



# Mount Pleasant Central School District

## 7th 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 and attributes do we need in order to become an effective problem-solver? In this class, students will be introduced to and develop an understanding of operations with rational numbers, proportional relationships, percents, probability, and statistics. Our main goal is to learn how to apply these concepts to solve real-world problems involving rates and percents, and create algebraic expressions and equations. We emphasize the use of prior knowledge and newfound skills to approach unfamiliar problems that will be presented to them. Assessments will primarily be given as a combination of formative and summative assessments. Students will be able to display their understanding and apply critical thinking skills to solve problems. In addition to the class assessments given by the teacher, there will be an NYS Math assessment given in May.

Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
<b>Operations with Rational Numbers</b>	September - October	-Describe a situation that makes a zero pair absolute value. -Identify a number as rational/irrational. -Solve real-world problems involving rational numbers and all operations.	-Integers -Rational -Irrational -Zero pair -Absolute value	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. (NY-7.NS)	Students will find the absolute value of numbers.  Students will perform all operations with rational numbers.  Students will solve real-life problems involving rational numbers.	-Identify and explain why a number is rational or irrational.  -Solving multi-step real-world problems involving rational numbers.	Test in the style of the Math 7 state exam. This is cumulative in nature.
<b>Expressions, Equations, and Inequalities</b>	October - January	- Translating words into algebraic expressions. -Simplifying expressions. -Solving two-step and	-Expression -Equation -Constant -Coefficient	Solve real-life and Mathematical problems using numerical and algebraic expressions,	Students will apply properties of operations to simplify algebraic expressions.	-Solve algebraic equations and inequalities for variables by using inverse	Test in the style of the Math 7 state exam. This is cumulative in nature.

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		multi-step equations and inequalities. -Writing equations/inequalities from real world situations.	-Multiplicative inverse -Distribute	equations, and inequalities. (NY-7.EE)	Students will write and solve expressions, equations, and inequalities from real world problems.	operations.  -An inequality has more than one solution, and its solution can be represented on a number line.	
<b>Percents</b>	February - March	-Involving consumer math: Use percent equations and proportions to calculate tax, tip, markup, discount, commission, interest, and percent of change/error.	-Percent of change and error -Discount and markup -Simple interest -Tip and tax -Commission	Use proportional relationships to solve multistep ratio and percent problems. (NY-7.RP)	Students will use the percent proportion and equation to find part, whole, and percent.  Students will use formulas to find the percent of change, error,	-Percentages are a standardized way to express a part of a whole, grounded in its connection to fractions and decimals. -Percentages are used to calculate discounts, sales	Test in the style of the Math 7 state exam. This is cumulative in nature.  Real Life Percent Cafe

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Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
		- Use percent equation or proportion to find missing values in real world problems.			and simple interest.	tax, and tips. Knowing how to quickly calculate these is a necessary life skill	
<b>Probability and Statistics</b>	March - April	-Introduce the distinction between independent events (where one event does not affect the other) and dependent events. -Calculate the probability of independent and dependent events. -Analyze and create graphs based on data given.	-Independent event -Dependent event -Sample space -Simple and compound probability	Investigate chance processes and develop, use, and evaluate probability models. (NY-7.SP)	Students will identify and calculate dependent and independent events.  Students will learn to visualize and draw to describe how data is spread out, identifying the shape (symmetrical, skewed), measures of central tendencies, and spread (variability) of a	Students are expected to develop an understanding of chance events, distinguish between independent and dependent probability, and use probability models to make predictions and solve problems.	Test in the style of the Math 7 state exam. This is cumulative in nature.

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Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
					data set.		
<b>Ratios and Proportions</b>	April	-Setting up and solving proportions from word problems using a variety of methods. -Calculate the unit rate to identify the better buy between products.	-Ratio -Rate -Unit rate -Better buy -Cross products -Equivalent ratios	Use proportional relationships to solve multistep ratio and percent problems. (NY-7.RP)	Students will write and solve proportions from word problems using mental math, multiplication, and cross products.  Students will use scale drawings to find actual or scaled distances/measurements/perimeters/areas.  Students will calculate unit rate.	-A proportion is a statement that two ratios are equal, and it can be represented as two equal fractions.  -A unit rate is a type of ratio that compares two quantities in which one of the quantities is 1. Examples of a unit rate include dollars per item, miles per hour, or gallons per minute.	Test in the style of the Math 7 state exam. This is cumulative in nature.
<b>Proportional Reasoning</b>	April - May	-Determine proportionality from a	-Unit rate -Constant of	Analyze proportional relationships and use	Students will identify and calculate the constant of	-Students will make the connection that the	Test in the style of the

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		table, graph, and equation. -Proportional relationships can be expressed by the equation $y = kx$ , where $y$ is one quantity and $x$ is another. $K$ is calculated by dividing $y$ by $x$ .	proportionality -Proportional equation -Proportional relationship	them to solve real-world and mathematical problems. (NY-7.RP)	proportionality from a table, graph, and equation.  Students will explain what the constant of proportionality means in the context of a real-world problem	constant of proportionality is the same as the unit rate. The unit rate can be written as an equation, and then used to create a table and graph.	Math 7 state exam. This is cumulative in nature.
Angles	May - June	-Understand, classify, and explore angle relationships formed by intersecting lines.	-Supplementary -Complementary -Vertical -Adjacent -Corresponding -Alternate	Solve real-life and mathematical problems involving angle measures.(NY-7.G)	Students will identify relationships and measures of angles.  Students will identify and find the measures of	-When a transversal cuts parallel lines, specific angle pairs have equal measures or are supplementary.	Test in the style of the Math 7 state exam. This is cumulative in nature.

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Unit Title	Month	Content	Vocabulary	Standards	Skills	Big Ideas	Assessments
			interior/exterior -Parallel lines -Transversal		angles formed when lines intersect by writing equations.	-Students can create and use equations to find missing angle measures in diagrams involving parallel lines and transversals.	