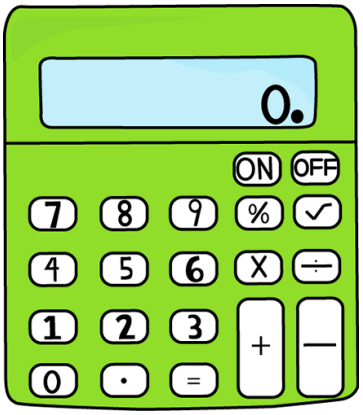
Ratios & Proportional Relationships



7th Grade—"I Can Do Math"

I can analyze proportional relationships and use them to solve real-world problems.

7. RP.1 .a □ 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. 2 .a □ I can recognize and represent a proportion as a statement of equality between two ratios.
7. RP. a.2.a □ 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. 2 .b □ I can define constant of proportionality as a unit rate.
7. RP. a. 2 .b □ I can analyze tables, graphs, equations, diagrams, and verbal descriptions to identify unit rate.
7. RP. a. 2 .c □ I can represent proportional relationships by writing equations.
7. RP. a. 2 .d □ 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 9 1,r) on a graph represents, where r is the unit rate.
7. RP. 3 .a □ I can apply proportional reasoning to solve multistep ratio and percent problems (ex: simple interest, tax, markups, gratuities, commissions, fees, percent increase and decrease or percent errors).

The Number System

7th Grade—"I Can Do Math"

I can apply what I have learned about operations with fractions.

7. NS. 1. a □ I can apply what I have learned about addition and subtraction to add and subtract rational number.

7. NS. 1. a □ I can show addition and subtraction on a horizontal or vertical number line diagram.

7. NS. a. 1. a □ 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. 1. b□ I can represent and explain how a number and its opposite have a sum of 0 and are additive inverses.

7. NS. a. 1. b □ 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. If q is negative, the sum of p and q will be q spaces to the left of p on a number line.

7. NS. a. 1. b □ I can explain and justify why the sum or p + q is located a distance of q in the positive or negative direction from p on a number line.

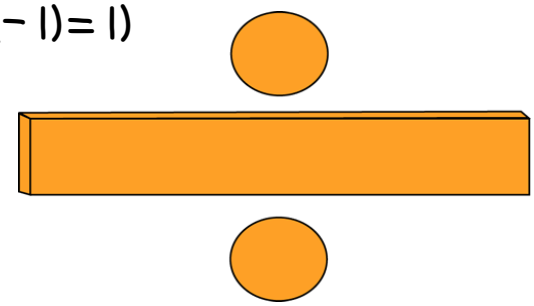
7. NS. a. 1. c □ I can represent how the distance between two rational numbers on a number line is the absolute value of their difference and apply this to real-world situations.

7. NS. a. 1. c □ I can identify subtraction of rational numbers as adding the additive inverse property to subtract rational number (p–q = p = 9–q).

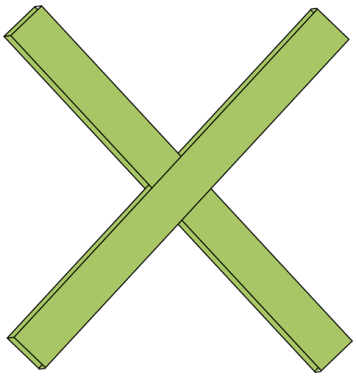
7. NS. a. 1. d □ I can use properties of operations as strategies to add and subtract rational numbers.

7. NS. a. 2. a □ I can apply what I have learned about multiplication and division of fractions to multiply and divide rational numbers.

7. NS. a. 2. a □ 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: 9- 1)(- 1)= 1)



The Number System (cont.)



7th Grade—"I Can Do Math"

7. NS. a. 2 .a □ I can use the products of rational numbers to describe real-world situations.

7. NS. a. 2 .b □ 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. 2 .b □ I can understand and describe the rules when dividing signed numbers and integers and recognize that $-(p/q) = 9-p)/q=p/q=p/(-q)$.

7. NS. a.2 .b □ I can use the quotient of rational numbers to describe real-world situations.

7. NS. a.2 .c □ 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.2 .d □ I can change a rational number to a decimal using long division and explain how the decimal form of a rational n umber stops in zeroes or repeats.

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.

Expressions & Equations

7th Grade—"I Can Do Math"

I can use properties of operations to create equivalent expressions.

7. EE. 1. a □ I can apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.

7. EE. 1. a □ I can combine like terms to factor and expand linear expressions with rational coefficients using distributive property.

7. EE. 2. a □ I can use properties of operations to write equivalent expressions.

7. EE. 2. a □ I can rewrite an expression in a different form if needed.

I can use numerical and algebraic expression and equations to solve real-life problems.

7. EE. 3. b □ I can apply properties of operations to calculate numbers in any form and convert between numerical forms when necessary.

7. EE. 3. b □ 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. 3. b □ I can determine if an answer makes sense using mental computation and estimation strategies.

7. EE. 4. b □ 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. 4. a □ I can identify and fluently solve equations in the form $px + q = r$ and $p(x + q) = r$.

7. EE. b. 4. a □ I can compare an arithmetic solution to an algebraic solution.

7. EE. b. 4. b □ I can write and solve word problems leading to inequalities in the form $px + q > r$ or $px + q < r$.

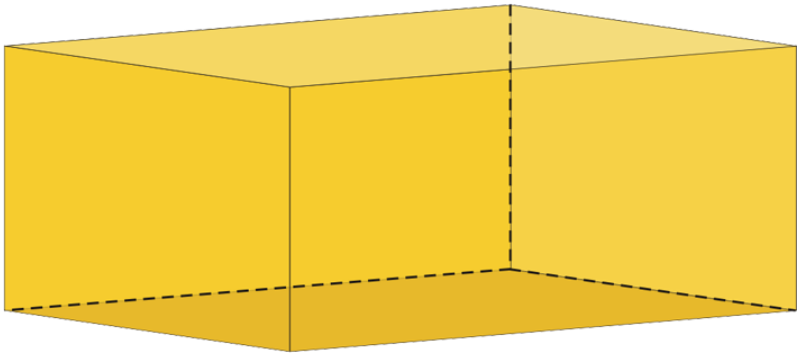
7. EE. b. 4. b □ I can graph and explain the solution of an inequality.

Geometry

7th Grade—"I Can Do Math"

I can construct and describe geometrical shapes and describe the relationship between them.

7.G. 1. a □ I can solve problems with scale drawings of geometric figures.
7.G. 1. a □ I can use actual lengths and areas of a scale drawing and use them to create a different sized scale drawing.



7.G. 2. a □ I can draw geometric shapes with given conditions either freehand. With a ruler and protractor, or with technology.
7.G. 2. a □ I can recognize and draw a triangle when given three measurements: the side lengths, three angle measurements, or a combination of side lengths and angle measurements.
7.G. 3. a □ I can draw and describe geometrical figures including right rectangular prisms and right rectangular pyramids.

I can use angle measurement, area, surface area, and volume to solve real-life problems.

7.G. 4. b □ I can state the formulas for the area and circumference of a circle and use them to solve problems.
7.G. 4. b □ I can explain the relationship between the circumference and the area of a circle.
7.G. 5. b □ 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. 6. b □ I can solve problems involving area, volume, and surface area of two and three dimensional figures.

Statistics & Probability

7th Grade—"I Can Do Math"

I can use random sampling to draw inferences about a population.

7.SP. 1. a □ I can understand that inferences about a population can be made by examining a sample.
7.SP. 1. a □ I can understand why generalizations made about a population from a sample are only valid if the sample represents that population.
7.SP. 2. a □ I can use data from a random sampling to draw conclusions about a population.
7.SP. 2. a □ I can generate multiple samples to gauge predictions.

I can draw informal comparative inferences about two populations.

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

I can investigate, develop, use, and evaluate probability models.

7.SP. 5. c □ 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.
7.SP. 6. c □ I can collect data to approximate probability.
7.SP. 6. a □ I can use probability to predict the number of times an event will occur.

Statistics & Probability (cont.)

7th Grade—"I Can Do Math"

7.SP. 7. c □ I can investigate, develop, and use probabilities to help me solve problems.

7.SP. 7. c □ I can compare probabilities to observed frequencies.

7.SP. c. 7. a □ I can develop a uniform probability model and use it to determine the probability of an event occurring.

7.SP. c. 7. b □ I can develop a probability model by observing frequencies in data developed from a chance process.

7.SP. 8. c □ I can find probabilities of multiple events using organized lists, tables, tree diagrams, and simulation.

7.SP. c. 8. a □ I can use the sample space to compare the number of favorable outcomes and determine the probability of the compound event.

7.SP. c. 8. b □ I can explain the outcomes in the sample space that make up an events.

7.SP. c. 8. c □ I can design and use simulation to predict the probability of a compound event.