Greenwich-Stow Creek Partnership Schools

Fifth Grade
Math Curriculum

Approved by the Board of Education

Stow Creek Board of Education: 8-22-2024

Greenwich Board of Education: 8-21-2024

5th Grade Unit 1

Whole Numbers, Expressions, and Volumes

Domains: Numbers and Operations in Base Ten; Operations and Algebraic Thinking; Measurement	**Marking:** Period: 1

Cluster Headings: Understand the Place Value System; Write and interpret numerical expressions; Analyze patterns and relationships; Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Overview of Unit:

- Being able to identify the value of each number in its place and its relation to other digits within place value
- Be able to multiply and divide with powers of ten
- Recognize the impact of powers of 10
- Read, write, estimate, and compare decimals to thousands
- Multiply and divide by multi-digit numbers fluently
- Relate multiplication to division
- Write, interpret, and evaluate numerical expressions
- Estimate, and apply the formula of the volume of a right rectangular prism

Learning Targets—Big Idea and Standards

Big Idea(s):

- 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.
- 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.
- Fluently multiply multi-digit whole numbers using the standard algorithm.
- 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.

- Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ 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.
- 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.
- Write and evaluate expressions using parentheses, brackets, or braces in numerical expressions
- Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- Find and apply the formulas V = l × w × h and V = Br4 × 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.
- 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.

Standards: 5.NBT.A.1-4, NBT.B.5-6, 5.OA.A.1-2, 5.B.2a-b, 5.M.B.3, 5.M.B.4a-c

- 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 $\frac{1}{10}$ of what it represents in the place to its left.
- 5.NBT.A.1 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.3 Read, write, and compare decimals to thousandths.
    - Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).
    - 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.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.

- 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. 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.M.B.2a 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.2b Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 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.4a Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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 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.

Essential Ideas

- Recognize the 10 to 1 relationship among place-value positions
- Write and evaluate repeated factors in exponential form
- Model, estimate and fluently multiply and divide multi-digit numbers
- Interpret remainders and adjust accordingly

- Represent a problem with a bar model or an equation and solve a division problem
- Write, interpret, and evaluate numerical expressions with an without parentheses, brackets, or braces
- Determine in what order of operations must be evaluated when there are grouping symbols
- Understand unit cubes and how they can be used to build a solid figure
- Find volume by counting the number of unit cubes in a right rectangular prism
- Estimate and find the volume of a right rectangular prism with a formula
- Find the volume of composed right rectangular prisms

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings

- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Base-Ten Blocks
- Color Pencils
- Decimal Models (eTeacher Resources)

Learning Plan:

Into Math Series

- Module 1, Lessons 1.1-1.6
- Module 2, Lessons 2.1-2.4
- Module 3, Lessons 3.1-3.4
- Module 4, Lessons 4.1-4.4
- Module 5, Lessons 5.1-5.6

Interdisciplinary Connections

X Interdisciplinary Standards: NJSLS

X NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☐**9.1 Personal Financial Literacy**

Financial Health: *Financial Psychology, Civic Financial Responsibility*

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☒ **9.2 Career Awareness and Planning**

☐**9.4 Life Literacies and Key Skills**

Creativity and Innovation

Critical Thinking and Problem Solving

Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

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Digital Citizenship

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5th Grade Unit 2

Add and Subtract Fractions and Mixed Numbers

Domain: Number and Operations - Fractions	**Marking Period**: 1-2

Cluster Heading: Use equivalent fractions as a strategy to add and subtract fractions

Overview of Unit:

- Understand addition and subtraction of fractions and mixed numbers with unlike denominators

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions and make reasonable estimates of them.

Standard(s): 5.NF.A.1, 5.NF.A.2

- 5.NF.A.1 Use equivalent fractions as a strategy to add and subtract fractions: 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. For example, $\frac{2}{3}+\frac{5}{4}=\frac{8}{12}+\frac{15}{12}=\frac{23}{12}$. (In general, $\frac{a}{b}+\frac{c}{d}=\frac{(ad+bc)}{bd}$).

- Use equivalent fractions as a strategy to add and subtract fractions: 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. For example, recognize an incorrect result $\frac{2}{5}+\frac{1}{2}=\frac{3}{7}$, by observing that $\frac{3}{7}<\frac{1}{2}$.

Essential Ideas

- Represent fraction sums and differences
- Represent addition and subtraction with different-sized parts
- Rewrite fractions with a common denominator
- Use benchmarks and number sense to estimate and assess reasonableness of fraction and mixed number sums and differences
- Rename mixed numbers and apply properties of addition
- Practice addition and subtraction using equations

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)

- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

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- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Base-Ten Blocks
- Color Pencils
- Decimal Models (eTeacher Resources)

Learning Plan:

Into Math Series

- Module 6, Lessons 6.1-6.4

- Module 7, Lessons 7.1-7.6

Interdisciplinary Connections

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5th Grade Unit 3

Multiplying Fractions and Mixed Numbers

Domain: Operations and Algebraic Thinking	**Marking Period**: 2

Cluster Heading: Number and Operations – Fractions

Overview of Unit:

- Apply and extend previous understandings of multiplication to multiply fractions and mixed numbers.

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

Standard(s): 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.5a, 5.NF.5b, 5.NF.B.6

- 5.NF.B.3 Interpret a fraction as division of the numerator by the denominator (i.e., $\frac{a}{b} = a \div b$). 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. For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

- 5.NF.B.4a Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction: Interpret the product $\left(\frac{a}{b}\right) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $\left(\frac{2}{3}\right) \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $\left(\frac{2}{3}\right) \times \left(\frac{4}{5}\right) = \frac{8}{15}$. (In general, $\left(\frac{a}{b}\right) \times \left(\frac{c}{d}\right) = \left(\frac{ab}{bd}\right)$).

- 5.NF.B.4b Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction: 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.5a Interpret multiplication as scaling (resizing), by: 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 Interpret multiplication as scaling (resizing), by: 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 $\frac{a}{b}=\frac{(n\times a)}{(n\times b)}$ to the effect of multiplying $\frac{a}{b}$ by 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.

Essential Ideas

- Explore groups of equal shares to show multiplication
- Represent multiplication of whole numbers by fractions
- Represent multiplication with unit fractions
- Use representations of area to develop procedures
- Explore area and mixed numbers
- Multiply fractions and mixed numbers
- Apply fraction multiplication to find area

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Into Math Series

- Module 8: Lesson 8.1-8.6
- Module 9: Lesson 9.1-9.4

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5th Grade Unit 4

Dividing Fractions and Converting Customary Units

Domain(s): Number and Operations – Fractions; Measurement; Data Literacy	**Marking Period:** 2

Cluster Headings: Apply and extend previous understandings of multiplication and division to multiply and divide fractions; Convert like measurement units within a given measurement system. Represent and interpret data using line plots to solve problems; Understand and analyze data visualizations; Represent and interpret data.

Overview of Unit:

- Divide Fractions and Mixed Numbers
- Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems (ie. Inches to yards; centimeters to kilometers).
- Represent and interpret data using line plots to solve problems

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students also use the meaning of division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)
- Convert measurements to solve problems using a singular measurement system.
- Analyze and interpret data

Standard(s): 5.NF.B.3, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c, 5.M.A.1, 5.DL.A.1, 5.DL.A.2, 5.DL.A.2, 5.DL.A.3, 5.DL.B.5

- 5.NF.B.3 Interpret a fraction as division of the numerator by the denominator (i.e., $\frac{a}{b} = a \div b$). 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. For example, interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

- 5.NF.B.7a Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions: Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $\left(\frac{1}{3}\right) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $\left(\frac{1}{3}\right) \div 4 = \frac{1}{12}$ because $\frac{1}{12} \times 4 = \frac{1}{3}$.

- 5.NF.B.7b Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions: Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for

$4 \div \left(\frac{1}{5}\right)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div \left(\frac{1}{5}\right) = 20$ because $20 \times \left(\frac{1}{5}\right) = 4$.

- 5.NF.B.7c Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions: 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 $\frac{1}{2}$ lb. of chocolate equally? How many $\frac{1}{3}$-cup servings are in 2 cups of raisins?

- 5.M.A.1 Convert like measurement units within a given measurement system: 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 and analyze data visualizations: 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 Understand and analyze data visualizations: 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 Understand and analyze data visualizations: Collect and clean data to be analyzable (e.g., make sure each entry is formatted correctly, deal with missing or incomplete data).

- 5.DL.B.5 Represent and interpret data: 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. 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.

Essential Ideas

- Interpret a fraction as division
- Represent and find the size of equal parts
- Use representations of division of unit fractions by whole numbers
- Represent and find the number of equal-sized parts
- Use Representations of division of whole numbers by unit fractions
- Relate multiplication and division of fractions

- Interpret and solve division of a whole number by a unit fraction
- Interpret and solve division of a unit fractions by a whole number
- Solve division problems using visual models and equations
- Convert customary measurements
- Solve multistep customary measurement problems
- Represent and interpret measurement data in line plots
- Convert time and find elapsed time

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
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- Refer to student IEP

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- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
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Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Into Math Series

- Module 10, Lessons 10.1-10.5
- Module 11, Lessons 11.1-11.6
- Module 12, lessons 12.1-12.4

Interdisciplinary Connections

_X_ Interdisciplinary Standards: NJSLS

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5th Grade Unit 5

Add and Subtract Decimals

Domain: Number and Operations in Base Ten	**Marking Period**: 3

Cluster Heading: Understand the place value system; Perform operations with multi-digit whole numbers and with decimals to hundredths.

Overview of Unit:

- Perform operations with multi-digit whole numbers and with decimals to thousandths

Learning Targets—Big Idea and Standards

Big Idea(s):

- Extend division to 2-digit divisors, integrating decimal fractions into the place value system, developing understanding of operations with decimals to thousandths, and developing fluency with whole number and decimal operations
- Students develop an understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understanding of models for decimals, decimal notation, and properties of operations to add and subtract decimals to thousandths. They develop fluency in these computations and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to thousandths efficiently and accurately.

Standards: 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4, 5.NBT.B.7

- 5.NBT.A.2 Understand the place value system: 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., $347.392 = 3\times100 + 4\times10 + 7\times1 + 3\times(\frac{1}{10}) + 9\times(\frac{1}{100}) + 2\times(\frac{1}{1000})$.
- 5.NBT.A.3b Read, write, and compare decimals to thousandths: Read 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 Understand the place value system: Use place value understanding to round decimals to any place.
- 5.NBT.B.7 Perform operations with multi-digit whole numbers & with decimals to hundredths: 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.

Essential Ideas

- Understand the thousandths
- Read and write decimals to thousandths
- Round decimals
- Compare and order decimals
- Represent decimal addition and subtraction
- Assess reasonableness of sums and differences
- Add and subtract decimals
- Use strategies and reasoning to add and subtract decimals

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups

- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Into Math Series

- Module 13, Lessons 13.1-13.4
- Module 14, Lessons 14.1-14.6

Interdisciplinary Connections

_X_ Interdisciplinary Standards: NJSLS

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

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NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☐**9.1 Personal Financial Literacy**

Financial Health: *Financial Psychology, Civic Financial Responsibility*

Financial Landscape: *Financial Institutions, Economic & Government Influences*

Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☐**9.2 Career Awareness and Planning**

☐**9.4 Life Literacies and Key Skills**

Creativity and Innovation

Critical Thinking and Problem Solving

Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☐**8.1 Computer Science**

☐**8.2 Design Thinking**

☐**9.4 Life Literacies and Key Skills**

Digital Citizenship

Information and Media Literacy

Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☐**1.2 Media Arts**

Creating - Conceive, Develop, and/or Construct

Performing - Integrate, Practice, and/or Present

Responding - Perceive, Evaluate, and/or Interpret

Connecting - Synthesize and/or Relate

5th Grade Unit 6

Multiply Decimals

Domain: Number and Operations in Base Ten	**Marking Period**: 3

Cluster Heading: Understand the place value system; Perform operations with multi-digit whole numbers and with decimals to hundredths.

Overview of Unit:

- Perform multiplication with multi-digit numbers with decimals to thousandths.

Learning Targets—Big Idea and Standards

Big Idea(s):

- Extend division to 2-digit divisors, integrating decimal fractions into the place value system, developing understanding of operations with decimals to thousandths, and developing fluency with whole number and decimal operations
- Students develop an understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understanding of models for decimals, decimal notation, and properties of operations to add and subtract decimals to thousandths. They develop fluency in these computations and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to thousandths efficiently and accurately.

Standards: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7

- 5.NBT.B.5 Perform operations with multi-digit whole numbers & with decimals to hundredths: With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Perform operations with multi-digit whole numbers & with decimals to hundredths: 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.
- 5.NBT.B.7 Perform operations with multi-digit whole numbers & with decimals to hundredths: 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.

Essential Ideas

- Understand decimal multiplication patterns
- Represent multiplication with decimals and whole numbers
- Assess reasonableness of products
- Multiply digits by a 1- and 2- digit whole numbers
- Solve problems using bar models
- Represent decimal multiplication
- Multiply decimals
- Multiply decimals with zeros

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Counters

Learning Plan:

Into Math Series

- Module 15, Sections 15.1-15.6
- Module 16, Sections 16.1-16.3

Interdisciplinary Connections

_X_Interdisciplinary Standards: NJSLS

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

X NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

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☐**9.2 Career Awareness and Planning**

☐**9.4 Life Literacies and Key Skills**

Creativity and Innovation

Critical Thinking and Problem Solving

Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☐**8.1 Computer Science**

☐**8.2 Design Thinking**

☐**9.4 Life Literacies and Key Skills**

Digital Citizenship

Information and Media Literacy

Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☐**1.2 Media Arts**

Creating - Conceive, Develop, and/or Construct

Performing - Integrate, Practice, and/or Present

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5th Grade Unit 7

Dividing Decimals and Converting Metric Units

Domains: Number and Operations in Base Ten; Measurement	**Marking Period**: 4

Cluster Headings: Understand the place value system; Perform operations with multi-digit whole numbers and with decimals to hundredths.

Overview of Unit:

- Perform division with multi-digit numbers with decimals to thousandths.
- Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems (ie. centimeters to kilometers).

Learning Targets—Big Idea and Standards

Big Ideas:

- Extend division to 2-digit divisors, integrating decimal fractions into the place value system, developing understanding of operations with decimals to thousandths, and developing fluency with whole number and decimal operations
- Students develop an understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understanding of models for decimals, decimal notation, and properties of operations to add and subtract decimals to thousandths. They develop fluency in these computations and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to thousandths efficiently and accurately.
- Convert measurements to solve problems using a singular measurement system

Standards: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7, 5.M.A.1

- 5.NBT.B.5 Perform operations with multi-digit whole numbers & with decimals to hundredths: With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Perform operations with multi-digit whole numbers & with decimals to hundredths: 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.

- 5.NBT.B.7 Perform operations with multi-digit whole numbers & with decimals to hundredths: 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.M.A.1 Convert like measurement units within a given measurement system: 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.

Essential Ideas

- Understand decimal division patterns
- Represent division of decimals by whole numbers
- Assess reasonableness of quotients
- Dive decimals by whole numbers
- Represent decimal division
- Divide decimals
- Divide decimals with zeros in the dividend
- Understand and solve metric conversion problems
- Solve multistep measurement problems

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups

- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- Online Resources
- Text and workbooks
- Standards Practice Book
- MathBoard

Learning Plan:

Into Math Series

- Module 17, Lessons 17.1-17.7
- Module 18, Lessons 18.1-18.3

Interdisciplinary Connections

_X_Interdisciplinary Standards: NJSLS

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5th Grade Unit 8

Graphs, Patterns, and Geometry

Domain: Geometry; Operations and Algebraic Thinking	**Marking Period**: 4

Cluster Heading: Graph points on the coordinate plane to solve real-world and mathematical problems; Classify two-dimensional figures into categories based on their properties; Analyze patterns and relationships.

Overview of Unit:

- Two dimensional figures have attributes that can be used for classifying them into categories
- A coordinate plane is created by a pair of perpendicular lines, called axes, and points in the coordinate plane are identified using ordered pairs of numbers (x,y)
- Find patterns and explain relationships among numbers

Learning Targets—Big Idea and Standards

Big Idea(s):

- Understanding two-dimensional figures and their properties
- Use the coordinate plane to graph and solve problems
- Relationships among numbers and number systems are means of representing real world quantities

Standard(s): 5.G.A.1, 5.G.A.2, 5.G.B.3, 5.G.B.4, 5.OA.B.3

- 5.G.A.1 A. Graph points on the coordinate plane to solve real-world and mathematical problems: 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 A. Graph points on the coordinate plane to solve real-world and mathematical problems: 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.G.B.3 Classify two-dimensional figures into categories based on their properties: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.B.4 Classify two-dimensional figures into categories based on their properties: Classify two-dimensional figures in a hierarchy based on properties.
- 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. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Essential Ideas

- Describe and understand a coordinate plane
- Use ordered pairs to represent problems
- Generate and identify numerical patterns
- Identify and graph relationships of patterns
- Identify and classify polygons
- Classify and organize triangles and quadrilaterals
- Use Venn diagrams to classify tow-dimensional figures

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

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- Tools (rulers, measuring cups, etc.)
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- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- *Into Math* Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- *Into Math* Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Centimeter Ruler
- Protractor
- Quadrilaterals (from eTeacher Resources)
- Scissors
- Tracing Paper
- Centimeter Cubes

Learning Plan:

Into Math Series

- Module 19, Lessons 19.1-19.5
- Module 20, Lessons 20.1-20.4

Interdisciplinary Connections

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Creativity and Innovation

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