



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.

DEPARTMENT Mathematics COURSE Mathematics, Grade 6

Curriculum Development Timeline

School: Township of Ocean Intermediate School

Course: Mathematics, Grade 6

Department: Mathematics

Board Approval	Supervisor	Notes
July 2006	Janet Bluefield	Born Date
July 2009	Janet Bluefield	Revisions/Alignment to NJCCS
July 2012	Janet Bluefield	Revisions
August 2016	Amanda Maltese	Revisions
July 2017	Nichole Kerney	Revisions/Alignment to NJSIS
August 2018	Nichole Kerney	Revisions
March 2019	Nichole Kerney	Review
August 2022	Gerard Marrone	Alignment to Standards Incorporate State Mandates

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Township of Ocean Pacing Guide			
Week	Marking Period 1	Week	Marking Period 3
1	Decimals, Fractions, Multiples & Factors	21	Rational Numbers
2	Decimals, Fractions, Multiples & Factors	22	Rational Numbers
3	Decimals, Fractions, Multiples & Factors	23	Ratio Concepts and Reasoning
4	Statistics: Measures of Center/Data Display	24	Ratio Concepts and Reasoning
5	Statistics: Measures of Center/Data Display	25	Ratio Concepts and Reasoning
6	Statistics: Measures of Center/Data Display	26	Ratio Concepts and Reasoning
7	Understand Numerical & Algebraic Expression	27	Ratio Concepts and Reasoning
8	Understand Numerical & Algebraic Expression	28	Ratio Concepts and Reasoning
9	Understand Numerical & Algebraic Expression	29	Geometry
10	Understand Numerical & Algebraic Expression	30	Geometry
Week	Marking Period 2	Week	Marking Period 4
11	Algebra: Understand Numerical and Algebraic Expressions	31	Geometry
12	Algebra: Understand Numerical and Algebraic Expressions	32	Geometry
13	Algebra: Understand Numerical and Algebraic Expressions	33	Geometry
14	Algebra: Understand Numerical and Algebraic Expressions	34	Geometry
15	Algebra: Solve Equations & Inequalities	35	Geometry
16	Algebra: Solve Equations & Inequalities	36	Geometry

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17	Algebra: Solve Equations & Inequalities	37	Statistics: Measures of Variability
18	Algebra: Solve Equations & Inequalities	38	Statistics: Measures of Variability
19	Algebra: Solve Equations & Inequalities	39	Statistics: Measures of Variability
20	Algebra: Solve Equations & Inequalities	40	Statistics: Measures of Variability

Core Instructional & Supplemental Materials including various levels of Texts

Core Instruction: EnVision 2.0 6th Math Workbook and Online Platform (Pearson)
Supplemental: IXL Math, ExamView (Pearson) and NJSLA Released Questions
Special Education Supplemental: Prodigy

[NJ Climate Change Educational Resources*](#)

* NJ Climate Change Education appears in the "Ratio Concepts and Reasoning" Unit

Time Frame	3 Weeks
Topic	
Decimals, Fractions, Multiples & Factors (EnVision 2.0 Topics 7, 8, 12)	
Alignment to Standards	
6.NS.1, 6.NS.2, 6.NS.3, 6.NS.4	
Learning Objectives and Activities	
This unit of study (Topics 7, 8, 12) focuses on a deep understanding of our number system through fluency in computations with decimals, fractions and finding common factors and multiples. The conceptual underpinnings that provide conceptual cohesion of the content include algorithms for performing each operation with rational numbers. Most algorithms for operations with rational numbers use equivalence to transform calculations into simpler ones. Another prominent idea is that calculations can be estimated by replacing numbers with those that are close and easy to compute with mentally. SWBAT answer the following questions: How can you estimate with decimals?	

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- How can you add, subtract, multiply and divide with decimals?
- How can you use prime and composite numbers to write the prime factorization of a number?
- How can you find the greatest common factor of two numbers?
- How can you find the least common multiple of two numbers?
- How can you represent division of fractions?
- How can you divide a whole number by a fraction?
- How can you model dividing a fraction by a fraction?
- How can you find the quotient of two fractions?
- How can you estimate the quotient of mixed numbers?

SWBAT demonstrate understanding of the following:

- Estimates can be found by using strategies such as rounding and compatible numbers. Some problems can be solved with an estimate.
- A general method, or standard algorithm, can be used to add, subtract, multiply and divide decimals fluently.
- Any number can be written as a unique product of prime numbers called its prime factorization.
- The greatest common factor (GCF) is the greatest factor that two or more numbers have in common. The GCF is 1 if the only common factor is 1.
- All non-zero whole numbers have multiples in common, include the smallest or least common multiple (LCM). Sometimes the LCM is one of the numbers.
- Visual models, such as number lines and area models, and equations can be used to represent and solve problems involving division of fractions.
- Dividing a whole number by a fraction is equivalent to multiplying the whole number by the fraction's reciprocal.
- Visual model, such as fraction strips, number lines and area models can be used to represent and solve problems involving division of a fraction by a fraction.
- Dividing by a fraction is equivalent to multiplying by the fraction's reciprocal.
- Rounding compatible numbers can be used to estimate the quotient of mixed numbers.

Learning Activities

- Center Games: "Think Together", "Toss and Talk", "Tic Tac Toe", "Display the Digits", "Teamwork", "Quick Questions" and "Clip and Cover"
- Math and Science Activity: "Mass Conservation" and "Cicadas"
- Math and Science: "Density" and "Prime Protection"
- Problem Solving Reading Math

Assessments

Formative:

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- “Practice Buddies” Classwork and Homework
- Daily Workbook Practice Problems
- Khan Academy or IXL Practice

Summative:

- “Quick Check” Quizzes
- Topic Tests

Alternative:

- Observation Assessment with “Solve and Share”
- Kahoot/Quizziz
- Everfi Project - [Vault Understanding Money](#): students will apply skills in this unit while creating a savings plan, researching careers and income, balance a budget based on needs and wants, learn about credit/borrowing and insurance.

Interdisciplinary Connections

Science: MS-ETS1-1: Students estimate sums and differences while defining the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles.

Career Readiness, Life Literacies, and Key Skills

In the Everfi Project, Vault Understanding Money, students will learn and apply the following standards:

9.1.8.PB.2: Explain how different circumstances can affect one’s personal budget.

9.1.8.PB.4: Construct a simple personal savings and spending plan based on various sources of income and different stages of life (e.g. teenager, young adult, family).

9.1.8.PB.6: Construct a budget to save for short-term, long-term, and charitable goals.

9.1.8.CDM.2: Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages, lines of credit) and compare and calculate the interest rates associated with each.

9.1.8.FI.3: Evaluate the most appropriate financial institutions to assist with meeting various personal financial needs and goals.

9.1.8.FI.4: Analyze the interest rates and fees associated with financial products.

9.1.8.RM.2: Analyze the need for and value of different types of insurance and the impact of deductibles in protecting assets against loss.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities and utility for accomplishing a specified task





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Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

Time Frame	7 Weeks
Topic	
Statistics (EnVision 2.0 Topics 15, 16)	
Alignment to Standards	
6.SP.1 , 6.SP.2 , 6.SP.3 , 6.SP.4 , 6.SP.5.a , 6.SP.5.b , 6.SP.5.c , 6.SP.5.d	
Learning Objectives and Activities	
Topics 15 focus on developing understanding of variability and the concept of statistical measures. Topic 16 focuses on the conceptual understanding of how to describe a data	

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distribution. Students learn that a question is statistical if there is an expectation of a variety of answers. Data generated by a statistical question has variability. Students are introduced to measures of center. The conceptual underpinnings that provide cohesion of the content is that there are special numerical measures used to describe the center and spread of numerical data sets. The most appropriate measure for a situation depend on the nature of the data and how the measures will be used.

SWBAT answer the following questions:

- How can you identify and write statistical questions?
- How can you use a single number to describe a data set?
- How can the mean, median and mode be used to summarize data?
- How can you make and use a frequency table and a histogram?
- How can variability of data be described with one number?
- Which statistical measure is most useful to describe a given situation?
- How can a data distribution be summarized?

SWBAT demonstrate understanding of the following:

- Statistical questions anticipate variability in responses and can be answered by collecting and analyzing data.
- The mean is one measure of center used to describe a center of data.
- Different measures can be used to describe a set of data.
- Data can be organized into equal ranges using a frequency table or a histogram.
- Measures of Variability describe the spread and clustering of data in a set.
- Measures of center can be used to describe and summarize a data set.
- A set of data collected to answer a statistical question has a distribution that can be described by its center, spread and overall shape.

Learning Activities

- Math and Science Activity: "Predicting the Weather" and "Tree Rings"
- Problem Solving Reading Mats
- Center Games: "Think Together" and "Teamwork"

Assessments

Formative:

- "Practice Buddies" Classwork and Homework
- Teacher Observation
- Class Debate of Approaches/Mathematical Methods

Summative:

- "Quick Check" Quizzes

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- Topic Tests
- Problem-based Quiz: Statistics in the Real-World

Alternative:

- Observation Assessment with “Solve and Share”
- Individual or group productive struggle assessment during introductory lessons

Interdisciplinary Connections

Science: MS-LS2-2: In this statistics unit students construct an explanation that predicts patterns of interactions among organisms.
CS&DT: 8.2.8.ETW.4: Compare the environmental effects of two alternative technologies devised to address climate change issues and use data to justify which choice is best.

Career Readiness, Life Literacies, and Key Skills

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will access Pearson online practice & Assessment: “Practice Buddies” & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives

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on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

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

CRP11: Use technology to enhance productivity.

Time Frame	8 Weeks
Topic	
Algebra: Understand Numerical and Algebraic Expressions (EnVision 2.0 Topic 1)	
Alignment to Standards	
6.EE.1, 6.EE.2.a, 6.EE.2.b, 6.EE.2.c, 6.EE.3, 6.EE.4, 6.EE.6, 6.NS.2	
Learning Objectives and Activities	
Topic 1 applies and extends previous understandings of arithmetic and numerical expressions to algebraic expressions. Students interpret, evaluate, and write algebraic expressions, including ones of with exponents, related to both mathematical and real-world context. The conceptual underpinnings that provide cohesion of the content is that variables can be used to stand for a number. Properties of operations are equally true for algebraic expressions as for numerical expressions. SWBAT answer the following questions: • How can you write a number using exponents? • How do you evaluate expressions? • How can we write an Algebraic Expression? • How can you describe the parts of an expression? • How can you Evaluate an Algebraic Expression? • How can you write equivalent expressions? • How can you simplify algebraic expressions? • How can you identify equivalent expressions? • How can you use formulas to solve problems? SWBAT demonstrate understanding of the following: • A whole number exponent can be used to represent repeated multiplication of a	

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number.

- There is an agreed upon order in which operations are carried out in a numerical expression.
- Algebraic expressions use variables to describe situations in which all of the information is not known.
- Parts of expressions can be described using words such as term, coefficient, product and factor.
- The value of an algebraic expression can be found by replacing variables with given numbers and doing the calculation that results.
- The Distributive property and other properties of operations are used to write equivalent expressions.
- Algebraic expressions can be simplified using the properties of operations to combine like terms and generate equivalent expressions.
- Equivalent expressions have the same value regardless of the number substituted for the variable. Properties of operations can be used to verify that expressions are equivalent.
- A formula is a rule that uses symbols to relate two or more quantities.

Learning Activities

- Center Games: "Display the Digits", "Toss and Talk", "Clip and Cover" and "Teamwork" Activities
- Math and Science Activity: "Energy Transfer in the Ecosystem" and "Nature's Recyclers"
- Problems Solving Reading Mat

Assessments

Formative:

- Graphic Organizer
- "Practice Buddies" Classwork and Homework
- Daily Workbook Practice Problems
- Khan Academy or IXL Practice
-

Summative:

- "Quick Check" Quizzes
- Topic Tests

Alternative:

- Observation Assessment with "Solve and Share"

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Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP4: Communicate clearly and effectively with reason.

Time Frame

4 Weeks

Topic

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Algebra: Solve Equations and Inequalities (EnVision 2.0 Topic 2)

Alignment to Standards

[6.NS.2](#), [6.NS.3](#), [6.EE.2.c](#), [6.EE.4](#), [6.EE.5](#), [6.EE.6](#), [6.EE.7](#), [6.EE.8](#)

Learning Objectives and Activities

Topic 2 focuses on solving one-step equations and simple inequalities. Students develop a deep understanding of algebraic equations, and solve them by applying properties of equality and inverse operations. Solutions to inequalities are graphed on a number line. Two conceptual underpinnings that provide cohesion of the content include: (1) many mathematical and real-world situations can be represented using variables, operations and number in expressions and equations; (2) the rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.

SWBAT answer the following questions:

- How can you determine whether a given number makes an equation true?
- How can you write equivalent equations?
- How can you solve Addition and Subtraction equations?
- How can you solve Multiplication and Division equations?
- How can you solve equations involving fractions and mixed numbers?
- How can you write and solve an inequality to describe the situation?

SWBAT demonstrate understanding on the following:

- A solution to an equation is a value for the variable that makes the equation true. An equation is true when the expressions or numbers on both sides of the equal sign have the same value.
- The same number can be added to, subtracted from, or multiplied on both sides of an equation and equality is maintained. Dividing both sides of an equation by the same non-zero number also maintains equality.
- Solving an equation involves finding the value of the variable that makes the equation true.
- Inverse relationships and properties of equality can be used to one-step multiplication and division equations.
- Inverse relationships and properties of equality can be used to solve equations with fractions and mixed numbers.
- An inequality is a mathematical sentence that contains the inequality symbol, and describes a situation that has infinite number of numerical possibilities that can be represented algebraically and graphed on a number line.

Learning Activities

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- Center Games: "Toss and Talk", "Think Together" and "Display the Digits"
- Problem Solving Reading Mat
- Math and Science Activity: "#1 Polyethylene terephthalate (PET) bottles" and "Biodegradable Materials"

Assessments

Formative:

- Teacher Observation
- Class Debate of Approaches/Mathematical Methods
- Graphic Organizer

Summative:

- "Quick Check" Quizzes
- Topic Tests

Benchmark:

- Cumulative midterm exam with multiple choice, short answer, and extended constructed response questions.

Alternative:

- Observation Assessment with "Solve and Share"
- Kahoot/Quizziz
- Individual or group productive struggle assessment during introductory lessons

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement and transition

9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

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Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP6: Demonstrate creativity and innovation.

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

Time Frame	2 Weeks
Topic	
Rational Numbers (EnVision 2.0 Topic 3)	
Alignment to Standards	
6.EE.3 , 6.EE.4 , 6.EE.5 , 6.EE.6 , 6.EE.7 , 6.NS.2 , 6.NS.5 , 6.NS.6.a , 6.NS.6.b , 6.NS.6.c , 6.NS.7.a , 6.NS.7.b , 6.NS.7.c , 6.NS.7.d	
Learning Objectives and Activities	
Topics 3 and 4 focus on applying and extending previous understandings of numbers to the system of rational numbers including developing a deep understanding of integers and other rational numbers, and locating points associated with rational number ordered pairs on the coordinate plane. The conceptual underpinnings that provide cohesion of the content is that the set of real numbers is infinite and ordered. Counting numbers, Whole numbers, Integers,	

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and Rational numbers are real numbers. Each real number can be associated with a unique point on the number line. The coordinate plane is an extension of the number line to two dimensions. So any point with real-number coordinates can be graphed on a coordinate plane.

SWBAT answer the following questions:

- What are integers?
- How can you plot rational numbers on a number line?
- How can you compare and order rational numbers?
- How can you represent and interpret absolute values?

SWBAT demonstrate understanding of the following:

- Integers are the counting numbers, their opposites, and zero.
- Each rational number can be associated with a unique point on the number line.
- Compare and order rational numbers
- Interpret absolute value in mathematics and real-world situations.

Learning Activities:

- Problem Solving Reading Math
- Math and Science Activity: "The Second Highest Mountain", "Mount McKinley" and "Seismographs"
- Center Games: "Think Together" and "Teamwork"

Assessments

Formative:

- "Practice Buddies" Classwork and Homework
- Daily Workbook Practice Problems
- Graphic Organizer

Summative:

- "Quick Check" Quizzes
- Topic Tests

Alternative:

- Kahoot/Quizziz
- Problem-based: You on a number line - opposites and ordering least to greatest using students as the points on the number line.

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

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Technology Integration

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- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP4: Communicate clearly and effectively with reason.

Time Frame	6 Weeks
Topic	
Ratio Concepts and Reasoning (EnVision 2.0 Topics 9, 10, 11)	
Alignment to Standards	
6.RP.1 , 6.RP.2 , 6.RP.3a , 6.RP.3b , 6.RP.3c , 6.RP.3d , 6.NS.8 , 6.EE.9	
Learning Objectives and Activities	

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Topics 9, 10 and 11 focus on conceptual understanding of ratios, rates, and percents and on solving problems involving ratio reasoning. When mathematical or real-world quantities have a relationship that can be stated as ,” for every x units of the first quantity there are y units of the second quantity,” this relationship can be described using a ratio. In a proportional relationship there are an infinite number of equivalent ratios.

SWBAT answer the following questions:

- What is a Mathematical way to compare quantities?
- How can a diagram help you solve a ratio problem?
- How can you find equivalent ratios?
- How can you compare ratios to solve a problem?
- How can you use tables and graphs to show equivalent ratios?
- What is a rate?
- How can you find and use a unit rate to solve a problem?
- How can you use unit rates to make comparisons?
- How can you compare the prices of different amounts of the same item?
- How can you use unit rates to solve constant speed problems?
- How does percent relate to the whole?
- How are fractions, decimals, and percents related?
- How can you write a percent greater than 100 as a fraction and as a decimal?
- How can you use fractions to estimate percents?
- How can you calculate percentages?
- How can you find the whole in a percent problem?

SWBAT demonstrate understanding of the following:

- A ratio is a mathematical way to compare quantities where for every x units of one quantity, there are y units of another quantity.
- Double number line diagrams can be used to represent terms in a ratio to solve real-world and mathematical problems.
- Ratio tables can be used to find equivalent ratios by multiplying or dividing both terms by the same nonzero number.
- Ratio tables and equivalent ratios can be used to compare two ratios.
- Equivalent ratios can be represented in a table, and the pairs of values can be plotted on a coordinate plane.
- A rate is a special type of ratio that compares two quantities with different units of measure.
- A unit rate is a special rate that compares a quantity to one unit of another quantity.
- Rates are easily compared when they are expressed as unit rates.
- A type of unit rate, called a unit price can be used to find and compare the cost of items.
- Unit rates that relate distance and time can be used to solve problems involving constant speed.
- A percent is a rate in which the first term is compared to 100. The percent is a number

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of hundredths that represents the part of the whole.

- Fractions, decimals and percents are three ways to show parts of a whole.
- A percent greater than 100 is equivalent to more than the whole. A percent less than 1 is equivalent to less than 1100 of the whole.
- Equivalent fractions and compatible numbers can be used to estimate the percent of a number.
- Finding a percent of a whole is like finding a fractional part of a whole.
- Models and equations can be used to find the whole amount when the percent and part are known.

Learning Activities:

- Center Games: "Think Together", "Clip and Cover" and "Toss and Talk"
- Problem Solving Reading Mats
- Center Games: "Display the Digits"
- Math and Science Activity: "What is Earth Made of?", "Minerals of the Earth", "Gulf Stream", "Nutrition Facts" and "Small but Important Molecules" *

Assessments

Formative:

- "Practice Buddies" Classwork and Homework
- Daily Workbook Practice Problems
- Teacher Observation

Summative:

- "Quick Check" Quizzes
- Topic Tests
- Problem-based Quiz/Test: Ratios in the Real-World

Alternative:

- Observation Assessment with "Solve and Share"
- Kahoot/Quizziz
- Online Everfi Project - [FutureSmart](#): students will apply skills in this unit while being the mayor of their town developing a spending plan, analyzing types of credit and taxes, career exploration, looking at different investments types and insurance.

Interdisciplinary Connections

Science: MS-ESS1-3: When students are creating and comparing ratios they analyze and interpret data to determine scale properties of objects in the solar system.

MS-ESS3-1: Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

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DEPARTMENT Mathematics COURSE Mathematics, Grade 6

Career Readiness, Life Literacies, and Key Skills

In the online Everfi Project, FutureSmart, students will learn and apply the following standards:

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities and utility for accomplishing a specified task

9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement and transition

In the online Everfi Project, FutureSmart, students will learn and apply the following standards:

9.1.8.EG.1: Explain how taxes affect disposable income and the difference between net and gross income

9.1.8.EG.2: Explain why various sources of income are taxed differently.

9.1.8.PB.4: Construct a simple personal savings and spending plan based on various sources of income and different stages of life (e.g. teenager, young adult, family).

9.1.8.CDM.2: Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages, lines of credit) and compare and calculate the interest rates associated with each.

9.1.8.RM.1: Determine criteria for deciding the amount of insurance protection needed.

9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information

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digitally.

Students will use internet based game sites such as Quizizz, Kahoot, Quizlet live and Everfi to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP4: Communicate clearly and effectively with reason.

CRP6: Demonstrate creativity and innovation.

Time Frame	7 Weeks
Topic	
Geometry (EnVision 2.0 Topics 13 and 14)	
Alignment to Standards	
6.G.1 , 6.G.2 , 6.G.3 , 6.G.4 , 6.NS.6c , 6.NS.8 , 6.EE.2a , 6.EE.2c , 6.EE.6	
Learning Objectives and Activities	
Topics 13 and 14 focus on a deep understanding of area of polygons, surface area of solids and volume of right rectangular prisms with fractional side lengths. The conceptual underpinnings that provide cohesion of the content include the idea that some attributes of objects are measurable and can be quantified using unit amounts. SWBAT answer the following questions: • How can you use the formula for the area of a rectangle to find the area formula of a parallelogram? • How can you find the area of a triangle? • How can you find the areas of special quadrilaterals? • How can you find the areas of polygons? • How can you find the area of a polygon on the coordinate plane?	

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- How do you classify solids?
- How can you find the surface area of a prism?
- How can you find the surface area of a pyramid?
- How can you find the volume of a rectangular prism with fractional edge lengths?

SWBAT demonstrate understanding of the following:

- The formula for the area of parallelogram, $A=bh$, can be derived from the formula for the area of a rectangle.
- The formula for the area of a triangle, $A=\frac{1}{2}bh$, can be derived from the formula for the area of a parallelogram.
- The areas of special quadrilaterals can be found by decomposing the quadrilaterals into shapes for which area formulas are known.
- The areas of polygons can be found by composing or decomposing the polygons into shapes for which the area formulas are known.
- The area of a polygon on a coordinate plane can be found by decomposing the polygon into shapes for which the area formulas are known.
- A net can be used to represent a polyhedron.
- The surface area of a prism is the sum of the areas of its faces.
- The surface area of a pyramid is the sum of the areas of its faces.
- Unit cubes or formulas can be used to find the volume of rectangular prisms and cubes.

Learning Activities:

- Center Games: "Toss and Talk" and "Teamwork"
- Problem Solving Reading Mats
- Math and Science Activity: "Rainwater Harvesting", "Floodplain Cultivation", "Greenhouses" and "Cell Surface Area and Volume"

Assessments

Formative:

- "Practice Buddies" Classwork and Homework
- Khan Academy or IXL Practice
- Teacher Observation
- Graphic Organizer

Summative:

- "Quick Check" Quizzes
- Topic Tests

Benchmark:

- Cumulative final exam with multiple choice, short answer, and extended constructed response questions.

Alternative:

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- Everfi Project: [Future Goals Hockey Scholar](#) - students digitally measure angles, calculate speed and distance using formulas, calculate area, and use the coordinate plane.
- Kahoot/Quizziz

Interdisciplinary Connections

Science: MS-PS2-2: Working through the Everfi Hockey project students will plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

ELA: W.6.1: When students are justifying their reasoning on short answer and extended constructed response questions they write arguments to support claims with clear reasons and relevant evidence.

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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Students will access Pearson online practice & Assessment: "Practice Buddies" & Topic Tests to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.8.TL.3: Select appropriate tools to organize and present information digitally.

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Career Education

CRP2: Apply appropriate academic and technical skills.

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

Modifications (ELL, Special Education, At Risk Students, Gifted & Talented, & 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

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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
- 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

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