7th Grade Math Curriculum Map: 2012-2013
The Number System
Time Line: Marking Period 1
**Correlated to MEAP*

CCSS	Essential Questions/Learning goals	Skills/ Vocabulary	Formative/ Summative Assessment	Resources
IS.1* ply and extend previous lerstandings of addition and traction to add and subtract onal numbers; represent lition and subtraction on a izontal or vertical number diagram. th Practices: 4	**In what ways can rational numbers be useful?** See Below	Positive, negative, opposite, additive inverse, absolute value, integer, rational number.	NWEA/ Common Unit Assessments	Accentuate the Negative Skip Investigation 4
IS.1.a* scribe situations in which posite quantities combine to ke 0. For example, a drogen atom has 0 charge ause its two constituents are positely charged. th Practices: 4	I can describe real-world situations where opposite quantities have a sum of zero.			
IS.1.b* derstand p+q as the number ated a distance absolute ue of q from p, in the itive or negative direction pending on whether q is itive or negative. Show that umber and its opposite have m of 0 (additive inverse) erpret sums of rational nbers by describing real- rld contexts. th Practices: 4	I can show that a number and its opposite have a sum of Zero.(additive inverse)			

IS.1.c* derstand subtraction of onal numbers as adding the litive inverse of = p + (-q) th Practices: 4	I can rewrite a subtraction problem as an addition problem using the additive inverse. I can show the distance between two rationals on a number line is the absolute value of their difference.			
IS.1.d* ply properties of operations strategies to add and subtract onal numbers. th Practices: 4	I can use the properties of operations to add and subtract rational numbers.			
IS.2* ply and extend previous lerstandings of ltiplication and division and fractions to multiply and ide rational numbers. th Practices: 8	I can apply what I already know about multiplying and dividing fractions to multiplying and dividing rationals.	Terminating decimal, repeating decimal, distributive property, multiplicative inverse property.		
IS.2.a* derstand that multiplication xtended from fractions to onal numbers by requiring t operations continue to sfy the properties of rations, particularly the tributive property, leading to ducts such as (-1)(-1) =1 and rules for multiplying singed nbers. interpret products of onal numbers by describing l-world contexts. th Practices: 8	I can use patterns to develop procedures for multiplying rational numbers. (Examples: An even number of negative signs yields a positive answer.) I can represent real world situations using multiplication of rationals.			

IS.2.b* derstand that integers can be ided, provided that the isor is not zero, and every otient of integers (with non-o divisor) is a rational nber. If p and q are integers n –(p/q) = (-p)/q = p/(-q). erpret quotients of rational nbers by describing real-rld contexts. th Practices: 8	I can define a rational number. (Note: Students need to understand that –(p/q)=(-p)/q=p/(-q)) I represent real world situations using division of rationals.			
IS.2.c* ply properties of operations strategies to multiply and ide rational numbers. th Practices: 8	How can I apply the properties of operations as strategies to multiply and divide rational numbers? (Note: Focus on the distributive property.)			
IS.2.d* nvert rational numbers to a imal using long division; ow that the decimal form of a onal number terminates in or eventually repeats. th Practices: 8	I can convert a rational number to a decimal using long division. I know that the decimal form of a rational number terminates in 0s or eventually repeats.			
IS.3* ve real-world and thematical problems olving the four operations h rational numbers. th Practices:1	I solve real-world problems that involve the addition, subtraction, multiplication, and or division of rational numbers.	Rational Number, complex fraction (faction within a fraction)		

7th Grade Math Curriculum Map
Ratios and Proportional Relationships
Time Line: Marking Period: 1

CCSS	Essential Questions/ Learning Goals	Skills /Vocabulary	Summative/Formative Assessment	Resources
.P.1* mpute unit rates ociated with ratios fractions, including os of lengths, as, and other ıntities measured in e or different units. · example, if a son walks ½ mile each ¼ hour npute the unit rate he complex ctions (1/2)/(1/4) th Practices: 2	**How can ratios and proportional relationships be used to determine unknown quantities?** I can compute unit rates.	Ratio, Rate, Unit Rate		Comparing And Scaling INV: 2,3,4 CC Transition K INV 1 Graphing Proportions Between 3 and 4
.P.2a* cide whether two ıntities are in a portional ıtionship. · example, by ing for equivalent os in a table or phing on a ordinate plane and serving whether the ph is a straight line ough the origin. th Practices: 4	I can determine whether two quantities are proportional by looking at a table, graph, equation, or as a verbal description.	Proportional relationship, constant of proportionality, unit rate, equivalent ratios, origin		

.P.2b* entify the constant oroportionality it rate) in tables, phs, equations, grams, and verbal criptions of portional ationships. th Practices: 4	I can identify the constant of proportionality in a, graph, equation, diagram, or verbal description.			
.P.2c* oresent portional ationships by iations. · example, if total t is proportional to number of n items chased at a istant price p, the ationships between total cost and the nber of items can expressed as t=pn th Practices:4	I can write an equation that represents a proportional relationship.			
.P.2d* olain what a point y) on the graph of a portional ationship means in ns of the situation, h special attention he points (0,0) and ·) where r is the t rate. th Practices: 4	I can use words to explain the relevance of a specific point on the graph of a proportional relationship, including but not limited to (0,0) and (1,r) (Where r is the unit rate.)			

.P.3* ɛ proportional ɪtionships to solve ltistep ratio and cent problems. ɪmples: simple ɛrest, tax, markups l markdowns, tuities and nmissions, fees, cent increase and ɾrease th Practices 2	I can use proportional reasoning to solve real-world ratio problems, including those with multiple steps. I can use proportional reasoning to solve real world PERCENT problems including those with multiple steps.	Proportional relationship, ratio, percent.		

7th Grade Math Curriculum Map
Expressions and Equations
Time Line: Marking Period 2

CCSS	Essential Questions/ Learning Goals	Skills /Vocabulary	Formative/ Summative Assessment	Resources
E.1 * ply properties of erations as strategies to l, subtract, factor, and and linear expressions h rational coefficients. th Practices: 7	1. I can use the commutative and associative properties to add linear expressions with rational coefficients. 2. I can use the distributive property to add and subtract linear expressions with rational coefficients 3. I can use the distributive property to factor a linear expression with rational coefficients. 4. I can use the distributive property to expand a linear expression with rational coefficients.	Linear expression, coefficient, like terms.	Two Unit Test One for Moving Straight Ahead Use Unit Test from Book One for Say it with Symbols w/ CC Transition Kit 7 INV 2 and 3 Assess: 7.EE.1, 7.EE.2, 7.EE.3, 7.EE.4	1. Moving Straight Ahead *Pre-Algebra Do All INV *Math 7 Skip 4.3 and 4.4 2. Say it With Symbols Skip INV: 3.3, 3.4, and 4.4 3. CC Transition 7 INV: 2 and 3
E.2 derstand that rewriting expression in different ms in a problem context shed light on the blem and how the ntities are related. th Practices 2	1. I can use equivalent expressions to understand the relationship between quantities.	NONE		

.E.3* ve multi-step real-life l mathematical blems posed with itive and negative onal numbers in any m (whole numbers, ctions, and decimals), ng tools strategically. ply properties of erations to calculate h numbers in any form; nvert between forms as ropriate; and assess the sonableness of answers ng mental computation l estimation strategies th Practices: 1	1. I can solve real-world problems using rational numbers in any form, including those problems involving multiple steps. 2. I can apply the properties of operations to fluently compute with rational numbers in any form. 3. I can use mental math and estimation strategies to determine if my solution is reasonable.	Rational Number		
.E.4a * ve word problems ding to equations of the m px+q=r and p(x+q)=r, ere p, q, and r are onal. Solve equations of se forms fluently. mpare an algebraic ution to an arithmetic ution, identifying the uence of the operations d in each approach. th Practices: 2	1. I can use a variable to represent a unknown quantity. 2. I can write a simple algebraic equation (in the form px+q=r and p(x+q) = r to represent a real world problem. 3. I can solve a simple algebraic equation by using the properties of equality or mathematical reasoning, and show or explain my steps.	NONE		

.E.4B ve word problems ding to inequalities of form px+q>r or px+q< raph the solution set of inequality and interpret the context of the blem. th Practices: 2	1. I can write a simple algebraic equation (in the form px+q>r and p(x+q)<r to represent a real world problem. 2. I can solve a simple algebraic inequality and graph the solution on a number line. 3. I can describe the solution to an inequality in relation to the problem			

7th Grade Math Curriculum Map
Geometry
Time Line: Marking Period 3

CCSS	Essential Questions/Learning Goals	Skills /Vocabulary	Formative/ Summative Assessment	Resources
;.1* ve problems involving le drawings of geometric ures, including computing ual lengths and areas from cale drawing and roducing a scale drawing different scale. thematical Practices:2	**How does geometry better describe objects?** I can use a scale drawing to determine the actual dimensions and area of geometric figure. I can use a different scale to reproduce a similar scale drawing.	Scale drawing	Unit Test / NWEA Two Unit Tests 1 After **Stretching and Shrinking:** Assess 7.G.1 1 After **CC Transition Kit Investigation 4:** Assess 7.G.2, 7.G.3, 7.G.4, 7.G.5, 7.G.6	**Stretching and Shrinking** Investigation Skip: 1.1, 1.2, 3.2, Need Additional AAA. SAS, SSS materials **Filling and Wrapping** ONLY DO INV 1.1-1.3 2.1-2.3 *Need to Supplement For triangular Prisms, Surface area, and Volume **CC Transition Kit Investigation 4**
;.2* aw geometric shapes with en conditions. Focus on nstructing triangles from ee measures of angles or es, noticing when the nditions determine a que triangle, more than triangle, or no triangle. thematical Practices:	1. I can draw a geometric shape with specific conditions. 2. I can construct a triangle when given 3 measurements. 3 side lengths, 3 angle measures, or a combination of side and angle measurements. 3. I can determine when three specific measurements will result in one unique triangle, more than one possible triangle, or no possible	NONE		

	triangle.			
G.3 scribe the two- ıensional figures that ult from slicing three- ıensional figures, as in ne sections of right tangular prisms and right tangular pyramids. thematical Practices:	1. I can name the two-dimensional figure that represents a particular slice of a three-dimensional figure.	Right rectangular prism, right rectangular pyramid.		
G.4 ow the formulas for the a and circumference of a :le and use them to solve blems; give an informal ivation of the relationship ween the circumference l area of a circle. thematical Practices:	1. I can state the formula for finding the circumference and area of a circle. 2. I can use the formulas to compute the area and circumference of a circle. 3. I can determine the diameter or radius of a circle when the circumference is given. 4. I can use a ratio and algebraic reasoning to compare the area and circumference of a circle.	Radius, diameter, circumference, area, pi.		
G.5 e facts about ıplementary, nplementary, vertical, and acent angles in a mult- ɔ problem to write and ve simple equations for an :nown angle in a figure. thematical Practices:7	1. I can state the relationship between supplementary, complementary and vertical angles. 2. I can use angle relationships to write algebraic equations for	Supplementary angles, complementary angles, vertical angles, adjacent angles.		

	unknown angles. 3. I can use algebra reasoning and angle relationships to solve multi-step problems.			
G. 6 ve real-world problems olving area, volume, and face area of two and ee-dimensional objects nposed of triangles, ıdrilaterals, polygons, es, and right prisms thematical Practices:	1. I can determine the area of 2-dimensional figures. 2. I can determine the surface area and volume of three-dimensional figures. 3. I can solve real world-problems involving area, surface area, and volume.	Length, width, base, height, altitude, area, surface area, and volume		

7th Grade Math Curriculum Map
Statistics
Time Line: Marking Period 4

CCSS	Essential Questions/Learning Goals	Skills /Vocabulary	Formative/ Summative Assessment	Resources
P.1 derstand that Statistics can used to gain information out a population by mining a sample of the pulation; generalizations out a population form a mple are valid only if the mple is representative of that pulation. Understand that dom sampling tends to duce representative samples l support valid inferences th Practices: 3	**EQ: How are statistics used to make informed decisions about uncertain events?** 1. I can explain that random sampling tends to produce representative samples and can be used to make inferences about overall populations. 2.I can explain why the validity of the sample depends on whether the sample is representative of the population.	sample, population, random sample, representative sample	Unit Test/ NWEA	**Review Mea median, an mode.** **Samples an Population INV: 1 AND ONLY** **CC Transiti Kit INV 5: Variability**
P.3 ormally assess the degree of ual overlap of two numerical a distributions with similar iabilities, measuring the ference between the centers expressing it as a multiple of measure of variability. th Practices: 3	1. I can find the difference in the mean or median of two different data sets. 2. I can demonstrate how two data sets that are very different can have similar variabilities. 3. I can draw inferences about the data sets by making a comparison of these differences relative to the mean absolute deviation or interquartile range of either set of data.	Centers, variabilities, mean, median, mean absolute deviation, interquartile range		

P.4 e measures of center and asures of variability for nerical data from random nples to draw informal nparative inferences about o populations. · example, decide whether words in a chapter of a enth-grade science book are ierally longer than the words he chapter of a fourth-grade ence book. th Practices: :3	1: I can compare two populations by using the means and/or medians of data collected from random samples. 2: I can compare two populations by using the mean absolute deviations and/or interquartile ranges of data from random samples.	Measures of variability, measures of center, mean, median, mean absolute deviation, interquartile range, population, random sample	
P.2 e data from a random sample draw inferences about a oulation with an unknown racteristic of interest. nerate multiple samples (or ulated samples) of the same e to gauge the variation in imates or predictions. · example, estimate the mean rd length in a book by domly sampling words from book; predict the winner of chool election based on domly sampled survey data. uge how far off the estimate prediction might be. th Practices: 3,	1 I can draw inferences about a population based on data generated by a random sample. 2. I can generate multiple samples from the same population and analyze the estimates or predictions based on the variation of each sample.	population, sample, random sample	Unit Test / NWEA

7th Grade Math Curriculum Map
Probability Unit
Time Line: Marking Period 4

CCSS	Essential Questions/Learning goals	Skills/ Vocabulary	Formative/ Summative Assessment	Resources
P.5 derstand that the probability a chance event is a number ween 0 and 1 that expresses likelihood of the event urring. larger numbers icate greater likelihood. A bability near 0 indicates an ikely event, a probability und ½ indicates an event t is neither unlikely nor ely, and a probability near 1 icates a likely event. th Practices: 3	**How is probability used to make informed decisions about uncertain events?** 1. I can define probability as a ratio that compares favorable outcomes to all possible outcomes. 2. I can recognize and explain that probabilities are expressed as a number between 0 and 1. 3. I can interpret a probability near 0 as unlikely to occur and a probability near 1 as likely to occur. 4. I can interpret a probability near ½ as being as equally likely to occur as not to occur.	Likely, unlikely	Unit Test/ NWEA	**What Do You Expect?** Complete All Investigations
P.6 proximate the probability of event by collecting data on chance process that duces it and observing its g-run relative frequency, and dict the approximate relative quency given the probability. example, when rolling a nber cube 600 times, predict t a 3 or 6 would be rolled ghly 200 time, but probably exactly 200 times. th Practices: 3	1. I can collect data on a chance process to approximate its probability. 2. I can use probability to predict the number of times a particular event will occur given a specific number of trials. 3. I can use variability to explain why the experimental probability will not always exactly equal the theoretical probability.	Theoretical probability, experimental probability, relative frequency		

P.7 velop a probability model l use it to find probabilities events. Compare babilities from a model to served frequencies; if the eement is not good, explain sible sources of crepancies th Practices: 4	1. I can develop a simulation to model a situation in which all events are equally likely to occur.			
P.7a velop a uniform probability del by assigning equal bability to all outcomes, and the model to determine babilities of events. example, if a student is ected at random from a class. d the probability that Jane l be selected and the bability that a girl will be ected. th Practices: 4	1. I can utilize the simulation to determine the probability of specific events.			
P.7b velop a probability model hich may not be uniform) by serving frequencies in data nerated from a chance cess example, find the proximate probability that a nning penny will land heads or that a tossed paper cup l land open-end down. Do outcomes for the spinning ny appear to be equally ely based on the observed quencies? th Practices: 4	1. I can determine the probability of events that may not be equally likely to occur, by utilizing a simulation model.			

SP.8: d probabilities of compound nts using organized lists, les, tree diagrams, and ıulation. th Practices:1 P.8.a derstand that, just as with ıple events, the probability a compound event is the ction of outcomes in the ıple space for which the npound event occurs. th Practices: 1 P.8.b present sample spaces for npound events using thods such as organized lists, les and tree diagrams. For an nt described in every day guage (e.g. "rolling double es"), identify the outcomes he sample space which npose the event th Practices: 1	1. I can create a sample space of all possible outcomes for a compound event by suing and organized list, a table, or a tree diagram. 1. I can use the sample space to compare the number of favorable outcomes to the total umber of outcomes and determine the probability of the compound event. 1. I can create a sample space of all possible outcomes for a compound event by suing and organized list, a table, or a tree diagram.			

P.8.c sign and use a simulation to ıerate frequencies for npound events. · example, use random digits ı simulation tool to ›roximate the answer to the :stion: If 40% of donors have e A blood, what is the babability that it will take at st 4 donors to find one with e A blood. th Practices: 1	1. I can design and utilize a simulation to predict the probability of a compound event.			