New York State Testing Program
Next Generation Learning Standards
Mathematics Test

Performance Level Descriptions

Grade 4

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New York State Testing Program
Next Generation Mathematics Test

Performance Level Descriptions

GRADE 4

Performance level descriptions (PLDs) help communicate to students, families, educators, and the public the specific knowledge and skills expected of students when they demonstrate proficiency of a learning standard. The PLDs serve several purposes in classroom instruction and assessment. They are the foundation of rich discussion around what students need to do to perform at higher levels and to explain the progression of learning within a subject area. PLDs are also crucial in explaining student performance on the NYS assessments since they make a connection between the scale score, the performance level, and specific knowledge and skills typically demonstrated at that level.

Policy Definitions of Performance Levels

For each subject area, students perform along a continuum of the knowledge and skills necessary to meet the demands of the Learning Standards for English Language Arts and Mathematics. There are students who excel in standards, students who are proficient, students who are partially proficient, and students who are below proficient. New York State assessments are designed to classify student performance into one of four levels based on the knowledge and skills the student has demonstrated. These performance levels are defined as:

NYS Level 4

Students performing at this level **excel** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered **more than sufficient** for the expectations at this grade.

NYS Level 3

Students performing at this level are **proficient** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered **sufficient** for the expectations at this grade.

NYS Level 2

Students performing at this level are **partially proficient** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered partial but insufficient for the expectations at this grade. Students performing at Level 2 are considered on track to meet current New York high school graduation requirements but are **not yet proficient** in Learning Standards at this grade.

NYS Level 1

Students performing at this level are **below proficient** in standards for their grade. They may demonstrate **limited** knowledge, skills, and practices embodied by the Learning Standards that are considered **insufficient** for the expectations at this grade.

How were the PLDs developed?

Following best practice for the development of PLDs, the number of performance levels and their definitions were specified prior to the articulation of the full descriptions. New York State educators certified in the appropriate grade-levels and subject areas convened in separate meetings to develop the initial draft PLDs for Grades 3-8 English Language Arts and Mathematics, respectively. In developing PLDs, participants considered policy definitions of the performance level and the knowledge and skill expectations for each grade level in the Learning Standards. Once they established the appropriate knowledge and skills from a particular standard for NYS Level 3 (i.e., proficient in standards), panelists worked together to parse the knowledge and skills across the other performance levels in such a way that the progression of the knowledge and skills was clearly seen moving from Level 1 to Level 4. This process was repeated for all of the standards for each grade and subject area.

The draft PLDs were reviewed by the New York State Education Department's (NYSED's) Content Advisory Panels which consist of classroom teachers from elementary, middle and high school, school and district administrators, English Language Learners (ELLs) and students with disabilities (SWD) specialists, and higher education faculty members from across the state. The drafts then went through additional rounds of review and edits from a number of NYS-certified educators, content specialists, and assessment experts under NYSED supervision.

How can the PLDs be used by Educators and in Instruction?

The PLDs should be used as a guidance document to show the overall continuum of learning of the knowledge and skills from the Learning Standards. NYSED encourages the use of the PLDs for a variety of purposes, including differentiating instruction to maximize individual student outcomes, creating formative classroom assessments and rubrics to help identify target performance levels for individual or groups of students, and tracking student growth along the proficiency continuum as described by the PLDs. The knowledge and skills shown in the PLDs describe *typical* performance and progression, however the order in which students will demonstrate the knowledge and skills within and between performance levels may be staggered (i.e. a student who predominantly demonstrates Level 2 knowledge and skills may simultaneously demonstrate certain knowledge and skills indicative of Level 3.).

How are the PLDs used in Assessment?

PLDs are essential in setting performance standards (i.e., "cut scores") for New York State assessments. Standard setting panelists use PLDs to determine the expectations for students to demonstrate the knowledge and skills necessary to *just barely* attain a Level 2, Level 3, or Level 4 on the assessment. These knowledge and skills drive discussions that influence the panelists as they recommend the cut scores on the assessment.

PLDs are also used in question development. Question writers are assigned to write questions that draw on the specific knowledge and skills from a PLD. This ensures that each test has questions that distinguish performance all along the continuum. Teachers can use the PLDs in the same manner when developing both formative and summative classroom assessments. Tasks that require students to demonstrate knowledge and skills from the PLDs can be tied back to the performance level with which the PLD is associated, providing the teacher with feedback about the students' progress as well as a wealth of other skills that the student is likely able to demonstrate (or can aspire to in the case of the next-highest PLD).

Next Generation Learning Standards
Grade 4 Mathematics Performance Level Descriptions

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students use the four operations with whole numbers to solve problems. (NY- 4.OA.1-3)		Interpret multiplication equations as comparisons and represent verbal statements of multiplicative comparisons as multiplication equations. (4.OA.1)	Using a visual model, represent a multiplicative comparison (relating the comparison to multiplication).*	Using a visual model, represent a multiplicative comparison (relating the comparison to repetitive addition). *
	Use multiplication or division to solve multi-step word problems involving multiplicative comparisons or create real-world problems that can be solved using multiplicative comparison.	Use multiplication or division to solve one-step or two-step word problems involving multiplicative comparisons, distinguishing multiplicative comparisons from additive comparisons and using drawings or equations with a symbol for the unknown number to represent the problem. (4.OA.2)	Use multiplication or division to distinguish between additive comparisons and multiplicative comparisons or solve one-step word problems involving multiplicative comparisons with whole number factors using drawings or manipulatives to represent the problem.	Use multiplication or division to interpret scaffolded word problems involving multiplicative comparisons.
		Represent multi-step word problems using equations or expressions with a letter representing the unknown quantity. † (4.OA.3a)	Represent two-step word problems using equations or expressions with a letter representing the unknown quantity.	Represent one-step word problems using equations or expressions with a letter representing the unknown quantity.

* May involve the use of drawings, models, manipulatives, and other aides as appropriate.
† Multi-step problems need not be represented by a single expression or equation.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students use the four operations with whole numbers to solve problems. (NY- 4.OA.1-3)		Solve multi-step word problems using any of the four operations with whole numbers and having whole-number answers, including problems in which remainders must be interpreted. (4.OA.3a)	Solve two-step word problems using any of the four operations with whole numbers and having whole-number answers.	Solve one-step word problems using any of the four operations with whole numbers and having whole number answers.
	Solve multi-step word problems using any of the four operations with whole numbers and assess the reasonableness of answers using mental computation and estimation strategies, including rounding by providing a valid mathematical explanation.	Solve multi-step word problems using any of the four operations with whole numbers and assess the reasonableness of answers using mental computation and estimation strategies, including rounding. (4.OA.3b)		
Gain familiarity with factors and multiples. (NY-4.OA.4)		Find all factor pairs for a whole number in the range 1–100. (4.OA.4)	Find all factor pairs for a whole number in the range of 26-100.	Find all factor pairs for a whole number in the range of 1-25. Solve single-digit multiplication and related division within 100.
	Explain the relationship between a multiple and a factor of a given whole number.	Recognize that a whole number is a multiple of each of its factors. (4.OA.4)		
Gain familiarity with factors and multiples. (NY-4.OA.4)	Explain how you know a given whole number is a multiple of a given one-digit number.	Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. (4.OA.4)	Given a model, determine whether a given whole number in the range of 26–100 is a multiple of a given one-digit number or identify multiples of a given whole number greater than 5 but less than 10.	Given a model, determine whether a given whole number in the range of 1–25 is a multiple of a given one-digit number or identify multiples of a given one-digit whole number less than or equal to 5.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Gain familiarity with factors and multiples. (NY-4.OA.4)	Explain why a given whole number is prime or composite.	Determine whether a given whole number in the range 51–100 is prime or composite. (4.OA.4)	Determine whether a given whole number in the range of 26–50 is prime or composite.	Determine whether a given whole number in the range of 1–25 is prime or composite.
Generate and analyze patterns. (NY-4.OA.5)	Given a pattern that follows an arithmetic rule, generate a different pattern using the same rule, identify the rule, and explain the apparent features of the pattern that are not explicit in the rule itself.	Generate a number or shape pattern that follows a given arithmetic rule involving multiplication or division. Identify the rule and informally explain apparent features of the pattern that were not explicit in the rule itself. (4.OA.5)	Generate a number or shape pattern that follows a given arithmetic rule involving addition or subtraction or identify the rule itself.	Extend a number or shape pattern that follows a given arithmetic rule involving addition or subtraction or identify a missing value in the pattern.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students generalize place value understanding for multi-digit whole numbers. (NY-4.NBT.1-3) (Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000)	Explain the relationship between place value and multiplication or division.	In a multi-digit whole number, recognize that a digit in one place represents ten times as much as it represents in the place to its right. (4.NBT.1)	In a whole number up to four-digits, recognize that a digit in one place represents ten times as much as it represents in the place to its right.*	Recognize that every 10 units of a place value represents 1 unit of the next largest place value.*
		Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. (4.NBT.2a)	Read and write four-digit whole numbers using base-ten numerals, number names, and expanded form.	Given a visual model or manipulative, read and write four-digit whole numbers using base-ten numerals, number names, and expanded form.
	Compare or order three or more multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of the comparison and explain the reasons for doing so.	Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of the comparison. (4.NBT.2b)	Compare two four-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of the comparison.	Given a visual model or manipulative, compare two four-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of the comparison.
	Given a context, choose an appropriate rounded number.	Using place value understanding, round multi-digit whole numbers to any place. (4.NBT.3)	Round four-digit whole numbers to any place.	Given a visual model or manipulative, round three-digit whole numbers to any place.

* May involve the use of drawings, models, manipulatives, and other aides as appropriate.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students use place value understanding and properties of operations to perform multi-digit arithmetic. (NY-4.NBT.5,6) (Note: Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000)	Multiply a multi-digit whole number by a one- or two-digit whole number using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. Explore connection of strategy to a standard algorithm.	Multiply a whole number up to four-digits by a one-digit whole number or a two-digit number by two-digit number using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (4.NBT.5)	Multiply a whole number up to three-digits by a one-digit whole number using strategies based on place value and the properties of operations.*	Multiply a whole number up to two-digits by a one-digit whole number based on place value and the properties of operations.*
	Divide a multi-digit whole number by a one-digit divisor to find a quotient with or without a remainder, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, area models, or other strategy. Explore connection of strategy to a standard algorithm.	Divide a whole number of up to four-digits by a one-digit divisor to find a quotient with or without a remainder, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, area models, or other strategy. (4.NBT.6)	Divide a whole number up to three-digits by a one-digit divisor to find a quotient without a remainder, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.*	Divide a whole number up to two-digits by a one-digit divisor to find a quotient without a remainder, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.*

* May involve the use of drawings, models, manipulatives, and other aides as appropriate.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students extend understanding of fraction equivalence and ordering. (NY-4.NF.1,2) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)	Recognize and generate equivalent fractions with denominators that may exceed the level 3 limitations with attention to how the number and size of the parts differ, even though the two fractions themselves are the same size. Recognize that a fraction *a*/*b* is equivalent to a fraction (*a* x *n*)/(*b* x *n*) based on multiplying the numerator and denominator by *n*, and that it gives the same result as partitioning each unit fraction piece into *n* smaller equal pieces.	Explain why a fraction *a*/*b* is equivalent to a fraction (*a* x *n*)/(*b* x *n*) by using visual fraction models. Recognize and generate equivalent fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and/or 100 with attention to how the number and size of the parts differ, even though the two fractions themselves are the same size. (4.NF.1)	Identify or generate two equivalent fractions using denominators 2, 3, 4, 6, and/or 8. May involve a visual model.	Given a visual model or manipulative, identify an equivalent fraction with a denominator of 2, 3, 4, 6 and/or 8. Represent benchmark fractions visually or locate them on a number line. Recognize the relationship between two benchmark fractions in terms of their position or size.
	Compare or order more than two fractions with different numerators and different denominators. Recognize that comparisons are valid only when the fractions refer to the same whole. Record the results of comparisons with symbols >, =, or < and justify the conclusions.	Compare two fractions with different numerators and different denominators. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or < and justify the conclusions.[€] (4.NF.2)	Given a visual model, compare two fractions, with like or unlike numerators or denominators, by recognizing that the fractions must refer to the same whole in order to compare. Focus should be on denominators of 2, 3, 4, 6, and 8. Record the results of comparisons with symbols >, =, or <.	Given a visual model or manipulative, compare two fractions with like denominators using the symbols >, =, or <. Focus on denominators of 2, 3, 4, 6, and 8. Explore comparing fractions with different denominators, and the role that equivalent fractions play in the comparison.

[€] Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (4.NF.3,4) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and/or 100)	Create, solve, and explain mathematical and word problems involving the addition and subtraction of fractions with like denominators (including mixed numbers) that refer to the same whole.	Understand addition and subtraction of fractions with like denominators (including mixed numbers) as joining and separating parts referring to the same whole and use that construct to solve mathematical and word problems. Focus should be on denominators of 2, 3, 4, 5, 6, 8, 10, 12, and/or 100. (4.NF.3a & 4.NF.3d)	Understand addition and subtraction of fractions with like denominators (including mixed numbers) as joining and separating parts referring to the same whole and use that construct to solve mathematical and word problems. Focus should be on denominators of 2, 3, 4, 6, and/or 8.	Given a visual model, identify another visual model with the same number of parts and referring to the same whole. Focus should be on denominators of 2, 3, 4, 6, and/or 8.
		Decompose a fraction (including mixed numbers) into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions.[€] (4.NF.3b)	Decompose a fraction into a sum of fractions with the same denominator in more than one way recording each decomposition by an expression or equation.	Given a visual model, decompose a fraction into a sum of fractions with the same denominator in one way, recording the decomposition by an expression or equation.

[€] Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Students build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. (4.NF.3,4) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)	Add and subtract mixed numbers with like denominators using the properties of operations and the relationship between addition and subtraction.	Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction. [€] (4.NF.3c)	Recognize the relationship between a mixed number and improper fraction with like denominators.	Recognize that a fraction a/b when a > b can be written as a mixed number.
	Solve mathematical and word problems involving multiplication of a whole number by a fraction and justify more than one solution path.	Apply and extend previous understandings of multiplication to recognize a fraction a/b as a multiple of $1/b$ and use that construct to solve mathematical and word problems involving multiplication of a whole number by a fraction. [€] (4.NF.4a-c)	Recognize the equivalence of a mixed number and an improper fraction with like denominators and recognize that a non-unit fraction is equivalent to a unit fraction times a whole number.	Recognize that a fraction a/b can be written as a mixed number or an improper fraction when $a > b$ and recognize how repeated addition can be used to multiply a whole number by a fraction.

[€] Grade 4 expectations are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Understand decimal notation for fractions and compare decimal fractions. (NY-4.NF.5-7)	Explain the place value relationship among equivalent fractions with denominators of 10 and 100, and then add them.	Express a fraction with denominator 10 as an equivalent fraction with denominator 100 and use this technique to add two fractions with respective denominators 10 and 100.[‡] (4.NF.5)	Express a fraction with denominator 10 as an equivalent fraction with denominator 100 and explain the relationship between 1/10 and 1/100.[£]	Given a visual model, express a fraction with denominator 10 as an equivalent fraction with denominator 100 and recognize the relationship between 1/10 and 1/100.
		Use decimal notation for fractions with denominators of 10 or 100 to recognize an equivalent decimal on a number line or recognize the number line that represents a given decimal. (4.NF.6)	Use decimal notation for fractions with denominators of 10 and 100 to identify equivalent decimals and fractions.	Recognize the relationship between tenths and decimal fractions and between hundredths and decimal fractions.
	Compare more than two decimals in tenths and hundredths by reasoning about their size. Recognize that comparisons are only valid when the decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.	Compare two decimals in tenths or two decimals in hundredths by reasoning about their size. Recognize that comparisons are only valid when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. (4.NF.7)	Compare two decimals to hundreds by reasoning about their size and involving a visual model. Recognize that comparisons are only valid when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <.	Given a visual model or manipulative, compare two decimals to tenths by reasoning about their size.

[£] Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (NY-4.MD.1-3) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)	Apply relative sizes of measurement to real-world contexts: ft, in., km, m, cm.	Know relative sizes of measurement units: ft, in., km, m, cm. e.g., * An inch is about the distance from the tip of your thumb to your first knuckle. * A foot is the length of two dollar bills. * A meter is about the height of a kitchen counter. * A kilometer is 2 1/2 laps around most tracks. (4.MD.1)	For a given object, determine the most appropriate unit of measure from a given system, based on the object's size.	Recognize that standard units of measurement can be broken down into smaller units.
	Know the conversion factor and use it to convert a smaller unit in terms of a larger unit: ft, in.; km, m, cm; hr, min, sec.	Know the conversion factor and use it to convert measurements in a larger unit in terms of a smaller unit: ft, in.; km, m, cm; hr, min, sec. e.g., Know that 1 ft is 12 times as long as 1 inch, and express the length of a 4 ft snake as 48 in. (4.MD.1)	Recognize that a given measurement can be expressed using different units, and yet retain the same value.	For a given system of measurement, identify the smaller unit or larger unit.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (NY-4.MD.1-3) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)	Convert all other measurements within a single system of measurement from a larger unit to a smaller unit. e.g., * Convert kilograms to grams, pounds to ounces, or liters to milliliters. * Record measurement equivalents in a two-column table. * Generate a conversion table for feet and inches.	Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit. e.g., * Given the conversion factors, convert kilograms to grams, pounds to ounces, or liters to milliliters. * Record measurement equivalents in a two-column table. * Generate a conversion table for feet and inches. (4.MD.1)	Given the conversion factor and/or associated visual aid, convert measurements in a larger unit in terms of a smaller unit: ft, in.; km, m, cm; hr, min, or sec.	Given manipulatives or visual aids, convert measurements in a larger unit in terms of a smaller unit: ft, in.; km, m, cm; hr, min, or sec.
	Use the four operations to solve multi-step word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, and involving whole numbers, fractions or decimals, or problems that require expressing measurements given in a larger unit in terms of a smaller unit.	Use any of the four operations to solve two-step word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, and involve fractions or decimals, or problems that require expressing measurements given in a larger unit in terms of a smaller unit. (4.MD.2a)	Given a visual model with a measurement scale, multiply or divide to solve a one-step word problem involving whole number distances, intervals of time, liquid volumes, masses of objects, and money.	Given a visual model with a measurement scale, add or subtract to solve a one-step word problem involving whole number distances, intervals of time, liquid volumes, masses of objects, and money.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (NY-4.MD.1-3) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)		Represent measurement quantities using diagrams that feature a measurement scale, such as number lines and involving any of the four operations. (4.MD.2b)	Recognize that a diagram with a measurement scale can be used to represent measurement quantities.	
	Solve mathematical or real-world problems involving rectangles with the same area but different perimeters or same perimeters but different areas.	Apply the area and perimeter formulas for rectangles to solve one-step mathematical or real-world problems. (4.MD.3)	Given the dimensions of a rectangle or rectangle made of unit squares, find the area or perimeter of the rectangle in a real-world problem.	Know that the process for finding the area and the perimeter of a rectangle is different. Given the dimensions of a rectangle or a rectangle made of unit squares, find the area or perimeter of it in a mathematical problem.
Represent and interpret data. (NY-4.MD.4) (Note: Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100)	For a given data set and its line plot, analyze the data by writing questions that will help describe how the data is distributed over the given range.	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, and 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. (4.MD.4)	Use a line plot to display a data set of measurements in fractions of a unit (1/2 and 1/4). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Use a line plot to display a data set of measurements in fractions of a unit (1/2). Solve problems involving addition of fractions by using information presented in line plots.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Geometric measurement: understand concepts of angle and measure angles. (NY-4.MD.5-7)	Use the concept of angle measure to identify and analyze angles in geometric shapes or real-world objects based on how the functionality or structure is relevant to the geometric shape or object itself.	Recognize 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. (4.MD.5a)	Given a visual aid, recognize that a complete rotation (circle) is 360° and that a circle is comprised of 360 'one-degree' angles.	Recognize that an angle is formed when two rays share a common endpoint.
		Recognize an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees. (4.MD.5b)	Recognize that a one-degree angle means the angle has a measure of 1/360 of a circle.	Recognize that an angle has a measure in degrees.
		Given an angle measure in whole-number degrees, use a protractor to identify the diagram with the same measure or sketch the angle of the specified measure. (4.MD.6)	Measure non-benchmark angles in whole-number degrees using a protractor.	Given a diagram of an angle with a protractor or circle, overlay measure the angle in whole-number degrees. Given a diagram of a benchmark angle, use a protractor to measure the angle in whole-number degrees.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Geometric measurement: understand concepts of angle and measure angles. (NY-4.MD.5-7)	Decompose a given angle and generate an addition and/or subtraction problem that models the decomposition. Create and solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems.	Recognize angle measure as 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. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (4.MD.7)	Recognize angle measure as additive, when a right, acute, or obtuse angle is decomposed into two non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the two parts.	Recognize that two non-overlapping angles can be added together to find the sum of the two angles.
Draw and identify lines and angles and classify shapes by properties of their lines and angles. (NY-4.G.1-3)		Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. (4.G.1)	Recognize or identify angles (right, acute, obtuse) and perpendicular and parallel lines in diagrams.	Recognize or identify points, lines, line segments, and rays in diagrams.
	Classify triangles based on angle size.	Identify and name triangles based on angle size (right, obtuse, acute). (4.G.2a)	Recognize that a right triangle has one angle equal to 90 degrees, an acute triangle has angles that are all less than 90 degrees, and an obtuse triangle has one angle greater than 90 degrees.	Recognize that a right angle is 90 degrees, an acute angle is less than 90 degrees, and an obtuse angle is greater than 90 degrees.

Cluster	Performance Level 4	Performance Level 3	Performance Level 2	Performance Level 1
Draw and identify lines and angles and classify shapes by properties of their lines and angles. (NY-4.G.1-3)	Classify quadrilaterals with exactly 2 pairs of parallel sides as parallelograms based on the presence or absence of parallel sides.	Identify and name all quadrilaterals with 2 pairs of parallel sides as parallelograms. (4.G.2b)	Recognize that a quadrilateral with exactly 2 pairs of parallel sides is a square, rectangle, or parallelogram.	Recognize that a quadrilateral has 4 sides.
	Classify quadrilaterals based on the presence or absence of right angles.	Identify and name all quadrilaterals with four right angles as rectangles. (4.G.2c)	Recognize that a quadrilateral with four right angles is a rectangle or a square.	
	Explain what it means for a figure to be symmetrical using examples of symmetrical and non-symmetrical figures.	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures, the number of symmetry lines a figure has, or draw lines of symmetry on a figure. (4.G.3)	Identify a line-symmetric figure or draw one line of symmetry on a symmetric figure.	Interpret the meaning of line of symmetry in a two-dimensional geometric figure.