CMAS Grade 5 Mathematics Performance Level Descriptors
(Based on PARCC)

In 2018, Colorado will continue to use the performance level descriptors (PLDs) that were developed in collaboration with the Partnership for Assessment of Readiness for College and Careers (PARCC) consortium to describe performance on the CMAS assessments.

	Grade 5 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
Addition and Subtraction Operations with Decimals 5.NBT.7-1 5.NBT.7-2	Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value, properties of operations and/or the relationship between addition and subtraction. **Applies this concept to a real-world context**, and relates the strategy to a written method and explain the reasoning used.	**Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value**, properties of operations and/or the relationship between addition and subtraction.	Adds or subtracts (without regrouping) two decimals to hundredths using concrete models, drawings or strategies based on place value and/or the relationship between addition and subtraction.	Adds or subtracts (without regrouping) two decimals to hundredths **(both decimals presented with the same number of decimal places)** using concrete models, drawings or strategies based on place value and/or the relationship between addition and subtraction.
Adding and Subtracting in Context with Fractions 5.NF.2-1 5.NF.2-2 5.NF.A.Int.1	**Describes a model to represent** word problems involving addition and subtraction of fractions and mixed numbers referring to the same whole in cases of unlike denominators by using visual fraction models or equations. **Assesses and justifies reasonableness using benchmark fractions and number sense of fractions**.	Solves word problems involving addition and subtraction of fractions and mixed numbers referring to the same whole **in cases of unlike denominators** by using visual fraction models or equations.	Solves word problems involving addition and subtraction of fractions **and mixed numbers** using only denominators of 2, 4, 5 or 10 **or benchmark fractions with unlike denominators, referring to the same whole by using visual fraction models or equations.**	Solves word problems involving addition and subtraction of fractions using only denominators of 2, 4, 5 or 10.
Fractions with Unlike Denominators	Adds and subtracts **three or more** fractions and adds and subtracts two mixed numbers with unlike denominators in such a way as to	Adds and subtracts two fractions or mixed numbers with unlike denominators **in such a way as to produce an equivalent sum or**	Adds or subtracts two fractions or **mixed numbers** with unlike denominators using only fractions with denominators of 2, 4, 5 or 10	Adds or subtracts two fractions with unlike denominators using only fractions with denominators of 2, 4, 5 or 10 in such a way as to

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5.NF.1-1 5.NF.1-2 5.NF.1-3 5.NF.1-4 5.NF.1-5	produce an equivalent sum or difference with like denominators.	**difference with like denominators.**	in such a way as to produce an equivalent sum or difference with like denominators.* *below grade level.	produce an equivalent sum or difference with like denominators.* *below grade level.
Multiplication and Division Operations with Decimals 5.NBT.7-3 5.NBT.7-4 5.NBT.Int.1	Multiplies tenths by tenths or tenths by hundredths and divides in problems involving tenths and/or hundredths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction. **Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.** Relates the strategy to a written method.	Multiplies tenths by tenths **or tenths by hundredths** and divides in problems involving tenths **and/or hundredths** using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction. **Relates the strategy to a written method.**	Multiplies tenths by tenths **and divides** in problems involving tenths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction.	Multiplies tenths by tenths in problems involving tenths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction.
Multiply with Whole Numbers 5.NBT.5 5.Int.1 5.Int.2	Solves two-step **unscaffolded** word problems involving multiplication and multiplies **four**-digit by **two-digit** whole numbers **using the standard algorithm.** **Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.** Accurately multiplies multi-digit	Solves two-step scaffolded word problems involving multiplication **of a three-digit by a one-digit whole number.** **Accurately** multiplies multi-digit whole numbers using the standard	Solves one-step word problems involving multiplication **of a three-digit by a one-digit whole number**. **Multiplies multi-digit whole numbers using the standard algorithm with limited accuracy.**	Solves one-step word problems involving multiplication.

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	whole numbers using the standard algorithm **and assesses reasonableness of the product.**	algorithm.		
Quotients and Dividends 5.NBT.6	Divides whole numbers up to four-digit dividends and **two-digit** divisors using strategies based on place value, the properties of operations and/or the relationship between multiplication and division. **Illustrates and explains the calculations by using equations, rectangular arrays, and area models.** **Checks reasonableness of answers by using multiplication or estimation.**	Divides whole numbers up to **four-digit** dividends and one-digit divisors which are multiples of ten using strategies based on place value, the properties of operations and/or the relationship between multiplication and division.	**Divides** whole numbers up to three-digit dividends and one-digit divisors which are multiples of ten **using strategies based on place value, the properties of operations and/or the relationship between multiplication and division.**	Correctly identifies the quotient of whole numbers up to three-digit dividends and one-digit divisors which are multiples of ten.
Multiplying and Dividing with Fractions 5.NF.4a-1 5.NF.4a-2 5.NF.4b-1 5.NF.6-1 5.NF.6-2 5.NF.7a 5.NF.7b 5.NF.7c	**Describes a model to represent and/**or solve real-world problem**s,** by multiplying a mixed number by a fraction, a fraction by a fraction and a whole number by a fraction; dividing a fraction by a whole number and a whole number by a fraction using visual fraction models and creating context for the mathematics **and equations**, including rectangular areas; and interpreting the product and/or quotient.	Multiplies a fraction or a whole number by a fraction and divides a fraction by a whole number – or whole number by a fraction – using visual fraction models and **creating context for the mathematics, including rectangular areas.**	Multiplies a fraction or a whole number by a fraction **and divide a fraction by a whole number or whole number by a fraction** using visual fraction models.	Multiplies a fraction or a whole number by a fraction using visual fraction models.
Interpreting	Solves word problems involving	Solves word problems involving	Solves word problems involving	Solves word problems involving

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Fractions 5.NF.3-1 5.NF.3-2	division of whole numbers leading to answers in the form of fractions or mixed numbers. Interprets the fraction as division of the numerator by the denominator. **Identifies a simple model representing the** situation**.** **Describes a model to represent the situation.**	division of whole numbers leading to answers in the form of fractions or mixed numbers. **Interprets the fraction as division of the numerator by the denominator.**	division of whole numbers leading to answers in the form of fractions **or mixed numbers** by using manipulatives or visual models to identify between which two whole numbers the answer lies.	division of whole numbers leading to answers in the form of fractions by using manipulatives or visual models to identify between which two whole numbers the answer lies.
Recognizing Volume 5.MD.3 5.MD.4	Recognizes volume as an attribute of solid figures and understands volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them. **Represents the volume of a solid figure as "n" cubic units.** **Writes an equation that illustrates the unit cube pattern.**	Recognizes volume as an attribute of solid figures and understands volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them.	Recognizes volume as an attribute of solid figures **and with a visual model understands that volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them.**	Recognizes volume as an attribute of solid figures.
Finding Volume 5.MD.5b 5.MD.5c	Solves real-world and mathematical problems by applying the formulas for volume, relating volume to the operations of multiplication and addition, and recognizing volume is additive by finding the volume of solid figures of two **or more** non-overlapping parts.	Given a visual model, solves real-world and mathematical problems by applying the formulas for volume, **relating volume to the operations of multiplication and addition, and recognizing volume is additive by finding the volume of solid figures of two non-overlapping parts.**	Given a visual model **and the formulas for finding volume**, **solves real-world and mathematical problems by applying the formulas for volume (*V* = *l* x *w* x *h* and *V* = *B* x *h*).**	Given a visual model, solves volume problems by counting unit cubes.

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Read, Write and Compare Decimals 5.NBT.3a 5.NBT.3b 5.NBT.4	Reads, writes and compares decimals **to any place** using numerals, number names, expanded form and symbols (>, <, =); rounds to any place and **chooses appropriate context given a rounded number.**	Reads, writes and compares decimals to the **hundredths** using numerals, number names, expanded form and symbols (>, <, =), and **rounds to any place.**	**Reads, writes and compares** decimals to the hundredths using numerals, number names, expanded form and symbols (>, <, =), **and rounds to any place with scaffolding**.	Identifies the correct comparison of decimals to the hundredths using numerals, number names, expanded form and symbols (>, <, =).
Place Value 5.NBT.1 5.NBT.2-2 5.NBT.A.Int.1	In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left and uses whole number exponents to denote powers of 10 and **uses symbols to compare two powers of 10 expressed exponentially (compare 10^2 to 10^5).**	In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right or 1/10 of what it represents in the place to its left and **uses whole number exponents to denote powers of 10.**	In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right or **1/10 of what it represents in the place to its left** by using manipulatives or visual models.	In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right by using manipulatives or visual models.
Multiplication Scaling 5.NF.5a	Interprets multiplication scaling by comparing the size of the product to the size of one factor on the basis of the size of the second factor without performing the indicated multiplication, **focusing on one factor being a fraction greater than or less than one.**	Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor without performing the indicated multiplication **where one factor is a fraction less than one.**	**Interprets** multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor by performing the indicated multiplication where one factor is a fraction less than one using manipulatives or visual models.	Identifies multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor by performing the indicated multiplication where one factor is a fraction less than one using manipulatives or visual models.
Write and Interpret Numerical Expressions 5.OA.1 5.OA.2-1 5.OA.2-2	Uses parentheses, brackets, or braces **with no greater depth than two,** to write and **evaluate** numerical expressions. **Interprets numerical expressions without evaluating them.**	Uses parentheses, brackets, or braces to **write numerical expressions.** Interprets simple numerical expressions without evaluating	Uses parentheses, **brackets, or braces** to write simple numerical expressions.	Uses parentheses to write simple numerical expressions.

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		them.		

	Grade 5 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
Graphing on the Coordinate Plane 5.G.1 5.G.2 5.OA.3	Represents real-world and mathematical problems by locating and graphing points in the first quadrant of a coordinate plane and interprets coordinate values of points in the context of the situation**.**	Represents real-world and mathematical problems by locating **and** graphing points in the first quadrant of a coordinate plane.	Represents real-world and mathematical problems by locating **or graphing** points in the first quadrant of a coordinate plane.	Represents real-world mathematical problems by locating points in the first quadrant of a coordinate plane.
Two-Dimensional Figures 5.G.3 5.G.4	Classifies two-dimensional figures in a hierarchy based on properties. Understands that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. **Uses appropriate tools to determine similarities and differences between categories and subcategories.**	Classifies two-dimensional figures in a **hierarchy** based on properties. Understands that shared attributes categorize two-dimensional figures.	**Classifies** two-dimensional figures based on properties. **Understands that shared attributes categorize two-dimensional figures.**	Identifies two-dimensional figures based on properties.
Conversions 5.MD.1-1 5.MD.1-2	Converts among different-sized standard measurement units within a given measurement system and uses these conversions to solve real-world, **multi-step** problems. **Chooses the appropriate**	Converts among different-sized standard measurement units within a given measurement system **and uses these conversions to solve real-world**, single-step problems.	**Converts** among different-sized standard measurement units within a given measurement system **and solves single-step problems by using manipulatives or visual models.**	Identifies the correct conversion among different-sized standard units within a given measurement system.

	Grade 5 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	measurement unit based on the given context.			
Data Displays 5.MD.2-2	Uses operations on fractions with denominators of 2, 4, and 8 to solve problems involving information in line plots and **interprets the solution in relation to the data.**	Uses operations on fractions with denominators of 2 and 4 to solve problems involving information in line plots.	Uses operations on fractions with like denominators of 2 **and 4** to solve problems involving information in line plots.	Uses operations on fractions with like denominators of 2 to solve problems involving information in line plots.

	Grade 5 Math: Sub-Claim C In connection with content, 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
Properties of Operations 5.C.1-1 5.C.1-2 5.C.1-3 5.C.2-1 5.C.2-2 5.C.2-3 5.C.2-4	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a well-organized and complete written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response may include: • a logical/defensible approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate) • an **efficient** and logical	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **well-organized** and complete written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response may include: • a logical/**defensible** approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)** • a logical progression of steps	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a complete written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response may include: • a **logical** approach based on a conjecture and/or stated assumptions • a logical, but incomplete, progression of steps • **minor** calculation errors	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an **incomplete** written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response may include: • an approach based on a conjecture and/or stated or faulty assumptions • an incomplete or illogical progression of steps • an intrusive calculation error

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	progression of steps with appropriate justification • precision of calculation • correct use of grade-level vocabulary, symbols and labels • justification of a conclusion • evaluation of whether an argument or conclusion is generalizable • evaluating, interpreting and critiquing the validity of other's responses, reasonings, and approaches, utilizing mathematical connections (when appropriate). **Provides a counter-example where applicable.**	• **precision of calculation** • **correct** use of grade-level vocabulary, symbols and labels • **justification of a conclusion** • **evaluation of whether an argument or conclusion is generalizable** • evaluating, **interpreting and critiquing** the validity of other's responses, **reasonings, and approaches, utilizing mathematical connections (when appropriate).**	• **some** use of grade-level vocabulary, symbols and labels • partial justification of a conclusion based on own calculations • **evaluating the validity of other's responses, approaches and conclusions.**	• limited use of grade-level vocabulary, symbols and labels • partial justification of a conclusion based on own calculations
Place Value 5.C.3	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on place value system including: • a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate) • an efficient and logical progression of steps with appropriate justification • precision of calculation	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a **well-organized** and complete response based on place value system including: • a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate) • a logical progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete response** based on place value system including: • 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	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on place value system which may include: • an approach based on a conjecture and/or stated or faulty assumptions • an incomplete or illogical progression of steps • an intrusive calculation error • limited use of grade-level vocabulary, symbols and labels • partial justification of a

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	• correct use of grade-level vocabulary, symbols and labels • justification of a conclusion • evaluation of whether an argument or conclusion is generalizable • evaluating, interpreting and critiquing the validity of other's responses, approaches and reasoning, and **providing a counter-example where applicable.**	• **justification of a conclusion** • **evaluation of whether an argument or conclusion is generalizable** • evaluating**,** interpreting and critiquing the validity of other's responses, approaches and reasoning.	conclusion based on own calculations • **evaluating the validity of other's responses, approaches and conclusions.**	conclusion based on own calculations
Concrete Referents and Diagrams 5.C.4-1 5.C.4-2 5.C.4-3 5.C.4-4 5.C.5-1 5.C.5-2 5.C.5-3 5.C.6	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on operations using concrete referents such as diagrams--including number lines (whether provided in the prompt or constructed by the student) and connecting the diagrams to a written (symbolic) method, which may include: • a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate) • an **efficient** and logical progression of steps **with appropriate justification**	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a **well-organized a**nd complete response based on operations using concrete referents such as diagrams--including number lines (**whether provided in the prompt or constructed by the student**) and connecting the diagrams to a written (symbolic) method, which may include: • a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)** • a logical progression of steps • **precision of calculation** • **correct** use of grade-level	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **a complete response** based on operations using concrete referents such as diagrams--including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include: • **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	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on operations using concrete referents such as diagrams – including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include: • a conjecture and/or stated or faulty assumptions • an incomplete or illogical progression of steps • an intrusive calculation error • limited use of grade-level vocabulary, symbols and labels • partial justification of a conclusion based on own

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	• precision of calculation • correct use of grade-level vocabulary, symbols and labels • justification of a conclusion • evaluation of whether an argument or conclusion is generalizable • evaluating, interpreting, and critiquing the validity of other's responses, approaches, and reasoning, and **providing a counterexample where applicable**	vocabulary, symbols and labels • **justification of a conclusion** • **evaluation of whether an argument or conclusion is generalizable** • evaluating, **interpreting, and critiquing** the validity of other's responses, approaches, and **reasoning.**	conclusion based on own calculations. • **evaluating** the validity of other's responses, **approaches and conclusions.**	calculations • accepting the validity of other's responses
Distinguish Correct Explanation/ Reasoning from that which is Flawed 5.C.7-1 5.C.7-2 5.C.7-3 5.C.7-4 5.C.8-2	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response by: • analyzing and defending solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately • **evaluating** explanation/reasoning if there is a flaw in the argument • presenting **and defending** corrected reasoning Response may include: • a logical approach based on a conjecture and/or stated assumptions, utilizing	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates **a well-organized** and complete response by: • analyzing and **defending** solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately • distinguishing correct explanation/reasoning from that which is flawed • identifying and describing the flaw in reasoning or describing errors in solutions to multi-step problems • presenting corrected reasoning Response may include:	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response by**:** • analyzing solutions to **multi-step** problems in the form of valid chains of reasoning**,** using symbols such as equal signs appropriately • distinguishing correct explanation/reasoning from that which is flawed • identifying and **describing the flaw in reasoning or describing errors in solutions to multi-step problems** • **presenting corrected reasoning** Response may include:	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response by: • analyzing solutions to scaffolded two-step problems in the form of valid chains of reasoning, sometimes using symbols such as equal signs appropriately • distinguishing correct explanation/reasoning from that which is flawed • identifying an error in reasoning Response may include: • a conjecture based on faulty assumptions • an incomplete or illogical progression of steps

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	mathematical connections (when appropriate) • **an efficient** and logical progression of steps **with appropriate justification** • precision of calculation • correct use of grade-level vocabulary, symbols and labels • justification of a conclusion • evaluation of whether an argument or conclusion is generalizable • evaluating, interpreting and critiquing the validity of other's • responses, approaches and reasoning, and **providing a counter-example where applicable**	• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)** • **a logical progression of steps** • **precision of calculation** • **correct** use of grade-level vocabulary, symbols and labels • **justification of a conclusion** • **evaluation of whether an argument or conclusion is generalizable** • evaluating**, interpreting and critiquing** the validity of other's responses, approaches and **reasoning**	• **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 based on own calculations • **evaluating** the validity of other's responses, **approaches and conclusions.**	• an intrusive calculation error • limited use of grade-level vocabulary, symbols and labels • partial justification of a conclusion based on own calculations • accepting the validity of other's responses

	Grade 5 Math: Sub-Claim D In connection with content, 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
Modeling 5.D.1 5.D.2	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:	In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:

	Grade 5 Math: Sub-Claim D In connection with content, 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: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	• using stated assumptions or making assumptions and using approximations to simplify a real-world situation • analyzing and/or creating constraints, relationships and goals • mapping relationships between important quantities by selecting appropriate tools to create models • analyzing relationships mathematically between important quantities to draw conclusions • justifying and defending models which lead to a conclusion • interpreting mathematical results in the context of the situation • reflecting on whether the results make sense • improving the model if it has not served its purpose • writing **a concise** arithmetic expression or equation to describe a situation	• using stated assumptions or **making assumptions** and using 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 • interpreting mathematical results in the context of the situation • reflecting on whether the results make sense • modifying and/or improving the model if it has not served its purpose • writing an arithmetic expression or equation to describe a situation	• 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 • interpreting mathematical results in a simplified context • reflecting on whether the results make sense • modifying the model if it has not served its purpose • writing an arithmetic expression or equation to describe a situation	• 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 arithmetic expression or equation to describe a situation