COURSE TITLE

Grade 4- Math

LENGTH

Full Year

DEPARTMENT

STEM Department

SCHOOL

Pierrepont Elementary School

DATE

September 10, 2018

Initial BOE Approval Date (Born on): 6/15/2015

Grade 4- Math

I. Introduction/Overview/Philosophy

In Grade 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

1. Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.
2. Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., 15/9 = 5/3), and they develop methods for generating and recognizing equivalent fractions. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.
3. Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

II. Objectives

Course Outline:

1. Working with Whole Numbers
    a. Recalling Prior Knowledge
    b. Writing numbers to 100,000 in standard form, word form, and expanded form
    c. Compare and order numbers to 100,000
    d. Adding and Subtracting multi-digit numbers
2. Estimation and Number Theory
    a. Recalling Prior Knowledge
    b. Estimation
    c. Factors

   d. Multiples
   e. Multiplying using models
3. Whole Number Multiplication and Division
   a. Recalling Prior Knowledge
   b. Multiplying by 1 Digit Numbers
   c. Multiplying by 2 digit Numbers
   d. Modeling Division with Regrouping
   e. Dividing by a 1-digit Number
   f. Real-World Problems: Multiplication and Division
4. Tables and Line Graphs
   a. Recalling Prior Knowledge
   b. Making and Interpreting a Table
   c. Using a Table
   d. Line Graphs
5. Data and Probability
   a. Recalling Prior Knowledge
   b. Average
   c. Median, Mode, and Range
   d. Stem-and-Leaf Plots
   e. Outcomes
   f. Probability as a Fraction
   g. Real-World Problems: Data and Probability
6. Fractions and Mixed Numbers
   a. Recalling Prior Knowledge
   b. Adding Fractions
   c. Subtracting Fractions
   d. Mixed Numbers
   e. Improper Fractions
   f. Renaming Whole Numbers When Adding and Subtracting Fractions
   g. Real-World Problems: Fractions
   h. Line Plot with Fractions of a Unit
7. Decimals
   a. Recalling Prior Knowledge
   b. Understanding tenths
   c. Understanding hundredths
   d. Comparing Decimals
   e. Rounding Decimals
   f. Fractions and Decimals
8. Adding and Subtracting Decimals
   a. Recalling Prior Knowledge’
   b. Adding Decimals
   c. Subtracting Decimals
   d. Real-World Problems: Decimals
9. Angles
   a. Recalling Prior Knowledge
   b. Understanding and Measuring Angles
   c. Drawing Angles to 180 degrees
   d. Turns and Angle Measures

10. Perpendicular and Parallel Line Segments
    a. Recalling Prior Knowledge
    b. Drawing Perpendicular Line Segments
    c. Drawing Parallel Line Segments
    d. Horizontal and Vertical Lines
11. Squares and Rectangles
    a. Recalling Prior Knowledge
    b. Squares and Rectangles
    c. Properties of Squares and Rectangles
12. Conversion of Measurement
    a. Recalling Prior Knowledge
    b. Length
    c. Mass, Weight, and Volume
    d. Time
    e. Real-World Measurement Problems
13. Area and Perimeter
    a. Recalling Prior Knowledge
    b. Area of a Rectangle
    c. Rectangles and Squares
    d. Composite Figures
    e. Using Formulas for Area and Perimeter
14. Symmetry
    a. Recalling Prior Knowledge
    b. Lines of Symmetry
    c. Rotational Symmetry
    d. Making Symmetric Shapes and Patterns
15. Identifying Tessellations
    a. Recalling Prior Knowledge
    b. Identifying Tessellations
    c. More Tessellations

Student Outcomes:

After successfully completing this course, the student will:

- Build fractions from unit fractions
- Draw and identify lines and angles, and classify shapes by properties of their lines and angles
- Extend understanding of fraction equivalence and ordering.
- Gain familiarity with factors and multiples
- Generalize place value understanding for multi-digit whole numbers
- Generate and analyze patterns
- Represent and interpret data
- Solve problems involving measurement and conversion of measurements
- Understand concepts of angle and measure angles (Geometric measurement)
- Understand decimal notation for fractions and compare decimal fractions.
- Use place value understanding and properties of operations to add and subtract
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Use the four operations with whole numbers to solve problems

New Jersey Student Learning Standards

CAREER READY PRACTICES

CRP1 Act as a responsible and contributing citizen and employee.

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2 Apply appropriate academic and technical skills.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation

CRP4 Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP6. Demonstrate creativity and innovation.

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP7. Employ valid and reliable research strategies.

Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP11. Use technology to enhance productivity.

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

TECHNOLOGY

Standard 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.
Strand A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
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.3- Use a graphic organizer to organize information about problem or issue.
Strand F: Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
8.1.5.F.1- Apply digital tools to collect, organize, and analyze data that support a scientific finding.

Standard 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.
Strand C. Design: The design process is a systematic approach to solving problems.
8.2.5.C.4- Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.
Strand D. Abilities for a Technological World: The designed world is the product of a design process that provides the means to convert resources into products and systems.
8.2.5.D.3- Follow step by step directions to assemble a product or solve a problem.

21ST CENTURY LIFE AND CAREERS
9.2 Career Awareness, Exploration, and Preparation
Strand A: Career Awareness
9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

NEW JERSEY STUDENT LEARNING STANDARDS- MATH

4.G.A.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.G.A.2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
4.G.A.3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
4.MD.A.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.
4.MD.C.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.

4.MD.C.5a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles.

4.MD.C.5b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
4.MD.C.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.MD.C.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.
4.NBT.A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
4.NBT.A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
4.NBT.A.3. Use place value understanding to round multi-digit whole numbers to any place.
4.NBT.B.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

4.NF.4.B.4b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.

4.NF.4.B.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.
4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
4.NBT.B.6. Find whole-number quotients and remainders with up to four-digit dividends and one-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.
4.NF.A.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that

comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
4.NF.B.3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b.

4.NF.B.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.B.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.

4.NF.B.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

4.NF.B.4a. Understand a fraction a/b as a multiple of 1/b.
4.NF.C.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
4.NF.C.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.
4.OA.A.1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
4.OA.B.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.
4.OA.C.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning

III. Proficiency Levels

This curriculum is appropriate for all grade 4 students.

IV. Methods of Assessment

Student Assessment
The teacher will provide a variety of assessments during the course of the year. The assessment may include but is not limited to: chapter and unit tests and quizzes, teacher observations, open-ended problems, cooperative work, and homework.

Curriculum/Teacher Assessment
The teacher will provide the subject area supervisor with suggestions for changes on an ongoing basis.

V. Grouping

This curriculum is appropriate for all students in grade 4.

VI. Articulation/Scope & Sequence/Time Frame

Course length is one year.

VII. Resources

Texts/Supplemental Reading/References

Math in Focus, Marshall Cavendish, 2015

VIII. Suggested Activities

Appropriate activities are listed in the curriculum map.

IX. Methodologies

The following methods of instruction are suggested: teacher guided explorations, working in groups/working with a partner, working with manipulatives and discovery activities.

X. Interdisciplinary Connections

At this grade level, connections to many other disciplines are appropriate and natural. Reading and writing become an integral part of the mathematics process. Connections with science are frequent throughout both curricula. Technology plays an important part in learning mathematics as well.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, Students at Risk, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Differentiating in this course includes but is not limited to:

Differentiation for Support (ELL, Special Education, Students at Risk)

- Peer mentoring on problems
- Differentiated teacher feedback on assignments
- Modeling out problems on whiteboard
- Visual aids as we project problems on whiteboard
- Study guides
- Tiered assignments
- Scaffolding of materials and assignments
- Re-teaching and review
- Guided note taking
- Exemplars of varied performance levels
- Multi-media approach to accommodating various learning styles

Differentiation for Enrichment

- Supplemental reading material for independent study
- Flexible grouping
- Tiered assignments
- Topic selection by interest
- Enhanced expectations for independent study
- Elevated questioning techniques using Webb's Depth of Knowledge matrix

XII. Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

XII. Curriculum Map/Pacing Guide

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
Working with Whole Numbers • Recalling Prior Knowledge • Writing numbers to 100,000 in standard form, word form, and expanded form • Compare and order numbers to 100,000 • Adding and Subtracting multi-digit numbers	3 Weeks	*For Support:* • Place-value chart to write multi-digit numbers • Place -value chips to represent numbers • Calculators to add and subtract multi-digit numbers • Google Translator *For Enhancement:* • Use of IXL • Inquiry-based instruction • Critical/Analytical thinking tasks on number sense	4.OA.C.5 4 NBT.A.1 4.NBT.A.2 4.NBT.B.4 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Teacher-made poster with place value columns and labels • Writing task: "Write the number….." • Kahoot • Quizlet Live • Prodigy • IXL Individual white-board assessment • Student self-assessments *Summative Assessment* • Quiz on writing numbers to 100,000 • Ch. 1 assessment on working with whole numbers
Estimation and Number Theory • Recalling Prior Knowledge • Estimation • Factors • Multiples • Multiplying using models	3 Weeks	*For Support:* • Use of notecards with rules of rounding • Teacher modeling • Visual aid with rules of rounding • Multiplication tables • Individual white boards • Google Translator *For Enhancement:* • Internet-based math challenges involving rounding	4.OA.A.2 4.OA.A.3 4.OA.B.4 4.NBT.A.2 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Exit Tickets on factors and multiples • IXL on factors, multiples, and estimation • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
		• Real-world problems using estimation for purchasing		*Summative Assessment* • Weekly quizzes • Chapter 2 assessment on estimation, factors, and multiples
Whole Number Multiplication and Division • Recalling Prior Knowledge • Multiplying by 1 Digit Numbers • Multiplying by 2 digit Numbers • Modeling Division with Regrouping • Dividing by a 1-digit Number • Real-World Problems: Multiplication and Division	4 weeks	*For Support:* • Multiplication chart • Calculator • Individual white boards • Word wall • Google Translator *For Enhancement:* • Extension activities creating a slideshow • Inquiry based problems in groups	4.OA.A.1 4.OA.A.2 4.OA.A.3 4.NBT.A.1 4.NBT.A.2 4.NBT.A.3 4.NBT.B.5 4.NBT.B.6 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Group work on division process • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Daily fact quizzes • Google Slide Presentation • Ch. 3 test
Tables and Line Graphs • Recalling Prior Knowledge • Making and Interpreting a Table • Using a Table • Line Graphs	3 Weeks	*For Support:* • Use of visuals • Use of graphic organizers to guide process • Teacher modeling • Individual white boards • Google Translator *For Enhancement:* • Extension of graphing project • Creation of student-made video on finding intervals	Mathematical Practices 1-8 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Graphing Project specific to a student's interest

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
				• Ch. 4 test
Data and Probability • Recalling Prior Knowledge • Average • Median, Mode, and Range • Stem-and-Leaf Plots • Outcomes • Probability as a Fraction • Real-World Problems: Data and Probability	3 Weeks	*For Support:* • Use of a calculator to find mean (average) • Use of notecards for process of obtaining mean, mode, and median • Individual white boards • Google Translator *For Enhancement:* • Inquiry-based questions in groups • Real-word problems to find mean, mode, median	4.NF.A.1 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Classwork assessment on computer based creation of the line plot • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Student driven project on probability • Ch. 5 test
Fractions and Mixed Numbers • Recalling Prior Knowledge • Adding Fractions • Subtracting Fractions • Mixed Numbers • Improper Fractions • Renaming Whole Numbers When Adding and Subtracting Fractions • Real-World Problems: Fractions • Line Plot with Fractions of a Unit	3 Weeks	*For Support:* • Word wall depicting vocabulary: fraction, numerator, denominator, and mixed numbers • Fraction models • Fraction number lines • Individual white boards • Google Translator *For Enhancement:* • Internet-based projects on creating fraction visuals • Critical thinking task: changing fractions to decimals	4.OA.A.2 4.NF.A.1 4.NF.B.3.a 4.NF.B.3.b 4.NF.B.3.c 4.NF.B.3.d 4.NF.B.4.a 4.NF.B.4.b 4.NF.B.4.c 4.MD.A.1 4.MD.B.4 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Classwork on fractions • Reflex Math analysis • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Quizzes on finding like denominators • Ch. 6 test
Decimals	3 Weeks	*For Support:*	4.OA.C.5	*Formative Assessment:*

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
• Recalling Prior Knowledge • Understanding tenths • Understanding hundredths • Comparing Decimals • Rounding Decimals • Fractions and Decimals		• Place-value chart to place numerals • Model with dimes (tenths) and pennies (hundredths) • Notes via Google Slides to be used for reference • Individual white boards • Google Translator *For Enhancement:* • IXL on tenths, hundredths, along with word problems with both • Student created videos with the process	4.NF.A.1 4.NF.B.3.a 4.NF.C.5 4.NF.C.6 4.NF.C.7 4.MD.A.1 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	• Google Form Homework • Pair/share to compare tenths and hundredths • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Quizzes on writing tenths and hundredths • Weekly assessment on problems with tenths and hundredths • Ch. 7 test
Adding and Subtracting Decimals • Recalling Prior Knowledge' • Adding Decimals • Subtracting Decimals • Real-World Problems: Decimals	2 Weeks	*For Support:* • Base-ten blocks • Place value charts to line up decimals • Individual white boards • Google Translator *For Enhancement:* • IXL • Student-driven project involving real-life problems	4.NBT.A.1 4.NBT.A.2 4.NBT..B.4 4.NF.C.5 4.MD.A.1 4.MD.A.2 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Google Form classwork • Cooperative work on real-life decimal problems • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Mid-year Linkit assessment on decimals • Ch. 8 test

Unit Topic	**Time Allocated**	**Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students**	**Standards**	**Assessments**
Angles • Recalling Prior Knowledge • Understanding and Measuring Angles • Drawing Angles to 180 degrees • Turns and Angle Measures	3 Weeks	*For Support:* • Notecards with acute, obtuse, and right angle measurements • Visual aids hung on math bulletin boards • Individual white boards • Google Translator *For Enhancement:* • Flipped Classroom on angles (Video) • Student creation of real-life visuals with correct angle denoted	4.G.A.1 4.G.A.2 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • IXL on type of angles/measurement of angles • Exit ticket on types of angles • Kahoot • Quizlet Live • Prodigy • Individual white-board assessment • Student self-assessments *Summative Assessment* • Quiz on angle measurement • Ch. 9 test on angles
Perpendicular and Parallel Line Segments • Recalling Prior Knowledge • Drawing Perpendicular Line Segments • Drawing Parallel Line Segments • Horizontal and Vertical Lines	2 Weeks	*For Support:* • Visual aids on math bulletin board depicting parallel, perpendicular, horizontal, and vertical lines • Testing accommodations made for individual students • Individual white boards • Google Translator *For Enhancement:* • Inquiry-based questions on differentiating parallel, perpendicular, horizontal, and vertical lines • Extension activity on parallel, perpendicular, horizontal, and vertical lines in room design	4.G.A.1 4.G.A.2 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Google drawing classwork on parallel, perpendicular, horizontal, and vertical lines • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Google Drawings depicting parallel, perpendicular, horizontal, and vertical lines • Ch. 10 test on parallel, perpendicular, horizontal, and vertical lines

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
				• Individual white-board assessment • Student self-assessments
Squares and Rectangles • Recalling Prior Knowledge • Squares and Rectangles • Properties of Squares and Rectangles	2 Weeks	*For Support:* • Geoboards • Individual white boards • Word wall illustrating differences of squares and rectangles • Google Translator *For Enhancement:* • Design a room in Google Drawing • Enrichment problems to find area and perimeter	4.OA.A.3 4.MD.A.1 4.MD.A.2 4.MD.A.7 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • IXL on properties of area and perimeter • Google Form classwork on finding the missing sides of squares and rectangles • Kahoot • Quizlet Live • Prodigy • Individual white-board assessment • Student self-assessments *Summative Assessment* • Design your room in Google Slides • Ch. 11 test on squares and rectangles

Unit Topic	**Time Allocated**	**Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students**	**Standards**	**Assessments**
Conversion of Measurement • Recalling Prior Knowledge • Length • Mass, Weight, and Volume • Time • Real-World Measurement Problems	2 Weeks	*For Support:* • Models to help with measurement including ounces, cups, pints, quarts, gallons, standard rulers, yardstick, metric rulers, and clocks • Graphic organizers with conversions listed of inches to feet, feet to yards, cups to pints, pints to quarts, quarts to gallons, seconds to minutes, minutes to hours • Graphic organizers with metric conversions of liter to milliliters, Kilograms to grams, grams to milligrams kilometers to meters, meters to centimeters, and meters to millimeters. • Graphic organizers with ounces to pounds, pounds to tons. • Bar models to help model conversions • Individual white boards • Google Translator *For Enhancement:* • Inquiry-based instruction with group problems after previewing teacher made video on topic • Real-world problems about weight, mass, volume, length, and time.	4NBT.B.6 4NF.B.3.c 4NF.B.4.b 4.MD.A.1 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Exit tickets • Calendar Math • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Quizzes on conversions • Ch. 11 test on conversions of measurement

Unit Topic	**Time Allocated**	**Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students**	**Standards**	**Assessments**
Area and Perimeter • Recalling Prior Knowledge • Area of a Rectangle • Rectangles and Squares • Composite Figures • Using Formulas for Area and Perimeter	3 Weeks	*For Support:* • Graph paper • Calculators • Individual white boards • Google Translator *For Enhancement:* • Inquiry-based problems • Real-world problems including room designs	4.OA.A.3 4.MD.A.1 4.MD.A.2 4.MD.A.3 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Homework • Room design on Google Drawings • IXL on area and perimeter • Kahoot • Quizlet Live • Prodigy • Individual white-board assessment • Student self-assessments *Summative Assessment* • Room design project • Ch. 13 test on area and perimeter
Symmetry • Recalling Prior Knowledge • Lines of Symmetry • Rotational Symmetry • Making Symmetric Shapes and Patterns	2 Weeks	*For Support:* • Teacher modeling • Graph paper • Shapes to identify shapes that are symmetrical • Individual white boards • Google Translator *For Enhancement:* • Student-driven project on symmetry • IXL	4.OA.C.5 4.G.A.2 4.G.A.3 CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	*Formative Assessment:* • Cite examples of visuals around the classroom that have line and rotational symmetry • Homework • Exit ticket • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Analysis of symmetrical shapes on Google Drawing • Ch. 14 test
Identifying Tessellations	2 Weeks	*For Support:*		*Formative Assessment:*

Unit Topic	Time Allocated	Differentiating Instruction for Students with Disabilities, Students at Risk, English Language Learners, & Gifted & Talented Students	Standards	Assessments
• Recalling Prior Knowledge • Identifying Tessellations • More Tessellations		• Graph paper • Geometric shapes • Isometric dot paper • Cut out shapes • Individual white boards • Google Translator *For Enhancement:* • Google Drawing • IXL on tessellations	CRP1,2,4,6,7,8,11,12 8.1.5.A.1, 8.1.5.A.3, 8.1.5.F.1 8.2.5.C.4, 8.2.5.D.3 9.2.4.A.4	• Google Drawing • Dot paper assessment • Homework • Kahoot • Quizlet Live • Prodigy • IXL • Individual white-board assessment • Student self-assessments *Summative Assessment* • Google Drawing Project on Tessellations • Ch. 15 test