Semester 1 of 2					
Unit Number: Title and Duration	**Purpose**	**Priority Grade-Level Standards**	**Content Goals**	**Learner Outcomes**	**Resources and Materials**
Unit 1: Integer Operations with Fractions and Decimals 21 days	Understanding how to apply integer rules to help students with bank accounts, elevation and other real life uses of absolute value. Students will also be able to use a number line to assist in solving math problems.	7.NS.A 1-2 • Apply and extend previous understandings of operations with fractions. • Apply and extend previous understandings of addition, subtraction, and absolute value to add and subtract rational numbers in authentic contexts. Understand subtraction as adding the additive inverse, $p – q = p + (–q)$. • Apply and extend previous understandings of multiplication and division and of	Students will know: • Apply and extend previous understanding of addition, subtraction, and absolute value to add and subtract rational numbers. • Understand that subtraction as adding the additive inverse. • Apply and extend previous understanding of multiplication and division of fractions to divide rational numbers. • Interpret operations of rational numbers in authentic	Students will be able to: • Show addition and subtraction on a horizontal or vertical number line. • Describe situations where opposites and combine to make 0. • Identify and differentiate rules for integer operations. • Identify terms related to integer operations. • Apply integer rules in real life situations. • Add, subtract, multiply, and	SMc Curriculum: *Core Focus on Mathematics: Rational Numbers and Equations* (Block 2)

		fractions to multiply and divide rational numbers. Interpret operations of rational numbers solving problems in authentic contexts.	contexts.	divide rational numbers.	
Unit 2: Understanding Equivalent Rational Numbers Can Be Written as Fractions, Decimals and Percents 17 days	Understand that fractions and decimals have equivalency. Fluency of these conversions supports flexible and efficient math problem solving.	7.NS.A.3 Understand that equivalent rational numbers can be written as fractions, decimals and percents.	Students will know: • How to identify a fraction, decimal, and percent. • Demonstrate the ability to convert rational numbers interchangeably.	Students will be able to: • Write a common fraction as a decimal. • Write a common fraction as a percent. • Demonstrate that a percent is a ratio comparison to 100.	SMc Curriculum: *Core Focus on Mathematics: Proportions and Probability* (Block 2)
Unit 3: Algebraic Reasoning: Expressions and Equations A 17 days	Students will demonstrate strategies for creating and solving expressions and equations.	7.AEE.A.1 Identify and write equivalent expressions with rational numbers by applying associative,	Students will know: • How to create equivalent expressions using like terms. • How to use the	Students will be able to: • Combine like terms to factor and expand linear expressions using	SMc Curriculum: *Core Focus on Mathematics: Rational Numbers and Equations* (Block 4)

	Equations are a building block for high school Algebra I class. They are also a staple for collegiate entrance exams.	commutative, and distributive properties. 7.AEE.A.2 Understand that rewriting an expression in different forms in a contextual problem can show how quantities are related.	distributive property to expand expressions. • Use substitution to identify equivalent expressions. • How to write expressions in multiple forms (include the use of integers).	distributive property. • Use properties of operations to write equivalent expressions. • Rewrite and expression in a different form • Define *expression.*	
Unit 4: Algebraic Expressions and Equations B 20 days	Set up and solve one- and two-step equations. Use Variables to represent quantities and construct one- and two-step inequalities. Graph an inequality on a number line. Equations and Inequalities are a foundational skill for HS and collegiate level math.	7.AAE.B.3 Write and solve problems in authentic contexts using expressions and equations with positive and negative rational numbers in any form. Contexts can be limited to those that can be solved with one or two-step linear equations. 7.AAE.B.4 Use variables to	Students will know: • Two expressions can be set to be equivalent to solve an equation. • How to create real life equations to solve for a missing variable. • Identify and construct symbols related to inequalities and graphing. • Create and solve	Students will be able to: • Use variables to represent numbers to solve real-world or mathematical problems to create equations or inequalities. • Identify and solve one and two step equations. • Apply a numerical and an algebraic	SMc Curriculum: *Core Focus on Mathematics: Rational Numbers and Equations* (Block 4)

		represent quantities and construct one- and two-step linear inequalities with positive rational numbers to solve authentic problems by reasoning about the quantities.	an inequality with a variable. • Graph an inequality. • How to solve a problem numerically and algebraically.	strategy for solving a problem. • Set up and solve one and two step inequalities. • Graph inequalities.	
Semester 2 of 2					
Unit Number: Title and Duration	**Purpose**	**Priority Grade-Level Standards**	**Content Goals**	**Learner Outcomes**	**Resources and Materials**
Unit 5: Set Up and Solve Authentic Proportional Relationship Problems. 25 days	Allows students to see how different things can relate to each other.	7.RP A.1-3 Analyze proportional relationships and use them to solve mathematical problems in authentic contexts.	Students will know: • Solve problems in authentic contexts involving unit rates associated with ratios of fractions. • Recognize and represent proportional relationships between quantities in tables, graphs, equations,	Students will be able to: • Calculate the unit rate for real life situations by breaking down the ratio and finding the relationship between two units. • Recognize and represent a proportion as a statement of equality between	SMc Curriculum: *Core Focus on Mathematics: Percents and Proportions*

			diagrams, and verbal descriptions of proportional relationships. Identify the constant of proportionality (unit rate) within various representations. • Use proportional relationships to solve ratio and percent problems in authentic contexts.	two ratios. • Analyze two ratios to determine if they are proportional using tables, graphs, and pictures. • Solve ratio and percent problems for real life applications such as interest, taxes, mark-ups, discounts, and commissions.	
Unit 6: Investigate Chance Processes and Develop, Use, and Evaluate Probability Models. 15 days	Use chance and probability to learn to make decisions from data. Use models to interpret chance and infer statements predicting the future chances of events.	RP B5-7 Investigate chance processes and develop, use, and evaluate probability models.	Students will know: • Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. • Represent probabilities as fractions, decimals, and	Students will be able to: • Analyze graphs, tables, equations, diagrams, and verbal descriptions to identify unit rate. • Explain and compare the differences between	SMc Curriculum: *Core Focus: Proportions and Probability*

			percents. • Use experimental data and theoretical probability to make predictions. • Understand the probability that predictions may not be exact. • Develop a probability model and use it to find probabilities of events. • Compare theoretical and experimental probabilities and explain possible sources of discrepancy if any exists.	theoretical and experimental probability. • Create predictions based on the likelihood of an event happening. • Determine probability of compound events from simulations, trees, tables, diagrams, and lists.	
Unit 7: Draw Construct and Describe Geometrical Figures and Describe the Relationships	Students will learn how to read and construct a scale drawing. Students will identify	GM A. 1-2 Draw, construct, and describe geometrical figures and describe the relationships	Students will know: • Solve problems involving scale drawings of geometric figures. • Reproduce a scale	Students will be able to: • Solve problems with scale drawings of geometric figures.	

Between Them. 13 days	angles that will or will not create a triangle.	between them.	drawing at a different scale and compute actual lengths and areas from a scale drawing. • Draw triangles from three measures of angles or sides. • Understand the possible side lengths, and angle measures that determine a unique triangle, more than one triangle or no triangle.	• Use a scale drawing to create different sized drawings to scale. • Recognize and draw a triangle when given three measurements: three side lengths, three angles or a combination of lengths and sides.	
Unit 8: Solve Mathematical Problems in Authentic Contexts Involving Angle Measure, Area, Surface Area and Volume. 10 days	Students will apply mathematical knowledge of shapes and how they are used in real world settings.	GM B. 3-5 Solve mathematical problems in authentic contexts involving angle measure, area, surface area, and volume.	Students will know: • Understand the relationship between area and circumference of circles. • Choose and use the appropriate formula to solve	Students will be able to: • State formulas for the area and circumference of a circle and use them to solve problems. • Explain the	SMc Curriculum: *Core Focus: Shapes and Angles*

			problems with radius, diameter, circumference and area of circles. • Apply facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to determine an unknown angle in a figure. • Solve problems in authentic contexts involving two- and three-dimensional figures. • Given formulas, calculate area, volume, and surface area.	relationship between the circumference and area of a circle. • Use properties of shapes to write and solve simple equations for unknown angles in a figure. • Solve problems involving area, volume, surface area of two-and three-dimensional figures.	
Unit 9: Formulate Statistical Investigative Questions & Analyze, Summarize and	Students will use math to understand how data is created and used for a specific purpose. They will	DR: A1, B.2, C.3, D.4 • Formulate statistical investigative	Students will know: • Formulate summary, comparative	Student will be able to: • Understand that inferences about a	SMc Curriculum: *Core Focus: Proportions and Probability*

Describe Data 12 days	create and solve questions of statistical significance.	questions. • Collect and consider data. • Analyze, summarize and describe data. • Interpret data and answer investigative questions.	investigative questions to gain information about a population and that a sample is valid only if the sample is representative of that population. • Collect or consider data from a random sample to compare and draw inferences about a population with an unknown characteristic of interest. • Analyze two data distributions visually to compare multiple measures of center and variability. • Interpret measures of center and measures of	population can be made by examining a sample. • Understand the validity of data based on samples and populations. • Draw conclusions about a population based on a random sample event. • Generate multiple samples to gauge predictions. • Identify similarities and differences in multiple data sets. • Draw conclusions from populations based on means, medians and ranges. • Collect and apply data to create measures of	

			variability for numerical data from random samples to compare between two populations, and to answer investigative questions.	center graphs and charts.	
End of Semester 2					