Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Curriculum Development Timeline

School: Township of Ocean Elementary Schools

Course: Mathematics, Grade 5

Department: Mathematics

Board Approval	Supervisor	Notes
July 2008	Victor Milano	Born Date
November 2012	Christine Picerno	Revisions
December 2017	Christine Picerno	Revisions
March 2019	Christine Picerno	Revisions

Home of the Spartans!
#spartanlegacy

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Marking Period 1		Marking Period 2	
1	Number & Operations in Base Ten	11	Number & Operations in Base Ten
2	Number & Operations in Base Ten	12	Number & Operations in Base Ten
3	Number & Operations in Base Ten	13	Number & Operations in Base Ten
4	Number & Operations in Base Ten	14	Number & Operations in Base Ten
5	Number & Operations in Base Ten	15	Number & Operations- Fractions
6	Number & Operations in Base Ten	16	Number & Operations- Fractions
7	Number & Operations in Base Ten	17	Number & Operations- Fractions
8	Number & Operations in Base Ten	18	Number & Operations- Fractions
9	Number & Operations in Base Ten	19	Number & Operations- Fractions
10	Number & Operations in Base Ten	20	Number & Operations- Fractions
Marking Period 3		**Marking Period 4**	
21	Number & Operations- Fractions	31	Measurement & Data
22	Number & Operations- Fractions	32	Operations & Algebraic Thinking
23	Number & Operations- Fractions	33	Operations & Algebraic Thinking
24	Number & Operations- Fractions	34	Operations & Algebraic Thinking
25	Number & Operations- Fractions	35	Operations & Algebraic Thinking
26	Number & Operations- Fractions	36	Operations & Algebraic Thinking
27	Number & Operations- Fractions	37	Geometry
28	Measurement & Data	38	Geometry
29	Measurement & Data	39	Geometry
30	Measurement & Data	40	Geometry

Home of the Spartans!
#spartanlegacy

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Time Frame	**September - December (14 Weeks)**
Topic	
Number and Operations in Base Ten	
Essential Questions	
• How are relationships helpful in mathematics? • What makes a strategy for computing effective and efficient? • How is math a language? • What would be impossible if we had no numbers? • Why is it useful to compose and decompose numbers?	
Enduring Understandings	
Students will understand that… • A quantity can be represented numerically in various ways. • Place value understanding is essential when modeling, comparing and computing whole numbers and decimals. • A variety of algorithms can be utilized when computing whole numbers and decimals	

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Alignment to NJSLS

- **5.NBT.A.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
- **5.NBT.A.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- **5.NBT.A.3** Read, write, and compare decimals to thousandths.
    - **3a** Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).
    - **3b** 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.

Key Concepts and Skills

- Understand decimals as equal divisions of a whole.
- Read, write, and model whole and decimal numbers.
- Model and identify equivalent decimals.
- Model adding and subtracting decimals.
- Add and subtract whole numbers and decimals to hundredths.
- Use the Commutative, Associative, and Distributive Properties to compute mentally.
- Estimate decimal sums and differences.
- Read construct graphs with decimal scales and decimals numbers.
- Use the NJSLS and Math Practices in a variety of real world problem solving situations.

Learning Activities

In this unit, students extend their understanding of the base-ten system to decimals to the thousandths place, building on their previous work with tenths and hundredths. Students observe that the process of composing and decomposing a base-ten unit is the same for decimals as for whole numbers and the same methods of recording numerical work can be used with decimals as

with whole numbers. Concrete materials, number lines, visual models and real world situations are used throughout the unit to illustrate important number & operation concepts as well as decimal concepts.

In addition, students multiply whole numbers and decimals. Their work involves finding the products of two-digit whole numbers and decimals both less than 1 and greater than 1, and estimating products by rounding factors.

Previously, students learned to divide multi-digit numbers by one-digit divisors. In this unit, students build on what they learned as they explore dividing multi-digit numbers by two-digit divisors. Students also learn a strategy for changing a division problem with a decimal divisor to an equivalent problem with a whole number divisor. They solve real world division problems and interpret the remainders in the contexts of the problems. They also use estimation to determine whether answers are reasonable. Real world situations are used throughout the unit to illustrate important division concepts.

enVision Math 2.0 Units of Study
Topic 5 - Use Models and Strategies to Divide Whole Numbers
Topic 6 - Use Models and Strategies to Divide Decimals
Topic 7 - Use Equivalent Fractions to ADd and Subtract Fractions
Topic 8 - Apply Understanding of Multiplication to Multiply Fractions

Curriculum Resources

Math Literature:

- Sold! A Mothematics Adventure by Nathan Zimelman
- The Amazing Impossible Erie Canal by Cheryl Harness
- A Remainder of One by Elinor J. Pinczes
- The Everything Kids' Money Book: Earn it, save it, watch it grow! by Brette McWhorter Sember
- The Great Divide: A Mathematical Marathon by Dayle Ann Dodds

enVision Math 2.0 Resources:

- Realize Online Platform
- Math Center Challenges
- MDIS - Math Diagnostic and Intervention System
- Student Editions
- Response to Intervention Tiered Materials

Assessments

Formative Assessments

- Teacher Observation
- Exit Slips/Check for Understanding

- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Daily Classwork
- Pre-Assessment
- Homework pages
- Fluency Check
- Quick Quiz
- Student Activity Pages

Summative Assessments

- Quick Quiz
- Performance Task
- Unit Test

Alternative Assessments

- Dividing Money Amongst Friends. – Activity to Support Savings
- Selling Properties in Different Towns – What we notice? Do taxes really impact us?

Career Ready Practices

CRP 4. SW communicate clearly and effectively and with reason while working on groups on the Solve and Share portion of the lesson.

CRP 11. SW use technology to enhance productivity by accessing the Quick Check via the Pearson Platform.

Interdisciplinary Connections

Language Arts Learning Activities:

- Build a strong base of knowledge through content-rich texts
- Read, write, and speak grounded in evidence
- Construct viable arguments and critique the reasoning of others
- Engage in argument from evidence

Alignment to Standards:

- **L.5.6.** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*).
- **L.5.4.** Determine or clarify the meaning of unknown and multiple-meaning words and

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

- **NJSLSA.L4.** Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

Science Learning Activities:

- Model with mathematics
- Develop and use models
- Use mathematics, information and computer technology, and computational thinking

Alignment to Standards:

- **3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3**. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. The performance expectations above were developed using the following elements
- **5-PS1-3.** Make observations and measurements to identify materials based on their properties.

Technology Integration

Technology Learning Activities:

- Students use Chromebooks to access Pearson Realize platform to practice and reinforce skills and concepts.
- Students will use Google Classroom to access links to interactive activities and math games.
- Students will access various websites, such as, Prodigy, Arcademics, Cool Math and IXL to practice and reinforce math skills.

Alignment to Standards:

- **TECH.8.1.2** 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.
- **TECH.8.1.2.A.CS2** Select and use applications effectively and productively

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

- **TECH.8.2.2.C** The design process is a systematic approach to solving problems

Time Frame	January-March (13 weeks)

Topic

Number & Operations - Fractions

Essential Questions

- Why do we need different kinds of numbers (ordinal, fractions, decimals, etc)?
- How does explaining my process help me to understand a problem better?
- What do effective problem solvers do, and what do they do when they get stuck?

Enduring Understandings

Students will understand that…

- Common denominators are needed when adding and subtracting fractions.
- There are multiple strategies for finding common denominators.
- Fractions are an integral part of real world situations. Fractions can be modeled and computed in a variety of ways.

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

Alignment to NJSLS

- **5.NF.A.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
- **5.NF.A.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. 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.
- **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
    - **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.
    - **4b** Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- **5.NF.B.5** Interpret multiplication as scaling (resizing).
    - **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.
    - **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.
- **5.NF.B.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- **5.NF.B.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
    - **7a** Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
    - **7b** Interpret division of a whole number by a unit fraction, and compute such quotients.
    - **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.

Key Concepts and Skills

- Use fraction bars to discuss basic fraction ideas.
- Generate and explain simple equivalent fractions.
- Understand the role of the multiplier in equivalent fractions.
- Use a variety of strategies to compare fractions.
- Convert between fractions and mixed numbers.
- Add and subtract mixed numbers with like denominators
- Add and subtract fractions with different denominators.
- Add and subtract mixed numbers with unlike denominators.
- Estimate sums and differences of fractions and mixed numbers, and decide whether answers are reasonable.
- Use estimates to determine whether answers to word problems are reasonable.
- Connect multiplying by 1/n to dividing by n, and use this idea to make multiplicative comparisons.
- Interpret 3/b times a quantity as a of b equal parts of that quantity.
- Multiply a whole number by a fraction to produce a fraction.
- Multiply any two fractions.
- Compare and apply strategies for multiplying fractions.
- Multiply with mixed numbers.
- Relate operations with fractions and whole numbers, and discuss properties of arithmetic.
- Add, subtract, compare, multiply, and divide fractions to solve word problems.
- Predict the size of a product relative to the size of one factor based on the size of the other factor.
- Relate division by a unit fraction or whole number to multiplication.
- Determine whether solving a word problem requires multiplication or division.
- Use the NJSLS and Math Practices in a variety of real world problem solving situations

Learning Activities

In this unit, students study fractions and mixed numbers. They find equivalent fractions, compare fractions, and add and subtract fractions and mixed numbers. Students apply their understanding of fractions and fraction models to represent the addition and subtraction with unlike denominators as equivalent problems with like denominators. They make reasonable estimates of the sums and differences.

Students will also connect fractions with division: 5 ÷ 3 = 5/3. Students use their understanding of multiplication by a fraction to generalize a formula for the product of two fractions. They connect their understanding of division as equal sharing of fractions. Visual models and real world situations are used throughout the unit to illustrate important fraction concepts

enVision Math 2.0 Units of Study
Topic 15 - Algebra: Analyze Patterns and Relationships

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Topic 16 - Geometric Measurement: Classify Two-Dimensional Figures
Stepping Up Lessons

Curriculum Resources

Math Literature:

- Polar Bear Math: Learning About Fractions with Klondike and Snow by Authors Ann Whitehead Nagda and Cindy Bickel
- Working with Fractions by David A. Adler
- Go, Fractions! by Judith Stamper
- Parting is Such Sweet Sorrow: Fractions and Decimals (Adventures in Mathopolis) by Linda Powley and Catherine Weiskopf

enVision Math 2.0 Resources:

- Realize Online Platform
- Math Center Challenges
- MDIS - Math Diagnostic and Intervention System
- Student Editions
- Response to Intervention Tiered Materials

Assessments

Formative Assessments

- Teacher Observation
- Exit Slips/Check for Understanding
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Daily Classwork
- Pre-Assessment
- Homework pages
- Fluency Check
- Quick Quiz
- Student Activity Pages

Summative Assessments

- Quick Quiz
- Performance Task
- Unit Test

Alternative Assessments

- A Polar Bear's Diet. – Polar Bear Creation

- How can we build a tower with the most amount of angles? (Spaghetti)

21st-Century Skills

Career Ready Practices

CRP 4. SW communicate clearly and effectively and with reason during the Solve and Share portion and related center activities of the lesson.

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving independent practice and problem solving problems.

CRP 11. SW use technology to enhance productivity by accessing the Pearson Platform.

Interdisciplinary Connections

Language Arts Learning Activities:

- Build a strong base of knowledge through content-rich texts
- Read, write, and speak grounded in evidence
- Construct viable arguments and critique the reasoning of others
- Engage in argument from evidence

Alignment to Standards:

- **SL.5.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
- **SL.5.4.** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- **SL.5.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
- **NJSLSA.SL2.** Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally

Science Learning Activities:

- Model with mathematics
- Develop and use models
- Use mathematics, information and computer technology, and computational thinking

Alignment to Standards:

- **5-ESS3-1**. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment
- **3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. The performance expectations above were developed using the following elements from the

Technology Integration

Technology Learning Activities:

- Students use Chromebooks to access Pearson Realize platform to complete their independent practice and problem solving problems online.
- Students will use Google Classroom to access links to interactive activities and math games.
- Students will access various websites, such as, Prodigy, Arcademics, Cool Math and IXL to practice and reinforce math skills during center related activities.

Alignment to Standards:

- **TECH.8.1.2** 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.
- **TECH.8.1.2.A.CS2** Select and use applications effectively and productively
- **TECH.8.2.2.C** The design process is a systematic approach to solving problems

Time Frame	April (4 weeks)

Topic

Measurement and Data

Essential Questions

- When can two people look at the same set of data and come up with different conclusions?
- What is the connection between the type of data and the type of display?
- How are shape and dimension used to draw, construct, model and represent real situations or solve problems?

- How does "what" is measured influence "how" it is measured?

Enduring Understandings

Students will understand that…

- When converting metric measurement, it's essential to apply understanding of place value and decimals.
- Data displays convey information in a concise way.
- Volume is an attribute of three dimensional space and is measured in cubic units.
- Volume is additive: volumes of composite solids can be determined by adding the volumes of each solid.

Alignment to NJSLS

- **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.
- **5.MD.C.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
  - **3a** 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.
  - **3b** 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.
- **5.MD.C.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume
  - **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 whole-number products as volumes, e.g., to represent the associative property of multiplication.
  - **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.
  - **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.

Key Concepts and Skills

- Convert among metric units of length.
- Convert among metric units of liquid volume.
- Convert among metric units of mass.

- Convert among customary units of length.
- Convert among customary units of liquid volume.
- Convert among customary units of weight.
- Make and analyze line plots.
- Use a formula to find the perimeter and area of a rectangle with fractional side lengths.
- Use a formula to find the volume of a rectangular prism.
- Identify whether a situation involves length, area or volume.
- Find the volume of a composite solid figure.
- Use the NJSLS and Math Practices in a variety of real world problem solving situations.

Learning Activities

Previously, students used multiplication to convert larger units to smaller units within the same measurement system. In this unit, students use both multiplication and division to convert within the same system. This is the first grade level in which students convert smaller units to larger units. Students worked with the perimeter and area of rectangles in earlier grades. At this grade level, they work with key concept of volume, exploring the concept using hands-on unit cubes, and progressing in their work to using a formula. Students also have previous experience identifying geometric figures by their properties. In Grade 5, students draw as well as sort and classify polygons by their attributes. They begin to formulate the idea of a hierarchy of quadrilateral properties. Visual models and real world situations are used throughout the unit to illustrate important concepts.

enVision Math 2.0 Units of Study

Topic 9 - Apply Understanding of Division to Divide Fractions
Topic 10 - Understand Volume Concepts
Topic 11 - Convert Measurements

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Curriculum Resources

Math Literature:

- The Math Chef: Over 60 Math Activities and Recipes for Kids by Joan D'Amico and Karen Eich Drummond

enVision Math 2.0 Resources:

- Realize Online Platform
- Math Center Challenges
- MDIS - Math Diagnostic and Intervention System
- Student Editions
- Response to Intervention Tiered Materials

Assessments

Formative Assessments

- Teacher Observation
- Exit Slips/Check for Understanding
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Daily Classwork
- Pre-Assessment
- Homework pages
- Fluency Check
- Quick Quiz
- Student Activity Pages

Summative Assessments

- Quick Quiz
- Performance Task
- Unit Test

Alternative Assessments

- Topic Math/Science Connections

Career Ready Practices

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving problem solving problems.

CRP 11. SW use technology to enhance productivity by accessing various online skill based

Home of the Spartans!
#spartanlegacy

websites.

Interdisciplinary Connections

Language Arts Learning Activities:

- Build a strong base of knowledge through content-rich texts
- Read, write, and speak grounded in evidence
- Construct viable arguments and critique the reasoning of others
- Engage in argument from evidence

Alignment to Standards:

- **SL.5.4.** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- **SL.5.5.** Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
- **L.5.6.** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*).

Science Learning Activities:

- Model with mathematics
- Develop and use models
- Use mathematics, information and computer technology, and computational thinking

Alignment to Standards:

- **5-PS1-2**. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
- **3-5-ETS1-1**. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. The performance expectations above were developed using the following elements from the

Technology Integration

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Technology Learning Activities:

- Students use Chromebooks to access Pearson Realize platform to practice and reinforce skills and concepts.
- Students will use Google Classroom to access links to interactive activities and math games.
- Students will access various online websites to practice and reinforce math skills.

Alignment to Standards:

- **TECH.8.1.2** 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.
- **TECH.8.1.2.A.CS2** Select and use applications effectively and productively
- **TECH.8.2.2.C** The design process is a systematic approach to solving problems

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Time Frame	April – May (5 weeks)

Topic

Operations & Algebraic Thinking

Essential Questions

- How do I know when an answer is reasonable?
- What makes a mathematical argument convincing?
- Why is the ability to solve problems the heart of mathematics?
- When would an estimate be more useful than an exact answer?
- What similar problems does this remind me of?
- Are there any mathematical operations we could survive without?

Enduring Understandings

Students will understand that…

- Any number, measure, numerical or algebraic expression, or equation can be represented in a variety of ways that have the same value.
- Representing problems and situations mathematically can help us understand real life scenarios.
- The four operations are interrelated, and the properties of each may be used to understand the others.
- Different math approaches can yield the same results

Alignment to NJSLS

- **5.OA.A.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- **5.OA.A.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
- **5.OA.B.3** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

Key Concepts and Skills

- Read and write expressions.
- Simplify numerical expressions.
- Write and evaluate expressions that contain variables.
- Write situation and solution equations to solve addition, subtraction, multiplication and division problems.
- Write word problems for equations involving fractions and decimals and model the product.
- Use a variety of methods to determine reasonable answers.

- Understand and apply comparison language.
- Model and solve multiplicative comparison problems.
- Solve comparison and multi-step problems.
- Use the NJSLS and Math Practices in a variety of real world problem solving situations.

Learning Activities

In previous units, the lessons focused on math concepts and skills as students applied these skills in word problems. In this unit, the focus is on solving problems as students use whole numbers, fractions and decimals to find answers. Their work involves writing real world contexts and writing situation and solution equations for one-step, two-step and multistep problems representing addition, subtraction, multiplication, and division. Visual models and real world situations are used throughout the unit to represent problems and illustrate solutions.

enVision Math 2.0 Units of Study

Topic 1 - Understand Place Value
Topic 2 - Add and Subtract Decimals to Hundredths
Topic 3 - Fluently Multiply Multi-Digit Whole Numbers
Topic 4 - Use Models and Strategies to Multiply Decimals

Curriculum Resources

Math Literature:

- O, Say Can You See? by Sheila Keenan and Ann Boyajian
- Time for Kids Almanac by Time for Kids Editors

enVision Math 2.0 Resources:

- Realize Online Platform
- Math Center Challenges
- MDIS - Math Diagnostic and Intervention System
- Student Editions
- Response to Intervention Tiered Materials

Assessments

Formative Assessments

- Teacher Observation
- Exit Slips/Check for Understanding
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Daily Classwork
- Pre-Assessment
- Homework pages
- Fluency Check
- Quick Quiz

- Student Activity Pages

Summative Assessments

- Quick Quiz
- Performance Task
- Unit Test

Alternative Assessments

- About How Many People Live in Each Country?
- Can you add baseball averages?

21st-Century Skills

9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

Career Ready Practices

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving problem solving problems.

CRP 11. SW use technology to enhance productivity by accessing various online skill based websites.

Interdisciplinary Connections

Language Arts Learning Activities:

- Build a strong base of knowledge through content-rich texts
- Read, write, and speak grounded in evidence
- Construct viable arguments and critique the reasoning of others
- Engage in argument from evidence

Alignment to Standards:

- **SL.5.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
- **SL.5.4.** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- **SL.5.5.** Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Science Learning Activities:

- Model with mathematics
- Develop and use models
- Use mathematics, information and computer technology, and computational thinking

Alignment to Standards:

- **3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved

Technology Integration

Technology Learning Activities:

- Students use Chromebooks to access Pearson Realize platform to practice and reinforce skills and concepts.
- Students will use Google Classroom to access links to: interactive activities and math games.
- Students will access various online websites to practice and reinforce math skills.

Alignment to Standards:

- **TECH.8.1.2** 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.
- **TECH.8.1.2.A.CS2** Select and use applications effectively and productively
- **TECH.8.2.2.C** The design process is a systematic approach to solving problems

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Time Frame	May-June (4 weeks)

Topic

Geometry

Essential Questions

- How are shape and dimension used to draw, construct, model and represent real situations or solve problems?
- How does geometry depend on measurement in order to describe shapes?
- How does the measurement of angles and sides relate to the number of lines of symmetry a shape has?
- How can artists use what they have learned about geometry in their artwork?

Enduring Understandings

Students will understand that…

- Two dimensional shapes can belong to more than one category based on their attributes.
- Coordinate geometry can be used to represent and verify geometric/algebraic relationships.

Alignment to NJSLS

- **5.G.A.1** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- **5.G.A.2** Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
- **5.G.B.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
- **5.G.B.4** Classify two-dimensional figures in a hierarchy based on properties.

Key Concepts and Skills

- Understand attributes of different types of quadrilaterals.
- Understand attributes of different types of triangles.
- Understand attributes of polygons and other dimensional figures.
- Locate and plot points in the first quadrant of the coordinate plane.
- Graph ordered pairs and use them to represent and solve real world problems.

- Use the NJSLS and Math Practices in a variety of real world problem solving situations.

Learning Activities

In this unit, students will continue to identify geometric figures by their properties. In Grade 5, students draw as well as sort and classify polygons by their attributes. They begin to formulate the idea of a hierarchy of quadrilateral properties. Visual models and real world situations are used throughout the unit to illustrate important concepts.

enVision Math 2.0 Units of Study
Topic 12 - Represent and Interpret Data
Topic 13 - Write and Interpret Numerical Expressions
Topic 14 - Graph Points on the Coordinate Plane

Curriculum Resources

Math Literature:

- The Fly on the Ceiling by Dr. Julie Glass
- Find the Constellations by H. A. Rey

enVision Math 2.0 Resources:

- Realize Online Platform
- Math Center Challenges
- MDIS - Math Diagnostic and Intervention System
- Student Editions
- Response to Intervention Tiered Materials

Assessments

Formative Assessments

- Teacher Observation
- Exit Slips/Check for Understanding
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Daily Classwork
- Pre-Assessment
- Homework pages
- Fluency Check
- Quick Quiz
- Student Activity Pages

Summative Assessments

- Quick Quiz
- Performance Task
- Unit Test

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Alternative Assessments

- How Fast Can Different Animals or Insects Move? How can we visually display our findings?
- Constellations and their placements? Creating our own Planetarium.

21st-Century Skills

9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

Career Ready Practices

CRP 4. SW communicate clearly and effectively and with reason during the Solve and Share portion of the lesson.

CRP 8. SW utilize critical thinking to make sense of problems and persevere in solving independent practice and problem solving problems.

CRP 11. SW use technology to enhance productivity by accessing the Pearson Platform.

Interdisciplinary Connections

Language Arts Learning Activities:

● Build a strong base of knowledge through content-rich texts
● Read, write, and speak grounded in evidence
● Construct viable arguments and critique the reasoning of others
● Engage in argument from evidence

Alignment to Standards:

- **L.5.6.** Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however*, *although*, *nevertheless*, *similarly*, *moreover*, *in addition*).
- **L.5.3.** Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- **SL.5.1.** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

Science Learning Activities:

● Model with mathematics
● Develop and use models
● Use mathematics, information and computer technology, and computational thinking

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Alignment to Standards:

- **5-ESS2-1.** Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
- **5-LS2-1.** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- **3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. The performance expectations above were developed using the following elements from the

Technology Integration

Technology Learning Activities:

- Students use Chromebooks to access Pearson Realize platform to practice and reinforce skills and concepts.
- Students will use Google Classroom to access links to interactive activities and math games.

Alignment to Standards:

- **TECH.8.1.2** 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.
- **TECH.8.1.2.A.CS2** Select and use applications effectively and productively
- **TECH.8.2.2.C** The design process is a systematic approach to solving problems

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

Modifications (ELL, Special Education, At-Risk Students, Gifted and Talented, and 504 Plans)

ELL:

- Work toward longer passages as skills in English increase
- Use visuals
- Introduce key vocabulary before lesson
- Teacher models reading aloud daily
- Provide peer tutoring
- Use of Bilingual Dictionary
- Guided notes and/or scaffold outline for written assignments
- Provide students with English Learner leveled readers.

Supports for Students With IEPs:

- Allow extra time to complete assignments or tests
- Guided notes and/or scaffold outline for written assignments
- Work in a small group
- Allow answers to be given orally or dictated
- Use large print books, Braille, or books on CD (digital text)
- Follow all IEP modifications

At-Risk Students:

- Guided notes and/or scaffold outline for written assignments
- Introduce key vocabulary before lesson
- Work in a small group
- Lesson taught again using a differentiated approach
- Allow answers to be given orally or dictated
- Use visuals / Anchor Charts
- Leveled texts according to ability

Gifted and Talented:

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Provide whole group enrichment explorations

Home of the Spartans!
#spartanlegacy

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:
Meeting the needs of all students with a proud tradition of academic excellence.

- Teach cognitive and methodological skills
- Use center, stations, or contracts
- Organize integrated problem-solving simulations
- Propose interest-based extension activities
- Expose students to beyond level texts.

Supports for Students With 504 Plans:

- Follow all the 504 plan modifications
- Text to speech/audio recorded selections
- Amplification system as needed
- Leveled texts according to ability
- Fine motor skill stations embedded in rotation as needed
- Modified or constrained spelling word lists
- Provide anchor charts with high frequency words and phonemic patterns