Window Rock Unified School District #8 **SCHOOL YEAR 2021-2022**

CURRICULUM GUIDE

SUBJECT: MATH **GRADE: 7TH** **TIMELINE: 2nd Quarter**

Standard	Student Friendly Learning Objectives	Content (subject or topic covered in Journeys/My Perspectives)	DOK Level	Skills (ability, practice, aptitude that will be learned)	Assessment	Academic/ Content Vocabulary
7.RP.A Analyze proportional relationships and use them to solve mathematical problems and problems in real-world context. **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 understand, find, and analyze percents of numbers.	**TOPIC 3** **ANALYZE AND SOLVE PERCENT PROBLEMS**	DOK 1	*Analyze Percents of Numbers *Understand equivalent rates can be used to find percents. *Analyze percents of numbers in a real-world context.	* Topic Readiness * Topic Assessment * Quiz * Exit Ticket * Dot Check * Doc Cam Student Work * Threshold * Cold Call * Wait time * Circulate * Show me * Turn and Talk	part whole rational percentage

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7.RP.A.2: Recognize and represent proportional relationships between quantities. c. Represent proportional relationships by equations. *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.* **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 proportions to solve percent problems.		DOK 2,3	*Connect Percent and Proportion *Construct a percent proportion *Use a percent proportion to find an unknown part, whole, or percent.		part to whole ratio model

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7.RP.A.2 Recognize and represent proportional relationships between quantities. **c.** Represent proportional relationships by equations. *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.* **7.RP.A.3** Use proportional relationships to solve multi-step ratio and percent problems.	I can represent and solve percent problems using equations.			*Represent and Use the Percent Equation: Part = Percent * Whole *Understand the relationship between proportional reasoning and percent. *Interpret the results of a percent equation in a real-life scenario.		percent equation sales tax
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 solve problems involving percent change and percent error.			*Solve Percent Change and Percent Error Problems *Solve real-world problems involving percent change and percent error. *Understand the percent equation and the different ways it can be used.		percent change percent error

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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 solve problems involving percent markup and markdown.			*Solve Markup and Markdown Problem *Understand and calculate markups and percent markdown.		markdown markup percent markdown percent markup
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 apply percent reasoning to solve simple interest problems.			*Solve Simple Interest Problems using annual interest rate $I = p \times r$ where I represents interest, p is principal (initial amount), and r is interest rate. *Identify the parts of interest problems and how the values are related. *Understand what simple interest is and how it is calculated.		interest rate principal simple interest

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7.EE.B.4 Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. 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. b. Solve word problems leading to inequalities of the form $px+q > r$ or $px+q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	I can write and evaluate algebraic expressions.	**TOPIC 4** **GENERATE EQUIVALENT EXPRESSIONS**		*Write and Evaluate Algebraic Expressions *Understand how variables are used to represent unknown values in problems	* Topic Readiness * Topic Assessment * Quiz * Exit Ticket * Dot Check * Doc Cam Student Work * Threshold * Cold Call * Wait time * Circulate * Show me * Turn and Talk	evaluate expression term variable coefficient substitute

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7.EE.A Apply and extend previous understanding of arithmetic to algebraic expressions. **7.EE.A.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	I can write equivalent expressions for given expressions.			*Generate Equivalent Expressions *Recognize when two expressions are equivalent *Use properties of operations to write equivalent expressions.		equivalent
7.EE.A Apply and extend previous understanding of arithmetic to algebraic expressions. **7.EE.A.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7.EE.A.2** Rewrite an expression in different forms, and understand the relationship between the different forms and their meanings in a problem context. *For example, a + 0.05a = 1.05a means that"increase by 5%" is the same as "multiply by 1.05."*	I can use properties of operations to simplify expressions. I can expand expressions using the Distributive Property. I can use common factors and the Distributive Property to factors expressions.			*Simplify Expressions *Combine like integer and rational terms. *Expand Expressions *Use the Distributive Property to expand expressions *Factor Expressions *Understand expanding an expression is the reverse of factoring *Identify the GCF of algebraic terms in expressions		factor

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7.EE.A Apply and extend previous understanding of arithmetic to algebraic expressions. **7.EE.A.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7.EE.A.2** Rewrite an expression in different forms, and understand the relationship between the different forms and their meanings in a problem context. *For example, a + 0.05a = 1.05a means that"increase by 5%" is the same as "multiply by 1.05."*	I can add expressions that represent real-world problems. I can subtract expressions using properties of operations. . I can use an equivalent expression to find new information.			*Add Expression *Use properties of operation to add expressions. *Model addition of expressions in real-life applications *Subtract Expressions *Use properties of operations to subtract expressions *Model subtraction of expressions in real-life applications *Analyze Equivalent Expressions *Write equivalent expressions to show how quantities are related in real-life applications		order of operations inverse operation

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7.EE.B Solve mathematical problems and problems in real-world context using numerical and algebraic expressions and equations. **7.EE.B.4** Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems.	I can represent a problem with a two-step equation.	**TOPIC 5** **SOLVE PROBLEMS USING EQUATIONS AND INEQUALITIES**		*Write Two-Step Equations	* Topic Readiness * Topic Assessment * Quiz * Exit Ticket * Dot Check * Doc Cam Student Work * Threshold * Cold Call * Wait time * Circulate * Show me * Turn and Talk	isolate the variable inverse relationship like terms

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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. *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.* **7.EE.B.4** Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. 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.	I can solve a problem with a two-step equation. I can use the Distributive Property to solve equations.			*Solve Two-Step Equations *Use models to solve two-step equations. *Compare algebraic and arithmetic *Solve Equations Using the Distributive Property		inequality properties of equality

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7.EE.B.4 Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. **7.EE.B.4b.** Solve word problems leading to inequalities of the form $px+q > r$ or $px+q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	I can solve inequalities using addition or subtraction. I can solve inequalities using multiplication or division. I can write and solve two-step inequalities. I can solve inequalities that require multiple steps.			*Solve Inequalities Using Addition or Subtraction Properties of Inequality *Graph the solution of inequalities on a number line. *Solve Inequalities Using Multiplication or Division Properties of Inequality *Graph the solution of inequalities on a number line. *Solve Two-Step Inequalities *Write inequalities and solve them using Multiplication and Division Properties of Inequalities Solve an inequality by multiplying or diving by a negative rational number. *Solve Multi-Step Inequalities *Explore the relationship between two-step inequalities. *Apply the Distributive Property to simplify and solve multi-step inequalities.		