Hainesport Township School District
211 Broad Street Hainesport, NJ 08036

Course Title: Math Grade 5
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Course Description and Concepts

In Grade 5, instructional time should will focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

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. 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.)

Students develop 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 understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. 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 hundredths efficiently and accurately.

Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

New Jersey Student Learning Standards Math

New Jersey Student Learning Standards for Mathematics

NJ Technology Standards

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.

8.2 Technology Education, Engineering, Design and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Career Ready Practices

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
CRP10. Plan education and career paths aligned to personal goals.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.

http://www.state.nj.us/education/cccs/2014/career/CareerReadyPractices.pdf

Pacing Guide

Unit Topic	Unit #	APX Unit Length
Understanding the Place Value System	I	50 Days
Understanding Volume and Operations in Fractions	II	45 Days

More Operations and Fractions	III		45 Days
Coordinate Geometry and Classifying Figures	IV		40 Days

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 1 Understanding the Place Value System	● 5.OA.A.1 ● 5.OA.A.2 ● 5.NBT.A.1 ● 5.NBT.A.2* ● 5.NBT.B.5* ● 5.NBT.B.6 ● 5.NBT.A.3 ● 5.NBT.A.4	● Write and interpret numerical expressions ● Understand the place value system ● Perform operations with multi-digit whole numbers and with decimals to hundredths	MP.1 Make sense of problems and persevere in solving them.
Unit 1: Suggested Open Educational Resources	5.OA.A.1 Using Operations and Parentheses 5.OA.A.1 Watch out for Parentheses 1 5.NBT.A.1 Which number is it? 5.NBT.A.1 Millions and Billions of People 5.NBT.A.3 Placing Thousandths on the Number Line 5.NBT.A.4 Rounding to Tenths and Hundredths 5.NBT.B.5 Elmer's Multiplication Error	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others.	

Unit 2 Understanding Volume and Operations on Fractions	• 5.MD.C.3 • 5.MD.C.4 • 5.MD.C.5 • 5.NBT.B.5* • 5.NF.A.1 • 5.NF.A.2 • 5.NF.B.3 • 5.NF.B.4	• Understand concepts of volume • Perform operations with multi-digit whole numbers and with decimals to hundredths • Use equivalent fractions as a strategy to add and subtract fractions • Apply and extend previous understandings of multiplication and division	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.
Unit 2: Suggested Open Educational Resources	5.MD.C.5 Breaking Apart Composite Solids 5.MD.C.5a using Volume to Understand the Associative Property of Multiplication 5.MD.C.5b Cari's Aquarium 5.MD.C Box of Clay 5.NF.A.1 Making S'Mores 5.NF.A.2 Do These Add Up? 5.NF.A Measuring Cups 5.NF.B.3 How Much Pie? 5.NF.B.4b Chavone's Bathroom Tiles		MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

Unit 3 More Operations on Fractions	- 5.NF.B.4b - 5.NF.B.5 - 5.NF.B.6 - 5.NF.B.7* - 5.NBT.A.2* - 5.NBT.B.7* - 5.MD.A.1	- Apply and extend previous understandings of multiplication and division - Understand the place value system - Perform operations with multi-digit whole numbers and with decimals to hundredths - Convert like measurement units within a given measurement system	MP.1 Make sense of problems and persevere in solving them.
Unit 3: Suggested Open Educational Resources	5.NF.B.4b New Park 5.NF.B.5 Comparing Heights of Buildings 5.NF.B.5 Grass Seedlings 5.NF.B.5b Mrs. Gray's Homework Assignment 5.NF.B.6 To Multiply or not to multiply? 5.NF.B.7 Banana Pudding 5.NBT.A.2 Multiplying Decimals by 10 5.NBT.A.2 Marta's Multiplication Error 5.NBT.B.7 The Value of Education 5.MD.A.1, 5.NF.B.3 Converting Fractions of a Unit into a Smaller Unit		MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.

Unit 4	● 5.G.A.1 ● 5.G.A.2 ● 5.OA.B.3 ● 5.G.B.3 ● 5.G.B.4 ● 5.MD.B.2 ● 5.NBT.B.5* ● 5.NBT.B.7* ● 5.NF.B.7*	● Graph points on the coordinate plane to solve real-world and mathematical problems ● Analyze patterns and relationships ● Classify two dimensional figures into categories based on their properties ● Represent and interpret data ● Perform operations with multi-digit whole numbers and with decimals to hundredths ● Apply and extend previous understanding of multiplication and division	MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Coordinate Geometry and Classifying Figures			
Unit 4: Suggested Open Educational Resources	5.G.A.1 Battle Ship Using Grid Paper 5.G.A.2 Meerkat Coordinate Plane Task 5.OA.B.3 Sidewalk Patterns 5.G.B.3 Always, Sometimes, Never 5.G.B.4 What is a Trapezoid? (Part 2) 5.MD.B.2 5.NF.A.1 Fractions on a Line Plot 5.NBT.B.7, 5.NF.B.3 What is 23 divided by 5? 5.NF.B.7c Salad Dressing		

Unit 1 Grade 5		
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
● 5.OA.A.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	MP.1 Make sense of problems and persevere in solving them. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): ● Standard convention for performing operations (Order of operations, including grouping symbols) Students are able to: ● evaluate numerical expressions that include grouping symbols (parentheses, brackets or braces). ● evaluate numerical expressions that include nested grouping symbols (for example, 3 x [5 + (7 - 3)]). Learning Goal 1: Evaluate numerical expressions that contain parentheses, brackets and braces.
● 5.OA.A.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning	Concept(s): ● Order of operations, including grouping symbols. Students are able to: ● write a simple numerical expression when given a verbal description. ● interpret the quantitative relationships in numerical expressions without evaluating (simplifying) the expression. Learning Goal 2: Write numerical expressions when given a verbal description or word problem; interpret numerical expressions without evaluating them.

● 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.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 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 3: 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.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	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. Learning Goal 4: 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.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision.	Concept(s): No new concept(s) introduced Students are able to:

	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	● multiply a whole number of up to a four digits by a whole number of up two digits using the standard algorithm with accuracy and efficiency. Learning Goal 5: Use the standard algorithm to multiply a whole number of up to a four digits by a whole number of up two digits.
● 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.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 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 6: 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.
● 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	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 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).

		each place, using >, =, and < symbols to record the results of comparisons.		Learning Goal 7: 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.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.		Concept(s): No new concept(s) introduced Students are able to: ● round decimals to any place value. Learning Goal 8: Round decimals to any place value.

Unit 1 Overview (Understanding the Place Value System)	
Content Area	Mathematics
Unit Title	Understanding the Place Value System
Grade Level	Grade 5
Recommended Pacing	APX: 50 Days
Unit Summary	In this unit of study students will write and interpret numerical expressions, understand the place value system perform operations with multi-digit whole numbers and with decimals to hundredths, perform operations with multi-digit whole numbers and with decimals to hundredths and apply and extend previous understandings of multiplication and division to multiply and divide fractions.
Interdisciplinary Connections	Primary Interdisciplinary Connections: Science

21st Century Themes/Career Ready Practices ● Communicating with students ● Using questioning and discussion techniques ● Engaging students in learning ● Using assessment in instruction ● Demonstrating Flexibility and Responsiveness	CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.
Core Instructional Materials	enVisions Math Pearson Realize IXL GSuite for Education Projector Internet resources Activity handouts from the teacher Presentations via technology including educational videos on Safari and youtube.com · Subject software Internet resources Presentations via technology, including documentaries and videos from Safari, youtube.com and teacher-created materials.

Standard(s)/Mathematical Concepts

Mathematical Practice Standards:

● 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.

Technology Standards:

- 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.Assess the credibility and accuracy of digital content.

- 8.2 Technology Education, Engineering, Design and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Progress Indicator(s) #	Progress Indicator Defined
5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions with these symbols
5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
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.3	Read, write, and compare decimals to thousandths.
	  a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3x100 + 4x10 + 7x1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000)
	  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.5	Fluently 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.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 (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.
8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.

8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards. ● Mathematical Vocabulary Activities ● Assessment Item Analysis ● UDL Menu ● Do Now / Exit Ticket ● Teacher / Student Questioning ● Class / Small Group Discussion ● Organizers ● Peer / Self Assessment ● Visual Presentations ● Think Pair Share ● Teacher Observation / Anecdotal Records ● Computer Based Applications/Programs ● Practice Presentations ● Homework Activities	*Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.* ● Unit Test 1 Assessment 1 (Pre Progress Reporting Period 1) ● Unit Test 1 Assessment 2 ● Teacher Constructed Standards Based Quiz 1(Pre Progress Reporting Period 1) ● Teacher Constructed Standards Based Quiz 2 ● Alternative Assessment Teacher Constructed 1 (Pre Progress Reporting Period 1) ● Alternative Assessment Teacher Constructed 2

District/School Writing Tasks	
Primary Focus *This is connected to the types of writing as indicated in the standards:* ● Informational/Explanatory ● Research	**Routine Writing** *This is daily writing or writing that is done several times over a week.* ● Text Dependent Writing (TDQ) ● Quickwrites ● Routine Writing

Unit Essential Questions

- How can you use place value, multiplication, and expressions to represent and solve problems?
- How can you divide whole numbers?
- How can you add and subtract decimals?

Unit Enduring Understandings

- Write and interpret numerical expressions
- Understand the place value system
- Perform operations with multi-digit whole numbers and with decimals to hundredths
- Perform operations with multi-digit whole numbers and with decimals to hundredths
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions

Key Vocabulary

- base
- distributive property
- evaluate
- exponent
- inverse operations
- numerical expressions
- order of operations
- period
- compatible numbers
- estimate
- inverse operation
- remainder
- sequence
- term
- thousandth
- benchmark
- estimate
- hundredth
- round
- tenth

Unit Learning Targets (Students will do…)

- Develop fluency with place value, multiplication, and expressions
- Divide whole numbers
- Add and subtract decimals
- Recognize the 10 to 1 relationship among place-value positions
- Read and write whole numbers through hundred millions
- Write and evaluate repeated factors in exponent form
- Multiply by 1- and 2-digit numbers using properties and a standard algorithm
- Use multiplication to solve division problems
- Use the strategy "solve a simpler problem" to solve problems
- Write numerical expressions and evaluate numerical expressions using order of operations
- Divide 3- and 4-digit dividends by 1-digit divisors using a variety of strategies
- Divide by 2-digit divisors using base-ten blocks, place value, and other strategies
- Estimate quotients using compatible numbers
- Solve division problems and decide when to write a remainder as a fraction
- Solve problems by using the strategy draw a diagram
- Model, read, and write decimals to thousandths
- Compare and order decimals to thousandths using place value
- Round decimals to any place
- Add and subtract decimals using base-ten blocks and place value
- Make reasonable estimates of decimal sums and differences
- Identify, describe, and create numerical patterns with decimals
- Solve problems using the strategy "make a table"

Instructional Best Practices and Exemplars

Instructional Best Practices and Exemplars
[Instructional Best Practices](#)
(Please see information in attached link)

Unit 2 Grade 5

Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills

● 5.MD.C.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 　5.MD.C.5a. 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.MD.C.5b. 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.MD.C.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 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 is 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, and/or other units to measure volume. Learning Goal 1: Measure volume by counting the total number cubic units required to fill a figure without gaps or overlaps.
● 5.MD.C.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 　5.MD.C.5a. 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	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 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 $V = B \times h$.

whole-number products as volumes, e.g., to represent the associative property of multiplication. 5.MD.C.5b. 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.MD.C.5c. 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.	MP.8 Look for and express regularity in repeated reasoning.	● find the volume of a composite solid composed of two right rectangular prisms. Learning Goal 2: 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 3: Apply formulas to solve real world and mathematical problems involving volumes of right rectangular prisms that have whole number edge lengths. Learning Goal 4: 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. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ● multiply multi-digit whole numbers with accuracy and efficiency. Learning Goal 5: Fluently multiply multi-digit whole numbers with accuracy and efficiency.

● 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. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/1 (in general, a/b + c/d = (ad + bc)/bd).*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	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 6: 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 represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	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. ● 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 7: Solve word problems involving adding or subtracting fractions with unlike denominators, and determine if the answer to the

	MP.7 Look for and make use of structure.	word problem is reasonable, using estimations with benchmark fractions.
● 5.NF.B.3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). 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 3/4 as the result of dividing 3 by 4, noting that 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 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?*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 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 8: 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. 5.NF.B.4a. Interpret the product (a/b) × 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*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics.	Concept(s): No new concept(s) introduced Students are able to: ● for whole number or fraction q, represent (a/b) × q as a parts of a partition of q into b equal parts [e.g. using a visual fraction model, (3/4) x 5 can be represented by 3 parts, after partitioning 5 objects into 4 equal parts]. ● for whole number or fraction q, represent (a/b) × q as $a \times q \div b$ [e.g. showing that (2/5) x 3 is equivalent to (2 x 3) ÷ 5].

fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.) 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.	MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	● from a story context, interpret (*a/b*) × *q* as *a* parts 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 ¼ inch x 7 ¾ inch rectangle, tile the rectangle using ¼ 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*) x *q* as *a* parts of a whole 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.

Unit 2 Overview (Understanding Volume and Operations in Fractions)	
Content Area	Mathematics
Unit Title	Understanding Volume and Operations in Fractions
Grade Level	Grade 5

Recommended Pacing	APX: 45 Days
Unit Summary	In this unit of study students will use equivalent fractions as a strategy to add and subtract fractions, geometric measurement: understand concepts of volume and classify two-dimensional figures into categories based on their properties.
Interdisciplinary Connections	Primary Interdisciplinary Connections: Science, ELA
21st Century Themes/Career Ready Practices ● Communicating with students ● Using questioning and discussion techniques ● Engaging students in learning ● Using assessment in instruction ● Demonstrating Flexibility and Responsiveness	CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.
Core Instructional Materials	enVisions Math Pearson Realize IXL GSuite for Education Projector Internet resources Activity handouts from the teacher Presentations via technology including educational videos on Safari and youtube.com · Subject software Internet resources Presentations via technology, including documentaries and videos from Safari, youtube.com and teacher-created materials.

Standard(s)/Mathematical Concepts

Mathematical Practice Standards:

- 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.

Technology Standards:

- 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.Assess the credibility and accuracy of digital content.

- 8.2 Technology Education, Engineering, Design and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Progress Indicator(s) #	Progress Indicator Defined
5.NF.A.1	Add and Subtract fractions with unlike denominators (including mixed numbers) by replacing 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.
5.MD.C.3	Recognize volume as an attribute of solid figures and understand concepts of volume and measurement.

	a. A cube with side length, 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.
5.MD.C4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
5.MD.C5	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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 base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. b. Apply the formulas V= l x w x h 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. 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.G.B.3	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 in a hierarchy based on properties.
RI.5.4	Determine the meaning of general academic and domain specific words and phrases in a text relevant to a grade 5 topic or subject area.

8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards. ● Mathematical Vocabulary Activities ● Assessment Item Analysis ● UDL Menu ● Do Now / Exit Ticket ● Teacher / Student Questioning ● Class / Small Group Discussion ● Organizers ● Peer / Self Assessment ● Visual Presentations ● Think Pair Share ● Teacher Observation / Anecdotal Records ● Computer Based Applications/Programs ● Practice Presentations ● Homework Activities	*Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.* ● Unit Test 2 Assessment 1 (Pre Progress Reporting Period 1) ● Unit Test 2 Assessment 2 ● Teacher Constructed Standards Based Quiz 1(Pre Progress Reporting Period 1) ● Teacher Constructed Standards Based Quiz 2 ● Alternative Assessment Teacher Constructed 1 (Pre Progress Reporting Period 1) ● Alternative Assessment Teacher Constructed 2

District/School Writing Tasks	
Primary Focus *This is connected to the types of writing as indicated in the standards:*	**Routine Writing** *This is daily writing or writing that is done several times over a week.*

● Informational/Explanatory ● Research	● Text Dependent Writing (TDQ) ● Quickwrites ● Routine Writing

Unit Essential Questions

- How can you add and subtract with unlike denominators?
- How do unit cubes help you build solid figures and understand the volume of a rectangular prism?
- How can you identify, classify and compare two-dimensional figures?

Unit Enduring Understandings

- Use equivalent fractions as a strategy to add and subtract fractions
- Geometric measurement: understand concepts of volume
- Classify two-dimensional figures into categories based on their properties

Key Vocabulary

- sum parallel lines
- perpendicular lines
- trapezoid
- parallelogram
- rhombus
- rectangle
- square
- quadrilateral
- polyhedrons
- prism
- bases
- lateral faces
- pyramid
- decagonal prism
- octagonal prism
- hexagonal prism
- pentagonal prism

- rectangular prism
- triangular prism
- pentagonal pyramid
- rectangular pyramid
- square pyramid
- triangular pyramid
- difference
- benchmark
- common denominator
- common multiples
- equivalent fractions
- simplest form
- mixed number
- numerators
- denominators
- difference
- polygon
- congruent
- regular polygon
- heptagon
- nonagon
- decagon
- hexagon
- octagon
- pentagon
- equilateral triangle
- isosceles triangle
- scalene triangle
- right triangle
- acute triangle
- obtuse triangle

Unit Learning Targets (Students will do…)

- Add and subtract fractions with unlike denominators
- Classify two-dimensional figures based on their properties.

- Understand concepts of volume
- Add fractions with unlike denominators using models, drawings, properties, and equivalent fractions.
- Subtract fractions with unlike denominators using models, drawings, and equivalent fractions.
- Make reasonable estimates of fraction sums and differences.
- Add and subtract mixed numbers with unlike denominators.
- Identify, describe, and create numerical patterns with fractions.
- Solve problems using the strategy *work backward.*
- Classify and compare polygons, triangles, and quadrilaterals using their properties.
- Solve problems using the strategy *act it out* and *make a table.*
- Identify, describe, and classify three-dimensional figures.
- Understand unit cubes and how they can be used to build a solid figure.
- Estimate volume of a rectangular prism and find the volume of a rectangular prism by counting unit cubes and using a formula.
- Find the volume of combined rectangular prisms.

Instructional Best Practices and Exemplars

Instructional Best Practices and Exemplars
[Instructional Best Practices](#)
(Please see information in attached link)

Unit 3 Grade 5

Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills
• 5.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.B.4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others.	Concept(s): No new concept(s) introduced Students are able to: • multiply fractional side lengths to find areas of rectangles. • represent fraction products as rectangular areas. • multiply a fraction by a whole number. • multiply a fraction by a fraction, in general, if q is a fraction c/d, then $(a/b) \, x \, (c/d) = a(1/b) \times c(1/d) = \ ac \times (1/b)(1/d) = ac(1/bd) = ac/bd.$

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.	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Learning Goal 1: Multiply fractions by whole numbers and fractions by fractions, drawing visual models to represent products, showing *(a/b) x (c/d) = ab(1/bd)*, and creating story contexts.
● 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×a)/(n×b)* to the effect of multiplying *a/b* by 1.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.6 Attend to precision. MP.7 Look for and make use of structure.	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 does not change the product. Learning Goal 2: 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.	MP.4 Model with mathematics.
	
	MP.1 Make sense of problems and persevere in solving them.
	
	MP.2 Reason abstractly and quantitatively.
	
	MP.3 Construct viable arguments and critique the reasoning of others.
	
	MP.5 Use appropriate tools strategically.
	
	MP.6 Attend to precision.
	
	MP.7 Look for and make use of structure.
	MP.8 Look for and express regularity in repeated reasoning.
		Concept(s): No new concept(s) introduced
		
		Students are able to:
		
		    ● multiply fractions and mixed numbers in order to solve real world problems.
		    ● represent the solution to these real world problems with visual fraction models and equations.
		
		Learning Goal 3: 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 quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.*
	MP.1 Make sense of problems and persevere in solving them.
	
	MP.2 Reason abstractly and quantitatively.
	
	MP.3 Construct viable arguments and critique the reasoning of others.
	
	MP.4 Model with mathematics.
	
	MP.5 Use appropriate tools strategically.
	
	MP.6 Attend to precision.
	
	MP.7 Look for and make use of structure.
		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 of a unit fraction by a whole number and represent with visual fraction models.
		    ● use a story context to interpret division of a whole number by a unit fraction.
		    ● divide of 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.

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 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (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?*	MP.8 Look for and express regularity in repeated reasoning.	Learning Goal 4: Divide a unit fraction by a non-zero whole number and interpret by creating a story context or visual fraction model. Learning Goal 5: Divide a whole number by a unit fraction and interpret by creating a story context or visual fraction model. Learning Goal 6: Solve real-world problems involving division of unit fractions by whole numbers or whole numbers by unit fractions.
● 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.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ● explain patterns in the placement of the decimal point when multiplying or dividing a decimal by powers of 10. ● write powers of 10 using whole-number exponents.

		Learning Goal 7: Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10; represent powers of 10 using whole-number exponents.
● 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. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 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 between addition and subtraction. ● relate the strategy to the written method and explain the reasoning used. Learning Goal 8: 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.MD.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.	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	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). ● solve multi-step, real world problems that require conversions.

	Learning Goal 9: Convert standard measurement units within the same system (e.g., centimeters to meters) in order to solve multi-step problems.

Unit 3 Overview (More Operations and Fractions)	
Content Area	Mathematics
Unit Title	More Operations and Fractions
Grade Level	Grade 5
Recommended Pacing	APX: 45 Days
Unit Summary	In this unit of study students will multiply decimals, divide decimals, multiply fractions, divide fractions.
Interdisciplinary Connections	Primary Interdisciplinary Connections: Science, ELA
21st Century Themes/Career Ready Practices ● Communicating with students ● Using questioning and discussion techniques ● Engaging students in learning ● Using assessment in instruction ● Demonstrating Flexibility and Responsiveness	CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.
Core Instructional Materials	enVisions Math Pearson Realize IXL GSuite for Education

	Projector Internet resources Activity handouts from the teacher Presentations via technology including educational videos on Safari and youtube.com · Subject software Internet resources Presentations via technology, including documentaries and videos from Safari, youtube.com and teacher-created materials.

Standard(s)/Mathematical Concepts

Mathematical Practice Standards:

- 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.

Technology Standards:

- 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.Assess the credibility and accuracy of digital content.

- 8.2 Technology Education, Engineering, Design and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Progress Indicator(s) #	Progress Indicator Defined
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.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.
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.7a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 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 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (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?*
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 (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. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 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 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	Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)
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.
RI.5.4	Determine the meaning of general academic and domain specific words and phrases in a text relevant to a grade 5 topic or subject area.

8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards. ● Mathematical Vocabulary Activities ● Assessment Item Analysis ● UDL Menu ● Do Now / Exit Ticket ● Teacher / Student Questioning ● Class / Small Group Discussion ● Organizers ● Peer / Self Assessment ● Visual Presentations ● Think Pair Share ● Teacher Observation / Anecdotal Records ● Computer Based Applications/Programs ● Practice Presentations ● Homework Activities	*Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.* ● Unit Test 3 Assessment 1 (Pre Progress Reporting Period 1) ● Unit Test 3 Assessment 2 ● Teacher Constructed Standards Based Quiz 1(Pre Progress Reporting Period 1) ● Teacher Constructed Standards Based Quiz 2 ● Alternative Assessment Teacher Constructed 1 (Pre Progress Reporting Period 1) ● Alternative Assessment Teacher Constructed 2

District/School Writing Tasks	
Primary Focus *This is connected to the types of writing as indicated in the standards:*	**Routine Writing** *This is daily writing or writing that is done several times over a week.* ● Text Dependent Writing (TDQ)

● Informational/Explanatory ● Research	● Quickwrites ● Routine Writing

Unit Essential Questions

- How can you solve decimal multiplication problems?
- How can you solve decimal division problems?
- How do you multiply fractions?
- What strategies can you use to solve division problems involving fractions?

Unit Enduring Understandings

- Understand the place value system
- Perform operations with multi-digit whole numbers and with decimals to hundredths
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions

Key Vocabulary

- decimal
- hundredths
- multiplication
- ones
- pattern
- place value
- product
- tenths
- thousandths
- expanded form
- decimal
- decimal point
- dividend
- divisor
- exponent
- quotient
- hundredth

- tenth
- compatible numbers
- estimate
- equivalent fractions
- remainder
- denominator
- numerator
- product
- equivalent fraction
- simplest form
- mixed number
- dividend
- fraction
- quotient
- whole number
- equation

Unit Learning Targets (Students will do…)

- Multiply decimals
- Divide decimals
- Multiply fractions
- Divide fractions
- Find patterns in products when multiplying by powers of 10
- Model multiplication of whole numbers and decimals
- Multiply a decimal and a whole number using properties and place value
- Use expanded form and place value to multiply a decimal and a whole number
- Solve problems using the strategy "draw a diagram" to multiply money
- Model multiplication of decimals
- Place the decimal point in decimal multiplication
- Multiply decimals with zeros in the product
- Find patterns in quotients when dividing by powers of 10
- Model division of decimals by whole numbers
- Estimate decimal quotients
- Divide decimals by whole numbers
- Model division by decimals

- Place the decimal point in decimal division
- Write a zero in the dividend to find a quotient
- Solve multi step decimal problems using the strategy "work backward"
- Model to find the fractional part of a group
- Model the product of a fraction and a whole number
- Multiply fractions and whole numbers
- Multiply fractions using models
- Relate the size of the product compared to the size of one factor when multiplying fractions
- Multiply fractions
- Use a model to multiply two mixed numbers and find the area of a rectangle
- Relate the size of the product to the factors when multiplying fractions greater than one
- Multiply mixed numbers
- Solve problems using the strategy "guess, check, and revise"
- Divide whole numbers by a fraction and divide a fraction by a whole number
- Solve problems using the strategy "draw a diagram"
- Interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number
- Divide a whole number by a fraction and divide a fraction by a whole number
- Represent division by drawing diagrams and writing story problems and equations

Instructional Best Practices and Exemplars

Instructional Best Practices and Exemplars
Instructional Best Practices
(Please see information in attached link)

Unit 4 Grade 5		
Content & Practice Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
● 5.G.A.1. Use a pair of perpendicular number lines, called axes, to define a coordinate	MP.1 Make sense of problems and persevere in solving them.	Concept(s): ● Coordinate plane as perpendicular number lines.

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.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	● Perpendicular number lines (axes) define a coordinate system. ● Intersection of the lines (origin) coincides with the 0 on each number line. ● Given points in the plane is located using an ordered pair of numbers (coordinates). ● First numbers in an ordered pair indicates how far to travel from the origin in the direction of the x-axis. ● Second numbers in an ordered pair indicate how far to travel in the direction of the y-axis. Students are able to: ● graph points defined by whole number coordinates in the first quadrant of the coordinate plane in order to represent real world and mathematical problems. ● interpret coordinates in context. Learning Goal 1: Represent real world and mathematical problems by graphing points defined by whole number coordinates in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
● 5.OA.A.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ● use two rules to create two numerical patterns.

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.*		● compare corresponding terms (e.g. compare the first terms in each list, compare the second terms in each list, etc). ● identify the relationship between corresponding terms and write ordered pairs. ● graph the ordered pairs. Learning Goal 2: Generate two numerical patterns from two given rules, identify the relationship between corresponding terms, create ordered pairs and graph the ordered pairs.
● 5.G.B.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *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 in a hierarchy based on properties.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): ● Attributes belonging to a category of two-dimensional figures also belong to *all* subcategories of that category. Students are able to: ● 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 3: Classify two- dimensional figures in a hierarchy based on properties.

● 5.MD.B.2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *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.*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	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 4: Make a line plot to display a data set in measurements in fractions of a unit (1/2, 1/4, 1/8) and use it to solve problems involving the four operations on fractions with unlike denominators.
● 5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: ● multiply multi-digit whole numbers with accuracy and efficiency. Learning Goal 5: Fluently multiply multi-digit whole numbers with accuracy and efficiency.
● 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,	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others.	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.

and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. *(benchmarked)	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure.	● 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 6: 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.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.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*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	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. ● use a story context to interpret division of a whole number by a unit fraction. ● 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: Solve real world problems involving division of unit fractions by whole numbers or whole numbers by unit fractions.

servings are in 2 cups of raisins?	

<table>
<tr><td colspan="2" style="background-color:#6aa84f; text-align:center">Unit 4 Overview (Coordinate Geometry and Measurement Conversions)</td></tr>
<tr><td>Content Area</td><td>Mathematics</td></tr>
<tr><td>Unit Title</td><td>Coordinate Geometry and Measurement Conversions</td></tr>
<tr><td>Grade Level</td><td>Grade 5</td></tr>
<tr><td>Recommended Pacing</td><td>APX: 40 Days</td></tr>
<tr><td>Unit Summary</td><td>In this unit of study students will use line plots, coordinate grids and patterns to graph and interpret data convert units of measure.</td></tr>
<tr><td>Interdisciplinary Connections</td><td>Primary Interdisciplinary Connections: Science</td></tr>
<tr><td>21st Century Themes/Career Ready Practices

● Communicating with students
● Using questioning and discussion techniques
● Engaging students in learning
● Using assessment in instruction
● Demonstrating Flexibility and Responsiveness</td><td>CRP2. Apply appropriate academic and technical skills.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.
CRP12. Work productively in teams while using cultural global competence.</td></tr>
<tr><td>Core Instructional Materials</td><td>enVisions Math
Pearson Realize
IXL
GSuite for Education
Projector
Internet resources</td></tr>
</table>

Activity handouts from the teacher Presentations via technology including educational videos on Safari and youtube.com · Subject software Internet resources Presentations via technology, including documentaries and videos from Safari, youtube.com and teacher-created materials.

Standard(s)/Mathematical Concepts

Mathematical Practice Standards:

- 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.

Technology Standards:

- 8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.Assess the credibility and accuracy of digital content.

- 8.2 Technology Education, Engineering, Design and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Progress Indicator(s) #	Progress Indicator Defined

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.*
5.MD.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.MD.B.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). 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.*
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.

RI.5.4	Determine the meaning of general academic and domain specific words and phrases in a text relevant to a grade 5 topic or subject area.
8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
8.1.5.A.2	Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
Formative assessment informs instruction and is ongoing throughout a unit to determine how students are progressing against the standards. ● Mathematical Vocabulary Activities ● Assessment Item Analysis ● UDL Menu ● Do Now / Exit Ticket ● Teacher / Student Questioning ● Class / Small Group Discussion ● Organizers ● Peer / Self Assessment ● Visual Presentations ● Think Pair Share ● Teacher Observation / Anecdotal Records ● Computer Based Applications/Programs ● Practice Presentations ● Homework Activities	*Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit.* ● Unit Test 4 Assessment 1 (Pre Progress Reporting Period 1) ● Unit Test 4 Assessment 2 ● Teacher Constructed Standards Based Quiz 1(Pre Progress Reporting Period 1) ● Teacher Constructed Standards Based Quiz 2 ● Alternative Assessment Teacher Constructed 1 (Pre Progress Reporting Period 1) ● Alternative Assessment Teacher Constructed 2

District/School Writing Tasks

Primary Focus	Routine Writing
This is connected to the types of writing as indicated in the standards: ● Informational/Explanatory ● Research	*This is daily writing or writing that is done several times over a week.* ● Text Dependent Writing (TDQ) ● Quickwrites ● Routine Writing

Unit Essential Questions

● How can you use line plots, coordinate grids, and patterns to help you graph and interpret data?
● What strategies can you use to compare and convert measurements?

Unit Enduring Understandings

● Analyze patterns and relationships.
● Represent and interpret data.
● Graph points on the coordinate plane to solve real-world and mathematical problems.
● Convert like measurement units within a given measurement system.

Key Vocabulary

● Data
● line plot
● ordered pair
● origin
● scale
● x-axis
● x-coordinate
● y-axis
● y-coordinate
● degree Fahrenheit
● interval
● line graph
● scale
● foot

- inch
- mile
- yard
- capacity
- cup
- fluid ounce
- gallon
- pint
- quart
- ounce
- pound
- ton
- weight
- dekameter
- centimeter
- decimeter
- gram
- kilogram
- kilometer
- liter
- mass
- meter
- milligram
- milliliter
- millimeter
- elapsed time

Unit Learning Targets (Students will do…)

- Make and use line plots with fractions to solve problems.
- Graph and name points on a coordinate grid using ordered pairs.
- Analyze and display data in a line graph.
- Use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
- Solve problems using the strategy *solve a simpler problem.*
- Graph the relationship between two numerical patterns on a coordinate grid.
- Compare, contrast, and convert customary units of length, capacity, and weight.

- Convert measurement units to solve multi-step problems.
- Compare, contrast, and convert metric units.
- Solve problems about customary and metric conversions using strategy *make a table.*
- Convert units of time to solve elapsed time problems.

Instructional Best Practices and Exemplars

Instructional Best Practices and Exemplars
Instructional Best Practices
(Please see information in attached link)

Modifications for SpEd/ESL/Students at Risk/Gifted

● Complete fewer or different homework problems than peers

● Write shorter papers

● Supports, Accommodations, and Modifications must be provided as stated in IEP, 504 Plan, or I&RS Intervention Plan, and may include (but are not limited to) the following:

Presentation accommodations:
● Listen to audio recordings instead of reading text
● Learn content from audio books, movies, videos and digital media instead of reading print versions
● Use alternate texts at lower readability level
● Work with fewer items per page or line and/or materials in a larger print size
● Use magnification device, screen reader, or Braille / Nemeth Code
● Use audio amplification device (e.g., hearing aid(s), auditory trainer, sound-field system (which may require teacher use of microphone)
● Be given a written list of instructions
● Record a lesson, instead of taking notes
● Have another student share class notes with him
● Be given an outline of a lesson
● Be given a copy of teacher's lecture notes
● Be given a study guide to assist in preparing for assessments
● Use visual presentations of verbal material, such as word webs and visual organizers
● Use manipulatives to teach or demonstrate concepts
● Have curriculum materials translated into native language

Response accommodations:

- Use sign language, a communication device, Braille, other technology, or native language other than English
- Dictate answers to a scribe
- Capture responses on an audio recorder
- Use a spelling dictionary or electronic spell-checker
- Use a word processor to type notes or give responses in class
- Use a calculator or table of "math facts"
- Respond directly in the test booklet rather than on an answer sheet. Setting accommodations:
- Work or take a test in a different setting, such as a quiet room with few distractions
- Sit where he learns best (for example, near the teacher, away from distractions)
- Use special lighting or acoustics
- Take a test in small group setting
- Use sensory tools such as an exercise band that can be looped around a chair's legs (so fidgety kids can kick it and quietly get their energy out)
- Use noise buffers such as headphones, earphones, or earplugs

Timing accommodations:
- Take more time to complete a task or a test
- Have extra time to process oral information and directions
- Take frequent breaks, such as after completing a task

Scheduling accommodations:
- Take more time to complete a project
- Take a test in several timed sessions or over several days
- Take sections of a test in a different order
- Take a test at a specific time of day

Organization skills accommodations:
- Use an alarm to help with time management
- Mark texts with a highlighter
- Have help coordinating assignments in a book or planner
- Receive study skills instruction

Assignment modifications:

● Answer fewer or different test questions
● Create alternate projects or assignments

Curriculum modifications:
● Learn different material
● Get graded or assessed using a different standard than the one for classmates