

Brigantine Public School District

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Curriculum Map

Content Area: Mathematics

Course Title: Grade 6 Mathematics

Grade Level: 6

Unit 1-Fractions & Decimals

6 Weeks

Unit 2-Ratio

5 Weeks

Unit 3-Integers

4 Weeks

Unit 4-Algebra

6 Weeks

Unit 5-Geometry

6 Weeks

Unit 6-Statistics

6 Weeks

Date Revised: August 2015

Board Approved: August 27, 2015

Unit 1 Overview	
Content Area: Mathematics	
Unit 1 Title: Fractions and Decimals	
Grade Level: 6	
<p>Unit Summary: Divide Multi-Digit Numbers; Prime Factorization; Least Common Multiple; Greatest Common Factor; Problem Solving; Add and Subtract Decimals; Multiply Decimals; Divide Decimals by Whole Numbers; Divide with Decimals; Compare and Order Fractions and Decimals; Multiply and Divide Fractions; Simplify Factors; Model Fraction Division; Estimate Quotients; Divide Mixed Numbers; Fraction Operations</p>	
<p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>9.1.8.B.2 Construct a simple personal savings and spending plan based on various sources of income.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Mathematical Practices	
CC.K-12.MP.5	Use appropriate tools strategically.
CC.K.-12.MP.7	Look for and make use of structure.
CC.K-12.MP.8	Look for and express regularity in repeated reasoning.
Unit Essential Questions	
<ul style="list-style-type: none"> ● How can you convert between fractions and decimals? ● How can you compare and order fractions and decimals? ● How do you multiply fractions? ● How do you simplify fractional factors by using the greatest common factor? ● How can you use a model to show division of fractions? ● How can you use compatible numbers to estimate quotients of fractions and mixed numbers? ● How do you divide fractions; mixed numbers? ● How can you use a model to show division of mixed numbers? ● How can you use the strategy use a model to help you solve a division problem? 	
Student Learning Objectives	
<ul style="list-style-type: none"> ● Write the prime factorization of numbers. ● Find the LCM and GCF of two whole numbers. 	

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- Solve problems involving greatest common factor by using the strategy draw a diagram.
- Fluently add, subtract, and multiply multi-digit decimals.
- Fluently divide decimals by whole numbers.
- Fluently divide whole numbers and decimals by decimals.
- Convert between fractions and decimals.
- Compare and order fractions and decimals.
- Multiply fractions.
- Simplify fractional factors by using the greatest common factor.
- Use a model to show division of fractions and mixed numbers.
- Use compatible numbers to estimate quotients of fractions and mixed numbers.
- Divide fractions and mixed numbers.

CPI #	Cumulative Progress Indicator (CPI)
CC.6.NS.2	Fluently divide multi-digit numbers using the standard algorithm.
CC.6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i>
CC.6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
CC.6.NS.6c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
CC.6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the Distributive Property to express the sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $38+8$ as $4(9+2)$.</i>

Unit Vocabulary

- Prime factorization
- Prime number
- Divisible
- Least common multiple
- Compatible numbers
- Terminating decimal
- Repeating decimal
- Mixed number
- Simplest form
- Equivalent fractions
- Common denominator
- Benchmark
- Compatible numbers
- Reciprocals

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- Multiplicative inverses

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment

Benchmark Assessment: Go Math Benchmarking

Equipment needed: Go Math Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources:

- <https://sites.google.com/site/brigantinemath/home>
- www-k6.thinkcentral.com
- <http://www.arcademics.com/> - Games to reinforce skills
- <http://www.estimation180.com/>
- <http://www.sumdog.com/>

Modifications: (Special Education, ELL, Gifted and Talented)

- Tiered Assignments
- Games
- Menus/Choice Boards
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint

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Unit 2 Overview	
Content Area: Mathematics	
Unit 2 Title: Ratios and Rates	
Grade Level: 6	
<p>Unit Summary: Model Ratios; Ratios and Rates; Equivalent Ratios and Multiplication Tables; Use Tables to Compare Ratios; Use Equivalent Ratios; Find Unit Rates; Equivalent Ratios and Graphs; Model Percents; Write Percents as Fractions and Decimals; Write Fractions and Decimals as Percents; Percent of a Quantity; Percents; Find the Whole from a Percent</p> <p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Learning Targets	
Mathematical Practices	
CC.K-12.MP.4	Model with mathematics.
CC.K-12.MP.7	Look for and make use of structure.
CC.K-12.MP.8	Look for and express regularity in repeated reasoning.
Unit Essential Questions	
<ul style="list-style-type: none"> ● How can you model ratios? ● How do you write ratios and rates? ● How can you use a multiplication table to find equivalent ratios? ● How can you use the strategy find a pattern to help you compare ratios? ● How can you use tables to solve problems involving equivalent ratios? ● How can you use unit rates to make comparisons? ● How can you solve problems using unit rates? ● How can you use a graph to represent equivalent ratios? ● How can you use a model to show a percent? ● How can you write percents as fractions and decimals? ● How can you write fractions and decimals as percents? ● How do you find a percent of a quantity? ● How can you use the strategy use a model to help you solve a percent problem? ● How can you find the whole given a part and the percent? 	

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Student Learning Objectives

- Model ratios.
- Write ratios and rates.
- Use a multiplication table to find equivalent ratios.
- Solve problems involving ratios by using the strategy find a pattern.
- Use tables to solve problems involving equivalent ratios.
- Use unit rates to make comparisons.
- Solve problems using unit rates.
- Use a graph to represent equivalent ratios.
- Use a model to show a percent as a rate per 100.
- Write percents as fractions and decimals.
- Write fractions and decimals as percents.
- Find a percent of a quantity.
- Solve percent problems by applying the strategy use a model.
- Find the whole given a part and the percent.

CPI #	Cumulative Progress Indicator (CPI)
CC.6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”</i>
CC.6.RP.3a	Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
CC.6.RP.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”¹</i>
CC.6.RP.3b	Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i>
CC.6.RP.3c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Unit Vocabulary

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|--|---|
| <ul style="list-style-type: none"> ● Ratio ● Pattern ● Rate ● Unit rate ● Equivalent ratios ● Equivalent fractions ● Numerator ● Percent | <ul style="list-style-type: none"> ● Denominator ● Coordinate plane ● Ordered pair ● x-coordinate ● y-coordinate ● Simplify |
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Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment

Benchmark Assessment: Go Math Benchmarks

Equipment needed: Go Math Textbooks, Manipulatives Kits; Differentiated Centers

Teacher Resources:

<https://sites.google.com/site/brigantinemath/home>

wwwk-6.thinkcentral.com

<http://www.estimated180.com/>

Modifications: (Special Education, Gifted and Talented, ELL)

- Tiered Assignments
- Games
- Menus/Choice Boards
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint

Unit 3 Overview	
Content Area: Mathematics	
Unit 3 Title: Integers	
Grade Level: 6	
<p>Unit Summary: Understand Positive and Negative Numbers; Compare and Order Integers; Rational Numbers and the Number Line; Compare and Order Rational Numbers; Absolute Value; Compare Absolute Values; Rational Numbers and the Coordinate Plane; Ordered Pair Relationships; Distance on the Coordinate Plane; The Coordinate Plane</p> <p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Learning Targets	
Mathematical Practices	
CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.3	Construct viable arguments and critique the reasoning of others.
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you use positive and negative numbers to represent real-world quantities? ● How can you compare and order integers? ● How can you plot rational numbers on a number line? ● How can you compare and order rational numbers? ● How can you find and interpret the absolute value of rational numbers? ● How can you interpret comparisons involving absolute values? ● How can you plot ordered pairs of rational numbers on a coordinate plane? ● How can you identify the relationship between points on a coordinate plane? ● How can you find the distance between two points that lie on a horizontal or vertical line on a coordinate plane? ● How can you use the strategy draw a diagram to help you solve a problem on the coordinate plane? 	
Student Learning Objectives	
<ul style="list-style-type: none"> ● Understand positive and negative numbers, and use them to represent real-world quantities. 	

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- Compare and order integers.
- Plot rational numbers on a number line, and use number line to identify opposites.
- Compare and order rational numbers.
- Find and interpret the absolute value of rational numbers.
- Interpret comparisons involving absolute values.
- Plot ordered pairs of rational numbers on a coordinate plane.
- Identify the relationship between points on a coordinate plane.
- Find horizontal and vertical distance on the coordinate plane.
- Solve problems on the coordinate plane by using the strategy draw a diagram.

CPI #	Cumulative Progress Indicator (CPI)
CC.6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
CC.6.NS.6a	Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.
CC.6.NS.7a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</i>
CC.6.NS.7b	Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</i>
CC.6.NS.6c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
CC.6.NS.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</i>
CC.6.NS.7d	Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</i>
CC.6.NS.6b	Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
CC.6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

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Unit Vocabulary

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| <ul style="list-style-type: none">● Integers● Opposites● Rational numbers● Origin● Ordered pair● X-coordinate● Y-coordinate | <ul style="list-style-type: none">● Absolute value● Coordinate plane● X-axis● Y-axis● Quadrants● Line symmetry● Line of symmetry |
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Evidence of Learning

Summative Assessment:

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Modifications: (Special Education, Gifted and Talented, ELL)

- Tiered Assignments
- Games
- Menus/Choice Boards
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint

Unit 4 Overview	
Content Area: Mathematics	
Unit 4 Title: Algebra	
Grade Level: 6	
<p>Unit Summary: Exponents; Evaluate Expressions Involving Exponents; Identify Parts of Expressions; Write Algebraic Expressions and Equations; Evaluate Algebraic Expressions and Formulas; Use Algebraic Expressions; Combine Like Terms; Generate Equivalent Expressions; Identify Equivalent Expressions; Model and Solve Addition, Subtraction, Multiplication, and Division Equations; Equations with Fractions; Solutions of Equations and Inequalities; Write and Graph Inequalities; Independent and Dependent Variables; Equations and Tables; Analyze Relationships; Graph Relationships; Equations and Graphs</p>	
<p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Learning Targets	
Mathematical Practices	
CC.K-12.MP.1	Make sense of problems and persevere in solving them.
CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.3	Construct variable arguments and critique the reasoning of others.
CC.K-12.MP.6	Attend to precision.
CC.K-12.MP.7	Look for and make use of structure.
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How do you write and find the value of expressions involving exponents? ● How do you use the order of operations to evaluate expressions involving exponents? ● How do you write an algebraic expression to represent a situation? ● How can you describe the parts of an expression? ● How do you evaluate an algebraic expression or a formula? ● How can you use variables and algebraic expressions to solve problems? ● How can you use the strategy use a model to combine like terms? ● How can you use properties of operations to write equivalent algebraic expressions? 	

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- How can you identify equivalent algebraic expressions?
- How do you determine whether a number is a solution of an equation?
- How do you write an equation to represent a situation?
- How can you use models to solve addition and multiplication equations?
- How can you use algebra to solve addition, subtraction, multiplication and division equations?
- How can you use the strategy solve a simpler problem to solve equations involving fractions?
- How can you determine whether a number is a solution of an inequality?
- How can you write an inequality to represent a situation?
- How can you represent the solutions of an inequality on a number line?
- How can you write an equation to represent the relationship between an independent variable and a dependent variable?
- How can you translate between equations, tables, and graphs?
- How can you use the strategy find a pattern to solve problems involving relationships between quantities?
- How can you graph the relationship between two quantities?

Student Learning Objectives

- Write and evaluate expressions involving exponents.
- Use the order of operations to evaluate expressions involving exponents.
- Write algebraic expressions, equations, and inequalities.
- Identify and describe parts of expressions.
- Evaluate algebraic expressions and formulas.
- Use algebraic expressions to solve problems.
- Combine like terms by applying the strategy use a model.
- Use the properties of operations to generate equivalent algebraic expressions.
- Identify equivalent algebraic expressions.
- Determine whether a number is a solution of an equation.
- Use models to solve addition and multiplication equations.
- Use algebra to solve addition, subtraction, multiplication, and division equations.
- Solve equations involving fractions by using the strategy solve a simpler problem.
- Determine whether a number is a solution of an inequality.
- Represent solutions of algebraic inequalities on number line diagrams.
- Write an equation to represent the relationship between an independent variable and a dependent variable.
- Translate between equations, tables, and graphs.
- Solve problems involving relationships between quantities by using the strategy find a pattern.
- Graph the relationship between two quantities.

CPI #

Cumulative Progress Indicator (CPI)

CC.6.EE.1

Write and evaluate numerical expressions involving whole-number exponents.

CC.6.EE.2a

Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as $5 - y$.*

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CC.6.EE.2b	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. <i>For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.</i>
CC.6.EE.2c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). <i>For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.</i>
CC.6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
CC.EE.3	Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</i>
CC.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i>
CC.6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
CC.6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
CC.6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
CC.6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

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Unit Vocabulary

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| <ul style="list-style-type: none">● Exponent● Base● Factor● Numerical expression● Order of operations● Evaluate● Algebraic expression● Variable● Terms● Coefficient● Identity property of addition● Identity property of multiplication● Inequality● Solution of an inequality● Number Line | <ul style="list-style-type: none">● Like terms● Equivalent expressions● Commutative property● Associative property● Identity property● Distributive property● Inverse operations● Equation● Solution of an equation● Subtraction property of equality● Addition property of equality● Multiplication property of equality● Division property of equality● Independent variable● Dependent variable● Linear equation |
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Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
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- Online Assessment
- PARCC

Benchmark Assessment: Go Math Benchmark

Equipment needed: Manipulatives Kits; Differentiated Centers

Teacher Resources:

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Modifications: (Special Education, Gifted and Talented, ELL)

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Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint

Unit 5 Overview	
Content Area: Mathematics	
Unit 5 Title: Geometry	
Grade Level: 6	
<p>Unit Summary: Convert Units of Length; Convert Unity of Capacity; Convert Units of Weight and Mass; Transform Units; Distance, Rate, and Time Formulas; Area of Parallelograms; Explore Area of Triangles; Area of Triangles; Explore Area of Trapezoids; Area of Trapezoids; Area of Regular Polygons; Composite Figures; Changing Dimensions; Figures on the Coordinate Plane; Three-Dimensional Figures and Nets; Explore Surface Area Using Nets; Surface Area of Prisms; Surface Area of Pyramids; Fractions and Volume; Volume of Rectangular Prisms; Geometric Measurements</p>	
<p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Learning Targets	
Mathematical Practices	
CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.6	Attend to precision.
CC.K-12.MP.3	Construct viable arguments and critique the reasoning of others.
CC.K-12.MP.8	Look for and express regularity in repeated reasoning.
CC.K-12.MP.4	Model with mathematics.
Unit Essential Questions	
<ul style="list-style-type: none"> ● How can you use ratio reasoning to convert from one unit of length to another? ● How can you use ratio reasoning to convert from one unit of capacity to another? ● How can you use ratio reasoning to convert from one unit of weight or mass to another? ● How can you transform units to solve problems? ● How can you use the strategy use a formula to solve problems involving distance, rate, and time? ● How can you find the area of parallelograms? ● What is the relationship among the areas of triangles, rectangles and parallelograms? 	

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- How can you find the area of triangles?
- What is the relationship between the areas of trapezoids and parallelograms?
- How can you find the area of trapezoids?
- How can you find the area of regular polygons?
- How can you find the area of composite figures?
- How can you use the strategy find a pattern to show how changing dimensions affects areas?
- How can you plot polygons on a coordinate plane and find their side lengths?
- How can you use nets to represent three-dimensional figures?
- What is the relationship between a net and the surface area of a prism?
- How can you find the surface area of prisms?
- How can you find the surface area of a pyramid?
- What is the relationship between the volume and the edge lengths of a prism with fractional edge lengths?
- How can you find volumes of rectangular prisms with fractional edge lengths?
- How can you use the strategy use a formula to solve problems involving area, surface area, and volume?

Student Learning Objectives

- Use ratio reasoning to convert from one unit of length to another.
- Use ratio reasoning to convert from one unit of capacity to another.
- Use ratio reasoning to convert from one unit of weight or mass to another.
- Transform units to solve problems.
- Solve problems involving distance, rate, and time by applying the strategy use a formula.
- Find the area of parallelograms.
- Investigate the relationship among the areas of triangles, rectangles, and parallelograms.
- Find the area of triangles.
- Investigate the relationship between areas of trapezoids and parallelograms.
- Find the area of trapezoids. Find the area of regular polygons.
- Find the area of composite figures.
- Determine the effect of changing dimensions on the area of a polygon by using the strategy find a pattern.
- Plot polygons on a coordinate plane, and use coordinates to find side lengths.
- Use nets to represent three-dimensional figures.
- Use nets to recognize that the surface area of a prism is equal to the sum of the areas of its faces.
- Find the surface area of prisms.
- Find the surface area of pyramids.
- Investigate the volume of rectangular prisms with fractional edge lengths.
- Use formulas to find the volume of rectangular prisms with fractional edge lengths.
- Solve problems involving area, surface area, and volume by applying the strategy use a formula.

CPI #

Cumulative Progress Indicator (CPI)

CC.6.G.1

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical

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	problems.
CC.6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
CC.6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
CC.6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Unit Vocabulary

<ul style="list-style-type: none"> ● Conversion factor ● Length ● Meter ● Capacity ● Gallon ● Liter ● Pint ● Quart ● Ounce ● Pounds ● Ton ● Weight ● Area ● Parallelogram ● Congruent ● Diagonal ● Right triangle ● Acute triangle ● Obtuse triangle 	<ul style="list-style-type: none"> ● Trapezoid ● Regular polygon ● Composite figure ● Solid figure ● Net ● Face ● Edge ● Vertex ● Base ● Lateral face ● Prism ● Pyramid ● Polygon ● Surface area ● Lateral area ● Volume
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Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment

Benchmark Assessment - Go Math Assessment

Equipment needed: Manipulatives Kits; Differentiated Centers

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Teacher Resources:

<https://sites.google.com/site/brigantinemath/home>

wwwk-6.thinkcentral.com

Modifications: (Special Education, Gifted and Talented, ELL)

- Tiered Assignments
- Games
- Menus/Choice Boards
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint

Unit 6 Overview	
Content Area: Mathematics	
Unit 6 Title: Statistics	
Grade Level: 6	
<p>Unit Summary: Recognize Statistical Questions; Describe Data Collection; Dot Plots and Frequency Tables; Histograms; Mean as Fair Share and Balance Point; Measures of Center; Effects of Outliers; Data Displays Patterns in Data; Box Plots; Mean Absolute Deviation; Measures of Variability; Choose Appropriate Measures of Center and Variability; Apply Measure of Center and Variability; Describe Distributions; Misleading Statistics</p> <p>Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts</p> <p>MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p> <p>21st century themes:</p> <ul style="list-style-type: none"> ● Information and communication skills ● Higher order thinking skills ● Problem solving skills ● Independent learners ● Real-world connections <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP3. Attend to personal health and financial well-being.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
Learning Targets	
Mathematical Practices	
CC.K-12.MP.1	Make sense of problems and persevere in solving them.
CC.K-12.MP.3	Construct viable arguments and critique the reasoning of others.
CC.K-12.MP.5	Use appropriate tools strategically.
CC.K-12.MP.6	Attend to precision.
Unit Essential Questions	
<ul style="list-style-type: none"> ● How do you identify a statistical question? ● How can you describe how a data set was collected? ● How can you use dot plots and frequency tables, histograms, and box plots to display data? ● How does the mean represent a fair share and balance point? ● How can you summarize a data set by using mean, median, and mode? ● How does an outlier affect measures of center and variability? ● How can you use the strategy draw a diagram to solve problems involving data? ● How can you describe overall patterns in a data set? ● How do you calculate the mean absolute deviation of a data set? 	

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- How can you summarize a data set by using range, interquartile range, and mean absolute deviation?
- How can you choose appropriate measures of center and variability to describe a data set and what can they show?
- How can you describe the distribution of a data set collected to answer a statistical question?

Student Learning Objectives

- Recognize statistical questions.
- Describe a data set by stating what quantity was measured and how it was measured.
- Display data in dot plots and frequency tables.
- Display data in histograms.
- Understand the mean as a fair share and as a balance point.
- Summarize a data set by using mean, median, and mode.
- Determine the effects of outliers on measure of center and variability.
- Solve problems involving data by using the strategy draw a diagram.
- Describe overall patterns in data, including clusters, peaks, gaps, and symmetry.
- Display data in box plots.
- Understand mean absolute deviation as a measure of variability from the mean.
- Summarize a data set by using range, interquartile range, and mean absolute deviation.
- Choose appropriate measures of center and variability to describe data, and justify the choice.
- Recognize what measures of center and variability indicate about a data set.
- Describe the distribution of a data set collected to answer a statistical question.
- Draw conclusions about the distribution of a data set by using the strategy work backward

CPI #	Cumulative Progress Indicator (CPI)
CC.6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</i>
CC.6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
CC.6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
CC.6.SP.5a	Reporting the number of observations.
CC.6.SP.5b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
CC.6.SP.5c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
CC.6.SP.5d	Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

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CC.6.SP.2

Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

Unit Vocabulary

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| <ul style="list-style-type: none">● Data● Statistical question● Dot plot● Frequency table● Relative frequency table● Lower quartile● Upper quartile● Box plot | <ul style="list-style-type: none">● Histogram● Bar graph● Measure of center● Mean● Median● Mode● Mean absolute deviation● Measure of variability● Range● Interquartile range |
|--|---|

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Equipment needed: Go Math Textbooks, Manipulatives Kits; Differentiated Centers

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