverse approaches during group planning and problem-solving. ○ STEM Story: Swati Mohan ○ Connect to Culture (Japanese futon, Dubai and their largest city attractions)

Assessment Evidence
Formative Assessments: Comprehension Checks, Standard Mastery, Mid Unit Assessments, NJ Assessment Practice Tests
Summative Assessments: Unit 4 Mid Assessments and Unit Assessment
Common Benchmark Assessments: i-Ready Diagnostic, Universal Screener for Number Sense (USNS)
Alternative Assessments: Unit Project- Measurement and Geometry Challenge (In class)

Core Instructional & Supplemental Materials
i-Ready Math Gr. 5 Textbook
iReady My Path
Fluency Skills and Practice

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students
Specific Strategies and Practices that Support Students with Disabilities: Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner. ● Small group/One to one ● Additional time - Review of directions ● Student restates information ● Space for movement or breaks ● Extra visual and verbal cues and prompts, Verbal and visual cues regarding directions and staying on task

- Preferential seating
- Follow a routine/schedule, Rest breaks
- Checklists, Immediate feedback

Specific Strategies and Practices that Support English Language Learners

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

- Pre-teaching of vocabulary and concepts, Teacher modeling
- Personal Glossary
- Extended Time
- Simplified/Verbal Instructions
- Visual learning- including graphic organizers

Students at Risk of Failure

- Home/School Connection
- Alternative Assessments
- Learning Contracts
- Leveled Rubrics and Tiered Activities
- Work Alone Choice, Group Work Choice

Students with 504 Plans

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

Specific Strategies and Practices that Support Gifted & Talented Students

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

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

Unit 5

Desired Results

Unit 5 Title: Algebraic Thinking and the Coordinate Plane: Expressions, Graphing Points, Patterns and Relationships

Unit Summary: This unit extends students' understanding of measurement, data, and geometry.

Learning Standards

NJSLS:

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.

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.

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.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills

• **9.4.2.CI.2:** Demonstrate originality and inventiveness in work

• **9.4.2.CT.3:** Use a variety of types of thinking to solve problems

Computer Science & Design Thinking

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

Interdisciplinary Connections

NJSLS – ELA 2023

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.

SL.PE.4.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

NJSLS – SCIENCE 2020

• **3-5-ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

• **3-5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
- How can I use equations to solve problems involving real world situations? - How and why can I use patterns to solve problems?	- Students will understand that equations help represent and solve real-world problems by showing the relationships between quantities and allowing us to find unknown values. - Students will understand that patterns help us recognize relationships, make predictions, and solve problems efficiently by revealing consistent rules or structures in numbers and operations.

Vocabulary:

operation	pattern	rule

Students will be able to:

- Evaluate expressions.
- Write a numerical expression to represent a phrase.
- Write ordered pairs for points in a coordinate grid.
- Graph points in a coordinate grid.
- Find the vertical and horizontal distance between two distances on a grid,
- Graph quantities that represent real-world situations in a coordinate grid and interpret the coordinate in terms of a real-world context.
- Generate a numerical pattern using a rule.
- Describe the relationship between corresponding terms of two number patterns.
- Explain ideas about patterns and about the coordinate plane by using models or diagrams to show why the ideas make sense for the problem.

Learning Activities:
Climate Change Alignment

Focus: Introduce the Purpose of STEM as a Tool for Problem Solving

- Connection: Frame STEM not just as “techy stuff” but as a way to help people and the planet.
- Instructional Tie-In: Ask students to brainstorm environmental problems they care about (e.g., too much plastic, energy waste, endangered animals). (Math in Action-Composting)

Diversity & Inclusion Alignment (N.J.S.A. 18A:35-4.36a)

- Highlight diverse contributions in STEM
  Include daily or weekly spotlights honoring STEM pioneers from various backgrounds (e.g., African American, Indigenous, women, scientists with disabilities), sharing diverse perspectives and demonstrating that innovation comes from all communities.
    - (STEM Story: Jose Celso Barbosa- First Puerto Rican to earn Medical Degree)
- Promote inclusive collaboration
  Emphasize team roles, respectful communication, and diverse thinking in hands-on tasks. Encourage students to notice and respect diverse approaches during group planning and problem-solving.
    - STEM Story: Jose Celso Barbosa
    - Connect to Culture (Mexican families often set up special areas in homes such as flowers and objects to remember loved ones, Tuskegee Airman-1st African American Fighter Pilots)

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