

# Mary Queen of Peace Curriculum--Math 7th Grade

High Priority Standards: (State, National, CCSS)

## The Number System

### Learning Goal

Students will be able to:  
solve problems using all operations with  
fractions.

### Learning Targets

- Apply and extend previous understandings of addition and subtraction to rational numbers; represent addition and subtraction on horizontal or vertical number lines.
  - Describe situations where opposite quantities combine to make zero.
  - Understand subtraction of rational numbers is adding the additive inverse.
  - Apply properties of operations as strategies to add or subtract rational numbers.
- Apply and extend understanding of multiplication and division
  - Understand multiplication of fraction is an extension of rational numbers.
  - Understand that integers can be divided, with the exception of zero divisor, that every quotient is a rational number.
  - Apply properties of operations as strategies to multiply and divide rational numbers.
  - Convert rational numbers to decimals.
- Solve real-world mathematical problems using rational numbers and the four operations.

High Priority Standards: (State, National, CCSS)

Expressions and Equations

<p>Learning Goal</p> <p>Students will be able to: use properties of operations to generate equivalent expressions</p>	<p>Learning Targets</p> <ul style="list-style-type: none"><li>• Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</li><li>• Understand that rewriting an expression in different forms in a problem context can shed light on how the quantities are related</li></ul>
<p>Learning Goal</p> <p>Students will be able to: solve real-world and mathematical problems using numerical and algebraic expressions and equations.</p>	<ul style="list-style-type: none"><li>• Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals) using tools strategically. Apply properties of operations to calculate with numbers in any form and convert between forms where appropriate; assess the reasonableness of answers using mental computation and estimation strategies.</li><li>• Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning the quantities.</li></ul>

High Priority Standards: (State, National, CCSS)

Ratios and Proportional Relationships

Learning Goal

Students will be able to: analyze proportional relationships and use them to solve real-world and mathematical problems.

Learning Targets

- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or unlike units.
- Recognize and represent proportional relationships between quantities.
  - Decide if two quantities are proportional
  - Identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions.
  - Explain what a point on a graph of a proportional relationship means in terms of the situation/unit rate.
- Use proportional relationships to solve multistep ratio and percent problems.

High Priority Standards: (State, National, CCSS)

Geometry

Learning Goal

Students will be able to: draw, construct, and describe geometrical figures and describe the relationships between them.

Learning Targets

- Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- Draw (freehand, with a ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

Learning Goal

Students will be able to: solve real-world and mathematical problems involving angle measure, area, surface area, and volume.

Learning Targets

- Know the formulas for the area and circumference of a circle and use them to solve problems; give informal derivation of the relationship between the circumference and area of a circle.
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for unknown angle in a

figure.

- Solve real-world and mathematical problems involving area, volume and surface area of two and three dimensional objects.

High Priority Standards: (State, National, CCSS)

Statistics and Probability

<p>Learning Goal</p> <p>Students will be able to: use random sampling to draw inferences about a population</p>	<p>Learning Targets</p> <ul style="list-style-type: none"><li>• Understand that statistics can be used to gain information about a population by examining a sample of the population. Understand that random sampling tends to produce representative samples and support valid inferences.</li><li>• Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples of the same size to gauge the variation in estimates or predictions.</li></ul>
<p>Learning Goal</p> <p>Students will be able to: draw informal comparative inferences about two populations.</p>	<p>Learning Targets</p> <ul style="list-style-type: none"><li>• Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between centers by expression it as a multiple measure of variability.</li><li>• Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</li></ul>
<p>Learning Goal</p> <p>Students will be able to: investigate chance processes and develop, use, and evaluate probability models</p>	<p>Learning Targets</p> <ul style="list-style-type: none"><li>• Understand that probability of a chance event is a number between 0 and 1 that expresses the likelihood of an event occurring. Larger numbers</li></ul>

indicate greater likelihood.

- Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
- Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of discrepancy.
- Find probabilities of compound events using organized lists, tables, diagrams, and simulation.