

Curriculum Development Overview
Unit Planning for 7th Grade Mathematics

Unit Title	X Marks the Spot!		Length of Unit	5 weeks
Focusing Lens(es)	Equivalence Comparison	Standards and Grade Level Expectations Addressed in this Unit	MA10-GR.7-S.2-GLE.1 MA10-GR.7-S.2-GLE.2	
Inquiry Questions (Engaging-Debatable):	<ul style="list-style-type: none"> Why are there different ways to solve equations? (MA10-GR.7-S.2-GLE.2-IQ.2) 			
Unit Strands	Expressions and Equations			
Concepts	Equivalent, expressions, inequalities, properties of operations, addition, subtraction, multiplication, division, factoring, expansion, arithmetic solution strategy, algebraic solution strategy, arithmetic operations, algebraic equations, correctness, algebraic manipulations, operation, both sides, negative number, reverse			

Generalizations My students will Understand that...	Guiding Questions	
	Factual	Conceptual
Mathematicians generate equivalent expressions by applying properties of operations to shed light on a problem context and the relationships between quantities. (MA10-GR.7-S.2-GLE.1-EO.a.i, a.ii)	What is an expression? How is it determined that two algebraic expressions are equivalent? (MA10-GR.7-S.2-GLE.1-IQ.2)	How do symbolic transformations affect an expression?(MA10-GR.7-S.2-GLE.1-IQ.1) How does rewriting the expression shed light on how the quantities in the problem are related?
Comparing arithmetic and algebraic solution strategies provides a basis for checking the correctness of algebraic manipulations. (MA10-GR.7-S.2-GLE.2-EO.c.i, c.ii)	What does it mean to solve an equation arithmetically?	How can substituting a value for x to allow for arithmetic operations assist in the solving of algebraic equations? Why do properties of operations work with numbers and variables? (MA10-GR.7-S.2-GLE.2-IQ.1)
Generating equivalent inequalities requires applying the same operations in the same order to both sides of an inequality. (MA10-GR.7-S.2-GLE.2-EO.c.iii, c.iv)	What is an inequality? How is it determined if inequalities written differently are equivalent? How can you graph the solution set of an inequality? What are examples of context that produce inequalities with infinitely or finitely many solutions?	Why is it necessary to carry out operations in the same order to both sides of inequality to generate an equivalent inequality? Why does multiplying or dividing by a negative number reverse the inequality sign? Why is it important to check a value from the solution set of an inequality in the original inequality?

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Key Knowledge and Skills: My students will...	<i>What students will know and be able to do are so closely linked in the concept-based discipline of mathematics. Therefore, in the mathematics samples what students should know and do are combined.</i>
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- Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. (MA10-GR.7-S.2-GLE.1-EO.a.i)
- Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related
- Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. (MA10-GR.7-S.2-GLE.2-EO.c.i)
- Fluently solve equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. (MA10-GR.7-S.2-GLE.2-EO.c.i)
- Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. (MA10-GR.7-S.2-GLE.2-EO.c.ii)
- Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. (MA10-GR.7-S.2-GLE.2-EO.c.iii)
- Graph the solution set of an inequality and interpret it in the context of the problem. (MA10-GR.7-S.2-GLE.2-EO.c.iv)

Critical Language: includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.
 EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *“Mark Twain exposes the hypocrisy of slavery through the use of satire.”*

A student in _____ can demonstrate the ability to apply and comprehend critical language through the following statement(s):	<i>When generating an equivalent inequality I need to reverse the inequality if I multiply or divide by a negative, for example $25 < 32$ but if I multiply both sides by -1, the new inequality becomes $-25 > -35$, notice the inequality sign had to change to keep it true.</i>
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Academic Vocabulary:	Identify, interpret, apply, solve, fluently, compare, graph, addition, subtraction, multiplication, division, equal, correctness, reverse
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Technical Vocabulary:	Equivalent, expressions, inequalities, properties of operations, factoring, expansion, arithmetic solution strategy, algebraic solution strategy, arithmetic operations, algebraic equations, algebraic manipulations, operation, both sides, negative number,
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