

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Expressions and Equations 8.EE.1 8.EE.2	<p>Evaluates and generates equivalent numerical expressions applying properties of integer exponents.</p> <p>Solves equations of the form $x^2 = p$ and $x^3 = p$, representing solutions using $\sqrt{\quad}$ or $\sqrt[3]{\quad}$ symbols.</p> <p>Demonstrates a solid understanding of the structure of these properties within a real-world context.</p>	<p>Evaluates and generates equivalent numerical expressions applying properties of integer exponents.</p> <p>Solves equations of the form $x^2 = p$ and $x^3 = p$, representing solutions using $\sqrt{\quad}$ or $\sqrt[3]{\quad}$ symbols.</p> <p>Demonstrates a general understanding of the structure of these properties within a real-world context.</p>	<p>Evaluates and generates equivalent numerical expressions applying properties of integer exponents.</p> <p>Solves equations of the form $x^2 = p$, where p is a perfect square and solves equations of the form $x^3 = p$, where p is a perfect cube, by representing the positive solution of the equation.</p>	<p>Evaluates simple numerical expressions using properties of integer exponents.</p> <p>Partially solves equations of the form $x^2 = p$, where p is a perfect square, by representing the positive solution of the equation.</p>
Scientific Notation 8.EE.3 8.EE.4-1 8.EE.4-2	<p>Using scientific notation, estimates very large and very small quantities and determines how many times as large one number is in relation to another.</p> <p>Performs operations with numbers expressed in scientific notation, with and without technology.</p>	<p>Using scientific notation, estimates very large and very small quantities and determines how many times as large one number is in relation to another.</p> <p>Performs operations with numbers expressed in scientific notation, without technology.</p>	<p>Using scientific notation, estimates very large and very small quantities.</p> <p>Performs operations with numbers expressed in scientific notation, without technology.</p>	<p>Using scientific notation, estimates very large quantities.</p> <p>Performs operations with numbers expressed in scientific notation, without technology.</p>

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	Interprets scientific notation that has been generated by technology.	Interprets scientific notation that has been generated by technology.		
Proportional Relationships and Linear Equations 8.EE.5-1 8.EE.5-2 8.EE.6-1 8.F.3-1	<p>Graphs linear relationships in the form $y=mx+b$, including proportional relationships.</p> <p>Interprets the unit rate as the slope of the graph of a proportional relationship and applies these concepts to solve real-world problems.</p> <p>Compares two different proportional relationships represented in different ways.</p> <p>Interprets $y=mx+b$ as defining a linear function.</p> <p>Uses similar triangles to show that the slope is the same between any two distinct points on a non-</p>	<p>Graphs linear relationships in the form $y=mx+b$, including proportional relationships.</p> <p>Interprets the unit rate as the slope of the graph of a proportional relationship and applies these concepts to solve real-world problems.</p> <p>Compares two different proportional relationships represented in different ways.</p> <p>Interprets $y=mx+b$ as defining a linear function.</p>	<p>Graphs linear relationships, in the form $y=mx+b$, including proportional relationships.</p> <p>Interprets the unit rate as the slope of the graph of a proportional relationship and applies these concepts to solve real-world problems.</p> <p>Compares two different proportional relationships represented in different ways.</p>	<p>Graphs linear relationships, in the form $y=mx+b$, including proportional relationships.</p> <p>Interprets the unit rate as the slope of the graph of a proportional relationship.</p> <p>Makes some comparisons between two different proportional relationships represented in different ways.</p>

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	vertical line in the coordinate plane.			
Solving Linear Equations 8.EE.7 8.EE.C.Int. 1	Solves complex mathematical and real-world linear equations in one variable, with rational number coefficients, including those that require use of the distributive property and combining of like terms.	Solves mathematical and real-world linear equations in one variable, with rational number coefficients, including those that require use of the distributive property or combining of like terms.	Solves linear equations in one variable, with rational number coefficients, including those that require use of the distributive property and combining like terms.	Solves linear equations in one variable, with rational number coefficients, including those that require use of the distributive property or combining like terms.
Simultaneous Linear Equations 8.EE.8a 8.EE.8b-1 8.EE.8b-2 8.EE.8b-3	Analyzes and solves mathematical and real-world problems leading to pairs of simultaneous linear equations graphically, algebraically and by inspection. Understands the relationship between the graphic representation and the algebraic solution to the system. Verifies a solution utilizing multiple methods to prove accuracy.	Analyzes and solves mathematical and real-world problems leading to pairs of simultaneous linear equations graphically, algebraically and by inspection . Understands the relationship between the graphic representation and the algebraic solution to the system.	Analyzes and solves mathematical problems leading to pairs of simultaneous linear equations graphically and algebraically .	Solves mathematical problems leading to pairs of simultaneous linear equations graphically or by inspection.

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Functions 8.F.1-1 8.F.1-2 8.F.2 8.F.3-2	<p>Understands that a function is a rule assigning to each input exactly one output which can be graphed as a set of ordered pairs.</p> <p>Compares properties of two functions represented in different ways.</p> <p>Identifies and proves functions as non-linear.</p>	<p>Understands that a function is a rule assigning to each input exactly one output, which can be graphed as a set of ordered pairs.</p> <p>Compares properties of two functions represented in different ways.</p> <p>Identifies functions that are non-linear.</p>	<p>Understands that a function is a rule that assigns to each input exactly one output and can be graphed as a set of ordered pairs.</p> <p>Compares some of the properties of two functions represented in different ways.</p>	<p>Understands that a function is a rule that assigns to each input exactly one output and can be graphed as a set of ordered pairs.</p>
Congruence and Similarity 8.G.1a 8.G.1b 8.G.1c 8.G.2 8.G.3 8.G.4	<p>Describes the effect of dilations, translations, rotations and reflections on two-dimensional figures with and without coordinates, determines whether two given figures are congruent or similar through one or more transformations and describes multiple sequences of transformations to justify congruence or similarity of two figures.</p>	<p>Describes the effect of dilations, translations, rotations and reflections on two-dimensional figures with and without coordinates, determines whether two given figures are congruent or similar through one or more transformations and describes the sequence of transformations to justify congruence or similarity of two figures.</p>	<p>Describes the effect of dilations, translations, rotations and reflections on two-dimensional figures with and without coordinates, and determines whether two given figures are congruent or similar through one or more transformations.</p>	<p>Describes the effect of translations, rotations and reflections on two-dimensional figures without coordinates and determines whether two given figures are congruent.</p>

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Pythagorean Theorem 8.G.7-1 8.G.7-2 8.G.8	Applies the Pythagorean Theorem in a planar case and to find the distance between two points in a coordinate system and in a three-dimensional case in both mathematical and real-world multi-step problems. Recognizes situations to apply the Pythagorean Theorem in multi-step problems.	Applies the Pythagorean Theorem in a simple planar case and to find the distance between two points in a coordinate system and in a simple three-dimensional case in both mathematical and real-world problems.	Applies the Pythagorean Theorem in a simple planar case and to find the distance between two points in a coordinate system.	Applies the Pythagorean Theorem in a simple planar case.

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math: Sub-Claim B			
	The student solves problems involving the Additional and Supporting Content for the grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Rational Numbers 8.NS.1 8.NS.2	Distinguishes between rational and irrational numbers, understands that these numbers have decimal expansions and locates them approximately on a number line, and converts between terminating decimals or repeating decimals and fractional representations of rational numbers. Analyzes and generalizes patterns and structures of repeating decimals.	Distinguishes between rational and irrational numbers, understands that these numbers have decimal expansions and locates them approximately on a number line, and converts between terminating decimals or repeating decimals and fractional representations of rational numbers.	Distinguishes between rational and irrational numbers, understands that these numbers have decimal expansions and locates them approximately on a number line, and converts between terminating decimals or repeating decimals of the form (0.aaa...) and fractional representations of rational numbers.	Distinguishes between rational and irrational numbers and understands that these numbers have decimal expansions and locates them approximately on a number line.
Modeling with Functions 8.F.4 8.F.5-1 8.F.5-2	Constructs a function to model a linear relationship between two quantities described with or without a context. Given a description of a relationship or two (x,y) values in a table of values or a graph, determines the rate of change and initial	Constructs a function to model a linear relationship between two quantities described with or without a context. Given a description of a relationship or two (x,y) values in a table of values or a graph, determines the rate of change and initial	Constructs a function to model a linear relationship between two quantities without a context. Given two (x,y) values in a table of values or a graph, determines the rate of change and initial value of the function.	Constructs a function to model a linear relationship between two quantities in a table or a graph. Determines the rate of change and initial value of the function from a table or graph that contains the initial value.

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math: Sub-Claim B			
	The student solves problems involving the Additional and Supporting Content for the grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	<p>value of the function.</p> <p>Analyzes, describes and contextualizes the functional relationship between two quantities.</p> <p>Sketches a graph of a function when given a written description.</p>	<p>value of the function.</p> <p>Analyzes and describes the functional relationship between two quantities.</p> <p>Sketches a graph of a function when given a written description.</p>	<p>Analyzes the graph of a linear function to describe the functional relationship between two quantities.</p> <p>Sketches the graph of a function when given a written description.</p>	<p>Analyzes the graph of a linear function to describe the functional relationship between two quantities.</p>
<p>Volume</p> <p>8.G.9</p>	<p>Knows the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume or dimensions of composite solids in mathematical and real-world problems.</p> <p>Applies these formulas to multiple composite mathematical solids and utilize these formulas within a novel context.</p>	<p>Knows the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume or dimensions of solids in mathematical and real-world problems.</p> <p>Applies these formulas to multiple composite mathematical solids.</p>	<p>Knows the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume of solids in mathematical and real-world problems.</p>	<p>Knows the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume of solids in mathematical problems.</p>

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8 Math: Sub-Claim B			
	The student solves problems involving the Additional and Supporting Content for the grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Bivariate Data 8.SP.1 8.SP.2 8.SP.3 8.SP.4	<p>Justifies the patterns of association that can be seen in bivariate data by constructing, displaying and interpreting scatter plots and two-way tables.</p> <p>Uses the equation of a linear model to solve problems in context.</p> <p>Informally fits a straight line to a scatter plot that suggests a linear association and assesses the model fit.</p> <p>Compares linear models used to fit the same set of data to determine which is a better fit.</p>	<p>Analyzes and describes the patterns of association that can be seen in bivariate data by constructing, displaying and interpreting scatter plots and two-way tables.</p> <p>Uses the equation of a linear model to solve problems in context.</p> <p>Informally fits a straight line to a scatter plot that suggests a linear association and assesses the model fit.</p>	<p>Analyzes and describes the patterns of association that can be seen in bivariate data by constructing, displaying and interpreting scatter plots and two-way tables.</p> <p>Uses the equation of a linear model to solve problems in context.</p> <p>Informally fits a straight line to a scatter plot that suggests a linear association.</p>	<p>Analyzes and describes the patterns of association that can be seen in bivariate data by constructing, displaying and interpreting scatter plots and two-way tables.</p> <p>Uses a given equation of a linear model to solve problems in context.</p> <p>Informally fits a straight line to a scatter plot that suggests a linear association.</p>

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
<p>Graphs and Equations</p> <p>8.C.1.1 8.C.1.2 8.C.2</p>	<p>Clearly constructs and communicates a complete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:</p> <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels • complete justification of a conclusion • generalization of an argument or conclusion • evaluating, interprets and critiques the validity and efficiency of 	<p>Clearly constructs and communicates a complete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:</p> <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels • complete justification of a conclusion • evaluating, interpreting and critiques the validity of other’s responses, approaches, conclusions and reasoning 	<p>Constructs and communicates a complete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:</p> <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical, but incomplete, progression of steps • minor calculation errors • some use of grade-level vocabulary, symbols and labels • partial justification of a conclusion • evaluating the validity of other’s approaches and conclusion 	<p>Constructs and communicates an incomplete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:</p> <ul style="list-style-type: none"> • a faulty approach based on a conjecture and/or stated assumptions • an illogical or incomplete progression of steps • major calculation errors • limited use of grade-level vocabulary, symbols and labels • partial justification of a conclusion

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	other’s responses, approaches and reasoning, conclusions and reasoning and providing a counter-example where applicable			
Reasoning 8.C.3.1 8.C.3.2 8.C.3.3 8.C.4.1 8.C.6	Clearly constructs and communicates a complete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including: <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels 	Clearly constructs and communicates a complete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including: <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels 	Constructs and communicates a complete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including: <ul style="list-style-type: none"> • a logical approach based on a conjecture and/or stated assumptions • a logical, but incomplete, progression of steps • minor calculation errors • some use of grade-level vocabulary, symbols 	Constructs and communicates an incomplete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including: <ul style="list-style-type: none"> • a faulty approach based on a conjecture and/or stated assumptions • an illogical and incomplete progression of steps • major calculation errors • limited use of grade-level vocabulary, symbols and labels

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	<ul style="list-style-type: none"> complete justification of a conclusion generalization of an argument or conclusion evaluating, interpreting and critiquing the validity and efficiency of other’s responses, approaches, conclusions and reasoning, and providing a counter-example where applicable 	<ul style="list-style-type: none"> complete justification of a conclusion evaluating, interpreting and critiquing the validity of other’s responses, approaches, conclusions and reasoning 	and labels <ul style="list-style-type: none"> partial justification of a conclusion evaluating the validity of other’s approaches and conclusions 	<ul style="list-style-type: none"> partial justification of a conclusion.
Geometric Reasoning 8.C.5.1 8.C.5.2 8.C.5.3	Clearly constructs and communicates a complete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including: <ul style="list-style-type: none"> a logical approach based on a conjecture 	Clearly constructs and communicates a complete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including: <ul style="list-style-type: none"> a logical approach based on a conjecture 	Constructs and communicates a complete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including: <ul style="list-style-type: none"> a logical approach based on a conjecture 	Constructs and communicates an incomplete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including: <ul style="list-style-type: none"> a faulty approach based on a conjecture and/or

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	<ul style="list-style-type: none"> and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels • complete justification of a conclusion • generalization of an argument or conclusion • evaluating, interpreting and critiquing the validity and efficiency of other’s responses, approaches and reasoning, and providing a counter-example where applicable • identifying and describing errors in solutions and presenting correct solutions • distinguishing correct 	<ul style="list-style-type: none"> and/or stated assumptions • a logical and complete progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels • complete justification of a conclusion • evaluating, interpreting and critiquing the validity of other’s responses, approaches, conclusions and reasoning • identifying and describing errors in solutions and presenting correct solutions 	<ul style="list-style-type: none"> and/or stated assumptions • a logical, but incomplete, progression of steps • minor calculation errors • some use of grade-level vocabulary, symbols and labels • partial justification of a conclusion • evaluating the validity of other’s approaches and conclusion • identifying and describing errors in solutions 	<ul style="list-style-type: none"> stated assumptions • an illogical and incomplete progression of steps • major calculation errors • limited use of grade-level vocabulary, symbols and labels • partial justification of a conclusion

Performance Level Descriptors – Grade 8 Mathematics

	Grade 8: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
	<p>explanation/reasoning from that which is flawed. If there is a flaw, presents correct reasoning.</p>			

Performance Level Descriptors – Grade 8 Mathematics

Grade 8: Sub-Claim D				
The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning.				
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
Modeling 8.D.1 8.D.2 8.D.3 8.D.4	Devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by: <ul style="list-style-type: none"> using stated assumptions and making assumptions and approximations to simplify a real-world situation mapping relationships between important quantities by selecting appropriate tools to create models analyzing relationships mathematically between important quantities to draw conclusions writing a complete, clear and correct 	Devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by: <ul style="list-style-type: none"> using stated assumptions and making assumptions and approximations to simplify a real-world situation mapping relationships between important quantities by selecting appropriate tools to create models analyzing relationships mathematically between important quantities to draw conclusions writing a complete, clear and correct 	Devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by: <ul style="list-style-type: none"> using stated assumptions and approximations to simplify a real-world situation illustrating relationships between important quantities by using provided tools to create models analyzing relationships mathematically between important quantities to draw conclusions writing an incomplete algebraic expression or equation to describe a 	Devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by: <ul style="list-style-type: none"> using stated assumptions and approximations to simplify a real-world situation identifying important quantities using provided tools to create models analyzing relationships mathematically to draw conclusions writing an incomplete algebraic expression or equation to describe a situation applying proportional reasoning

Performance Level Descriptors – Grade 8 Mathematics

Grade 8: Sub-Claim D				
The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning.				
Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command	
algebraic expression or equation to describe a situation <ul style="list-style-type: none"> • applying proportional reasoning • writing/using functions to describe how one quantity of interest depends on another • using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity • reflecting on whether the results make sense • improving the model if it has not served its purpose • interpreting mathematical results in the context of the situation 	algebraic expression or equation to describe a situation <ul style="list-style-type: none"> • applying proportional reasoning • writing/using functions to describe how one quantity of interest depends on another • using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity • reflecting on whether the results make sense • improving the model if it has not served its purpose • interpreting mathematical results in the context of the situation 	situation <ul style="list-style-type: none"> • applying proportional reasoning • writing/using functions to describe how one quantity of interest depends on another • using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity • reflecting on whether the results make sense • modifying the model if it has not served its purpose • interpreting mathematical results in a simplified context 	<ul style="list-style-type: none"> • using functions to describe how one quantity of interest depends on another • using unreasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity 	

Performance Level Descriptors – Grade 8 Mathematics

Grade 8: Sub-Claim D					
The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning.					
Level 5: Distinguished Command		Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command	
<ul style="list-style-type: none"> • analyzing and/or creating constraints, relationships and goals analyzing, justifying and defending models which lead to a conclusion 					