**Mathematics**
123456789

" I Can¨
Mascoma Standards
7th Grade Math

I Can Use Proportional Relationships to Help Me Understand Math

☐ I Can draw a model for a proportional relationship and connect it to an equation to solve a problem. 7.RP.2c

☐ I Can compute unit rates with ratios of fractions, including lengths, areas, and other units. 7.RP.1

☐ I Can determine whether two quantities are proportional from a table or a graph. 7.RP.2a

☐ I Can identify the unit rate in tables, graphs, equations, diagrams, and verbal expressions. 7.RP.2b

☐ I Can represent proportional relationships by equations. 7.RP.2c

☐ I Can interpret and explain what a point (x, y) means on a proportional graph, attending to (0, 0) and (1, r) where r is the unit rate . 7.RP.2d

☐ I Can use proportions to solve multi-step ratio and percent problems (interest, tax, discounts, and tips). 7.RP.3

## I Can Use Properties of Operations to Help Me Understand Math
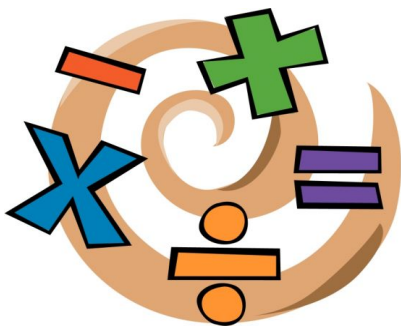
☐ I Can add and subtract linear expressions with rational coefficients. 7.EE.1

☐ I can explain simplification of algebraic expressions. 7.EE.2

☐ I can factor and expand linear expressions with rational coefficients. 7.EE.2

☐ I can restate expressions to make sense of real life situations. (the perimeter of a rectangle can be l+l+w+w or 2l+2w. 7.EE.2

☐ I can solve multi-step mathematical and real life problems posed with positive and negative rational numbers. 7.EE.3

-37	> Greater than	-80
-61	< Less than	-8
-3	= Equal to	-3

☐ I can convert between rational number forms if necessary (fractions/decimals/percents) . 7.EE.3

☐ I can determine if and explain why an answer to a multi-step real life problem is reasonable by using estimation and mental math. 7.EE.3

☐ I can fluently solve multi-step equations of the form p (x + q) = r. 7. EE.4a

☐ I can solve multi-step inequalities, and graph the solution on a number line. 7.EE.4b

I Can Use Geometry to Help Me Understand Math

☐ I can solve problems with scale drawings of geometric figures. 7.G.1

☐ I can compute actuals lengths are area from a scale drawing. 7.G.1
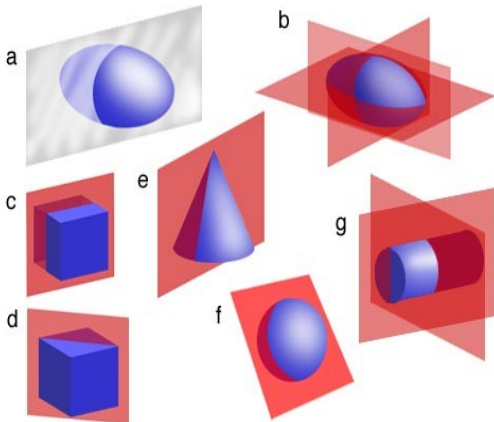
☐ I can draw geometric shapes with given conditions (freehand, ruler & protractor, technology). 7.G.2

☐ I can describe the two-dimensional figure that results from slicing a three-dimensional figure. 7.G.3

☐ I can give an informal derivation of the relationship between the circumference and area of a circle. 7.G.4

☐ I can use facts about supplementary, complimentary, vertical and adjacent angles in solving a multi-step problem. 7.G.5

☐ I can write and solve simple equations for an unknown angle in a figure. 7.G.4

☐ I can solve real-world and mathematical problems involving 2 dimensional area (triangles, quadrilaterals, polygons) and 3 dimensional volume and surface area (cubes, right prisms) 7.G.6

I Can use Statistics and Probability to Help Me Understand Math

☐ I can make generalizations from statistical data about a population sample. 7.SP.1

☐ I can compare and draw inferences from measures of central tendency (mean/median/mode), measures of variation (range/quartile/interquartile range), visual overlap, and mean absolute deviation (dot plots/box plots/histograms). 7. SP.4

Mean Median Mode
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☐ I can describe the difference between two sample populations and explain what the difference means. 7.SP.4

☐ I can explain why the numeric probability of an event is between 0 and 1 . 7.SP.5

☐ I can predict probability from collecting data. 7. SP.5

☐ I can find the probability of compound events by constructing models (lists/tables/tree diagrams/simulations). 7.SP.8

☐ I can design and use a simulation to generate frequencies for compound events. 7.SP.8c

I Can Use the Number System to Help Me Understand Math

☐ I can explain my solutions for operations on integers . 7.NS.1

☐ I Can add and subtract natural and whole numbers, integers, fractions, and decimals, individually and combining more than one type of number. 7.NS.2

Basic Properties of Numbers

Associative Property
~In addition and multiplication, no matter how the numbers are grouped, the answer will always be the same.

(a + b) + c = a + (b + c)
(4 + 3) + 5 has the same sum as 4 + (3 + 5)

(a x b) x c = a x (b x c)
(2 x 3) x 4 has the same product as 2 x (3 x 4)

Identity Property
~Identity property for addition or identity property of zero.
* adding zero will not change a number.

x + 0 = x   11 + 0 = 11

~Identity property for multiplication or identity property of one.
* multiplying by 1 will not change a number.

x x 1 = x   8 x 1 = 8

Commutative Property
~In addition and multiplication, numbers may be added or multiplied together in any order.

a + b = b + a   a x b = b x a
6 + 3 = 9 and 3 + 6 = 9
3 x 4 = 12 and 4 x 3 = 12

Distributive Property
~multiplying a number is the same as multiplying its addends by the number, then adding the products.

6 x 9 is the same as 6 x (4 + 5)
which equals (6 x 4) + (6 x 5)
which equals 24 + 30 which equals 54

☐ I Can multiply and divide natural and whole numbers, integers, fractions, and decimals, individually and combining more than one type of number. 7.NS.2

☐ I can solve real-world problems involving all four operations on rational numbers. 7.NS.3

☐ I can apply the properties of operations (commutative, associative, identity, distributive, and inverse properties) along with the order of operations to solve problems with rational numbers. 7.MS.3

P E M D A S

| Parentheses | Exponents | Multiply | Divide | Add | Subtract |
| () | a^2 | ✗ | ÷ | ➕ | ➖ |