CMAS Grade 4 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 4 Math : Sub-Claim A The student solves problems involving the Major 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**
Fractions and Decimals 4.NF.1-2 4.NF.2-1 4.NF.A.Int.1 4.NF.5 4.NF.6 4.NF.7 4.NF.Int.1 4.NF.Int.2	Compares decimals to hundredths; uses decimal notations for fractions with denominators 10 or 100. Compares fractions, with like or unlike numerators and denominators, by creating equivalent fractions with common denominators, comparing to a benchmark fraction and **generating equivalent fractions.** Recognizes that decimals and fractions must refer to the same whole in order to compare. Shows results using symbols. **Demonstrates the use of conceptual understanding of fractional equivalence and ordering when solving** simple word problems requiring fraction comparison. **Converts a simple fraction to a denominator of 10 or 100 and writes as a decimal (e.g.,1/2 =**	Given a visual model and/or manipulatives, compares decimals to hundredths: **Expresses a fraction with denominator 10 as an equivalent fraction with denominator 100.** **Uses decimal notation for fractions with denominators 10 or 100.** Compares fractions, with like or unlike numerators and denominators, by **creating equivalent fractions with common denominators** and comparing to a benchmark fraction. Recognizes that decimals and fractions must refer to the same whole in order to compare. Shows results using symbols. **Solves simple word problems requiring fraction comparison**.	Given a visual model and/or manipulatives, compares decimals to hundredths; uses decimal notations for fractions (tenths and hundredths); compares fractions, with like **or unlike numerators and denominators by comparing to a benchmark fraction.** **Recognizes that decimals and fractions must refer to the same whole in order to compare.** **Shows results using symbols.** **Solves simple word problems requiring fraction comparison with scaffolding**.	Given a visual model and/or manipulatives, compares decimals to hundredths; uses decimal notations for fractions (tenths and hundredths); compares fractions with like denominators.

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	5/10 = .5, ¼ = 25/100 = 0.25, 1/20 = 5/100 = 0.05). **Adds fractions with denominators of 10 and 100.**			
Building Fractions 4.NF.3a 4.NF.3b-1 4.NF.3c 4.NF.3d 4.NF.Int.1	**Understands** and solves mathematical and real-world problems involving the addition and subtraction of fractions and mixed numbers with like denominators by joining and separating parts referring to the same whole, and **justifying the solution by using a visual model.** Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.	Using visual models and/or manipulatives, solves mathematical and **word problems** involving the addition and subtraction of fractions and **mixed numbers** with like denominators by joining and separating parts referring to the same whole. Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.	Using visual models and/or manipulatives, solves mathematical problems involving the addition and subtraction of fractions with like denominators by joining and separating parts referring to the same whole. **Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.**	Using visual models and/or manipulatives, solves mathematical problems involving the addition and subtraction of fractions with like denominators by joining and separating parts referring to the same whole.
Multiplying Fractions 4.NF.4a 4.NF.4b-1 4.NF.4b-2 4.NF.4c 4.NF.Int.1	**Describes a visual fraction model** and solves mathematical and real-world problems by recognizing that fraction a/b is a multiple of $1/b$ and uses that construct to multiply a fraction by a whole number.	Using visual models and/or manipulatives, solves mathematical and **real- world problems** by recognizing that fraction a/b is a multiple of $1/b$ and uses that construct to multiply a fraction by a whole number.	Using visual models and/or manipulatives, solves mathematical problems by recognizing that fraction a/b is a multiple of $1/b$ **and uses that construct to multiply a fraction by a whole number.**	Using visual models and/or manipulatives, solves mathematical problems by recognizing that fraction a/b is a multiple of $1/b$.
Solving with Multiplication 4.OA.1-1 4.OA. 1-2 4.OA.2	Interprets multiplication equations as comparisons and represents statements of multiplicative comparisons as multiplicative equations.	Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations.	Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations.	Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations.

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	Distinguishes multiplicative comparisons. Uses multiplication or division to solve **multi-step** word problems involving multiplicative comparisons. Uses a symbol for the unknown number.	Uses multiplication or division to solve **one- or two-step word problems** involving multiplicative comparisons.	**Uses multiplication or division to solve scaffolded word problems involving multiplicative comparisons.**	
Multi-step Problems 4.OA.3-1 4.OA.3-2 4.NBT.5-1 4.NBT.5-2 4.NBT.6-1 4.NBT.6-2 4.Int.2 4.Int.3 4.Int.4 4.Int.5	Solves multi-step word problems using the four operations with whole numbers: in multiplying a three-or four-digit by a one-digit number or two two-digit numbers. Finds whole number quotients and remainders with up to **four**-digit dividends and one-digit divisors and interprets remainders as appropriate. Chooses from a variety of strategies to solve these problems and **selects an appropriate context for the task.**	Solves two-step word and other problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors and **interprets remainders as appropriate**. **Chooses from a variety of strategies to solve these problems.**	Solves one- or two-step **word** problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers. Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors. **Chooses from a variety of strategies to solve these problems. Can only solve two-step problems when scaffolding is provided for each step.**	Solves one-step mathematical problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers. Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors.
Place Value 4.NBT.1 4.NBT.2 4.NBT.3 4.NBT.Int.1	In any **multi**-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right. Reads, writes and compares multi-digit whole numbers using base-10	In any **four-digit** whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right. Reads, writes and compares **four-digit** whole numbers using base-10	In any three-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right. **Reads, writes and compares three-digit whole numbers using base-10**	In any three-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right.

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	numerals, number names in expanded form and inequality symbols (>, <, =), rounds to any place **and chooses appropriate context given a rounded number.** **Performs computations by applying conceptual understanding of place value, rather than by applying multi-digit algorithms.**	numerals, number names in expanded form and inequality symbols (>, <, =), and **rounds to any place.**	**numerals, number names in expanded form and inequality symbols (>, <, =), and rounds to any place with scaffolding.**	
Addition and Subtraction 4.NBT.4-1 4.NBT.4-2 4.Int.7 4.Int.8	Solves **multiple**-step word and other problems by adding or subtracting multi-digit whole numbers using the standard algorithm.	Solves **two**-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm.	Solves one-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm with accuracy.	Solves one-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm with limited accuracy.

	Grade 4 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**
Operations and Factors 4.OA.4-1 4.OA.4-2 4.OA.4-3 4.OA.4-4	Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100, finds **all** factor pairs and determines multiples of whole numbers. Determines whether a whole number in the range 1-100 is prime or composite.	Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 finds factor pairs or determines multiples of whole numbers. Determines whether a whole number in the range 1-100 is prime or composite.	Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 finds factor pairs or determines multiples of whole numbers. **Determines, with scaffolding, whether a whole number in the range 1-100 is prime or composite.**	Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 identifies factor pairs or multiples of whole numbers.
Measurement and	Solves measurement word problems involving whole numbers	**Solves measurement word problems involving whole**	Solves mathematical measurement problems involving whole numbers	Solves mathematical measurement problems involving whole numbers

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Conversion 4.MD.1 4.MD.2-1 4.MD.2-2 4.MD.3 4.Int.6	which include calculation of area and perimeter – including those in which **side lengths are missing** – using all four operations. Solves measurement word problems which include calculation of area and perimeter – including those in which **side lengths are missing** – using addition, subtraction, and multiplication of simple fractions. Records measurement equivalents in a two-column table. Uses knowledge of measurement units within one system to solve word problems, real-world problems, and mathematical problems involving converting from larger units to smaller units. Represents measurement quantities using diagrams such as number line diagrams **that require students to provide the appropriate measurement scale given the context.**	**numbers which include calculation of area and perimeter – when information about side lengths is provided –** using all four operations. Solves measurement word problems **which include calculation of area and perimeter – when information about side lengths is provided –** using addition, subtraction, and multiplication of simple fractions. Records measurement equivalents in a two-column table. Uses knowledge of measurement units within one system to **solve word problems, real-world problems and mathematical problems** involving converting from larger units to smaller units. **Represents measurement quantities using diagrams such as number line diagrams that feature a measurement scale**.	using all four operations**.** Solves mathematical measurement problems using addition, subtraction, **and multiplication** of simple fractions. **Records measurement equivalents in a two-column table.** **Uses knowledge of measurement units within one system to convert from larger units to smaller units.**	using all four operations**.** Solves mathematical measurement problems using addition and subtraction of simple fractions.
Represent and Interpret Data	Makes a line plot to display a data set of measurements in fractions of a unit with like denominators	Makes a line plot to display a data set of measurements in fractions of a unit with like denominators of	**Makes** a line plot to display a data set of measurements in fractions of a unit with like denominators of 2	Identifies a correct line plot that displays a data set of measurements in fractions of a unit

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4.MD.4-1 4.MD.4-2	limited to 2, 4 and 8, **(including mixed numbers)** and uses addition and subtraction of fractions to solve problems involving information in the line plots and **evaluates the solution in relation to the data.**	2 or 4 and **uses addition and subtraction of fractions to solve problems involving information in the line plot.**	or 4.	with like denominators of 2 or 4.
Geometric Measurement 4.MD.5 4.MD.6 4.MD.7	Recognizes how angles are formed and that angle measures are additive. Understands and applies concepts of angle measurement **recognizing that angles are measured in reference to a circle.** Uses a protractor to measure and sketch angles. Solves mathematical and real-world problems by composing and decomposing angles**.** Solves mathematical and real-world angle problems, **including problems that require the use of equations with a symbol for the unknown angle measure.**	Understands and applies concepts of angle measurement**.** Uses a protractor to measure and **sketch angles.** **Solves mathematical and real-world problems by composing and decomposing angles.**	Understands and **applies** concepts of angle measurement. **Uses a protractor to measure angles.**	Understands and identifies concepts of angle measurement.
Lines, Angles and Shapes 4.G 1 4.G.2 4.G.3	Draws and identifies points, lines, line segments, rays, angles (right, obtuse and acute), perpendicular lines, parallel lines, lines of symmetry and right	**Draws** and identifies points, lines, line segments, rays, angles (right, obtuse and acute), perpendicular lines, parallel lines, lines of symmetry and right	Identifies points, lines, line segments, rays, angles (right, obtuse and acute), perpendicular lines, parallel lines, lines of symmetry and right triangles, and	Identifies points, lines, line segments, rays, angles (right, obtuse and acute), perpendicular lines, parallel lines, lines of symmetry and right triangles.

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	triangles, and use **any of these** to classify **or describe** two-dimensional figures.	triangles, and use some of these to classify **two-dimensional figures.**	**use some of these to classify quadrilaterals and triangles.**	
Generate and Analyze Patterns 4.OA.5	Generates a number or shape pattern that follows a given rule and identifies apparent features of the pattern that were not explicit in the rule itself **and describes the rule for generating the number or shape pattern.**	Generates a number or shape pattern that follows a given rule and **identifies explicit features of the pattern.**	**Generates** a number or shape pattern that follows a given rule.	Identifies a number or shape pattern that follows a given rule.

	Grade 4 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 4.C.1-1 4.C.1-2 4.C.2 4.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 complete written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division • identification of arithmetic patterns Response may include: • a logical/defensible 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 complete written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division • identification of arithmetic patterns Response may include: • a logical/**defensible** 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 constructs and communicates a written response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division • identification of arithmetic patterns Response may include: • a **logical** approach based on a conjecture and/or stated assumptions	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 • identification of arithmetic patterns Response may include: • an approach based on a conjecture and/or stated or faulty assumptions

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	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, reasonings, and approaches, utilizing mathematical connections (when appropriate). **Provides a counter-example where applicable.**	**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, **reasonings, and approaches, utilizing mathematical connections (when appropriate).**	• 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 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 calculations
Concrete Referents and Diagrams 4.C.4-1 4.C.4-2 4.C.4-3 4.C.4-4 4.C.4-5 4.C.7-1 4.C.7-2 4.C.7-3 4.C.7-4	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	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:	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**	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

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	Level 5: Exceeded Expectations	**Level 4: Met Expectations**	**Level 3: Approached Expectations**	**Level 2: Partially Met Expectations**
	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** • 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.**	**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 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 calculations • accepting the validity of other's responses.
Distinguish Correct Explanation/ Reasoning from that which is Flawed 4.C.5-1 4.C.5-2	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: • presenting and defending solutions to multi-step problems in the form of valid	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: • presenting and **defending** solutions to multi-step problems in the form of valid chains of	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**:** • presenting solutions to **multi-step** problems in the form of valid chains of reasoning**,** using	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: • presenting solutions to scaffolded two-step problems in the form of valid chains of

	Grade 4 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**
4.C.5-3 4.C.5-4 4.C.5-5 4.C.5-6 4.C.6-1 4.C.6-2 4.C.6-3	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 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.**	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: • 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**.	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: • **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.**	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 • 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 4 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 4.D.1 4.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: • 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	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: • 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	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: • 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	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: • 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

	Grade 4 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**
	served its purpose • writing **a concise** arithmetic expression or equation to describe a situation			