Proficiency Scales

Mathematics
Grade 4
2020

SOUTHWESTERN UNION
EDUCATION

PROFICIENCY SCALES

Proficiency scales serve as a starting point for unit planning, creating assessments, delivering instruction, grading, and reporting progress, as well as making teaching visible to students and guiding their growth on the standards. Specifically, a proficiency scale is a continuum or learning progression that articulates distinct levels of knowledge and skills relative to specific standards. It shows teachers and students what proficiency looks like, what knowledge and skills students need to achieve proficiency, and how students might go beyond proficiency.

A proficiency scale is composed of a series of levels as follows:

Score 3.0—Heart of the proficiency scale; it defines the target content that teachers expect all students to know and be able to do. I CAN statements are provided for this level.

Score 2.0—Simpler content; it describes the foundational knowledge and skills that students will need to master before progressing to proficiency.

Score 4.0—Challenging content; it provides students the opportunity to go above and beyond expectations by applying their knowledge in new situations or demonstrating understanding beyond what the teacher teaches in class. A generic statement is provided for this level.

Scores 1.0 and 0.0—No specific content; 1.0 indicates that a student can demonstrate some knowledge or skill with help from the teacher, but not independently; 0.0 means that, even with help, a student cannot show any understanding. Generic statements are provided for these levels.

Half-point Scores—More precise measurement of knowledge and skills that is between two levels. Generic statements are provided for these levels.

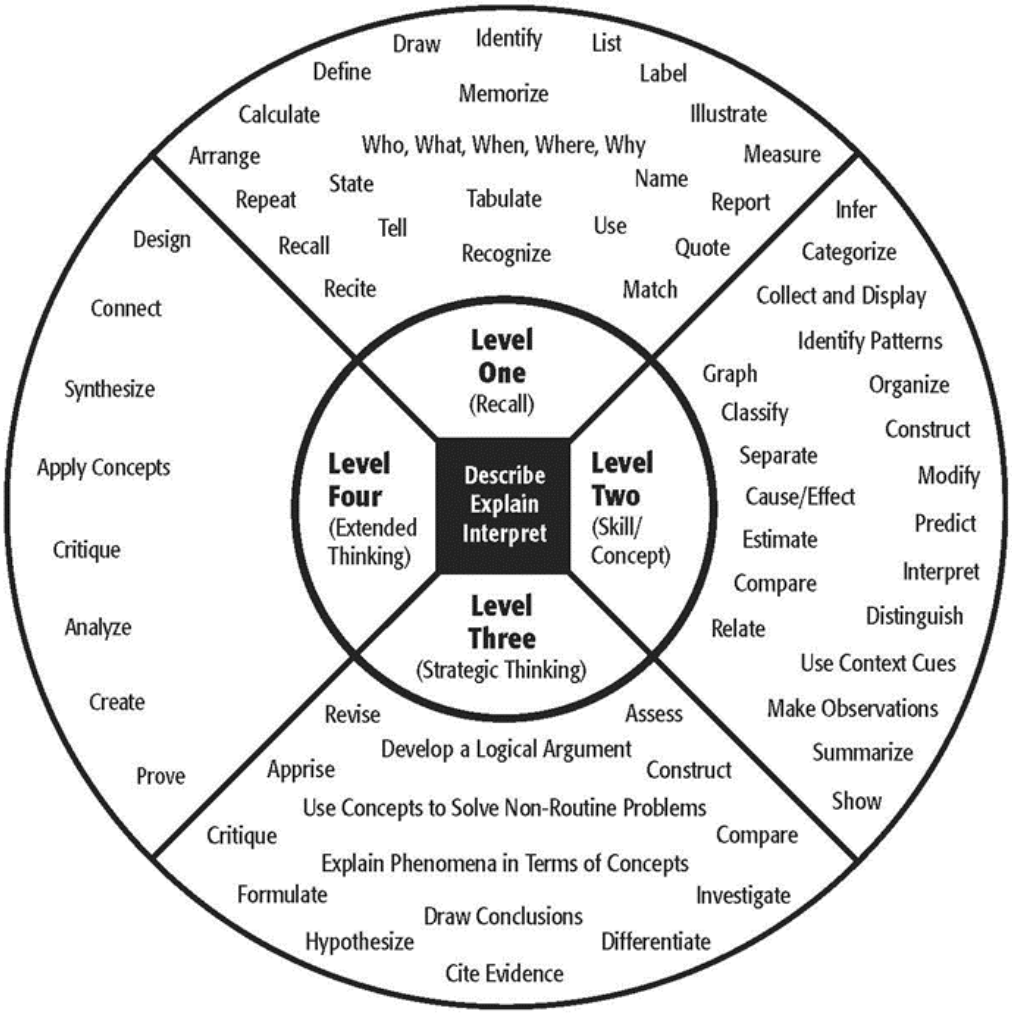
Proficiency scales become the centerpiece of communication and understanding in the classroom, as well as the common language for discussing learning between teacher and student.

The proficiency scales are organized according to the domains and strands in the NAD standards.

The cognitive rigor or complexity of the 3.0 learning targets has also been included, for it impacts the selection of instructional activities as well as assessment tasks. The Depth of Knowledge (DOK) model is generally used for this purpose, which is a taxonomy of four levels of cognitive demand. The levels are:

- **Level 1**—Recall
- **Level 2**—Skill/Concept
- **Level 3**—Strategic Thinking
- **Level 4**—Extended Thinking

Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
Recall elements and details of story structure, such as sequence of events, character, plot and setting.	Identify and summarize the major events in a narrative.	Support ideas with details and examples.	Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.
Conduct basic mathematical calculations.	Use context cues to identify the meaning of unfamiliar words.	Use voice appropriate to the purpose and audience.	Apply mathematical model to illuminate a problem or situation.
Label locations on a map.	Solve routine multiple-step problems.	Identify research questions and design investigations for a scientific problem.	Analyze and synthesize information from multiple sources.
Represent in words or diagrams a scientific concept or relationship.	Describe the cause/effect of a particular event.	Develop a scientific model for a complex situation.	Describe and illustrate how common themes are found across texts from different cultures.
Perform routine procedures like measuring length or using punctuation marks correctly.	Identify patterns in events or behavior.	Determine the author's purpose and describe how it affects the interpretation of a reading selection.	Design a mathematical model to inform and solve a practical or abstract situation.
Describe the features of a place or people.	Formulate a routine problem given data and conditions.	Apply a concept in other contexts.	
	Organize, represent and interpret data.		

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <http://www.wcer.wisc.edu/WAT/index.aspx>.

DISCIPLINARY TRANSFER GOALS

There are a small number of overarching, long-term transfer goals in each subject area. They are meant to be integrated within and across grade-level instruction. Below are the transfer goals for math.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

ESSENTIAL QUESTIONS AND BIG IDEAS for MATH DOMAINS

4

Numbers and Operations

Essential Question: What does numerical reasoning involve and what does it demonstrate about God's world?

Big Idea: Numerical reasoning with whole numbers and fractions demonstrates dependability and order in God's world.

Operations and Algebraic Thinking

Essential Question: How do mathematical operations connect us to an infinite God?

Big Idea: Solving problems through mathematical operations reveals numerical patterns that demonstrate God's unchanging order and constancy.

Measurement

Essential Question: What do the systems of measurement reveal about God's creation?

Big Idea: Accurately measuring and quantifying objects in God's creation demonstrates His dependability and precision.

Geometry

Essential Question: What does geometry reveal about God?

Big Idea: God is revealed as the Master Designer when geometry is used as a means of describing the attributes of the physical world.

Data Analysis, Statistics, and Probability

Essential Question: How can we collect and use information in a way that reflects God's orderly creation?

Big Idea: Information from God's vast creation can be measured, recorded, and displayed to assist in understanding and decision making.

Subject: **Math**	Domain: **Numbers and Operations** Strand: **Place Value**	Grade: **4**

Standards: 4.NO.1 Use place value understanding of multi-digit whole numbers to round to any place up to millions (4.NBT.1,3)
4.NO.2 Read, write, compare, and understand whole numbers using standard, number name, and expanded forms (4.NBT.2)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Compare two multi-digit numbers based on meanings of the digits in each place using <, >, and = *(e.g., compare "twelve hundred" and 1,200; 833 and 142; "eleven thousand seven" and 1,107)* **DOK 2** **I can compare two multi-digit numbers using <, >, and =.** • Use place value understanding to round multi-digit whole numbers to any place up to millions **DOK 2** **I can round multi-digit whole numbers to any place up to millions.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Base-ten numeral, compare, digit, division, expanded form, millions, number name, place, place value, recognize, represent, round, standard form, thousands, whole number* The student will perform basic processes, such as: • Explain that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right *(e.g., recognize that 700 ÷ 70 = 10 by applying concepts of place value and division)* • Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form *(e.g., rewrite "one million forty-two hundred twelve" in base-ten numerals, rewrite 7,568,374 using number names, and rewrite 288,749 in expanded form)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Numbers and Operations** Strand: **Basic Operations**	Grade: **4**

Standard: 4.NO.3 Add and subtract multi-digit whole numbers; multiply up to 4 digits X 1 digit and 2 digits X 2 digits; divide using a one-digit divisor and up to a four-digit dividend with and without a remainder (4.NBT.4,5,6)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Fluently add and subtract multi-digit whole numbers using the standard algorithm *(e.g., when given that a bakery sold 7,389 blueberry muffins and 6,254 chocolate chip muffins on Saturday, and sold 4,196 blueberry muffins and 2,275 chocolate chip muffins on Sunday, determine which type of muffin sold better and then calculate the total number of muffins the bakery sold over the weekend)* **DOK 2** **I can add and subtract multi-digit whole numbers.** • Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit whole numbers using equations, rectangular arrays, and/or models *(e.g., draw area models that show the problems 3,008 x 15, 23 x 15)* **DOK 2** **I can multiply a whole number up to four digits by a one-digit number and two two-digit numbers.** • Find whole-number quotients, with and without remainders, with up to four-digit dividends and one-digit divisors using equations, rectangular arrays, and/or models *(e.g., draw area models that show the problems 8,400 ÷ 4; 2,736 ÷ 9; 9,225 ÷ 7)* **DOK 2** **I can find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Calculate, calculation, digit, dividend, division, divisor, equation, fluently, model, multiplication, multiply, place value, properties of operations, quotient, rectangular array, remainder, standard algorithm, strategy, whole number* The student will perform basic processes, such as: • Add and subtract multi-digit whole numbers using concrete models or drawings *(e.g., make drawings that show the problems 513 – 248; 389 + 267)*	

	• Multiply a whole number of up to three digits by a one-digit whole number using strategies based on place value and the properties of operations; illustrate and explain the calculation using equations, rectangular arrays, and/or models *(e.g., draw area models that show the problems 324 x 6, 658 x 9)* • Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division; illustrate and explain the calculations using equations, rectangular arrays, and/or models *(e.g., draw area models that show the problems 426 ÷ 4, 584 ÷ 4)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Numbers and Operations** Strand: **Fractions/Decimals**	Grade: **4**

Standard: 4.NO.4 Understand, express, and order fractions with different numerators and denominators; numerically express equivalent fractions (4.NF.1,2)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Generate equivalent fractions *(e.g., when given the fraction 2/8, multiply or divide the numerator and denominator by the same nonzero value to generate equivalent fractions having denominators of 4, 16, and 32)* **DOK 2** **I can make equivalent fractions.** • Compare two fractions with different numerators and different denominators using the symbols >, =, <, and justify the comparison *(e.g., when given the pairs of fractions 3/8 and 2/5, 6/7 and 18/21, and 40/64 and 30/48, compare the fractions in each pair using >, =, < symbols by creating common denominators or numerators, or comparing to a benchmark fraction such as 1/2; represent each fraction on a number line to verify the comparison)* **DOK 3** **I can compare two fractions with different numerators and denominators using >, =, <.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *benchmark fraction, common denominator, common numerator, compare, comparison, denominator, divide, equivalent, fraction, generate, justify, model, multiply, nonzero, number line, numerator, represent, symbol, value, verify, whole* The student will perform basic processes, such as: • Explain why a fraction *a/b* is equivalent to a fraction *(n x a)/(n x b)* using models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size *(e.g., given a model that shows 1/3 = 2/6, explain why the fractions are equivalent)* • Recognize and generate equivalent fractions using models (*e.g., when given the fraction 6/9, use models to generate equivalent fractions having denominators of 3, 18, and 54)* • Explain that comparisons of fractions are valid only when the two fractions refer	

	to the same whole	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Numbers and Operations** Strand: **Fractions/Decimals**	Grade: **4**

Standard: 4.NO.5 Add and subtract fractions and mixed numbers with common denominators; multiply fractions by whole numbers (4.NF.3,4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Add and subtract mixed numbers with like denominators *(e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction)* **DOK 3** **I can add and subtract mixed numbers with like denominators.** • Solve word problems involving addition and subtraction of fractions with like denominators, expressing each in an equation with the aid of a model *(e.g., Rachel rode her bike for one-fifth of a mile on Monday and two-fifths of a mile on Tuesday. How many miles did she ride altogether?)* **DOK 3** **I can solve word problems involving addition and subtraction of fractions with like denominators.** • Solve word problems involving multiplication of a fraction by a whole number, expressing each in an equation with the aid of a model *(e.g., If each person at a party will eat 3/8 of a pound of vegeburger, and there will be 5 people at the party, how many pounds of vegeburger will be needed? Between what two whole numbers does your answer lie?)* **DOK 3** **I can solve word problems involving multiplication of a fraction by a whole number.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Addition, decompose, denominator, equation, equivalent, express, fraction, mixed number, model, multiple, multiply, product, properties of operations, subtraction, verify, whole, whole number, word problem* The student will perform basic processes, such as: • Describe a fraction *a/b*, with *a* > 1, as a sum of fractions 1/*b (e.g., 3/8 = 1/8 + 1/8 + 1/8)* • Explain addition and subtraction of fractions as joining and separating parts referring to the same whole	

	• Decompose a fraction into a sum of fractions with the same denominator in more than one way, expressing each decomposition by an equation and verifying with a model *(e.g., 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 +1 + 1/8 = 8/8 + 8/8 + 1/8)* • Describe a fraction *a/b* as a multiple of 1/*b* (e.g*., use a model to represent 5/4 as the product 5 x (1/4), recording the conclusion by the equation 5/4 = 5 x (1/4))* • Explain a multiple of a/b as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number *(e.g., use a model to express 3 x (2/5) as 6 x (1/5), recognizing this product as 6/5)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Numbers and Operations** Strand: **Fractions/Decimals**	Grade: **4**

Standard: 4.NO.6 Understand, compare, and use decimal notation for fractions with denominators of 10 or 100 (4.NF.5,6,7)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Add two fractions with denominators 10 and 100 by making the denominators equivalent *(e.g., express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100)* **DOK 3** **I can add two fractions with denominators 10 and 100.** • Compare two decimals to hundredths using symbols >, =, < *(e.g., compare the decimal values 1.25 and 1.29, 0.4 and 0.04, 0.2 and 0.09, 2.30 and 2.3, and 1.57 and 1.6, using >, =, > symbols and verifying with a model)* **DOK 3** **I can compare two decimals to hundredths using >, =, <.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Compare, decimal, denominator, equivalent, express, fraction, hundredths, model, notation, symbols, verify, whole* The student will perform basic processes, such as: • Express a fraction with denominator 10 as an equivalent fraction with denominator 100 *(e.g., 3/10 = 30/100)* • Use decimal notation for fractions with denominators 10 or 100 *(e.g., rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line)* • Explain that comparisons are valid only when the two decimals refer to the same whole	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Operations and Algebraic Thinking** Strand: **Multiplication/Problem Solving**	Grade: **4**

Standards: 4.OAT.1 Memorize and fluently multiply using the multiplication facts through 12
4.OAT.2 Solve multi-step word problems including remainder interpretation and estimate to check; create equations with a letter for the unknown (4.OA.1,2,3)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Multiply or divide to solve word problems involving multiplicative comparison *(e.g., when given that a girl has a collection of 1,284 beads, and when given that her sister had 3 times as many beads but gave away 2,551 of them, determine whether the girl or her sister currently has more beads; use drawings and equations with a symbol for the unknown number to represent the problem)* **DOK 3** **I can solve word problems by comparing two things through multiplication.** • Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including division word problems in which remainders must be interpreted *(e.g., Lucy's room has an area of 165 sq ft; write an equation with a letter standing for the unknown quantity to find the length of Lucy's room if the width is 11 feet; use estimation strategies to check the solution)* **DOK 3** **I can solve multi-step word problems with whole numbers using the four operations.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • Additive, comparison, computation, divide, estimation, equation, fact, multiplicative comparison, mental, multiplication, multiply, operation, number, quantity, remainder, represent, rounding, solution, strategy, symbol, unknown, whole number, word problem The student will perform basic processes, such as: • Memorize the multiplications facts through 12 • Interpret a multiplication equation as a comparison *(e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5)* • Represent verbal statements of multiplicative comparisons as multiplication	

<table>
<tr><td></td><td colspan="2">equations (e.g., John says that he is thinking of a number that is 7 times bigger than 3. Write an equation to express the relationship.)
• Distinguish between multiplicative comparison and additive comparison (e.g., multiplicative comparison—How many times as many?; additive comparison—How many more?)
• Explain that an unknown can be in any position of a multiplicative comparison problem
• Explain that mental computation and estimation strategies, including rounding, can be used to determine the reasonableness of answers</td></tr>
<tr><td></td><td>Score 1.5</td><td>Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content</td></tr>
<tr><td>Score 1.0</td><td colspan="2">With help, partial success at score 2.0 content and score 3.0 content</td></tr>
<tr><td></td><td>Score 0.5</td><td>With help, partial success at score 2.0 content but not at score 3.0 content</td></tr>
<tr><td>Score 0.0</td><td colspan="2">Even with help, no success</td></tr>
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Subject: **Math**	Domain: **Operations and Algebraic Thinking** Strand: **Factors**	Grade: **4**

Standards: 4.OAT.3 Find all factor pairs for a whole number within 100; identify whole numbers as prime or composite (4.OA.4)
4.OAT.4 Understand the basic concepts of least common multiple (LCM) and greatest common factor (GCF)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Determine whether a given whole number in the range 1 to 100 is prime or composite *(e.g., when given the numbers 23, 56, and 84, identify whether each number is prime or composite)* **DOK 2** **I can tell if a number is prime or composite.** • Determine whether a given whole number in the range of 1 to 100 is a multiple of a given one-digit number *(e.g., when given the numbers 23, 56, and 84, identify whether each number is a multiple of 3 and 7)* **DOK 2** **I can tell if a number is a multiple of a one-digit number.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Composite, decomposed, digit, factor, factor pair, greatest common factor, least common multiple, multiple, multiplicatively, number, prime, product, whole number* The student will perform basic processes, such as: • Explain that a number can be multiplicatively decomposed into factor pairs and expressed as a product of these factor pairs *(e.g., factor pairs for 6 are 1 and 6, 2 and 3, 3 and 2, 6 and 1)* • Explain that a whole number is a multiple of each of its factors • Find all factor pairs for a whole number in the range 1 to 100 *(e.g., when given the numbers 23, 56, and 84, find every factor pair for each number)* • Explain that a prime number has only two factors, one and itself (only one factor pair) *(e.g., 1, 3, 5, 7, 11)* • Explain that a composite number has more than two factors (more than one factor pair) *(e.g., 4, 6, 8, 9, 10)* • Explain least common multiple and greatest common factor *(e.g., least common multiple of two numbers is the smallest number that is a multiple of both*	

	numbers; greatest common factor is the greatest factor that is common to two or more numbers)	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Operations and Algebraic Thinking** Strand: **Patterns**	Grade: **4**

Standard: 4.OAT.5 Generate and analyze number and shape patterns (4.OA.5)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Describe the features of a number pattern including those that are not explicit in the rule itself *(e.g., given the rule "Add 3" and the starting number 1; explain that the terms appear to alternate between odd and even numbers; explain why)* **DOK 3** **I can describe the features of a number pattern.** • Describe the features of a shape pattern including those that are not explicit in the rule itself *(e.g., given the repeating sequence "square, circle, triangle, square, circle, triangle," explain that every nth term in which n is evenly divisible by 3 will be a triangle; explain that every nth term in which n is not evenly divisible by 3 will be a square if the quotient has a remainder of 1 and a circle if is has a remainder of 2; explain why)* **DOK 3** **I can describe the features of a shape pattern.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Explicit, feature, number, pattern, rule, sequence, shape, term* The student will perform basic processes, such as: • Generate a number or shape pattern that follows a given rule *(e.g., given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence; given the repeating sequence "square, circle, triangle, square, circle, triangle," generate terms in the resulting sequence)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Measurement** Strand: **Measurement/Conversion**	Grade: **4**

Standards: 4.M.1 Solve problems involving measurement (time, volume, mass, money, simple fractions, decimals, distance) (4.MD.2)
4.M.2 Convert measurement from a larger unit to a smaller unit (km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec) (4. MD.1)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems that involve simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit *(e.g., Mason ran for an hour and 15 minutes on Monday, 25 minutes on Tuesday, and 40 minutes on Wednesday. What was the total number of minutes Mason ran? Represent measurement quantities on a number line.)* **DOK 3** **I can solve word problems involving measurement.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Conversion, decimal, distance, fraction, liquid volume, mass, measurement, money, number line, operation, relative, system, time, word problem, quantity, unit* The student will perform basic processes, such as: • Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec *(e.g., know that 1 ft is 12 times as long as 1 in)* • Express measurements in a larger unit in terms of a smaller unit within one system of units *(e.g., express the length of a 4 ft snake as 48 in, and generate a conversion table for feet and inches listing the number pairs (1,12), (2, 24), (3, 36), . . .)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content

Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Measurement** Strand: **Measurement/Conversion**	Grade: **4**

Standard: 4.M.3 Apply area and perimeter formulas (4.MD.3)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Apply the area and perimeter formulas for rectangles in real-world problems *(e.g., find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor)* **DOK 3** **I can find the area and perimeter of a rectangle.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Area, equation, factor, formula, mathematical, multiplication, perimeter, real world, rectangle, unknown* The student will perform basic processes, such as: • Know the area and perimeter formulas for rectangles *(e.g., P = 2l + 2w; A = lw)* • Apply the area and perimeter formulas for rectangles in mathematical problems *(e.g., find the area and perimeter of a rectangle when l = 11 and w = 5)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Measurement** Strand: **Measurement/Conversion**	Grade: **4**

Standard: 4.M.4 Read a Fahrenheit and Celsius thermometer knowing the significance of 32˚F, 212˚F, 0˚C, and 100˚C

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Read a Fahrenheit and Celsius thermometer *(e.g., given several thermometers with both Celsius and Fahrenheit scales registering different temperatures, write the temperature indicated on each thermometer)* **DOK 2** **I can measure temperature with Celsius and Fahrenheit thermometers.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Celsius, Fahrenheit, register, scale, temperature, thermometer* The student will perform basic processes, such as: • Know the significance of 32˚F, 212˚F, 0˚C, 100˚C *(e.g., water boils--212˚C, 100˚F; water freezes--0˚C, 32˚F)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Measurement** Strand: **Angles**	Grade: **4**

Standard: 4.M.5 Recognize angles as geometric shapes that are formed wherever two rays share a common end point; understand concepts of angle measurement and measure angles in whole-number degrees (4.MD.5,6,7)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Sketch angles of specified measure *(e.g., sketch angles that measure 90˚, 45˚, and 120˚)* **DOK 2** **I can draw angles with specific measurements.** • Solve addition and subtraction problems to find unknown angles on a diagram *(e.g., by using an equation with a symbol for the unknown angle measure)* **DOK 3** **I can solve addition and subtraction problems to find unknown angles.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Additive, angle, center, circle, circular arc, decomposed, degree, endpoint, equation, fraction, geometric, intersect, measure, measured, overlap, part, point, protractor, ray, shape, sum, unknown, whole number* The student will perform basic processes, such as: • Explain that angles are geometric shapes that are formed wherever two rays share a common endpoint • Explain that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle; an angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles • Explain that an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees • Measure angles in whole number degrees using a protractor (*e.g., when given a series of angles, use a protractor to determine the measure of each angle in degrees)* • Explain that angle measure is additive—when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle	

	measures of the parts	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Measurement** Strand: **Money**	Grade: **4**

Standard: 4.M.6 Know how to count up to make change

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Count up to make change *(e.g., If an item cost $2.75 and you gave $5.00, you should count out the change starting with $2.75. Count out 1 quarter to make $3.00, and then $2.00 to get to $5.00. The total change, therefore, should be $2.25.)* **DOK 3** **I can count up to make change.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Bills, change, coins, count up* The student will perform basic processes, such as: • Count up to make change by drawing the bills and coins *(e.g., if the price is $1.95 and you gave $2.00, draw the coins you would count up from $1.95 to 2.00 to see how much change you would receive in return)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Geometry** Strand: **Lines/Angles**	Grade: **4**

Standards: 4.GEO.1 Draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines (4.G.1)
4.GEO.3 Recognize and draw lines of symmetry with two-dimensional figures (4.G.3)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines *(e.g., draw two points A and B, draw a line that passes through A and B, draw a line segment with end points at A and B, and draw a ray with its starting point at A that passes through B; draw right, acute, and obtuse angles using a protractor; draw perpendicular and parallel lines using a protractor and straight edge)* **DOK 2** **I can draw points, lines, line segments, rays, angles, and perpendicular and parallel lines.** • Draw all possible lines of symmetry in two-dimensional figures (e.g., when given a set of two-dimensional figures, draw all lines of symmetry for each figure) **DOK 2** **I can draw all lines of symmetry in two-dimensional figures.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Acute angle, angle, figure, line, line of symmetry, line segment, obtuse angle, parallel line, perpendicular line, point, protractor, ray, right angle, straight edge, two-dimensional* The student will perform basic processes, such as: • Identify examples of points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines in two-dimensional figures *(e.g., given a set of two-dimensional figures, identify points, lines, line segments, rays, angles, and perpendicular and parallel lines)* • Recognize a line of symmetry for a two-dimensional figure *(e.g., as a line across the figure such that the figure can be folded along the line into matching parts)* • Identify line-symmetric figures *(e.g., when given a set of two-dimensional figures, determine whether each figure has line symmetry)*	

	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Geometry** Strand: **Lines/Angles**	Grade: **4**

Standard: 4.GEO.2 Classify figures with perpendicular and parallel lines, and angles of a specified size (4.G.2)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines *(e.g., given an array of two-dimensional shapes, classify them based on the presence or absence of parallel or perpendicular lines)* **DOK 3** **I can group two-dimensional shapes based on whether the sides are parallel or perpendicular.** • Classify two-dimensional figures based on the presence or absence of angles of a specified size *(e.g., given an array of two-dimensional shapes, classify them based on the presence or absence of right angles)* **DOK 3** **I can group two-dimensional shapes based on whether they contain a right angle or not.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Angle, category, classify, figure, parallel line, perpendicular line, right angle, right triangle, two-dimensional* The student will perform basic processes, such as: • Recognize right triangles as a category • Identify right triangles *(e.g., given a set of triangles, identify those that are right triangles)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**	Domain: **Data Analysis, Statistics, and Probability** Strand: **Data**	Grade: **4**

Standard: 4.DSP.1 Solve addition and subtraction problems using a line plot to display a data set of measurement in fractions of a unit (halves, fourths, and eighths) (4.MD.4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: • Solve addition and subtraction problems using a line plot of measurement data in fractions of a unit (1/2, 1/4, 1/8) *(e.g., from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection)* **DOK 3** **I can solve addition and subtraction problems using a line plot of measurement data in fractions of a unit.**	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: • *Data, fraction, interpret, line plot, measurement, unit* The student will perform basic processes, such as: • Make a line plot of measurement data in fractions of a unit (1/2, 1/4, 1/8) *(e.g., create a line plot from the measurement of the length of student pencils in the classroom)*	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	