



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 Intermediate School

Course: Mathematics, Grade 6

Department: Mathematics

| Board Approval | Supervisor | Notes |
|----------------|-----------------|-------------------------------|
| July 2006 | Victor Milano | Born Date |
| July 2009 | Jessica Shaw | Revisions/Alignment to NJCCCS |
| August 2012 | Janet Bluefield | Revisions |
| August 2016 | Amanda Maltese | Revisions |
| July 2017 | Nichole Kerney | Revisions/Alignment to NJSIS |
| August 2018 | Nichole Kerney | Revisions |

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| 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 Expressions | 27 | Ratio Concepts and Reasoning |
| 8 | Understand Numerical & Algebraic Expressions | 28 | Ratio Concepts and Reasoning |
| 9 | Understand Numerical & Algebraic Expressions | 29 | Geometry |
| 10 | Understand Numerical & Algebraic Expressions | 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 |
| 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 |

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| | |
|--|----------------|
| Time Frame | 3 weeks |
| Topic | |
| Decimals, Fractions, Multiples & Factors (Topics 7, 8, 12) | |
| Essential Questions | |
| <ul style="list-style-type: none">A. How can you estimate with decimals?B. How can you add, subtract, multiply and divide with decimals?C. How can you use prime and composite numbers to write the prime factorization of a number?D. How can you find the greatest common factor of two numbers?E. How can you find the least common multiple of two numbers?F. How can you represent division of fractions?G. How can you divide a whole number by a fraction?H. How can you model dividing a fraction by a fraction?I. How can you find the quotient of two fractions?J. How can you estimate the quotient of mixed numbers? | |
| Enduring Understandings | |
| <ul style="list-style-type: none">A. Estimates can be found by using strategies such as rounding and compatible numbers. Some problems can be solved with an estimate.B. A general method, or standard algorithm, can be used to add, subtract, multiply and divide decimals fluently.C. Any number can be written as a unique product of prime numbers called its prime factorization.D. 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.E. 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.F. Visual models, such as number lines and area models, and equations can be used to represent and solve problems involving division of fractions.G. Dividing a whole number by a fraction is equivalent to multiplying the whole number by the fraction's reciprocal. | |

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- H. 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.
- I. Dividing by a fraction is equivalent to multiplying by the fraction's reciprocal.
- J. Rounding compatible numbers can be used to estimate the quotient of mixed numbers.

Alignment to Standards

6.NS.A.1, 6.NS.B.2, 6.NS.B.3, 6.NS.B.4, CRP2

Key Concepts and Skills

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.

Skills

- Estimate sums and differences
- Add and subtract decimals
- Estimate the products of decimals
- Multiply decimals
- Divide decimals by whole numbers
- Find quotients of two whole numbers
- Identify prime and composite numbers, and write the prime factorization of a number
- Find the greatest common factor of two whole numbers
- Find the least common multiple of two whole numbers
- Use models to divide fractions
- Divide whole numbers by fractions
- Use models to divide fractions by fractions
- Divide fractions by fractions
- Estimate quotients of mixed numbers
- Find the quotient of mixed numbers

Learning Activities

- Center Games: "Think Together"
- Math and Science Activity: "Mass Conservation"

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- Center Games: “Toss and Talk”
- Center Games: “Tic Tac Toe”
- Center Games: “Display the Digits”
- Center Games: “Teamwork”
- Math and Science: “Density”
- Math & Science: “Prime Protection”
- Problem Solving Reading Math
- Math and Science Activity: “Cicadas”
- Center Games: “Quick Questions”
- Center Games: “Clip and Cover”

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework

21st Century Skills

| | | | | | | | |
|----------------------|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |

Interdisciplinary Connections

Science: estimation, mass conservation, and density

Technology Integration

8.1 Educational Technology- 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.

ELMO device for projection

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Four-function Calculators
Student issued Chromebook laptop computers
Smart Notebook software
Pearson online practice & Assessment: "Practice Buddies" & Topic Tests
Internet based game site: Quizzizz, Kahoot, Quizlet, Everfi

| | |
|--|---------|
| Time Frame | 7 weeks |
| Topic | |
| Statistics (Topics 15, 16) | |
| Essential Questions | |
| <ul style="list-style-type: none">A. How can you identify and write statistical questions?B. How can you use a single number to describe a data set?C. How can the mean, median and mode be used to summarize data?D. How can you make and use a frequency table and a histogram?E. How can variability of data be described with one number?F. Which statistical measure is most useful to describe a given situation?G. How can a data distribution be summarized? | |
| Enduring Understandings | |
| <ul style="list-style-type: none">A. Statistical questions anticipate variability in responses and can be answered by collecting and analyzing data.B. The mean is one measure of center used to describe a center of data.C. Different measures can be used to describe a set of data.D. Data can be organized into equal ranges using a frequency table or a histogram.E. Measures of Variability describe the spread and clustering of data in a set.F. Measures of center can be used to describe and summarize a data set.G. A set of data collected to answer a statistical question has a distribution that can be described by its center, spread and overall shape. | |
| Alignment to Standards | |

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6.SP.A.1, 6.SP.A.2, 6.SP.A.3, 6.SP.B.4, 6.SP.5.a, 6.SP.B.5.b, 6.SP.B.5.c, 6.SP.5.d, CRP2, CRP8, CRP11

Key Concepts and Skills

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 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.

Skills

Identify and write statistical questions, and then display the collected data.

Find the mean of a data set.

Find the median, mode, and range of a data sets

Make and analyze frequency tables and histograms

Use absolute deviation, mean absolute deviation (MAD), and interquartile range (IQR) to describe the variability of a data set.

Use appropriate statistical measures to describe and summarize data sets

Summarize a numerical data set

Learning Activities

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

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- "Quick Check" Quizzes and Topic Tests
- "Practice Buddies" Classwork and Homework

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| 21st Century Skills | | | | | | | |
|---|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |
| Interdisciplinary Connections | | | | | | | |
| Science: predicting the weather, tree rings English Language Arts: reading and writing | | | | | | | |
| Technology Integration | | | | | | | |
| 8.1 Educational Technology- 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. Google Classroom Websites ELMO device for projection Four-function Calculators Student issued Chromebook laptop computers Smart Notebook software Pearson online practice & Assessment: "Practice Buddies", "Quick Checks" & Topic Tests Internet based game site: Quizizz, Kahoot, Quizlet, Everfi | | | | | | | |

| Time Frame | 8 Weeks |
|--|----------------|
| Topic | |
| Algebra: Understand Numerical and Algebraic Expressions (Topic 1) | |

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Essential Questions

- A. How can you write a number using exponents?
- B. How do you evaluate expressions?
- C. How can we write an Algebraic Expression?
- D. How can you describe the parts of an expression?
- E. How can You Evaluate an Algebraic Expression?
- F. How can you write equivalent expressions?
- G. How can you simplify algebraic expressions?
- H. How can you identify equivalent expressions?
- I. How can you use formulas to solve problems?

Enduring Understandings

- A. A whole number exponent can be used to represent repeated multiplication of a number.
- B. There is an agreed upon order in which operations are carried out in a numerical expression.
- C. Algebraic expressions use variables to describe situations in which all of the information is not known.
- D. Parts of expressions can be described using words such as term, coefficient, product and factor.
- E. The value of an algebraic expression can be found by replacing variables with given numbers and doing the calculation that results.
- F. The Distributive property and other properties of operations are used to write equivalent expressions.
- G. Algebraic expressions can be simplified using the properties of operations to combine like terms and generate equivalent expressions.
- H. 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.
- I. A formula is a rule that uses symbols to relate two or more quantities.

Alignment to Standards

6.EE.A.1, 6.EE.A.2.a, 6.EE.A.2.b, 6.EE.A.2.c, 6.EE.3, 6.EE.A.4, 6.EE.B.6, 6.NS.2, CRP4

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Key Concepts and Skills

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.

Skills

Write and evaluate numbers with whole number exponents
Use order of operations to evaluate numerical expressions
Use variables to write algebraic expressions
Identify parts of an expression
Evaluate algebraic expressions using substitution
Write equivalent expressions using the properties of operations
Simplify algebraic expressions by combining like terms.
Identify equivalent expressions.
Use formulas to solve problems in temperature, geometry, finance.

Learning Activities

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

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework

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| 21st Century Skills | | | | | | | |
|---|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |
| Interdisciplinary Connections | | | | | | | |
| Science: energy transfer in the ecosystem, use formulas to find temperature. Finance: using formulas in finance. Geometry: use formulas to find perimeter and area. | | | | | | | |
| Technology Integration | | | | | | | |
| 8.1 Educational Technology- 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. Google Classroom Websites ELMO device for projection Four-function Calculators Student issued Chromebook laptop computers Smart Notebook software Pearson online practice & Assessment: "Practice Buddies", "Quick Checks" & Topic Tests Internet based game site: Quizizz, Kahoot, Quizlet, Everfi | | | | | | | |

| Time Frame | 4 weeks |
|---|----------------|
| Topic | |
| Algebra: Solve Equations and Inequalities (Topic 2) | |
| Essential Questions | |
| A. How can you determine whether a given number makes an equation true? B. How can you write equivalent equations? | |

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- C. How can you solve Addition and Subtraction equations?
- D. How can you solve Multiplication and Division equations?
- E. How can you solve equations involving fractions and mixed numbers?
- F. How can you write and solve an inequality to describe the situation?

Enduring Understandings

- A. 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.
- B. 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.
- C. Solving an equation involves finding the value of the variable that makes the equation true.
- D. Inverse relationships and properties of equality can be used to one-step multiplication and division equations.
- E. Inverse relationships and properties of equality can be used to solve equations with fractions and mixed numbers.
- F. 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.

Alignment to Standards

6.NS.2, 6.NS.3, 6.EE.A.4, 6.EE.B.5, 6.EE.6, 6.EE.B.7, 6.EE.B.8, 6.EE.2.c, CRP6, CRP8

Key Concepts and Skills

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.

Skills

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Use substitution to find solutions to equations.
Identify equivalent expressions and use the properties of equality to write equivalent equations.
Use inverse relationships and properties to solve one-step addition and subtraction equations.
Use inverse relationships and properties to solve one-step multiplication and division equations.
Solve one-step equations involving fractions and mixed numbers.
Write inequalities to describe mathematical or real-world situations
Describe solutions to an inequality and represent them on a number line.

Learning Activities

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

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework
- Mid-year Benchmark

21st Century Skills

| | | | | | | | |
|----------------------|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |

Interdisciplinary Connections

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Consumer Science

Technology Integration

8.1 Educational Technology- 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.

Google Classroom Websites

ELMO device for projection

Four-function Calculators

Student issued Chromebook laptop computers

Smart Notebook software

Pearson online practice & Assessment: "Practice Buddies", "Quick Checks" & Topic Tests

Internet based game site: Quizizz, Kahoot, Quizlet, Everfi

Time Frame

2 weeks

Topic

Rational Numbers (Topic 3)

Essential Questions

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

Enduring Understandings

- A. Integers are the counting numbers, their opposites, and zero.

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- B. Each rational number can be associated with a unique point on the number line.
- C. Compare and order rational numbers
- D. Interpret absolute value in mathematics and real-world situations.

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, 6.NS.7, CRP4

Key Concepts and Skills

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, 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.

Skills

Use positive and negative numbers in real-life situations

Find and position rational numbers on a number line

Compare and order rational numbers

Interpret absolute value in mathematics and real-world situations

Identify and graph points with integer coordinates on the coordinate plane

Identify and graph points with rational number coordinates on the coordinate plane.

Learning Activities

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

Assessments

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- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework

21st Century Skills

| | | | | | | | |
|----------------------|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |

Interdisciplinary Connections

Science: seismographs
English Language Arts: reading to interpret real-world situations

Technology Integration

8.1 Educational Technology- 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.

Google Classroom Websites
ELMO device for projection
Four-function Calculators
Student issued Chromebook laptop computers
Smart Notebook software
Pearson online practice & Assessment: “Practice Buddies”, “Quick Checks” & Topic Tests
Internet based game site: Quizizz, Kahoot, Quizlet, Everfi

| | |
|------------|----------------|
| Time Frame | 6 weeks |
| Topic | |

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Ratio Concepts and Reasoning (Topics 9, 10, 11)

Essential Questions

- A. What is a Mathematical way to compare quantities?
- B. How can a diagram help you solve a ratio problem?
- C. How can you find equivalent ratios?
- D. How can you compare ratios to solve a problem?
- E. How can you use tables and graphs to show equivalent ratios?
- F. What is a rate?
- G. How can you find and use a unit rate to solve a problem?
- H. How can you use unit rates to make comparisons?
- I. How can you compare the prices of different amounts of the same item?
- J. How can you use unit rates to solve constant speed problems?
- K. How does percent relate to the whole?
- L. How are fractions, decimals, and percents related?
- M. How can you write a percent greater than 100 as a fraction and as a decimal?
- N. How can you use fractions to estimate percents?
- O. How can you calculate percentages?
- P. How can you find the whole in a percent problem?

Enduring Understandings

- A. A ratio is a mathematical way to compare quantities where for every x units of one quantity, there are y units of another quantity.
- B. Double number line diagrams can be used to represent terms in a ratio to solve real-world and mathematical problems.
- C. Ratio tables can be used to find equivalent ratios by multiplying or dividing both terms by the same nonzero number.
- D. Ratio tables and equivalent ratios can be used to compare two ratios.
- E. Equivalent ratios can be represented in a table, and the pairs of values can be plotted on a coordinate plane.
- F. A rate is a special type of ratio that compares two quantities with different units of measure.
- G. A unit rate is a special rate that compares a quantity to one unit of another quantity.
- H. Rates are easily compared when they are expressed as unit rates.
- I. A type of unit rate, called a unit price can be used to find and compare the cost of

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items.

- J. Unit rates that relate distance and time can be used to solve problems involving constant speed.
- K. A percent is a rate in which the first term is compared to 100. The percent is a number of hundredths that represents the part of the whole.
- L. Fractions, decimals and percents are three ways to show parts of a whole.
- M. A percent greater than 100 is equivalent to more than the whole. A percent less than 1 is equivalent to less than $\frac{1}{100}$ of the whole.
- N. Equivalent fractions and compatible numbers can be used to estimate the percent of a number.
- O. Finding a percent of a whole is like finding a fractional part of a whole.
- P. Models and equations can be used to find the whole amount when the percent and part are known.

Alignment to Standards

6.RP.A.1, 6.RP.A.2, 6.RP.A.3a, 6.RP.A.3b, 6.RP.A.3c, 6.NS.8, 6.EE.9, CRP2, CRP4, CRP6

Key Concepts and Skills

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.

Skills

Use ratios and ratio language to describe the relationship between two quantities
Use diagrams and other models to represent and solve ratio problems
Find equivalent ratios
Compare ratios to solve problems
Use tables and graphs to solve problems
Use rates to solve problems
Solve problems involving unit rates
Use unit rates to make comparisons
Use unit prices to compare costs
Use unit rates to solve problems involving constant speed.
Represent and find the percent of a whole

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Write equivalent values as fractions, decimals or percents
Write percents that are greater than 100 or less than 1
Estimate percent of a number
Find the percent of a number
Find the whole amount when given a part and the percent

Learning Activities

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

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework

21st Century Skills

| | | | | | | | |
|----------------------|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |

Interdisciplinary Connections

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Office of Teaching and Learning

SPARTAN MISSION:

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

Science: nutrition, minerals of the earth
English Language Arts: reading to interpret real-world situations

Technology Integration

8.1 Educational Technology- 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.

- Google Classroom Websites
- ELMO device for projection
- Four-function Calculators
- Student issued Chromebook laptop computers
- Smart Notebook software
- Pearson online practice & Assessment: “Practice Buddies”, “Quick Checks” & Topic Tests
- Internet based game site: Quizizz, Kahoot, Quizlet, Everfi

| | |
|------------|----------------|
| Time Frame | 7 weeks |
|------------|----------------|

Topic

Geometry (Topics 13 and 14)

Essential Questions

- A. How can you use the formula for the area of a rectangle to find the area formula of a parallelogram?
- B. How can you find the area of a triangle?
- C. How can you find the areas of special quadrilaterals?
- D. How can you find the areas of polygons?
- E. How can you find the area of a polygon on the coordinate plane?
- F. How do you classify solids?
- G. How can you find the surface area of a prism?
- H. How can you find the surface area of a pyramid?
- I. How can you find the volume of a rectangular prism with fractional edge lengths?

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Enduring Understandings

- A. The formula for the area of parallelogram, $A = bh$, can be derived from the formula for the area of a rectangle.
- B. 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.
- C. The areas of special quadrilaterals can be found by decomposing the quadrilaterals into shapes for which area formulas are known.
- D. The areas of polygons can be found by composing or decomposing the polygons into shapes for which the area formulas are known.
- E. 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.
- F. A net can be used to represent a polyhedron.
- G. The surface area of a prism is the sum of the areas of its faces.
- H. The surface area of a pyramid is the sum of the areas of its faces.
- I. Unit cubes or formulas can be used to find the volume of rectangular prisms and cubes.

Alignment to Standards

6.G.A.1, 6.G.A.2, 6.G.A.3, 6.G.A.4, 6.NS.C.6c, 6.NS.C.8, 6.EE.A.2a, 6.EE.A.2c, 6.EE.B.6, CRP2, CRP8

Key Concepts and Skills

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.

Skills

- Find the areas of parallelograms and rhombuses
- Find the areas of triangles
- Find the areas of special quadrilaterals
- Find the areas of polygons
- Find the areas of polygons on the coordinate plane.
- Classify solid figures and represent them by their nets.
- Find the surface areas of rectangular and triangular prisms
- Find the surface areas of rectangular and triangular pyramids

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Find the volume of a rectangular prism with fractional edge lengths

Learning Activities

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

Assessments

- Daily Workbook Practice Problems
- Participation in Cooperative Learning Activities
- Observation Assessment
- Project-based Assessment
- “Quick Check” Quizzes and Topic Tests
- “Practice Buddies” Classwork and Homework
- Benchmark

21st Century Skills

| | | | | | | | |
|----------------------|---|------------------------|---|----------------|---|---------------|---|
| Creativity | x | Critical Thinking | x | Collaboration | x | Communication | x |
| Life & Career Skills | x | Information Technology | x | Media Literacy | | | |

Interdisciplinary Connections

Science: cell surface area and volume

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Modifications (ELL, Special Education, 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

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

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- 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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