# California Alternate Assessments Performance Level Descriptors
# GRADE THREE—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Operations and Algebraic Thinking** | **3.NO.2d3** Solve multiplication problems with neither number greater than 5. | Create an array of sets (e.g., 3 rows of 2). | Identify an array of objects that represents factors in a problem with neither number greater than 5. | Solve multiplication equations with some context in which both numbers are equal to or less than 5. | Solve multiplication equations with limited or no context in which both numbers are equal to or less than 5. |
| | **3.NO.2e1** Solve or solve and check one- or two-step word problems requiring addition, subtraction or multiplication with answers up to 100. | Combine (+), decompose (-), and multiply (x) with concrete objects; use counting to get the answers. Match the action of combining with vocabulary (i.e., in all; altogether) or the action of decomposing with vocabulary (i.e., have left; take away) in a word problem. | Count objects to match the action of combining, decomposing, or multiplying to solve word problems. | Solve addition, subtraction, or multiplication word problems with answers up to 50. | Solve addition, subtraction, or multiplication word problems with answers up to 100. |
| | **3.PRF.2d1** Identify multiplication patterns in a real world setting. | Concrete understanding of a pattern as a set that repeats regularly or grows according to a rule; Ability to identify a pattern that grows (able to show a pattern) (shapes, symbols, objects). | Identify a pattern that repeats or grows according to a rule, using numbers, shapes, symbols, or objects. | Identify multiplication patterns with concrete representations. | Identify multiplication patterns in real world settings and limited concrete representations. |

# California Alternate Assessments Performance Level Descriptors
# GRADE THREE—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Number and Operations in Base Ten** | **3.NO.1j3** Use place value to round to the nearest 10 or 100. | Identify ones or tens in bundled sets – Similar/different with concrete representations [i.e., is this set of manipulatives (8 ones) closer to this set (a ten) or this set (a one)?]. | Identify a set of objects that is closer to 1 or 10. | Use place value to round numbers to the nearest 10 with minimal representations. | Use place value to round numbers to the nearest 10 or 100. |
| | **3.NO.2c1** Solve multi-step addition and subtraction problems up to 100. | Combine (+) or decompose (-) with concrete objects; use counting to get the answers. | Solve addition and subtraction problems with single digits using concrete objects. | Solve multi-step addition and subtraction problems with solutions up to 50. | Solve multistep addition and subtraction problems with solutions up to 100. |
| **Number and Operations— Fractions** | **3.NO.1I3** Identify the fraction that matches the representation (rectangles and circles; halves, fourths, thirds, and eighths). | Identify part and whole when item is divided. Count the number of the parts selected (3 of the 4 parts; have fraction present but not required to read ¾). | Identify part and whole when item is divided. Count the number of the parts selected. | Identify a representation of fractional parts. | Identify the fraction that matches the representation. |
| | **3.SE.1g1** Use =, <, or > to compare two fractions with the same numerator or denominator. | Concrete representation of a fractional part of a whole as greater than, less than, or equal to another. | Identify which representation of a fractional part of a whole is greater than, less than, or equal to another. | Use =, <, or > to compare representations of two fractions with same or different numerators and the same denominator. | Use =, <, or > to compare two fractions with same or different numerators and the same denominator. |
| **Measurement and Data** | **3.DPS.1g1** Collect data, organize into picture or bar graph. | Organize data into a graph using objects (may have number symbols). | Organize data into a graph using objects. | Transfer data from a graphic to a bar graph or picture graph**.** | Transfer data from a graphic or organized list to a bar graph. |

# California Alternate Assessments Performance Level Descriptors
## GRADE THREE—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| Measurement and Data | **3.ME.1d2** Measure area of rectangular figures by counting squares. | Ability to identify the area of a rectangular figure. | Identify a representation of the area of a rectangle. | Determine the area of rectangular figures by counting unit squares. | Measure the area of rectangular figures by counting unit squares. |
| Geometry | **3.GM.1i1** Partition rectangles into equal parts with equal area. | Concept of equal parts; Partitioning with concrete objects; Find the rectangle that is the same or match two congruent rectangles. | Find the rectangle that is the same or match two congruent rectangles. | Identify rectangles that are partitioned into parts to show equal areas. | Partition rectangles into equal parts with equal area. |

| Domain | | | | | |
|---|---|---|---|---|---|
| **Operations and Algebraic Thinking** | **4.NO.2d7** Determine how many objects go into each group when given the total number of objects and groups where the number in each group or number of groups is not > 10. | Create an array of objects given a specific number of rows and the total number, place one object in each group/row at a time. | Create an array of objects given a specific number of rows and the total number, and place one object in each group/row at a time. | Determine how many objects go equally into groups when given the total number of objects and groups, and when the number in each group or number of groups is not > 6. | Determine how many objects go equally into groups when given the total number of objects and groups, and when the number in each group or number of groups is not > 10. |
| | **4.PRF.1e3** Solve multiplicative comparisons with an unknown using up to 2-digit numbers with information presented in a graph or word problem (e.g., an orange hat cost $3. A purple hat cost 2 times as much. How much does the purple hat cost? [3 x 2 = p]). | Identify visual multiplicative comparisons (e.g., which shows two times as many tiles as this set?). | Identify visual multiplicative comparisons (e.g., which shows two times as many tiles as this set?). | Solve multiplicative comparisons with an unknown using one-digit numbers with information presented in a graph or word problem. | Solve multiplicative comparisons with an unknown using up to two-digit numbers with information presented in a graph or word problem. |
| | **4.NO.2e2** Solve or solve and check one or two step word problems requiring addition, subtraction, or multiplication with answers up to 100. | Select the representation of manipulatives on a graphic organizer to show addition/ multiplication equation; Match to same for representations of equations with equations provided (may be different objects but same configuration). | Match a model to addition/multiplication equations using two single-digit numbers. | Solve one-step addition, subtraction, or multiplication word problems up to 50. | Solve or solve and check addition, subtraction, or multiplication in one- or two-step word problems up to 100. |

# California Alternate Assessments Performance Level Descriptors
## GRADE FOUR—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Number and Operations in Base Ten** | **4.NO.1j5** Use place value to round to any place (i.e., ones, tens, hundreds, thousands). | Identify ones, tens, hundreds in bundled sets – Similar/different with concrete representations (i.e., is this set of manipulatives (8 tens) closer to this set (a hundred) or this set (a ten)?). | Identify ones, tens, hundreds in bundled sets – Similar/different with concrete representations. | Use place value to round numbers to the nearest ten or hundred. | Use place value to round numbers to the nearest hundred or thousand. |
| | **4.NO.1m1** Determine equivalent fractions. | Equivalency: what is and what is not equivalent; this may begin with numbers/sets of objects: e.g., 3=3 or two fraction representations that are identical (two pies showing 2/3). | Identify equivalent representations of a number/set or two identical fraction representations. | Identify equivalent representations of a fraction (e.g., shaded diagram). | Identify or determine equivalent fractions. |
| **Number and Operations—Fractions** | **4.NO.1n2** Compare up to 2 given fractions that have different denominators. | Differentiate between parts and a whole. | Differentiate between parts and a whole. | Compare representations of two fractions with different denominators. | Compare two fractions with different denominators. |
| | **4.SE.1g2** Use =, <, or > to compare fractions (fractions with a denominator of 10 or less). | Concrete representation of a fractional part of a whole as greater than, less than, or equal to another. | Compare representations of two fractional parts of a whole as less than, greater than, or equal to another. | Use =, <, or > to compare two fractions or fraction representations with denominators less than 10. | Use =, <, or > to compare two fractions with denominators of 10 or less. |
| **Measurement and Data** | **4.ME.1g2** Solve word problems using perimeter and area where changes occur to the dimensions of a rectilinear figure. | Identify the perimeter; Identify the area; Show each when size of figure changes. | Identify a rectangle with the smaller or larger perimeter or area. | Compute the perimeter or area of a rectangle. | Solve word problems using perimeter and area where changes occur to the dimensions of a rectangular figure. |

# California Alternate Assessments Performance Level Descriptors
## GRADE FOUR—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Measurement and Data** | **4.DPS.1g3** Collect data, organize in graph (e.g. picture graph, line plot, bar graph). | Identify data sent based on a single attribute (e.g., pencils vs. markers); Identify data set with more or less (e.g., this bar represents a set with more); Organize the data into a graph using objects (may have number symbols). | Identify data set based on a single attribute; Identify data set with more or less; organize the data into a graph using objects. | Transfer data from a representation to a graph. | Collect data, organize in graph. |
| **Geometry** | **4GM.1h2** Classify two-dimensional shapes based on attributes (# of angles). | Identify attributes within a 2-dimensional figure (e.g., rectangles have sides – student identifies sides of rectangle – and angles – student identifies angles in rectangle). | Identify given attributes of 2 – two-dimensional shapes. | Sort a set of two-dimensional shapes based on attributes. | Classify two-dimensional shapes based on attributes. |

# California Alternate Assessments Performance Level Descriptors
## GRADE FIVE—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Operations and Algebraic Thinking** | **5.PRF.2b1** Generate or select a comparison between two graphs from a similar situation. | Compare two pieces of information provided in a single display. | Make comparisons between two pieces of data shown. | Make quantitative comparisons between two data sets shown. | Make quantitative comparisons between data sets shown on two graphs. |
| **Number and Operations in Base Ten** | **5.NO.1b1** Read, write, or select a decimal to the hundredths place. | Recognize part whole using materials divided into tenths – Count tenths to determine how many (e.g.,4 tenths) (.4 have the decimal present but not required to read). | Identify and count graphic representations of tenths. | Identify place values to the hundredths place. | Identify place values to the hundredths place in various forms. |
| | **5.NO.1b4** Round decimals to the next whole number. | Identify place value to the ones, tens, hundreds, thousands. | Identify a number in the ones, tens, or hundreds place. | Round decimals up to the hundredths place to nearest whole number. | Round decimals up to the thousandths place to nearest whole number. |
| | **5.NO.2a5** Solve word problems that require multiplication or division. | Combine (x) or decompose (÷) with concrete objects; use counting to get the answers. | Use objects to multiply with products up to 100 or divide numbers under 100. | Identify solutions up to 100 in multiplication and division word problems. | Solve multiplication and division word problems. |
| | **5.NO.2c1** Solve step problems using decimals. | Combine (+) or decompose (-) with concrete objects; use counting to get the answers; Match the action of combining with vocabulary (i.e., in all; altogether) or the action of decomposing with vocabulary (i.e., have left; take away) in a word problem. | Solve one-step addition and subtraction problems. | Perform one-step addition and subtraction operations with decimals. | Solve one-step problems with decimals using any of the four operations. |

# California Alternate Assessments Performance Level Descriptors
## GRADE FIVE—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Number and Operations—Fractions** | **5.NO.2c2** Solve word problems involving the addition, subtraction, multiplication, or division of fractions. | Identify what to do with the parts when given the key word (using the fractional parts). | Divide sets into two equal parts. | Solve addition and subtraction word problems involving fractions with like denominators. | Solve word problems involving fractions with like denominators using any operation. |
| | **5.PRF.1a1** Determine whether the product will increase or decrease based on the multiplier. | Limit to whole numbers and 1 or more; Show what happens to set when one of these (1x) versus some other number (e.g., 2x). | Identify graphic set when a multiplier of 2 or more is applied. | Determine if the value of the product increases or decreases based upon the multiplier. | Determine in a word problem if the value of the product increases or decreases based upon the multiplier. |
| **Measurement and Data** | **5.ME.1b2** Convert standard measurements of length. | To measure an object or quantity using 2 different units to show they mean the same thing (e.g., 12 inches and 1 foot). If larger unit, there are less; smaller units, you need more. | Match quantity of measurement of length needed using different measuring tools to a model. | Identify converted standard lengths of measurement. | Convert standard lengths of measurement. |
| | **5.ME.2a1** Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass. | Identify what measures time (clock used to measure time; calendar used to measure days); identify past/present (for lapsed time). | Identify tool used to calculate elapsed time (e.g., years, days, hours). | Convert standard measurements when solving for time lapse (e.g., 14 days to 2 weeks). | Convert standard measurements when finding area, volume, or mass (inches, feet, gallons, pounds, etc., not metric measurement units). |
| **Geometry** | **5.GM.1c3** Use ordered pairs to graph given points. | Identify the x- and y-axis or concept of intersection. | Identify a given axis of a coordinate plane. | Locate a given point on a coordinate plane when given an ordered pair. | Plot a point on a coordinate plane when given an ordered pair. |

# California Alternate Assessments Performance Level Descriptors
## GRADE SIX—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Ratios and Proportional Relationships** | **6.PRF.1c1** Describe the ratio relationship between two quantities for a given situation. | Match/identify a simple ratio (1:X) to the relationship between two quantities. | Match a given unit rate to a model. | Identify the ratio relationship between two quantities. | Describe the ratio relationship between two quantities. |
| | **6.NO.1f1** Find a percent of a quantity as rate per 100. | State a relationship to a quantity out of 100. | Select a relationship to a quantity out of 100. | Select a percentage of a quantity as rate per 100, when the given quantity is a factor of 100. | Calculate a percentage of a quantity as a rate per 100. |
| **The Number System** | **6.NO.2c3** Solve one-step, addition, subtraction, multiplication, or division problems with fractions or decimals. | Concept of +, -, x, ÷. Concept of fraction and decimal. Use concrete object to represent the removal (subtraction) or addition of one-half from/to a whole object. | Match a model which represents the addition or subtraction of one-half to/from a whole. | Solve a one-step addition or subtraction problem using fractions with like denominators or decimals. | Solve a one-step multiplication or division problem using fractions or decimals. |
| | **6.NO.1d4** Select the appropriate meaning of a negative number in a real-world situation. | Ability to select the appropriate representation of more than or less than 0 in a real-world situation. | Identify a graphic representation of a value less than zero in a real-world situation. | Select the appropriate meaning of a negative number in a real-world situation when given a graphical aid. | Select the appropriate meaning of a negative number in a real-world situation. |
| | **6.NO.1d2** Locate positive and negative numbers on a number line. | Recognize how values/numbers lie on either side of zero. | Identify a number less than zero on a number line. | Identify a representation of positive and negative values on a number line. | Identify the location of positive and negative values on a number line. |
| **Expressions and Equations** | **6.PRF.1d1** Solve real world single-step linear equations. | Recognize the intended outcome of a word problem based on a linear equation. | Identify the intended solution of a word problem based on a linear equation. | Solve real real-world, single-step linear equations requiring addition or subtraction. | Solve real-world, single-step linear equations requiring multiplication or division. |

# California Alternate Assessments Performance Level Descriptors
## GRADE SIX—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Expressions and Equations** | **6.ME.2a2** Solve one-step, real- world measurement problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours). | Identify a familiar unit rate. | Identify a familiar unit rate. (e.g., 4 quarters: 1 dollar is 4:1). | Solve a one-step, real-world measurement problem involving unit rates, where no value exceeds 50. | Solve a one-step, real-world measurement problem involving unit rates. |
| | **6.NO.2a6** Solve problems or word problems using up to three digit numbers and any of the four operations. | Decompose (÷) with concrete objects; use counting to get the answer. | Decompose (÷) with concrete objects; use counting to get the answer. | Solve a word problem with graphic support which has numbers up to three digits using addition or subtraction. | Solve a word problem which has numbers up to three digits using multiplication or division. |
| **Geometry** | **6.GM.1d1** Find the area of quadrilaterals. | Use manipulatives to measure the area of a rectangle (e.g., tiling). | Count the number of grids or tiles inside a rectangle to find the area of a rectangle. | Determine the area of a rectangle when it has been gridded (tiled). | Determine the area of a quadrilateral. |
| **Statistics and Probability** | **6.DPS.1d3** Select statement that matches mean, mode, and spread of data for 1 measure of central tendency for given data set. | Identify the highest and lowest value in a data set given a number line and matching symbols; Identify the representation (Plastic snap cubes, wiki sticks) of the mode; Use concrete materials to produce the mean (leveled plastic snap cubes). | Identify the mean, mode, lowest value, and highest value of a graphical data set. | Identify the mean, median, or spread of a set of data which contains either three or five values. | Identify the mean, median, or spread of an odd number set which contains at least five values. |

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Ratios and Proportional Relationships** | **7.NO.2f1** Identify the proportional relationship between two quantities (use rules or symbols to show quantitative relationships). | Recognize the constancy of one object to its parts (i.e., one face, two eyes). | Recognize the constancy of one object to its parts. | Match a given ratio to a model. | Identify unit rate (constant of proportionality) in tables or graphs of proportional relationships. |
| | **7.NO.2f2** Determine if two quantities are in a proportional relationship using a table of equivalent ratios or points graphed on a coordinate plane. | Use a table to recognize the quantity of two entries, without counting, to determine which is relatively larger. | Recognize qualitative comparisons of a data set presented in a table. | Identify proportional relationships between quantities represented in a table or a bar graph. | Identify proportional relationships between quantities represented in a table or a graph. |
| | **7.PRF.1f1** Use proportional relationships to solve multistep percent problems in real-world situations. | Identify how one variable changes in relation to another variable in a directly proportional relationship (e.g., a/b = c/d, if a increases, what will happen to c?). | Identify how one variable changes in relation to another variable given a directly proportional relationship. | Solve problems in real-world situations involving finding the percentage of a whole. | Solve multistep problems in real-world situations involving the addition or subtraction of percentages. |
| | **7.NO.2f6** Solve word problems involving ratios. | Show rate when asked; Show proportion when asked; Select a set for the ratio given (Maria stamps three letters every minute which we write as 3:1. Show me the letters she stamps in a minute). | Identify a rate or proportion given a set of data, or identify a set for a given ratio. | Solve word problems involving ratios, with no value in the given ratio greater than 12. | Solve word problems involving ratios. |

# California Alternate Assessments Performance Level Descriptors
## GRADE SEVEN—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **The Number System** | **7.NO.2i1** Solve multiplication problems with positive or negative numbers. | Create an array of objects for the mathematical equation and match answer symbol (+ or -) following multiplication rules for an equation. | Identify an array that represents multiplication between numbers of like or different signs. | Solve multiplication problems with positive or negative whole numbers less than or equal to 10. | Solve multiplication problems with positive or negative whole numbers. |
| | **7.NO.2i2** Solve division problems with positive or negative numbers. | Create an array of objects for the mathematical equation and match answer symbol (+ or -) following division rules for an equation. | Identify an array that represents division of numbers of like or different signs. | Solve division problems with positive or negative whole numbers less than or equal to 10. | Solve division problems with positive or negative whole numbers. |
| **Expressions and Equations** | **7.PRF.1g2** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. | Record/replace a variable in an equation with a fact from a story on a graphic organizer. | Identify what the variable represents in a modeled equation from a story on a graphic organizer. | Identify or create a variable equation to model a given real-world situation. | Identify or create a variable equation or inequality to model a real-world situation. |
| **Geometry** | **7.ME.2d1** Apply formula to measure area and circumference of circles. | Recognize the area of a circle and the circumference when shown a graphic representation. | Identify graphical representations of area and circumference of a circle. | Identify or compute the area and/or circumference of a circle using 3 as the value of pi. | Identify or compute the area and/or circumference of a circle using 3.14 as the value of pi. |
| | **7.GM.1h2** Find the surface area of three-dimensional figures using nets of rectangles or triangles. | Demonstrate the concept of the surface area of a rectangular prism; rectangular prism. | Identify representations of the surface area or volume of a rectangular prism. | Identify or compute the surface area of a rectangular prism. | Identify or compute the surface area of a triangular prism. |

# California Alternate Assessments Performance Level Descriptors
## GRADE SEVEN—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Statistics and Probability** | **7.DPS.1k1** Analyze graphs to determine or select appropriate comparative inferences about two samples or populations. | Understand basic information from simple graphs (e.g., interpret a bar graph using the understanding that the taller column on a graph has a higher frequency, the shorter column on a graph has a lower frequency). | Identify basic information from simple graphs. | Analyze graphs to select appropriate comparative inferences about two samples or populations. | Analyze graphs to determine appropriate comparative inferences about two samples or populations. |

# California Alternate Assessments Performance Level Descriptors
## GRADE EIGHT—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| The Number System | **8.NO.1k3** Use approximations of irrational numbers to locate them on a number line. | Recognize how values/numbers can lie between whole number values on a number line. | Locate a given nonrepeating, rational decimal number on a number line. | Locate approximate placement of an irrational number on a number line spaced in whole number increments. | Locate approximate placement of an irrational number on a number line. |
| Expressions and Equations | **8.PRF.1e2** Represent proportional relationships on a line graph. | Recognize a positive relationship between two variables. | Recognize a positive relationship between two variables. | Match a provided proportional relationship to its line graph. | Plot provided data representing a proportional relationship on a line graph. |
| | **8.PRF.1g3** Solve linear equations with variable. | Use manipulatives or graphic organizer to solve a problem. | Identify the solution to an equation by using manipulatives or a graphic organizer. | Identify the solution to a linear equation that contains one variable. | Solve a linear equation that contains one variable. |
| Functions | **8.PRF.2e2** Identify the rate of change (slope) and initial value (y-intercept) from graphs. | Indicate the point on a line that crosses the y-axis. | Identify the y-intercept of a linear graph. | Identify the slope and/or y-intercept of a positive linear graph. | Identify the slope and/or y-intercept of a linear graph. |
| | **8.PRF.1f2** Describe or select the relationship between the two quantities given a line graph of the situation. | Use a graph to recognize the quantity in two sets, without counting, to determine which is relatively larger. | Identify the relatively larger data set when given two data sets presented in a graph. | Identify the relationship shown on a positive linear graph with whole number values. | Identify the relationship shown on a linear graph. |
| Geometry | **8.GM.1g1** Recognize congruent and similar figures. | Demonstrate the concept of congruent and similar (e.g., match concrete examples of congruent shapes, match concrete examples of similar shapes). | Match a concrete example of a shape to a similar or congruent concrete example of a shape. | Identify congruent or similar figures when given common geometric figures. | Identify congruent or similar figures. |

# California Alternate Assessments Performance Level Descriptors
## GRADE EIGHT—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Geometry** | **8.ME.1e1** Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings). | Recognize how the space inside a figure increases when the sides are lengthened. | Identify the figure with a larger area or volume when given a pair of figures. | Describe the change in area, surface area, or volume when a single attribute is changed. | Describe the change in area, surface area, or volume when one or more attributes are changed. |
| | **8.ME.2d2** Apply the formula to find the volume of three-dimensional shapes (i.e., cubes, spheres, and cylinders). | Ability to recognize attributes of a three-dimensional shape. | Identify an attribute of a three-dimensional shape. | Identify the volume of a cube or rectangular prism. | Compute the volume of three-dimensional shapes. |
| **Statistics and Probability** | **8.DPS.1h1** Graph bivariate data using scatter plots and identify possible associations between the variable. | Locate points on the x-axis and y-axis of an adapted grid (not necessarily numeric). | Identify or place a point on the x or y-axis of a numeric or non-numeric grid. | Identify associations between variables in graphs with no more than 5 data points. | Plot provided data on a graph and/or identify associations between variables in graphs. |
| | **8.DPS.1k2** Analyze displays of bivariate data to develop or select appropriate claims about those data. | Use graphic supports (e.g., highlighted transparency of an association) to identify the appropriate statement when given a relationship between two variables. | Identify the appropriate statement when given a relationship between two variables using graphic support. | Select appropriate claims given displays of bivariate data with no more than 5 data points. | Select or develop appropriate claims given displays of bivariate data. |

# California Alternate Assessments Performance Level Descriptors
## GRADE ELEVEN—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Number and Quantity: The Real Number System** | **HS.NO.1a1** Simplify expressions that include exponents. | Create an array with a number multiplied by itself (Show me 3 rows of 3). | Identify the array that represents a square number. | Simplify an expression that includes an exponent of 2. | Simplify an expression that includes an exponent of 3. |
| **Number and Quantity: Quantities** | **H.ME.1a2** Solve real-world problems involving units of measurement. | Ability to solve real-world measurement problems that require interpretation and use of a table. | Solve real-world measurement problems using a single extension of a table. | Solve real-world measurement problems without unit conversions. | Solve real-world measurement problems that require a single unit conversion. |
| **Algebra: Creating Equations** | **H.PRF.2b1** Translate a real-world problem into a one-variable linear equation. | Match an equation with one variable to the real-world context. | Match an equation with one variable to a real-world situation. | Identify the linear representation of a real-world situation. | Complete a partial linear equation that represents a real-world situation. |
| | **H.PRF.2b2** Solve equations with one or two variables using equations or graphs. | Count and arrange a given number of objects into two sets in multiple combinations. | Count and arrange a given number of objects into two sets in multiple combinations. | Solve a one-variable word problem using an equation or a linear graphical representation with values not exceeding 1,000. | Solve a one- or two-variable word problem using an equation or a linear graphical representation. |
| | **H.ME.1b2** Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute. | Identify the unknown quantity when given an equation and labeled figure. | Identify the unknown quantity when given an equation and two-dimensional labeled figure | Solve a linear equation to find a missing attribute of a figure given the area or volume. | Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute. |
| **Functions: Interpreting Functions** | **H.PRF.1c1** Select the appropriate graphical representation of a linear model based on real world events. | Match a point not on a line as not being part of a data set for a given line. | Determine whether a given point is or is not part of a data set shown on a graph. | Identify the linear representation of a real-world situation. | Select information to complete the graphical linear representation of a real-world situation. |

# California Alternate Assessments Performance Level Descriptors
## GRADE ELEVEN—MATHEMATICS

| Domain | Core Content Connectors | Essential Understandings | Level 1—Limited Understanding | Level 2—Foundational Understanding | Level 3—Understanding |
|---|---|---|---|---|---|
| **Functions: Interpreting Functions** | **H.PRF. 2c1** Make predictions based on a given model (for example, a weather model, data for athletes over years). | Extend a graph when provided a relationship and two choices. | Identify an extension of a graph. | Make predictions from data tables and graphs to solve problems, when the prediction is no more than a single increment from the given information. | Make predictions from data tables and graphs to solve problems. |
| **Geometry: Similarity, Right Triangles, and Trigonometry** | **H.GM.1b1** Use definitions to demonstrate congruency and similarity in figures. | Identify the right angle within a given triangle; sides and/or hypotenuse of a right triangle. | Identify the hypotenuse, sides, or right angle of a right triangle. | Determine if given geometric shapes are congruent, similar but not congruent, or neither. | Determine if given figures are congruent, similar but not congruent, or neither. |
| **Statistics and Probability: Interpreting Categorical and Quantitative Data** | **H.DPS.1b1** Complete a graph given the data, using dot plots, histograms, or box plots | Make a connection between categories in a data table to the appropriate axis of a graph. | Identify the missing axis labels on a graph. | Identify multiple missing labels on a graph using a given data table. | Plot data on dot plots, histograms, or box plots given data. |
| | **H.DPS.1c1** Use descriptive stats; range, median, mode, mean, outliers/gaps to describe data set. | Identify the highest and lowest value in a data set given a number line and matching symbols (concept of range). | Identify the greatest or least value in a set of data shown on a number line or graph. | Calculate the mean, median, or range of a set of data. | Calculate the mean, median, mode, range, and/or outliers of a set of data. |