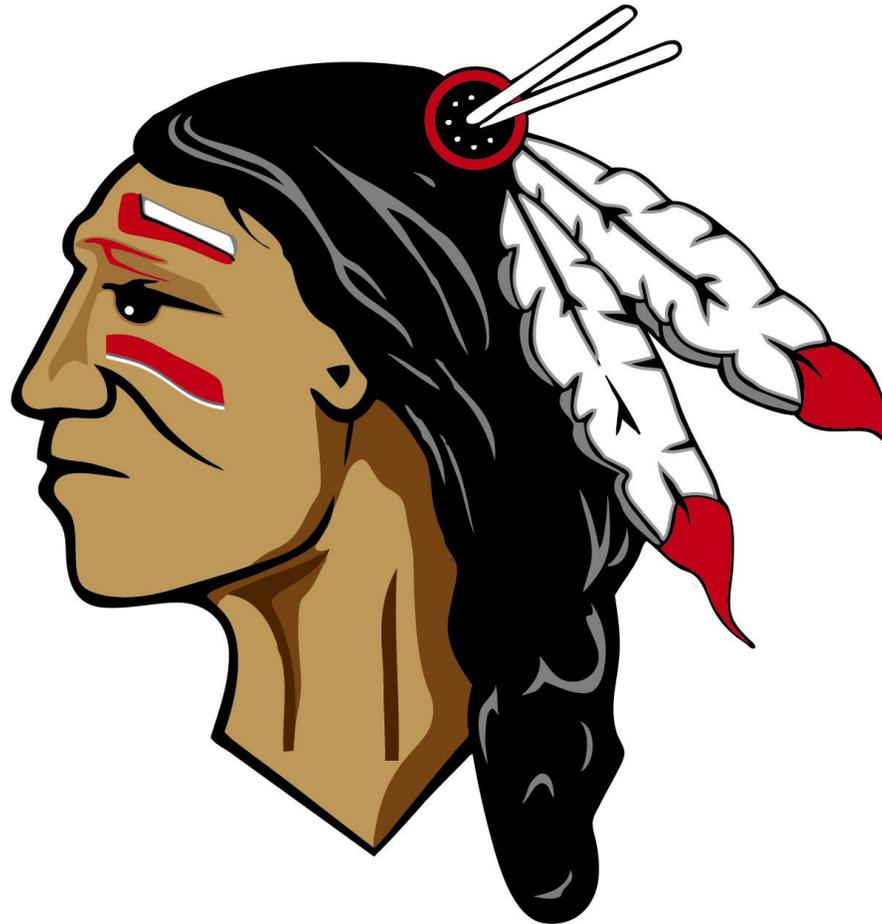


Westside Middle School 7th Grade Math Curriculum Map 2017-2018

Teacher: Taggart Revised: 8.10.17



Map is still under construction and will be revised throughout the year.

WESTSIDE MIDDLE SCHOOL 7TH GRADE MATH CURRICULUM MAP

Teacher: Taggart

Quarter 1

The Number System

Essential Questions

-How do the properties of operations extend to negative rational numbers?

AR STANDARDS / SKILLS

CONTENT VOCABULARY WITHIN THE STANDARD WILL BE TAUGHT THROUGHOUT DAILY OBJECTIVES / GOALS.

The student will....

Standard Coding: **The Number System**

Apply and extend previous understandings of operations with fractions.

AR.MATH.CONTENT.7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

AR.MATH.CONTENT.7.NS.A.1.A Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.

AR.MATH.CONTENT.7.NS.A.1.B Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

AR.MATH.CONTENT.7.NS.A.1.C Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

AR.MATH.CONTENT.7.NS.A.1.D Apply properties of operations as strategies to add and subtract rational numbers. AR.MATH.CONTENT.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. AR.MATH.CONTENT.7.NS.A.2.A Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

AR.MATH.CONTENT.7.NS.A.2.B Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.

AR.MATH.CONTENT.7.NS.A.2.C Apply properties of operations as strategies to multiply and divide rational numbers.

AR.MATH.CONTENT.7.NS.A.2.D Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

AR.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

Activities/Skills	Assessments	Resources	Vocabulary/Terms
<ul style="list-style-type: none"> ● Students will find the absolute values of rational numbers. ● Students will express numbers in m/n form. ● Students will locate rational numbers on the number line. ● Students will write rational numbers as terminating or repeating decimals using long division. ● Students will compare rational numbers on the number line. ● Students will understand irrational numbers and how they fill the number line. ● Students will use rational numbers to locate irrational numbers approximately on the number line. ● Students will show that irrational numbers are characterized by a non-terminating and non-repeating decimal representation. ● Students will understand the real number system and the real number line. ● Students will identify significant digits in a given number. ● Students will determine if trailing zeros of an integer are significant. ● Students will round integers and decimals to a specified number of significant digits. ● Students will add integers with the same sign. ● Students will add integers to their opposites. ● Students will add integers with different signs. ● Students will subtract integers by adding their opposites. ● Students will find the distance between two integers on a number line. ● Students will multiply integers. ● Students will divide integers. ● Use addition, subtraction, multiplication, and division with integers. ● Students will add and subtract rational numbers. ● Students will multiply and divide rational numbers. ● Students will add and subtract decimals. ● Students will multiply and divide numbers in decimal form. ● Students will multiply and divide numbers in decimal and percent form. 	<ul style="list-style-type: none"> ● Formative Assessments ● Kahoot ● Bellwork 	<ul style="list-style-type: none"> ● Kahn Academy ● Brainpop ● Singapore Math Textbook 	<p>Opposites, set of integers, positive integers, negative integers, negative fractions, rational numbers, terminating decimal, repeating decimal, irrational numbers, approximate, real number, real number line, significant digits, precise, additive inverse, zero pair, complex fraction, least common denominator</p>

Quarter 2

Expressions and Equations

Essential Questions:

- What is the difference in an algebraic and arithmetic solution?
- How are equations used to solve real-world geometry problems?

AR STANDARDS / SKILLS

CONTENT VOCABULARY WITHIN THE STANDARD WILL BE TAUGHT THROUGHOUT DAILY OBJECTIVES / GOALS.

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

AR.Math.Content.7.EE.A.1 Apply properties of operations as strategies to add, subtract, expand, and factor linear expressions with rational coefficients

AR.Math.Content.7.EE.A.2 Understand how the quantities in a problem are related by rewriting an expression in different forms

AR.Math.Content.7.EE.B.3 Solve multi-step, real-life, and mathematical problems posed with positive and negative rational numbers in any form using tools strategically: • Apply properties of operations to calculate with numbers in any form (e.g., $-(1/4)(n-4)$) • Convert between forms as appropriate (e.g., if a woman making \$25 an hour gets a 10% raise, she will make an additional $1/10$ of her salary an hour, or \$2.50, for a new salary of \$27.50) • Assess the reasonableness of answers using mental computation and estimation strategies (e.g., if you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation)

AR.MATH.CONTENT.7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

AR.MATH.CONTENT.7.EE.B.4.A 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. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

AR.MATH.CONTENT.7.EE.B.4.B 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. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.

Activities/Skills	Assessments	Resources	Vocabulary/Terms
<ul style="list-style-type: none"> ● Students will real-world and mathematical problems involving the addition, subtraction, multiplication, and division of rational numbers ● Students will word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. ● Students will represent addition and subtraction with rational numbers on a horizontal or vertical number line diagram ● Students will apply properties of operations as strategies to add and subtract rational numbers ● Students will interpret sums and differences in real-world contexts ● Students will apply properties of operations as strategies to multiply and divide rational numbers ● Students will interpret the products and quotients of rational numbers in real-world contexts ● Students will know that rational numbers must have a nonzero divisor ● Students will know rational numbers can be written as terminating or repeating decimals ● Students will graph the solution set of the inequality and interpret it in the context of the problem ● Students will construct simple equations and inequalities to solve problems by reasoning about the quantities ● Students will 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 and can solve them fluently. ● Students will use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 	<ul style="list-style-type: none"> ● Formative Assessments ● Kahoot ● Bellwork 	<ul style="list-style-type: none"> ● Kahn Academy ● Brainpop ● Singapore Math Textbook 	<p>integer, rational number, terminating, addition, subtraction, multiplication, division, quotient, product, difference, sum, divisor, inequality, less than, greater than, supplementary angle, complementary angle, vertical angle, and adjacent angles, nonzero, additive inverse, zero pair</p>

Quarter 3

AR STANDARDS / SKILLS

CONTENT VOCABULARY WITHIN THE STANDARD WILL BE TAUGHT THROUGHOUT DAILY OBJECTIVES / GOALS.

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Activities/Skills	Assessments	Resources	Vocabulary/Terms

Quarter 4

AR STANDARDS / SKILLS

CONTENT VOCABULARY WITHIN THE STANDARD WILL BE TAUGHT THROUGHOUT DAILY OBJECTIVES / GOALS.

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Activities/Skills	Assessments	Resources	Vocabulary/Terms