

## "I Can" Do Math

(Ratios & Proportional Relationships)

**I can examine how one item relates to another and use this information to solve problems.**

- 7.RP.A.1 I can calculate the unit rate for real life situations by breaking down the ratio (fractions) by dividing to solve the problem to find the relationship between two units.
- 7.RP.A.2 I can recognize and represent a proportion as a statement of equality between two ratios.
- 7.RP.A.2A I can analyze two ratios to determine if they are proportional to one another with a variety of strategies (ex: using tables, graphs or pictures).
- 7.RP.A.2B I can define constant of proportionality as a unit rate.
- 7.RP.A.2B I can analyze tables, graphs, equations, diagrams and verbal descriptions to identify unit rate.
- 7.RP.A.2C I can represent proportional relationships by writing equations.
- 7.RP.A.2D I can explain what the points on a graph of a proportional relationship mean in terms of a specific situation and recognize what  $(0,0)$  and  $(1,r)$  on a graph represents, where  $r$  is the unit rate.
- 7.RP.A.3 I can apply proportional reasoning to solve multistep ratio and percent problems (ex: simple interest, tax, markups, markdowns, gratuities, commissions, fees, percent increase and decrease or percent errors).

## "I Can" Do Math

(The Number System)

**I can apply what I have learned about addition, subtraction, multiplication and division to fractions.**

- 7.NS.A.1 I can apply what I have learned about addition and subtraction to add and subtract rational numbers.
- 7.NS.A.1 I can show addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.A.1A I can describe situations where opposite quantities combine to make 0 (ex: A hydrogen atom has 0 charge because its two constituents are oppositely charged.).
- 7.NS.A.1B I can demonstrate and explain how when adding two numbers  $p + q$ : if  $q$  is positive, the sum of  $p$  and  $q$  will be  $|q|$  spaces to the right of  $p$  on a number line; and if  $q$  is negative, the sum of  $p$  and  $q$  will be  $|q|$  spaces to the right of  $p$  on a number line.
- 7.NS.A.1B I can explain and justify why the sum of  $p + q$  is located a distance of  $|q|$  in the positive or negative direction from  $p$  on a number line.
- 7.NS.A.1C I can represent how the distance between two rational numbers on a number line is the absolute value of their difference and apply this to real-world situations.
- 7.NS.A.1C I can identify subtraction of rational numbers as adding the additive inverse property to subtract rational numbers,  $p - q = p + (-q)$ .
- 7.NS.A.1D I can use properties of operations as strategies to add and subtract rational numbers.

## "I Can" Do Math

### (The Number System)

- 7.NS.A.2 I can apply what I have learned about multiplication and division of fractions to multiply and divide rational numbers.
- 7.NS.A.2A I can recognize and describe the rules when multiplying signed numbers and apply the order of operations, particularly the distributive property, to multiply rational numbers (ex:  $(-1)(-1)=1$ ).
- 7.NS.A.2A I can use the products of rational numbers to describe real-world situations.
- 7.NS.A.2B I can explain why integers can be divided except when the divisor is 0 and describe why the quotient is always a rational number.
- 7.NS.A.2B I can understand and describe the rules when dividing signed numbers and integers and recognize that  $-(p/q)=(-p)/q=p/(-q)$ .
- 7.NS.A.2B I can use the quotient of rational numbers to describe real-world situations.
- 7.NS.A.2C I can identify how properties of operations can be used to multiply and divide rational numbers (ex: distributive property, multiplicative inverse property, multiplicative identity, commutative property for multiplication and associative property for multiplication.)
- 7.NS.A.2D I can change a rational number to a decimal using long division and explain how the decimal form of a rational number stops in zeroes or repeats.

## **"I Can" Do Math**

(The Number System)

- 7.NS.A.3 I can add, subtract, multiply and divide rational numbers.
- 7.NS.A.3 I can solve real-world problems by adding, subtracting, multiplying and dividing rational numbers, including complex fractions.

## **"I Can" Do Math**

(Expressions & Equations)

**I can use properties of operations to create equivalent expressions.**

- 7.EE.A.1 I can apply properties of operations to add, subtract, factor and expand linear expressions with rational coefficients.
- 7.EE.A.1 I can combine like terms to factor and expand linear expressions with rational coefficients using the distributive property.
- 7.EE.A.2 I can use properties of operations to write equivalent expressions.
- 7.EE.A.2 I can rewrite an expression in a different form if needed.

## "I Can" Do Math

### (Expressions & Equations)

**I can solve real-world and mathematical problems using expressions and equations.**

- 7.EE.B.3 I can apply properties of operations to calculate numbers in any form and convert between numerical forms when necessary.
- 7.EE.B.3 I can solve multi-step real-world and mathematical problems using positive and negative rational numbers in any form (whole numbers, fractions and decimals).
- 7.EE.B.3 I can determine if an answer makes sense using mental computation and estimation strategies.
- 7.EE.B.4 I can use variables to represent numbers in real-world or mathematical problems and make reasonable simple equations and inequalities to solve problems.
- 7.EE.B.4A I can identify and fluently solve equations in the form  $px+q=r$  and  $p(x+q)=r$  (ex: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?).
- 7.EE.B.4A I can compare an arithmetic solution to an algebraic solution.
- 7.EE.B.4B I can write and solve word problems leading to inequalities in the form  $px+q>r$  or  $px+q<r$ .
- 7.EE.B.4B I can graph and explain the solution of an inequality.

# "I Can" Do Math

(Geometry)

**I can draw, construct and describe geometrical figures and describe the relationships between them.**

- 7.G.A.1 I can solve problems with scale drawings of geometric figures.
- 7.G.A.1 I can figure out actual lengths and areas from a scale drawing and use them to create a different sized scaled drawing.
- 7.G.A.2 I can draw geometric shapes with given conditions either freehand, with a ruler and protractor or with technology.
- 7.G.A.2 I can recognize and draw a triangle when given three measurements: three side lengths, three angle measurements, or a combination of side lengths and angle measurements.
- 7.G.A.3 I can draw and describe geometrical figures including right rectangular prisms and right rectangular pyramids.
- 7.G.A.3 I can name the two-dimensional figures that represent a particular slice of a three-dimensional figure.

# **"I Can" Do Math**

(Geometry)

**I can solve real-world and mathematical problems involving angle measure, area, surface area and volume.**

- 7.G.B.4 I can state the formulas for the area and circumference of a circle and use them to solve problems.
- 7.G.B.4 I can explain the relationship between the circumference and the area of a circle.
- 7.G.B.5 I can use properties of supplementary, complementary, vertical and adjacent angles in multi-step problems to write and solve simple equations for an unknown angle in a figure.
- 7.G.B.6 I can solve problems involving area, volume and surface area of two-and three-dimensional figures.

## **"I Can" Do Math**

(Statistics & Probability)

**I can use random sampling to draw conclusions about a population.**

- 7.SP.A.1 I can understand that inferences about a population can be made by examining a sample.
- 7.SP.A.1 I can understand why generalizations made about a population from a sample are only valid if the sample represents that population.
- 7.SP.A.2 I can use data from a random sampling to draw conclusions about a population (ex: Estimate the mean word length in a book by randomly sampling words from the book.).
- 7.SP.A.2 I can generate multiple samples to gauge predictions.

**I can use data to compare two populations.**

- 7.SP.B.3 I can find similarities and differences in two different data sets (including mean, median, etc.)
- 7.SP.B.4 I can compare and draw conclusions from two populations based off of their means, medians and/or ranges.

## I Can" Do Math

(Statistics & Probability)

**I can develop, use and evaluate probability modes.**

- 7.SP.C.5 I can recognize and explain that the probability of a chance event is a number between 0 and 1 that expresses how likely an event is to occur (ex: When rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.).
- 7.SP.C.6 I can collect data to approximate probability.
- 7.SP.C.6 I can use probability to predict the number of times an event will occur.
- 7.SP.C.7 I can investigate, develop and use probabilities to help me solve problems.
- 7.SP. C.7 I can compare probabilities to observed frequencies.
- 7.SP.C.7A I can develop a uniform probability model and use it to determine the probability of an event occurring.
- 7.SP.C.7B I can develop a probability model by observing frequencies in data developed from a chance process.
- 7.SP.C.8 I can find probabilities of multiple events using organized lists, tables, tree diagrams and simulation.
- 7.SP.C.8A I can use the sample space to compare the number of favorable outcomes to the total number of outcomes and determine the probability of the compound event.
- 7.SP.C.8B I can explain the outcomes in the sample space that make up an event.
- 7.SP.C.8C I can design and use simulation to predict the probability of a compound event.