Claim (SBAC)	Content Domain	Target	CCSS	Depth of Knowledge Level	Teaching Strategies/Resources
Claim 1:Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	**The Number System**	The student will know that there are numbers that are not rational, and approximate them by rational numbers.	Standards: 8.NS.A, 8. NS.1, 8.NS.2 8.NS.A: Know that there are numbers that are not rational, and approximate them by rational numbers. 8.NS.1: Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational number. 8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions. (e.g., π^2).	1&2	Saxon Math Saxon Math Standards Success Understanding By Design Quizzes Smarter Balanced Assessment Consortium website
	Expressions and Equations	The student will work with radicals and integer exponents.	Standards: 8.EE.A, 8.EE.1, 8.EE.2, 8.EE.3, 8.EE.4 8.EE.A: Work with radicals and integer exponents. 8.EE.1: Know and apply the properties of integer exponents to generate equivalent number expressions. 8.EE.2: Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational. 8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities and to express how many times as much one is than the other. 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use	1	

			millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.		
		The student will understand the connections between proportional relationships, lines and linear equations.	Standards: 8.EE.B, 8.EE.5, 8.EE.6 8.EE.B: Understand the connections between proportional relationships, lines, and linear equations. 8.EE.5 Graph proportional relationships, interpreting the unit rates as he slope of he graph. Compare two different proportional relationships represented in different ways. 8.EE.6: Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at *b*.	1&2	
		The student will analyze and solve linear equations and pairs of simultaneous linear equations.	Standards 8.EE.C, 8.EE.7, 8.EE.8 8.EE.C: Analyze and solve linear equations and pairs of simultaneous linear equations. 8.EE.7: Solve linear equations in one variable. 8.EE.8: Analyze and solve pairs of simultaneous linear equations.	1 & 2	
	Functions	The student will define, evaluate, and compare functions.	Standards 8.F.A, 8.F.1, 8.F.2, 8.F.3 8.F.A.: Define, evaluate, and compare functions. 8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 8.F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). 8.F.3.: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	1 & 2	
		The student will use functions to model relationships between quantities.	Standards 8.F.B., 8.F.4., 8.F.5 8.F.B: Use functions to model relationships between quantities. 8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a		

			graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. 8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.		
	Geometry	The student will understand congruence and similarity using physical models, transparencies, or geometry software.	Standards: 8.GA, 8.G.1, 8.G.2, 8.G.3, 8.G.4, 8. G.5 8.GA Understand congruence and similarity using physical models, transparencies, or geometry software. 8.G.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines. 8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. 8..G. 3 Describe the effect of dilations, translations, rotations, and reflections, on two-dimensional figures using coordinates. 8.G.4: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. 8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	1 & 2	
		The student will understand and apply the Pythagorean Theorem.	Standards: 8.G.B, 8.G.6, 8.G.7, 8.G.8 8.G.B Understand and apply the Pythagorean Theorem. 8.G.6 Explain a proof of the Pythagorean Theorem and its converse.. 8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	1 & 2	
		The student will solve real-world and mathematical problems	Standards: 8.G.C, 8.G.9 8.G.C Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	1 & 2	

		involving volume of cylinders, cones, and spheres.	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.		
	Statistics and Probability	The student will investigate patterns of association in bivariate data.	Standards: 8.SP.A, 8.SP.1, 8.SP2, 8.SP.3, 8.SP.4 8.SP.A Investigate patterns of association in bivariate data 8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. 8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of he data points to the line. 8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. 8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	1&2	
Claim 2 Problem Solving Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.	**Expressions and Equations, Functions, and Geometry**	The student will apply mathematics to solve well-posed problems in pure mathematics and arising in everyday life, society, and the workplace. The student will select and use appropriate tools strategically.	Standards: 8.EE.B, 8.EE.C, 8.F.A, 8.F.B, 8.G.A, 8.G.B, 8.G.C 8.EE.B Understand the connections between proportional relationships, lines, and linear equations. 8.EE.C: Analyze and solve linear equations and pairs of simultaneous linear equations. 8.R.A: Define, evaluate, and compare functions. 8.F.B: Use Functions to model relationships between quantities. 8.G.A: Understand congruence and similarity using physical models, transparencies, or geometry software.	1,2,&3	

		The student will interpret results in the context of a situation. The student will identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).	8.G.B. Understand and apply the Pythagorean Theorem. 8.G.C: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.		
Claim 3 Communicating Reasoning Students clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.	**Expression and Equations, Functions, Geometry**	The student will test propositions or conjectures with specific examples. The student will construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. The student will state logical assumptions being used. The student will use the technique of breaking an argument into cases. The student will distinguish correct logic or reasoning from that which is flawed and – if there is a flaw in the argument-explain what it is. The student will base arguments on concrete referents such as objects,	Standards: 8.EE.1, 8.EE.5, 8.EE.6, 8.EE.7a, 8.EE.7b, 8.EE.8a, 8.F.1, 8.F.2, 8.F.3, 8.G.1 8.G.2, 8.G.4, 8.G.5, 8.G.6, 8.G.8 8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. 8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. 8.EE.6 Use similar triangles to explain why the slop *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = ms$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b. 8.EE.7a Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). 8.EE.7b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. 8.EE.8a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because	2,3,&4	

		drawings, diagrams, and actions. The student will at later grades, determine conditions under which an argument does and does not apply.	points on intersection of their graphs, because points of intersection satisfy both equations simultaneously. 8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verybal descriptions) 8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear 8.G.1 Verify experimentally the properties of rotations, reflections, and translations 8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. 8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. 8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles 8.G.6 Explain a proof of the Pythagorean Theorem and is convers. 8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.		

Claim 4 Modeling and Data Analysis Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.	**Expression and Equations, Functions, Geometry, and Statistics and Probability**	The student will apply mathematics to solve problems arising in everyday life, society, and the workplace. The student will construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for complex problem. The student will state logical assumptions being used. The student will interpret results in the context of a situation. The student will analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon. The student will identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). The student will identify, analyze and synthesize relevant external resources to pose or solve problems.	Standards: 8.EE.3, 8.EE.4, 8.EE.B,8.EE.C, 8.F.B, 8.G.B,8.G.C,8.SP.A 8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities and to express how many times as much one is than the other. 8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. 8.EE.B Understand the connections between proportional relationships, lines and linear equations. 8.EE.C Analyze and solve linear equations and pairs of simultaneous linear equations. 8.F.B Use functions to model relationships between quantities. 8.G.B Understand and apply the Pythagorean Theorem 8.G.C Solve real-world and mathematical problems involving volume of cylinders, cones and spheres. 8.SP.A Investigate patters of association in bivariate data	1, 2, 3, & 4	