

**Trinity Area School District
Template for Curriculum Mapping**

Course: Common Core Math 7 / Pre-Algebra Grade: 7	Overview of Course (Briefly describe what students should understand and be able to do as a result of engaging in this course): The purpose of this course is to prepare students for 8 th grade. The material covered includes integers, variables, expressions, equations, inequalities, graphing, rational numbers, and similar figures. With the implementation of several different aspects such as Study Island, CDT Testing, Formula Sheets, and utilizing the Released Items from the Department of Education, students will achieve a higher education.
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Overarching Big Ideas, Enduring Understandings, and Essential Questions
(These “spiral” throughout the entire curriculum.)

Big Idea	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)
Operations	All	1. All math problems can be solved with an appropriate operation.	1. How can we determine which operation we need to use while solving a math problem?
Numbers	All	1. Number relate to each other in real-world problems.	1. Why is it necessary to have a variety of numbers?
Expression	All	1. Expressions are a common, everyday practice.	1. How do we use expressions every day?
Variables	All	1. All expressions can be solved for the unknown variable.	1. Why do we use variables?
Estimation (Rounding)	All	1. Problems can be solved with the estimation.	1. How can estimation tell us if we have solved the problem correctly?
Integers	All	1. Integers relate to real-world situations.	1. Why is it necessary to have integers?
Conversions	All	1. All mathematical components can be expressed in equal conversions.	1. Why is it necessary to be able to express equality in many ways?
Evaluations	All	1. Real-world problems can be evaluated using common math practices.	1. Given an example of an everyday situation, can math practices be used to evaluate the problem?

Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study
(These do NOT “spiral” throughout the entire curriculum, but are specific to each unit.)

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)* and Terminology	Common Resource(s)* Used
Week 1-2	Operation of Rational Numbers	Decimals <ul style="list-style-type: none"> • Convert between rational numbers • Write a terminating decimal • Write a repeating decimal • Perform basic operations of decimals • Represent operations on a number line • Understand properties of operations 	CC.2.1.7.E.1 <i>MO7.A.N.1.1.1</i> <i>MO7.A.N.1.1.2</i> <i>MO7.A.N.1.1.3</i> <i>* Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</i>	1. Decimals can be used to express real world situations. 2. Decimals can be computed by using the proper basic operations.	1. When is it important for you to use decimals in everyday life? 2. Why is it important that we have different operations?	Terminology - rational numbers - terminating decimal - repeating decimals - non-repeating decimals - non-terminating decimals - bar notation	-Decimal Activity -Common Rule Handout for all operations with decimals
Week 3-4	Operation of Rational Numbers	Integers <ul style="list-style-type: none"> • Finding opposites • Perform basic operations of integers • Represent operations on a number line 	CC.2.1.7.E.1 <i>MO7.A.N.1.1.1</i> <i>MO7.A.N.1.1.2</i> <i>MO7.A.N.1.1.3</i> <i>* Apply and extend previous understandings of operations with fractions to add,</i>	1. Negative numbers can express real-world situations. 2. Rules of integers can be utilized by solving basic math problems.	1. Why do we have negative numbers? 2. How do we know if your calculation results in a positive or negative integer?	Terminology - integers - absolute numbers - opposite numbers - additive inverse - properties of operations	- “Starburst” Sheets - Tic-Tac-Toe Board - Integer Tiles -Around the world -Chase game

			<i>subtract, multiply, and divide rational numbers.</i>				
Weeks 5-9	Operation of Rational Numbers	Fractions <ul style="list-style-type: none"> • Represent operations on a number line • Convert between fractions and decimals • Perform basic operations with fractions • Understand properties of operations • Write negative fractions 	CC.2.1.7.E.1 <i>M07.A.N.1.1.1</i> <i>M07.A.N.1.1.2</i> <i>M07.A.N.1.1.3</i> <i>* Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</i>	1. Fractions can be used to represent something greater than/less than a whole.	1. What is a whole?	Terminology - fractions Assessment - First nine weeks Assessment	-LCD -Pizza Survey
Weeks 10 - 17	Algebraic Equations/ Inequalities/ Linear Expressions	Algebra <ul style="list-style-type: none"> • Simplify and rewrite expressions • Model and solve two-step problems • Graph and write inequalities • Solve one-step and two-step equations/ inequalities • Apply properties of operations to linear expressions 	CC.2.2.7.B.1 <i>M07.B-E.1.1.1</i> <i>M07.B-E.2.1.1</i> <i>M07.B-E.2.2.1</i> <i>M07.B-E.2.2.2</i> <i>M07.B-E.2.3.1</i> <i>* Use properties of operations to generate equivalent expressions.</i>	1. Expressions and inequalities can be evaluated by combining like terms. 2. The equivalency of an expression or inequality can be determined using many methods.	1. What is the most appropriate method to evaluating expressions and inequalities? 2. How do you determine which method to use to show equivalency among expressions and inequalities?	Terminology - variable - distributive property - factor - like terms - coefficient	

		<ul style="list-style-type: none"> Compare algebraic solutions and arithmetic solutions 					
Weeks 18 – 19	Properties of Numbers	Distributive Property <ul style="list-style-type: none"> Relate Distributive Property & Property of Operations to Integer rules 	CC.2.1.7.E.1 <i>M07.A.N.1.1.1</i> <i>M07.A.N.1.1.2</i> <i>M07.A.N.1.1.3</i> <i>* Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</i>	1. Distributive properties can express various mathematical situations for all operations.	1. When can we utilize the distributive property in everyday life?	Terminology - distributive property	
Weeks 20 - 23	Ratios and Proportional Relationships	Ratios <ul style="list-style-type: none"> Write ratios of length, area, and measurable quantities 	CC.2.1.7.D.1 <i>M07.A-R.1.1.2</i> <i>* Analyze proportional relationships and use them to solve real-world and mathematical problems.</i>	1. Ratios can be written to compare a part to a part, a part to a whole, or the whole to a part.	1. What is the best way to represent a measureable quantity using a ratio?	Terminology - ratios	- Pie Sections (Equivalency)
Weeks 20 - 23	Ratios and Proportional Relationships	Rates <ul style="list-style-type: none"> Find a unit rate 	CC.2.1.7.D.1 <i>M07.A-R.1.1.1</i> <i>* Analyze proportional relationships and use them to solve real-world and</i>	1. Rates compare two quantities that have different units of measure.	1. Why do we have different units of measure?	Terminology - unit rate	- Better Buy Activity

			<i>mathematical problems.</i>				
Weeks 20 - 23	Ratios and Proportional Relationships	Proportions <ul style="list-style-type: none"> Determine whether two fractions are proportional by using tables/graphs Represent proportional relationships using equations Identify the constant of proportionality 	CC.2.1.7.D.1 CC.2.1.7.B.3 <i>M07.A-R.1.1.2</i> <i>M07.A-R.1.1.3</i> <i>M07.A-R.1.1.4</i> <i>M07.B-E.2.2.1</i> <i>M07.B-E.2.2.2</i> <i>* Analyze proportional relationships and use them to solve real-world and mathematical problems.</i>	1. Proportions can be represented in more than one way. 2. Proportional relationships can be solved using tables, graphs, and equations.	1. What is the best way to set up a proportion? 2. What are the pros and cons of the methods of displaying proportional relations?	Terminology - proportion - constant of proportionality	-3-Dimensional Shapes
Weeks 24 - 25	Similar Figures	Figures (Similar Figures / Scale Drawings) <ul style="list-style-type: none"> Find a missing measure Use a scale drawing Find the scale of a model and map 	CC.2.3.7.A.2 <i>M07.C-G.1.1.1</i> <i>M07.C-G.1.1.2</i> <i>M07.C-G.1.1.3</i> <i>M07.C-G.1.1.4</i> <i>* Draw, construct, and describe geometrical figures and describe the relationships between them.</i>	1. A scale tells how to reduce or enlarge the dimensions of a drawing. 2. Scale drawings are similar to and proportional to the actual object.	1. Why is it important to understand a scale drawing versus the actual size? 2. Why are similar figures proportional?	Terminology - scale - scale drawing Assessment - Performance Task (“Dinosaur” cross curriculum with Science)	-Indirect Measuring Activity -Blueprint
Weeks 25 - 26	Similar Figures	Proportions (Percent of Increase/Decrease) <ul style="list-style-type: none"> Finding sales tax, tip, commission, fees, and percent of error 	CC.2.1.7.D.1 <i>M07.A-R.1.1.6</i> <i>* Analyze proportional relationships and use them to solve real-world and</i>	1. The percent of change can be expressed using proportions. 2. The fluctuation of prices is due to the	1. What is the best way to represent the percent of increase/percent of decrease? 2. How do we determine the price of items in a sale based on	Terminology - interest - percent increase/markup - percent decrease/markdown - principal - simple interest	-Menus -Coupons/Discounts -Personal Purchases -Savings account statements

		<ul style="list-style-type: none"> Finding simple interest Finding markup and discount 	<i>mathematical problems.</i>	increase or decrease in percentage.	sales, discounts, and/or tax?	<ul style="list-style-type: none"> - gratuity - tax - percent error - fees <p>Assessment</p> <ul style="list-style-type: none"> - Mid Term (1st and 2nd nine weeks) - Performance Task (Menu Project) 	
Weeks 27 - 28	Geometry	<p>Angle Relations</p> <ul style="list-style-type: none"> Find angle relations Use angle relations to solve for missing measures 	<p>CC.2.3.7.A.2 <i>M07.C-G.2.1.1</i> <i>M07.C-G.2.1.2</i></p> <p>CC.2.3.8.A.3 <i>* Draw, construct, and describe geometrical figures and describe the relationships between them.</i></p>	1. Angles can form special relations with each other.	1. What is the best method for determining the relationship among two angles?	<p>Terminology</p> <ul style="list-style-type: none"> - supplementary - complementary - adjacent - vertical - alternate exterior - alternate interior - corresponding 	- Compass
Weeks 29 - 30	Geometry	<p>Constructions</p> <ul style="list-style-type: none"> Draw geometric shapes with given conditions 	<p>CC.2.3.7.A.2 <i>M07.C-G.1.1.1</i> <i>M07.C-G.1.1.2</i> <i>M07.C-G.1.1.3</i> <i>M07.C-G.1.1.4</i></p> <p><i>* Draw, construct, and describe geometrical figures and describe the relationships between them.</i></p>	1. Triangles can be used to construct geometric figures.	1. How do we use shapes to construct real world figures?	<p>Terminology</p> <ul style="list-style-type: none"> - angle measurement - geometric shapes 	- Triangle Inequality Theorem

Weeks 30 - 31	Geometry	Circles <ul style="list-style-type: none"> Find area and circumference of a circle 	CC.2.3.7.A.1 <i>M07.C-G.2.2.1</i> <i>M07.C-G.2.2.2</i> <i>* Draw, construct, and describe geometrical figures and describe the relationships between them.</i>	1. The parts of a circle are used to calculate measurements of or around the circle.	1. When would you need to know the measurement of a circle or the area of it?	Terminology - center - radius - diameter - pi - circumference - area Assessment - Third nine weeks Assessment	- Formula Sheet
Weeks 31 - 32	3-Dimensional Figures	Shapes <ul style="list-style-type: none"> Find area of polygons Find area of compound figures Find area and circumference of a circle Find surface area and volume of 3-dimensional figures Identify cross sections 	CC.2.3.7.A.1 <i>M07.C-G.2.2.1</i> <i>M07.C-G.2.2.2</i> <i>* Draw, construct, and describe geometrical figures and describe the relationships between them.</i> CC.2.3.8.A.1 <i>M08.C-G.3.1.1</i> <i>* Apply formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems.</i>	1. Three dimensional figures can be sliced and diced into common shapes. 2. The measurements of three dimensional figures are used to calculate volume and surface area.	1. How do we use cross-sections to slice and dice three dimensional figures? 2. Explain how volume differs from surface area	Terminology - cross-section - volume - surface area - derivation Assessment - Performance Task (Dream House Project)	- 3-D Figures - Formula Sheet - Clay or Playdoh for cross sections
		Transformations <ul style="list-style-type: none"> Identify rotations, reflections, and translations 	CC.2.3.8.A.2 <i>M08.C-G.1.1.1.</i> <i>M08.C-G.1.1.2</i> <i>M08.C-G.1.1.3</i> <i>M08.C-G.1.1.4</i>	1. You can prove two figures are congruent if one is the result of a translation, reflection, or rotation of the other.	1. Why do translations, reflections, and rotations create congruent images?	Terminology - transformation - translation - reflection - rotation	Grid paper and color pencils

		<ul style="list-style-type: none"> Describe the effects of transformations Describe a sequence of transformation 	<i>*Understand and apply congruence, similarity, and geometric transformations using various tools.</i>				
Weeks 33 - 34	Probability / Sampling	Probability <ul style="list-style-type: none"> Identify a random sample Draw inferences Find sample space and represent with models Find probability of compound events: both dependent and independent Gauge the variation of a sample Find likelihood of an event Find relative frequency of an event Use models to show and compare probability Use stimulation to generate frequencies for events 	CC.2.4.7.B.1 <i>M07.D-S.1.1.1</i> <i>M07.D-S.1.1.2</i> <i>* Investigate chance processes and develop, use, and evaluate probability models.</i>	1. Most data is comprised from information based on population samples. 2. The spread of data depends on the sample.	1. Explain the relationship between a population and a sample. 2. Why is it important to have a good sample size in gathering data?	Terminology - population - sample - sample size - inferences - frequency - outcomes	- Student Survey -“Casino in the classroom”

Weeks 35 - 36	Variations	Variations <ul style="list-style-type: none"> • Compare two populations • Determine overlap of data sets 	CC.2.4.7.B.2 <i>M07.D-S.2.1.1</i> <i>* Draw informal comparative inferences about two populations</i>	1. Variations can be determined based on their data points and proportional relationships. 2. We can determine if the variation is direct or indirect.	1. How can we use variations in real-world problems? 2. How do we use variation in everyday projects?	Terminology - Variation - Direct Variation Constant, k Assessment - Final (All Year)	- Simulations