

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Operations and Algebraic Thinking)

The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.

Exceeds Expectations Level 4 – A student who performs at Level 4 exceeds expectations for the assessed standards.	Meets Expectations Level 3 – A student who performs at Level 3 meets expectations for the assessed standards.	Partially Meets Expectations Level 2 – A student who performs at Level 2 partially meets expectations for the assessed standards.	Does Not Yet Meet Expectations Level 1 – A student who performs at Level 1 does not yet meet expectations for the assessed standards.
Write and interpret numerical expressions: 5.OA.A.1, 5.OA.A.2			
Uses, with consistent accuracy, parentheses, brackets, or braces with no greater depth than two, to write and evaluate numerical expressions.	Uses parentheses, brackets, or braces to write numerical expressions, with accuracy.	Uses parentheses, brackets, or braces to write simple numerical expressions, with partial accuracy.	Uses parentheses to write simple numerical expressions with limited accuracy.
Demonstrates and interprets numerical expressions without evaluating them.	Interprets simple numerical expressions without evaluating them, with accuracy.		
Analyze patterns and relationships: 5.OA.B.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, with consistent accuracy.	Represents real-world and mathematical problems by locating and graphing points in the first quadrant of a coordinate plane, with accuracy.	Represents real-world and mathematical problems by locating or graphing points in the first quadrant of a coordinate plane, with partial accuracy.	Represents real-world and mathematical problems by locating points in the first quadrant of a coordinate plane with limited accuracy.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Number & Operations in Base Ten) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Understand the place value system: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3.a, 5.NBT.A.3.b, 5.NBT.A.4			
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; uses whole number exponents to denote powers of 10; uses symbols to compare two powers of 10 expressed exponentially (<i>e.g.</i> , compare 10^2 to 10^5), with consistent accuracy.	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; uses whole number exponents to denote powers of 10, with accuracy.	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, with partial accuracy.	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, with limited accuracy.
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, with consistent accuracy.	Reads, writes, and compares decimals to the hundredths using numerals, number names, expanded form and symbols ($>$, $<$, $=$); rounds to any place, with accuracy.	Reads, writes, and compares decimals to the hundredths using numerals, number names, expanded form and symbols ($>$, $<$, $=$); rounds to any place, with scaffolding, with partial accuracy.	Identifies the correct comparison of decimals to the hundredths using numerals, number names, expanded form and symbols ($>$, $<$, $=$), with limited accuracy.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Number & Operations in Base Ten) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Perform operations with multi-digit whole numbers and with decimals to hundredths: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7			
Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.			
Accurately multiplies multi-digit whole numbers using the standard algorithm and assesses reasonableness of the product with consistent accuracy.	Accurately multiplies multi-digit whole numbers using the standard algorithm with accuracy.	Multiplies multi-digit whole numbers using the standard algorithm, with partial accuracy.	
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 with consistent accuracy.	Divides whole numbers up to four digit dividends and one digit divisors (or two 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, with accuracy.	Divides whole numbers up to three-digit dividends and one-digit divisors (or two-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, with partial accuracy.	Identifies the quotient of whole numbers up to three-digit dividends and one-digit divisors (or two-digit divisors which are multiples of ten).
Illustrates and explains the calculations by using equations, rectangular arrays, and area models.			
Checks reasonableness of answers by using multiplication or estimation.			
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, with consistent accuracy.	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, with accuracy.	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, with partial accuracy.	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, with limited accuracy.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Number & Operations in Base Ten)

The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.

Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
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 with consistent accuracy.	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 with accuracy.	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 with partial accuracy.	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 with limited accuracy.
Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.			
Relates the strategy to a written method with consistent accuracy.	Relates the strategy to a written method with accuracy.		

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Number & Operations – Fractions) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Use equivalent fractions as a strategy to add and subtract fractions: 5.NF.A.1. 5.NF.A.2			
Adds and subtracts three or more fractions and adds and subtracts two mixed numbers with unlike denominators in such a way as to produce an equivalent sum or difference with like denominators with consistent accuracy.	Adds and subtracts two fractions or mixed numbers with unlike denominators in such a way as to produce an equivalent sum or difference with like denominators with accuracy.	Adds or subtracts two fractions or mixed numbers with unlike denominators using only fractions with denominators of 2, 4, 5 or 10 in such a way as to produce an equivalent sum or difference with like denominators.* *below grade level.	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 produce an equivalent sum or difference with like denominators.* *below grade level.
Correctly describes a model to represent 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.	Correctly solves 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.	Partially solves 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.	Attempts to solve problems involving addition and subtraction of fractions using only denominators of 2, 4, 5 or 10.
Assesses and justifies reasonableness using benchmark fractions and number sense of fractions.			
Apply and extend previous understandings of multiplication and division: 5.NF.B.3, 5.NF.B.4.a, 5.NF.B.4.b, 5.NF.5.a, 5.NF.B.6, 5.NF.B.7.a, 5.NF.B.7.b, 5.NF.B.7.c			
Solves problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers with consistent accuracy.	Correctly solves problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, with accuracy.	Partially solves problems involving 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.	Attempts to solve problems involving 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.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Number & Operations – Fractions) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Interprets a fraction as division of the numerator by the denominator with consistent accuracy.	Interprets a fraction as division of the numerator by the denominator with accuracy.		
Identifies a simple model representing the situation.			
Describes a model to represent the situation.			
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 with consistent accuracy.	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 with accuracy.	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, with partial accuracy.	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, with limited accuracy.
Describes a model to represent and/or solve problems, by multiplying a mixed number by a fraction, a fraction by a fraction and a whole number by a fraction; divides 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 interprets the product and/or quotient with consistent accuracy.	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 mathematics, including rectangular areas with accuracy.	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 with partial accuracy.	Multiplies a fraction or a whole number by a fraction using visual fraction models with limited accuracy.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Measurement & Data)

The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.

Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Convert like measurement units within a given measurement system: 5.MD.A.1			
Converts among different-sized standard measurement units within a given measurement system and uses these conversions to solve multi-step problems.	Converts among different-sized standard measurement units within a given measurement system and uses these conversions to solve 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.
Choose the appropriate measurement unit based on the given context.			
Represent and interpret data: 5.MD.B.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 with consistent accuracy.	Uses operations on fractions with denominators of 2 and 4 to solve problems involving information in line plots with accuracy.	Uses operations on fractions with like denominators of 2 and 4 to solve problems involving information in line plots with partial accuracy.	Uses operations on fractions with like denominators of 2 to solve problems involving information in line plots with limited accuracy.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Measurement & Data) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Geometric measurement: understand concepts of volume: 5.MD.C.3, 5.MD.C.4, 5.MD.C.5.b, 5.MD.C.5.c			
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 with consistent accuracy.	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, with accuracy.	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.
Represents the volume of a solid figure as n cubic units.			
Writes an equation that illustrates the unit cube pattern.			
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 ($V = l \times w \times h$ and $V = B \times h$).	Given a visual model, solves volume problems by counting unit cubes.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Content (Geometry) The student solves problems for the grade/course with connections to the Standards for Mathematical Practice.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Graph points on the coordinate plane to solve real-world and mathematical problems: 5.G.A.1, 5.G.A.2			
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 with consistent accuracy.	Represents real-world and mathematical problems by locating and graphing points in the first quadrant of a coordinate plane with accuracy.	Represents real-world and mathematical problems by locating or graphing points in the first quadrant of a coordinate plane with partial accuracy.	Represents real-world and mathematical problems by locating points in the first quadrant of a coordinate plane.
Classify two-dimensional figures into categories based on their properties: 5.G.B.3, 5.G.B.4			
Classifies two-dimensional figures in a hierarchy based on properties with consistent accuracy.	Classifies two-dimensional figures in a hierarchy based on properties, with accuracy.	Classifies two-dimensional figures based on properties, with partial accuracy.	Identifies two-dimensional figures based on properties.
Demonstrates that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category with consistent accuracy.	Understands that shared attributes categorize two-dimensional figures, with accuracy.	Understands that shared attributes categorize two-dimensional figures, with partial accuracy.	
Uses appropriate tools to determine similarities and differences between categories and subcategories.			

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Properties of Operations: 5.NBT.B.6, 5.NBT.B.7, 5.MD.C.5.a, 5.NF.B.3, 5.NF.B.4.a, 5.NF.B.7.a, 5.NF.B.7.b, 5.NF.B.7.c			
In connection with the content knowledge, skills, and abilities, 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 progression of steps with appropriate justification • precision of calculation • consistently accurate use of grade-level vocabulary, symbols and labels • logical justification of a conclusion	In connection with the content knowledge, skills, and abilities, 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 • precision of calculation • correct use of grade-level vocabulary, symbols and labels • justification of a conclusion	In connection with the content knowledge, skills, and abilities, 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 • some use of grade-level vocabulary, symbols and labels • partial justification of a conclusion based on own calculations	In connection with the content knowledge, skills, and abilities, 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 • limited use of grade-level vocabulary, symbols and labels • limited justification of a conclusion based on own calculations

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
- evaluating, interpreting, and critiquing the validity of others' responses, reasonings, and approaches, utilizing mathematical connections (when appropriate). Provides a counter-example where applicable - evaluation of whether an argument or conclusion is generalizable.	- evaluating, interpreting, and critiquing the validity of others' responses, reasonings, and approaches, utilizing mathematical connections (when appropriate) - evaluation of whether an argument or conclusion is generalizable.	evaluating the validity of others' responses, approaches and conclusions.	

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Place Value: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3.a, 5.NBT.A.3.b, 5.NBT.A.4			
In connection with the content knowledge, skills, and abilities, 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 - correct use of grade-level vocabulary, symbols and labels - logical justification of a conclusion - evaluating, interpreting, and critiquing the validity of others' responses, approaches and reasoning, and providing a counter-example where applicable - evaluation of whether an argument or conclusion is generalizable.	In connection with the content knowledge, skills, and abilities, 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 - justification of a conclusion - evaluating, interpreting, and critiquing the validity of others' responses, approaches and reasoning - evaluation of whether an argument or conclusion is generalizable.	In connection with the content knowledge, skills, and abilities, 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 conclusion based on own calculations - evaluating the validity of others' responses, approaches and conclusions.	In connection with the content knowledge, skills, and abilities, 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 - limited justification of a conclusion based on own calculations

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Concrete Referents and Diagrams: 5.NF.A.2, 5.NF.B.4.a, 5.NF.B.4.b, 5.NF.B.7.a, 5.NF.B.7.b, 5.NBT.B.6, 5.NBT.B.7, 5.MD.C.4, 5.MD.C.5.a, 5.MD.C.5.b, 5.MD.C.5.c			
In connection with the content knowledge, skills, and abilities, 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 • precision of calculation • correct use of grade-level vocabulary, symbols and labels • logical justification of a conclusion • evaluating, interpreting, and critiquing the validity of others’ responses, approaches, and reasoning, and providing a counter-example where applicable • evaluation of whether an argument or conclusion is generalizable.	In connection with the content knowledge, skills, and abilities, 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) • a logical progression of steps • precision of calculation • correct use of grade-level vocabulary, symbols and labels • justification of a conclusion • evaluating, interpreting, and critiquing the validity of others’ responses, approaches, and reasoning • evaluation of whether an argument or conclusion is generalizable.	In connection with the content knowledge, skills, and abilities, 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 conclusion based on own calculations • evaluating the validity of others’ responses, approaches and conclusions.	In connection with the content knowledge, skills, and abilities, 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 • limited justification of a conclusion based on own calculations • accepting the validity of others’ responses.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Distinguish Correct Explanation/ Reasoning from that which is Flawed: 5.NF.A.1, 5.NF.A.2, 5.NF.B.5.b, 5.MD.C.5.c,			
In connection with the content knowledge, skills, and abilities, 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 the explanation / reasoning if there is a flaw in the argument. Response may include: - an analytical 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 - consistently accurate use of grade-level vocabulary, symbols and labels - Advanced justification of a conclusion	In connection with the content knowledge, skills, and abilities, the student with accuracy clearly constructs and communicates a well-organized and 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 - analyzing and describing the flaw in reasoning or describing errors in solutions to multi-step problems - explaining 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	In connection with the content knowledge, skills, and abilities, the student constructs and communicates a complete response by: - interpreting 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: - 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	In connection with the content knowledge, skills, and abilities, the student constructs and communicates an incomplete response by: - interpreting 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 - an intrusive calculation error - limited use of grade-level vocabulary, symbols and labels - limited justification of a conclusion based on own calculations

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Reasoning (may cross multiple reporting categories) 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.			
Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
- evaluating, interpreting, and critiquing the validity of others' responses, approaches and reasoning, and providing a counter-example where applicable - evaluation of whether an argument or conclusion is generalizable.	- evaluating, interpreting, and critiquing the validity of others' responses, approaches and reasoning - analysis of whether an argument or conclusion is generalizable.	analyzing the validity of others' responses, approaches and conclusions.	accepting the validity of others' responses.

GRADE 5 MATHEMATICS

Performance Level Descriptors

Grade 5 Math: Modeling (may cross multiple reporting categories)

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, 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 and making use of structure, and/or looking for and expressing regularity in repeated reasoning.

Exceeds Expectations	Meets Expectations	Partially Meets Expectations	Does Not Yet Meet Expectations
Modeling: 5.MD.C.3, 5.MD.C.4, 5.MD.C.5.b, 5.MD.C.5.c, 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3.a, 5.NBT.A.3.b, 5.NBT.A.4, 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7, 5.NF.A.1, 5.NF.A.2, 5.NF.B.3, 5.NF.B.4.a, 5.NF.B.4.b, 5.NF.B.5.a, 5.NF.B.6, 5.NF.B.7.a, 5.NF.B.7.b, 5.NF.B.7.c			
In connection with the content knowledge, skills, and abilities, the student devises a well organized 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 • analyzing relationships between important quantities by selecting appropriate tools to create models • evaluating relationships mathematically between important quantities to draw conclusions • justifying and defending models which lead to a conclusion • reflecting on whether the results make sense • selecting the appropriate model if it has not served its purpose • writing a concise arithmetic expression or equation to describe a situation • analyzing mathematical results in the context of the situation.	In connection with the content knowledge, skills, and abilities, the student devises a well organized 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 • reflecting on whether the results make sense • modifying and/or improving the model if it has not served its purpose • writing a clear arithmetic expression or equation to describe a situation • interpreting mathematical results in the context of the situation.	In connection with the content knowledge, skills, and abilities, 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 • illustrating relationships mathematically between important quantities to draw conclusions • 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 • interpreting mathematical results in a simplified context.	In connection with the content knowledge, skills, and abilities, 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 • identifying relationships mathematically to draw conclusions • using provided tools to create models • writing an unclear arithmetic expression or equation to describe a situation.