Mount Pleasant Central School District

6th Grade, Math

We believe that students should learn the mathematical practice standards by showing the connections between real world problems and mathematical solutions by modeling, explorations and discovery.

What skills do we need in order to become an effective problem-solver? In this class, students will focus on building upon their basic arithmetic skills by delving deeper into fractions, decimals, and percents, while also introducing the concept of negative numbers (integers). Our main goal is to learn how to apply these concepts to solve problems involving ratios, rates, and basic algebraic expressions, alongside geometry and measurement concepts like calculating volume and surface area. We emphasize student collaboration, class discussions, and critical thinkers who build on prior knowledge to develop new concepts. Students will be assessed primarily through projects, quizzes, and tests that encourage students to think critically to solve challenging real-world problems.

Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
Operations with Fractions and Multi-Digit Numbers (Mod 1)	September - Mid October	-Write expressions as powers. -Perform all operations with fractions and decimals.	-Dividend/Divisor -Exponent -Factor -Prime vs Composite -Denominator -Reciprocal	Apply and extend previous understandings of multiplication and division to divide fractions by fractions. (NY-6.NS)	Students will explore, identify information, and use mathematical rules to model real-world applications.	Operations with fractions follow patterns and properties that build on operations of numbers.	Students will complete a written exam.
Ratios, Rates and Percents (Mod 2)	Mid October - November	-Ratio word problems -Solve percent word problems (including tax, tip, sales).	-Ratio -Rate (unit Rate) -Conversion -Percent Proportion	Understand ratio concepts and use ratio reasoning to solve problems. (NY-6.RP)	Students will recognize patterns between ratios and rates and find equivalent ratios and rates.	Ratios, rates, and percents are ways of comparing quantities.	Holiday Shopping Project- Students are given a budget for purchasing gifts for their family and friends for the holidays. Each student is given a set of criteria to follow and they must stay within their budget. Students will display their knowledge of sales and tax using percentages. Students will complete a

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Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
							written exam.
Rational Numbers (Mod 3)	December - February	-Integers in various representations. -Rational numbers in various representations.	-Integer -Rational number -Irrational number -Quadrants -Absolute Value	Apply and extend previous understandings of numbers to the system of rational numbers. (NY-6.NS)	Students will understand the relationship between fractions, decimals, and percentages.	Rational numbers are part of a larger number system that follow consistent rules and have meaning within a context.	Students will complete a written exam.
Expressions and One-Step Equations (Mod 4)	February	-Writing and evaluating expressions. -Equivalent expressions using mathematical properties.	-Expressions -Variable -Coefficient -Terms -Constant -Order of Operations	Apply and extend previous understandings of arithmetic to algebraic expressions (NY-6.EE)	Students will be able to create and manipulate expressions utilizing variables.	Expressions represent mathematical situations and relationships, using variables for unknowns or varying quantities	Students will complete a written exam.
Equations and Inequalities (Mod 4)	March	-Solving, writing and graphing equations. -Solving, writing and graphing inequalities.	-Equation -Inequality -Inequality symbols -Term components -Independent/dependent	Reason about and solve one-variable equations and inequalities. (NY-6.EE)	Students will understand the structures of equations and inequalities. Students will be able to model a variety of situations with equations	Equations and inequalities are mathematical statements of balance or comparison used to model real world situations.	Students will complete an amusement park brochure describing requirements for pricing, height for rides, etc.

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					and inequalities.		
Geometry (Mod 5)	April	-Area of polygons and composite figures. -Volume and surface area of 3D shapes.	-Surface area -Volume -Area -Polygons -Composite figure	Solve real-world and mathematical problems involving area, surface area, and volume. (NY-6.G)	Students will use various formulas to determine the area of 2D polygons (individually or as components of a 3D shape). Students will use various formulas to determine volume of 3D shapes.	Formulas reveal structure and relationships among shapes in the 2D and 3D plane.	Students will create characters for a television show by measuring and drawing polygons. Students will be required to calculate the area of each polygon before finding the area of the completed composite figure.
Probability and Statistics (Mod 6)	May	-Probability -Statistical questions	-Probabilty -"Chance" -"Fairness" -Sample -Population	Develop understanding of statistical variability. (NY-6.SP)	Students will research, gather data, and interpret data in order to draw conclusions based on their findings.	Probability quantifies uncertainty and allows for prediction with a degree of certainty. Data can be displayed as a means to summarize real world situations.	Students will complete a written exam.

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Integer Operations (7th Compact)	June	-Adding, subtracting, multiplying, and dividing integers.	-Integers -Order of operations	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. (NY-7.NS)	Students will apply their knowledge of integers on the number line to determine the rules to add, subtract, multiply, and divide integers.	Operations with integers build on the whole-number rule.	Students will complete a written exam.