

## 6<sup>th</sup> Grade Math

### 1<sup>st</sup> Nine Weeks

#### Rational Number Operations

- Classify whole numbers, integers, and rational numbers using visuals
- Recognize that dividing by a number and multiplying by reciprocal are identical operations.
- Determine whether a quantity decreases or increases when multiplied by fraction
- Multiply and divide positive rational numbers fluently

#### Integer Operations

- Add, subtract, multiply and divide integers fluently
- Represent integer operations with concrete models and standard algorithms
- Identify a number, its opposite and its absolute value

#### Fraction, Decimal, Percent

- Order a set of rational numbers (fractions/decimals)
- Generate equivalent forms of fractions, decimals and percents
- Locate, compare and order integers/rational numbers on a number line
- Recognize that division is equivalent to fraction notation  $a/b = a \div b$
- Represent benchmark fractions using 10 by 10, strip diagrams, number lines and numbers
- Use equivalent fractions, decimals and percents to show equal parts of the same whole
- Represent ratios and percents with concrete models, fractions and decimals

### 2<sup>nd</sup> Nine Weeks

#### Expressions, Equations and Inequalities

- Use order of operations and prime factorization to generate equivalent expressions
- Identify the difference between an additive and multiplicative relationship
- Distinguish between expressions and equations verbally, numerically, and algebraically.
- Determine if two expressions are equivalent using models and algebraic representations.
- Generate equivalent expressions using properties of operations including inverse, identity, commutative, associative, and distributive
- Model and solve one-variable one-step equations
- Write one-variable, one-step equations and inequalities to represent constraints or conditions
- Represent solutions for one-variable, one-step equations and inequalities on number lines
- Determine if a value makes an equation or inequality true

#### Personal Financial Literacy

- Describe information in credit reports
- Explain various methods to pay for college
- Compare features and costs of checking account, debit card
- Distinguish between credit and debit cards
- Compare the annual salary of several occupations requiring various levels of post-

### 3<sup>rd</sup> Nine Weeks

#### Algebraic Representations

- Graph points in all 4 quadrants
- Identify independent and dependent quantities
- Write an equation from a table with the notion of independent and dependent quantities.
- Compare two rules verbally, numerically, graphically and symbolically
- Represent a situation using verbal description, table, graph and equation.

#### Proportional Reasoning

- Solve real world problems to find the whole given a part and percent, to find part given whole and percent, to find percent given part and whole
- Solve prediction and comparison using ratios and rates.
- Use ratios to define two quantities describing the same attribute
- Use rates to compare by division two quantities having different attributes.
- Use scale factors, tables, graphs and proportions to represent math and real world problems.

#### Data Analysis

- Measures of Central Tendency including mean, median, mode and range.
- Measures of Spread- range and IQR
- Data collection-dot plot, box plot
- Data Collection-dot plot, box plot, stem and leaf plot, histogram, percent bar graph
- Compare shape, center and spread of data

### 4<sup>th</sup> Nine Weeks

#### Geometry and Measurement

- Model area formulas by decomposing and rearranging
- Area of rectangles, parallelograms, trapezoids, triangles, Volume of rectangular prisms
- Triangles and their properties
- Write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms
- Model and solve equations including geometric concepts

#### STAAR REVIEW

- Review targeted TEKS from assessed curriculum
- Utilize data from benchmark to identify weaknesses.
- Close gaps.

STAAR EXAM is May 11

#### Bridge to 7<sup>th</sup> grade

- Classification Real Numbers
- Integer Operations
- Fraction, Decimal, Percent Conversions

## 6<sup>th</sup> Grade Math PAP

1 <sup>st</sup> Nine Weeks	2 <sup>nd</sup> Nine Weeks	3 <sup>rd</sup> Nine Weeks	4 <sup>th</sup> Nine Weeks
<p><b><u>Classify numbers and integer operations</u></b></p> <ul style="list-style-type: none"> <li>Add, subtract, multiply and divide integers fluently</li> <li>Represent integer operations with concrete models and standard algorithms</li> <li>Classify whole numbers, integers, and rational numbers using visuals</li> <li>Locate, compare and order integers/rational numbers on a number line</li> <li>Balance a check register</li> <li>Extend previous knowledge of sets and subsets to describe relationships between rational numbers</li> </ul> <p><b><u>Fraction, Decimal, Percent</u></b></p> <ul style="list-style-type: none"> <li>Generate equivalent forms of fraction, decimal and percent</li> <li>Order a set of rational numbers</li> <li>Represent ratios and percents with concrete models, fractions and decimals</li> <li>Represent benchmark fractions and percents using visuals</li> <li>Use equivalent fraction, decimal and percent to show equal parts of same whole</li> <li>Compare and order integers and rational numbers on number line</li> </ul> <p><u>Red is 7<sup>th</sup> grade accelerated material.</u></p>	<p><b><u>Operations with rational numbers</u></b></p> <ul style="list-style-type: none"> <li>Multiply and divide positive rational numbers fluently</li> <li>Recognize that dividing by a number and multiplying by reciprocal are identical operations.</li> <li>Determine whether a quantity decreases or increases when multiplied by fraction</li> <li>Compare features and costs of checking account, debit card</li> <li>Distinguish between credit and debit cards</li> <li>Solve problems using addition, subtraction, multiplication and division of rational numbers</li> <li>Add, subtract, multiply and divide rational numbers fluently</li> </ul> <p><b><u>Equivalent expressions, graphing in coordinate plane</u></b></p> <ul style="list-style-type: none"> <li>Graph points in all 4 quadrants</li> <li>Use order of operations and prime factorization to generate equivalent expressions</li> <li>Determine if two expressions are equivalent using models.</li> <li>Generate equivalent expressions using properties of operation including inverse, identity, commutative, associative</li> </ul> <p><b><u>Ratios ,Rates, Proportions</u></b></p> <ul style="list-style-type: none"> <li>Solve prediction and comparison using ratios and rates.</li> <li>Ratios vs Rates</li> <li>Use ratios to define two quantities describing the same attribute</li> <li>Use rates to compare by division two quantities having different attributes.</li> <li>Use scale factors, tables, graphs and proportions to represent math and real world problems.</li> <li>Calculate unit rates from rates in math and real-world problems</li> <li>Solve problems involving ratio, rate and proportion,</li> <li>Solve math problem involving similar shape and scale drawings</li> </ul>	<p><b><u>Simplify expressions, Solve equations and inequalities</u></b></p> <ul style="list-style-type: none"> <li>Distinguish between expressions and equations verbally, numerically, and algebraically</li> <li>Generate equivalent expressions using distributive property</li> <li>Model and solve one-variable one-step equations</li> <li>Write one-variable, one-step equations and inequalities to represent constraints or conditions</li> <li>Represent solutions of equations and inequalities on number lines</li> <li>Write a real-world problem given an equation or inequality</li> <li>Determine if a value makes an equation or inequality true</li> <li>Model and solve one-variable two step equations and inequalities</li> <li>Determine if the given value makes one-variable, two step equations and inequalities true</li> <li>Represent solutions for one-variable two step equations and inequalities on number line</li> <li>Write one variable two step equations and inequalities</li> </ul> <p><b><u>Multiple Representations</u></b></p> <ul style="list-style-type: none"> <li>Represent a situation using verbal description, table, graph and equation in form <math>y = kx</math> or <math>y = x+b</math></li> <li>Identify independent and dependent quantities</li> <li>Write an equation from a table with the notion of independent and dependent quantities.</li> <li>Compare two rules verbally, numerically, graphically and symbolically</li> <li>Identify the difference between an additive and multiplicative relationship</li> </ul>	<p><b><u>Multiple Representations, continued</u></b></p> <ul style="list-style-type: none"> <li>Determine the constant of proportionality</li> <li>Represent linear relationships for <math>y = mx + b</math> using tables, graphs, equations, words</li> <li>Represent constant rates of change</li> </ul> <p><b><u>Data Analysis</u></b></p> <ul style="list-style-type: none"> <li>Measures of Central Tendency including mean, median, mode and range.</li> <li>Measures of Spread- range and IQR</li> <li>Data collection-dot plot, box plot</li> <li>Data Collection-dot plot, box plot, stem and leaf plot, histogram, percent bar graph</li> <li>Compare shape, center and spread of data</li> <li>Use data to make inferences</li> <li>Compare two populations</li> <li>Solve problems using bar graphs, dot plots, box plots</li> </ul> <p><b><u>Geometry and Measurement</u></b></p> <ul style="list-style-type: none"> <li>Conversions within a measurement system</li> <li>Model area formulas by decomposing and rearranging</li> <li>Area of rectangles, parallelograms, trapezoids, triangles, Volume of rectangular prisms</li> <li>Triangles and their properties</li> <li>Convert between measurement systems</li> <li>Write and solve equations involving geometry concepts</li> <li>Circles including pi, circumference and area</li> </ul> <p>Area of composite figures</p> <p><b><u>STAAR REVIEW</u></b></p> <p>STAAR EXAM is May 11</p>