

SUBJECT: MATH

GRADE: 7th

TIMELINE: 1st Quarter

Standard	Student Friendly Learning Objectives	Content (subject/envision math2.0 topic)	DOK Level	Skills (ability, practice, or task to be performed)	Assessment	Academic Vocabulary
7.NS.A Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers except division by zero. 7.NS.A.1 Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. 7.NS.A.2 Multiply and divide integers and other rational numbers. d. Convert a rational number to decimal form using long division; know that the decimal form of a rational number terminates in 0's or eventually repeats.	I can relate integers, their opposites, and their absolute values. I can recognize rational numbers and write them in decimal form.	[TOPIC 1] INTEGERS AND RATIONAL NUMBERS	1, 2, 3	*Show two integers that are opposites and their distance from 0 on the number line. *Combine opposites to make 0. *Identify rational numbers and write them in decimal form.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	integers opposites absolute value rational number terminating decimal repeating decimal repeating digit convert decimal equivalent additive inverse

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7.NS.A.1 Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. 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 context. 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 context. d. Apply properties of operations as strategies to add and subtract rational numbers.	I can add integers.	[TOPIC 1] INTEGERS AND RATIONAL NUMBERS (cont.)		*Add positive and negative integers. *Use the number line to visualize adding integers. *Model integer addition in real-life applications.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	additive inverse
	I can subtract integers.			*Use the number line to visualize subtracting integers. *Understand subtraction of integers as adding the additive inverse, $p - q = p + (-q)$.		
	I can add and subtract rational numbers.			*Use properties of operations to add and subtract rational numbers.		associative property commutative property distributive property

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7.NS.A.2 Multiply and divide integers and other rational numbers . 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 context. 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 context. c. Apply properties of operations as strategies to multiply and divide rational numbers.	I can multiply integers. I can multiply rational numbers. I can divide integers. I can divide rational numbers.	[TOPIC 1] INTEGERS AND RATIONAL NUMBERS (cont.)		* Find the product of rational numbers. *Multiply positive and negative integers. *I can apply integer multiplication to real-life applications. *Divide integers by applying the rules of multiplying integers. *Determine equivalencies among quotients. *Understand how the signs of integers in a multiplication sentence relate to the signs in a related division statement.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	complex fraction multiplicative inverse

Window Rock Unified School District #8-- TMS CURRICULUM MAP

SY 2023-2024

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7.NS.A.3 Solve mathematical problems and problems in real-world context involving the four operations with rational numbers. Computations with rational numbers extend the rules for manipulating fractions to complex fractions where $a/b \div c/d$ when a, b, c, and d are all integers and b, c, and $d \neq 0$. 7.EE.B Solve mathematical problems and problems in real-world context using numerical and algebraic expressions and equations. 7.EE.B.3 Solve multi-step mathematical problems and problems in real-world context posed with positive and negative rational numbers in any form. Convert between forms as appropriate and assess the reasonableness of answers. <i>For example, 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 per hour.</i>	I can solve problems with rational numbers.	[TOPIC 1] INTEGERS AND RATIONAL NUMBERS (cont.)		*Use a mathematical model to represent a problem situation and to propose a solution. *Test and verify the appropriateness of math models.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	complex fraction multiplicative inverse

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7.RP.A Analyze proportional relationships and use them to solve mathematical problems and problems in real-world context. 7.RP.A.1 Compute unit rates associated with ratios involving both simple and complex fractions, including ratios of quantities measured in like or different units. 7.RP.A.3 Use proportional relationships to solve multi-step ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error).	I can use ratio concepts and reasoning to solve multi-step problems. I can find unit rates with ratios of fractions and use them to solve problems.	[TOPIC 2] ANALYZE AND USE PROPORTIONAL RELATIONSHIPS	1,2,3	*Compute unit rates with ratios of whole numbers and decimals. *Use ratios and rates to describe the relationship between two quantities. *Generate ratio tables and compare equivalent. *Find unit rates with ratios of fractions *Find unit rates to solve multi-step problems.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	rate equivalent ratio unit rate

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7.RP.A.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i>	I can test for equivalent ratios to decide whether quantities are in a proportional relationship. I can use the constant of proportionality in an equation to represent a proportional relationship.	[TOPIC 2] ANALYZE AND USE PROPORTIONAL RELATIONSHIPS (cont.)		*Determine whether quantities are proportional by testing for equivalent ratios. *Use the constant of proportionality in an equation to represent a proportional relationship.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	proportion constant of proportionality proportional relationship

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7.RP.A.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship (e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. 7.RP.A.3 Use proportional relationships to solve multi-step ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error).	I can use a graph to determine whether two quantities are proportional. I can determine whether a relationship is proportional and use representations to solve problems.	[TOPIC 2] ANALYZE AND USE PROPORTIONAL RELATIONSHIPS (cont.)		*Recognize the graph of a proportional relationship is a straight line through the origin. *Recognize that graphs that are not straight lines or do not pass through the origin do not represent proportional quantities. *Identify a constant of proportionality from a graph. *Interpret a point on a graph of a proportional relationship. *Use representations to find entry points into problems. *Determine whether a problem situation describes a proportional relationship in order to choose an appropriate solving strategy.	*Topic Assessment *Mid Topic Assessment *Written Quiz *Exit Ticket *Dot Check *DocCam Student Presentation *Peer Critique *Whole Group Discourse *Cold Call *Wait *Circulate *Show Me *Turn and Talk	proportional quantities origin interpretation

Highlight

- Power Standards – yellow
- Sub-Power Standards - green
- Supporting Standards - light blue