

# 7<sup>th</sup> Grade Year at a Glance

## 2019-2020

Grading Period	2 <sup>nd</sup> Grading Period
<p><b>Rational Numbers, Equations, and Inequalities</b></p> <ul style="list-style-type: none"> <li>• <u>Sets and Subsets</u> (7.2A) expected to extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.</li> <li>• <u>Rational Number Operations</u> (7.3A) add, subtract, multiply, and divide rational numbers fluently <b>(7.3B) apply and extend previous understanding of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers</b></li> <li>• <u>Model and Solve Equations and Inequalities</u> <b>(7.11A) model and solve one-variable, two-step equations and inequalities</b> (7.10B) represent solutions for one-variable, two-step equations and inequalities on number lines; (7.11B) determine if the given value(s) make(s) one-variable, two-step equations and inequalities true</li> <li>• <u>Write equations/inequalities and scenarios</u> (7.10A) write one-variable, two-step equations and inequalities to represent constraints or conditions within problems (7.10C) write a corresponding real-world problem given a one-variable, two-step equation or inequality.</li> </ul>	<p><b>Continue 1<sup>st</sup> 9wks</b></p> <p><b>Proportional Reasoning</b></p> <ul style="list-style-type: none"> <li>• <u>Unit rates including between measurement systems</u> (7.4C) determine the constant of proportionality (<math>k = y/x</math>) within mathematical and real-world problems (7.4B) calculate unit rates from rates in mathematical and real-world problems (7.4E) convert between measurement systems, including the use of proportions and the use of unit rates</li> <li>• <u>Ratios, rates, and percents</u> <b>(7.4D) solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems;</b></li> </ul> <p><b>Graphing and Inferencing Data</b></p> <ul style="list-style-type: none"> <li>• <u>Inferences</u> (7.6F) use data from a random sample to make inferences about a population (7.12B) use data from a random sample to make inferences about a population (7.12C) compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations</li> <li>• <u>Graphing</u> <b>(7.6G) solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents</b> <b>(7.12A) compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads</b></li> </ul>
<p><b>Multiple Representations</b></p> <ul style="list-style-type: none"> <li>• <u>Constant rates of change and constant of proportionality in multiple representations</u></li> <li>• <b>(7.4 A) represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including <math>d = rt</math></b> (7.4C) determine the constant of proportionality (<math>k = y/x</math>) within mathematical and real-world problems</li> <li>• <u>Tables, equations, graphs</u> <b>(7.7A) represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form <math>y = mx + b</math>.</b></li> </ul>	



**3<sup>rd</sup> Grading Period****Probability**

- Qualitative vs. quantitative  
**(7.6H) solve problems using qualitative and quantitative predictions and comparisons from simple experiments;**
- Sample Space  
(7.6A) represent sample spaces for simple and compound events using lists and tree diagrams
- Find Probabilities  
(7.6B) select and use different simulations to represent simple and compound events with and without technology  
(7.6E) find the probabilities of a simple event and its complement and describe the relationship between the two  
**(7.6I) determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces**
- Make Predictions  
(7.6C) make predictions and determine solutions using experimental data for simple and compound events  
(7.6D) make predictions and determine solutions using theoretical probability for simple and compound events

**2D Geometry**

- Similarity and Scale  
(7.5A) generalize the critical attributes of similarity, including ratios within and between similar shapes  
**(7.5C) solve mathematical and real-world problems involving similar shape and scale drawings**
- Circle Relationships  
(7.5B) describe  $\pi$  as the ratio of the circumference of a circle to its diameter;  
(7.8C) use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas.  
**(7.9B) determine the circumference and area of circles**
- Area of Composite Figures  
**(7.9C) determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles;**
- Equations with Geometric Figures  
(7.11C) write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships.

**4<sup>th</sup> Grading Period****3D Geometry**

- Surface Area  
(7.9D) solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net
- Volume  
(7.8A) model the relationship between the volume of a rectangular prism and a rectangular pyramid having both congruent bases and heights and connect that relationship to the formulas  
(7.8B) explain verbally and symbolically the relationship between the volume of a triangular prism and a triangular pyramid having both congruent bases and heights and connect that relationship to the formulas;  
**(7.9A) solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids**

**Financial Literacy**

- Financial Decisions  
(7.13A) calculate the sales tax for a given purchase and calculate income tax for earned wages;  
(7.13B) identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget;  
(7.13C) create and organize a financial assets and liabilities record and construct a net worth statement;  
(7.13D) use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby;  
(7.13E) calculate and compare simple interest and compound interest earnings; and  
(7.13F) analyze and compare monetary incentives, including sales, rebates, and coupons.

