Evidence Statement Tables
Grade 6 Mathematics

Evidence Statement Keys

Evidence statements describe the knowledge and skills that an assessment item/task elicits from students. These are derived directly from the Common Core State Standards for Mathematics (the standards), and they highlight the advances of the standards, especially around their focused coherent nature. The evidence statement keys for grades 3 through 8 will begin with the grade number. High school evidence statement keys will begin with "HS" or with the label for a conceptual category.

An Evidence Statement might:

1. **Use exact standard language** – For example:

   - 8.EE.1 - Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$*. This example uses the exact language as standard 8.EE.1

2. **Be derived by focusing on specific parts of a standard** – For example: 8.F.5-1 and 8.F.5-2 were derived from splitting standard 8.F.5:

   - 8.F.5-1 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).
   - 8.F.5-2 Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

   Together these two evidence statements are standard 8.F.5:

   Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or 2 decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

3. **Be integrative (Int) –** Integrative evidence statements allow for the testing of more than one of the standards on a single item/task without going beyond the standards to create new requirements. An integrative evidence statement might be integrated across all content within a grade/course, all standards in a high school conceptual category, all standards in a domain, or all standards in a cluster. For example:

   - **Grade/Course – 4.Int.2[1]** (Integrated across Grade 4)
   - **Conceptual Category – F.Int.1[1]** (Integrated across the Functions Conceptual Category)
   - **Domain – 4.NBT.Int.1[1]** (Integrated across the Number and Operations in Base Ten Domain)
   - **Cluster – 3.NF.A.Int.1[1]** (Integrated across the Number and Operations – Fractions Domain, Cluster A)

4. **Focus on mathematical reasoning–** A reasoning evidence statement (keyed with C) will state the type of reasoning that an item/task will require and the content scope from the standard that the item/task will require the student to reason about. For example:

   - 3.C.2[1] -- Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division.
     - Content Scope: Knowledge and skills are articulated in 3.OA.6
   - 7.C.6.1[1] – Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.
     - Content Scope: Knowledge and skills are articulated in 7.RP.2

   Note: When the focus of the evidence statement is on reasoning, the evidence statement may also require the student to reason about securely held knowledge from a previous grade.

5. **Focus on mathematical modeling –** A modeling evidence statement (keyed with D) will state the type of modeling that an item/task will require and the content scope from the standard that the item/task will require the student to model about. For example:

   - 4.D.2[1] – Solve multi-step contextual problems with degree of difficulty appropriate to Grade 4 requiring application of knowledge and skills articulated in 3.OA.A, 3.OA.8,3.NBT, and/or 3.MD.

     Note: The example 4.D.2 is of an evidence statement in which an item/task aligned to the evidence statement will require the student to model on grade level, using securely held knowledge from a previous grade.

   - HS.D.5[1] - Given an equation or system of equations, reason about the number or nature of the solutions.
     - Content scope: A-REI.11, involving any of the function types measured in the standards.

[1] The numbers at the end of the integrated, modeling and reasoning Evidence Statement keys are added for assessment clarification and tracking purposes. For example, 4.Int.2 is the second integrated Evidence Statement in Grade 4.

Grade 6 Evidence Statements
Listing by Type I, Type II, and Type III

The Evidence Statements for Grade 3 Mathematics are provided starting on the next page. The list has been organized to indicate whether items designed are aligned to an Evidence Statement used for Type I items (sub-claims A and B), Type II items (reasoning/sub-claim C), or Type III items (modeling/sub-claim D).

Evidence Statements are presented in the order shown below and are color coded:

Peach – Evidence Statement is applicable to Type I items.

Lavender – Evidence Statement is applicable to Type II items.

Aqua – Evidence Statement is applicable to the Type III items.

Grade 6 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim A (20 of 52 points) & Sub-claim B (10 of 52 points)					
A	6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*	i) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2	No
A	6.RP.2	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*	i) Expectations for unit rates in this grade are limited to non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2	No
A	6.RP.3a	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	i) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers	MP.2 MP.4 MP.5 MP.7 MP.8	Yes
A	6.RP.3b	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*	i) Expectations for unit rates in this grade are limited to non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2 MP.5 MP.8	Yes
A	6.RP.3c-1	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity).	i) Tasks may or may not contain context. ii) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2 MP.5 MP.7 MP.8	Yes
A	6.RP.3c-2	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c. Solve problems involving finding the whole, given a part and the percent.	i) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2 MP.5 MP.7 MP.8	Yes

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Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.RP.3d	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	i) Tasks may or may not contain context. ii) Tasks require students to multiply and/or divide dimensioned quantities. iii) Half of the tasks require students to correctly express the units of the result. iv) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2 MP.5 MP.6 MP.7 MP.8	Yes
A	6.NS.1-2	Solve word problems involving division of fractions by fractions. *For example, How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*	i) Only the answer is required. For the explanations and representations aspect of 6.NS.1-2, see 6.C.2 and 6.C.3. ii) Note that the italicized examples correspond to three meanings/uses of division: (1) equal sharing; (2) measurement; (3) unknown factor. These meanings/uses of division should be sampled equally. iii) Tasks may involve fractions and mixed numbers but not decimals.	MP.4	No
B	6.NS.2	Fluently divide multi-digit numbers using the standard algorithm.	i) The given dividend and divisor require an efficient/standard algorithm (e.g., 40584 ÷ 76). ii) Tasks do not have a context. iii) Only the answer is required. iv) Tasks have a maximum of five-digit dividends and a maximum of two-digit divisors. v) Tasks may or may not have a remainder. Students understand that remainders can be written as fractions or decimals.	-	No
B	6.NS.3-1	Fluently add multi-digit decimals using the standard algorithm.	i) Tasks do not have a context. ii) Only the sum is required iii) The given addends require an efficient/standard algorithm (e.g., 72.63 + 4.875). iv) Each addend is greater than or equal to 0.001 and less than or equal to 99.999.	-	No
B	6.NS.3-2	Fluently subtract multi-digit decimals using the standard algorithm.	i) Tasks do not have a context. ii) Only the difference is required. iii) The given subtrahend and minuend require an efficient/standard algorithm (e.g., 177.3 – 72.635). iv) The subtrahend and minuend are each greater than or equal to 0.001 and less than or equal to 99.999. Positive differences only.	-	No

Grade 6 Evidence Statements

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	6.NS.3-3	Fluently multiply multi-digit decimals using the standard algorithm.	i) Tasks do not have a context. ii) Only the product is required. iii) The given factors require an efficient/standard algorithm (e.g., 72.3 × 4.8). iv) For purposes of assessment, the possibilities are 1-digit x 2-digit, 1-digit x 3-digit, 2-digit x 3-digit, 2-digit x 4-digit, or 2-digit x 5-digit.	-	No
B	6.NS.3-4	Fluently divide multi-digit decimals using the standard algorithm.	i) Tasks do not have a context. ii) Only the quotient is required. iii) The given dividend and divisor require an efficient/standard algorithm (e.g., 177.3 ÷ 0.36). iv) Tasks are either 4-digit ÷ 2-digit or 3-digit ÷ 3-digit. (For example, 14.28 ÷ 0.68 or 2.39 ÷ 0.684). v) Every quotient is a whole number or a decimal terminating at the tenths, hundredths, or thousandths place.	-	No
B	6.NS.4-1	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.	i) Tasks do not have a context.	-	No
B	6.NS.4-2	Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4(9 + 2).*	i) Tasks do not have a context. ii) Tasks require writing or finding the equivalent expression with the greatest common factor.	MP.7	No
A	6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	i) Tasks do not require students to perform any computations. ii) Students may be asked to recognize the meaning of 0 in the situation, but will not be asked to explain.	MP.2 MP.5	No
A	6.NS.6a	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.	i) Tasks have "thin context"[2] or no context.	MP.5 MP.8	No

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.NS.6b-1	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane.	i) Tasks have "thin context" or no context. ii) Students need not recognize or use traditional notation for quadrants (such as I, II, III, IV). iii) Coordinates are not limited to integers.	MP.5	No
A	6.NS.6b-2	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. b. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes	i) Tasks have "thin context" or no context. ii) Students need not recognize or use traditional notation for quadrants (such as I, II, III, IV). iii) Coordinates are not limited to integers.	MP.5 MP.8	No
A	6.NS.6c-1	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram	i) Tasks have "thin context" or no context. ii) Coordinates are not limited to integers.	MP.5	No
A	6.NS.6c-2	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. c. Find and position pairs of integers and other rational numbers on a coordinate plane.	i) Tasks have "thin context" or no context. ii) Students need not recognize or use traditional notation for quadrants (such as I, II, III, IV). iii) Coordinates are not limited to integers.	MP.5	No
A	6.NS.7a	Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.*	i) Tasks do not have a context. ii) Tasks are not limited to integers.	MP.2 MP.5	No

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.NS.7b	Understand ordering and absolute value of rational numbers. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 °C > –7 °C to express the fact that –3 °C is warmer than –7 °C.*	i) Tasks are not limited to integers. ii) For the explain aspect of 6.NS.7b, see 6.C.4.	MP.2 MP.3 MP.5	No
A	6.NS.7c-1	Understand ordering and absolute value of rational numbers. c. Understand the absolute value of a rational number as its distance from 0 on the number line.	i) Tasks do not have a context. ii) Tasks are not limited to integers.	MP.2 MP.5	No
A	6.NS.7c-2	Understand ordering and absolute value of rational numbers. c. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*	i) Tasks have a context. ii) Tasks are not limited to integers.	MP.2	No
A	6.NS.7d	Understand ordering and absolute value of rational numbers. d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*	i) Tasks may or may not contain context. ii) Tasks are not limited to integers. iii) Prompts do not present students with a number line diagram, but students may draw a number line diagram as a strategy.	MP.2 MP.5	No
A	6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	i) Tasks may or may not contain context. ii) Finding distances is limited to points with integer coordinates.	MP.1 MP.2 MP.5	No

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.EE.1-1	Write numerical expressions involving whole-number exponents.	i) Tasks involve expressing *b*-fold products $a \cdot a \cdot \ldots \cdot a$ in the form a^b, where *a* and *b* are non-zero whole numbers ii) Tasks do not require use of the laws of exponents	MP. 8	No
A	6.EE.1-2	Evaluate numerical expressions involving whole-number exponents.	i) Tasks may involve simple fractions raised to small whole-number powers, e.g. $(1/2)^3$, $(2/3)^2$. ii) Tasks may involve nonnegative decimals raised to whole-number powers. iii) Tasks do not have a context.	MP.8	Yes
A	6.EE.2a	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.*	i) Tasks do not have a context. ii) Numerical values in these expressions may include whole numbers, fractions, and decimals.	MP.8	Yes
A	6.EE.2b	Write, read, and evaluate expressions in which letters stand for numbers. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2(8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*	i) Tasks do not have a context. ii) Numerical values in these expressions may include whole numbers, fractions, and decimals.	MP.7	Yes
A	6.EE.2c-1	Write, read, and evaluate expressions in which letters stand for numbers. c. Evaluate expressions at specific values of their variables. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	i) Tasks do not have a context. ii) Numerical values in these expressions may include whole numbers, fractions, and decimals. iii) Task will not require operations on negative numbers.	MP.7	Yes
A	6.EE.2c-2	Write, read, and evaluate expressions in which letters stand for numbers. c. Evaluate expressions that arise from formulas used in real-world problems at specific values of their variables. *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	i) Tasks are simple applications of formulas that are provided in the prompt. ii) Tasks do not require the student to manipulate the formula or isolate variables to solve an equation. iii) Tasks have "thin context" or no context. iv) Numerical values in these expressions may include whole numbers, fractions, and decimals. v) Task will not require operations on negative numbers.	MP.7	Yes

Grade 6 Evidence Statements

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	-	MP.7	No
A	6.EE.5-1	Understand solving an equation as a process of answering a question: which values from a specified set, if any, make the equation true?	-	MP.5 MP.6	Yes
A	6.EE.5-2	Use substitution to determine whether a given number in a specified set makes an inequality true.	i) Most of the tasks involve values from an infinite set of nonnegative numbers (e.g., even numbers; whole numbers; fractions). Some tasks involve values from a finite set of nonnegative numbers (e.g., {2, 5, 7, 9}).	MP.5 MP.6	Yes
A	6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	i) Tasks may require students to write an expression to represent a real-world or mathematical problem. Tasks do not require students to find a solution. ii) Tasks may require students to interpret a variable as a specific unknown number, or, as a number that could represent any number in a specified set.	MP.2 MP.6 MP.7	No
A	6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	i) Tasks are algebraic, not arithmetic. See *Progression* for Expressions and Equations, pp. 3, 4. ii) Half of the tasks involve whole-number values of p and q; and half of the tasks involve fraction or decimal values of p and q. iii) Fractions and decimals should not appear together in the same problem. iv) These tasks only involve equations with addition and multiplication. v) A valid equation and the correct answer are both required for full credit.	MP.1 MP.2 MP.6 MP.7	Yes
A	6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	i) Values of c are not limited to integers. ii) Tasks involve < and >, not $\leq$ and $\geq$.	MP.2 MP.6 MP.7	No

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*	i) Tasks that involve writing an equation should not go beyond the equation types described in 6.EE.7 (x+p =q and px = q where p, q, and x are all nonnegative rational numbers).	MP.2 MP.4 MP.6 MP.8	Yes
B	6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	-	MP.1 MP.2 MP.5 MP.7	Yes
B	6.G.2-1	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism.	i) Tasks do not have a context. ii) Tasks require focusing on the connection between packing the solid figure and computing the volume.	MP.2	No
B	6.G.2-2	Apply the formulas $V = l\,w\,h$ and $V = B\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	i) Tasks focus on using the formulas in problem-solving contexts.	MP.1 MP.4 MP.5	Yes
B	6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	-	MP.1 MP.5	Yes
B	6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	-	MP.1 MP.4 MP.5	Yes

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*	i) Tasks do not assess mode and range.	-	No
B	6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution, which can be described by its center, spread, and overall shape.	i) Tasks might present several distributions graphically and ask which two have nearly the same center, nearly the same spread, or nearly the same overall shape. ii) Tasks do not assess mode and range.	MP.4	No
B	6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	i) Tasks might ask students to rate statements True/False/Not Enough Information, such as, "The average height of trees in Watson Park is 65 feet. Are there any trees in Watson Park taller than 65 feet?" ii) Tasks do not assess mode and range.	MP.4	No
B	6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	i) Tasks ask students to identify which display corresponds to a given set of data. ii) Tasks do not assess mode and range.	MP.2 MP.5	No
B	6.SP.5	Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	i) Tasks have a text-based and a graphics-based overview of a numerical data set. ii) Tasks require students to identify/select from unambiguously true or false statements such as, "About half of the values are greater than the average"; "If this point were deleted from the data set, the median would not change"; etc. iii) Tasks do not assess mode and range.	MP.4	Yes
B	6.Int.1	Solve two-step word problems requiring operations on multi-digit whole numbers or decimals.	i) Operations are no more complex than those specified for 6.NS.2, 6.NS.3-1, 6.NS.3-2, 6.NS.3-3, and 6.NS.3-4 with the exception of 3-digit x 3-digit. ii) For purposes of assessment, the possibilities for multiplication are 1-digit x 2-digit, 1-digit x 3-digit, 2-digit x 3-digit, 2-digit x 4-digit, 2-digit x 5-digit, or 3-digit x 3-digit (For example, 7.68 x 15.3 or 0.35 x 18.241).	MP.1	No

Grade 6 Evidence Statements

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Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim C (10 of 52 points)					
C	6.C.1.1	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 6.EE.3, 6.EE.4	i) Tasks should not require students to identify or name properties.	MP.3 MP.6 MP.7	Yes
C	6.C.2	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 6.NS.1	-	MP.2 MP.3 MP.4 MP.6	Yes
C	6.C.3	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 6.NS.1	-	MP.2 MP.3 MP.4 MP.5 MP.6	Yes
C	6.C.4	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 6.NS.6, 6.NS.7	-	MP.3 MP.5 MP.6	Yes
C	6.C.5	Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 6.NS.6, 6.NS.8	-	MP.3 MP.4 MP.5 MP.6	Yes
C	6.C.6	Given an equation, present the solution steps as a logical argument that concludes with a solution. Content Scope: Knowledge and skills articulated in 6.EE.B	i) Tasks do not require students to write an equation or inequality.	MP.3 MP.6	Yes
C	6.C.7	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 6.EE.4	-	MP.3 MP.6	Yes
C	6.C.8.1	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 6.RP.A	i) Expectations for ratios in this grade are limited to ratios of non-complex fractions. The initial numerator and denominator should be whole numbers.	MP.2 MP.3 MP.6	Yes

Grade 6 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
C	6.C.8.2	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 6.EE.9	i) Tasks that involve writing an equation should not go beyond the equation types described in 6.EE.7 ($x+p=q$ and $px=q$ where p, q, and x are all nonnegative rational numbers).	MP.2 MP.3 MP.6	Yes
C	6.C.9	Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed 'student' reasoning is presented and the task is to correct and improve it.) Content Scope: Knowledge and skills articulated in 5.NBT, 5.MD.C	i) Tasks may have scaffolding[1], if necessary, in order to yield a degree of difficulty appropriate to Grade 6.	MP.3 MP.6	Yes

Grade 6 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim D (12 of 52 points)					
D	6.D.1	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Tasks may have scaffolding, if necessary, in order yield a degree of difficulty appropriate to Grade 6.	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	6.D.2	Solve multi-step contextual problems with degree of difficulty appropriate to Grade 6, requiring application of knowledge and skills articulated in 5.NBT.B, 5.NF, 5.MD, and 5.G.A.	i) Tasks may have scaffolding, if necessary, in order yield a degree of difficulty appropriate to Grade 6.	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	6.D.3	Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity. Content Scope: Knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Tasks may have scaffolding, if necessary, in order to yield a degree of difficulty appropriate to Grade 6.	MP.1 MP.2 MP.4 MP.5 MP.7	Yes

[1] Scaffolding in a task provides the student with an entry point into a pathway for solving a problem. In unscaffolded tasks, the student determines his/her own pathway and process. Both scaffolded and unscaffolded tasks will be included in reasoning and modeling items.

[2] "Thin context" is a sentence or phrase that establishes a concrete referent for the quantity/quantities in the problem, in such a way as to provide meaningful avenues for mathematical intuition to operate, yet without requiring any sort of further analysis of the context. For example, a task could provide a reason for the use of scientific notation such as, "The number represents the distance between two planets."

Evidence Statement Tables
Grade 7 Mathematics

Evidence Statement Keys

Evidence statements describe the knowledge and skills that an assessment item/task elicits from students. These are derived directly from the Common Core State Standards for Mathematics (the standards), and they highlight the advances of the standards, especially around their focused coherent nature. The evidence statement keys for grades 3 through 8 will begin with the grade number. High school evidence statement keys will begin with "HS" or with the label for a conceptual category.

An Evidence Statement might:

1. **Use exact standard language** – For example:

   - 8.EE.1 - Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$*. This example uses the exact language as standard 8.EE.1

2. **Be derived by focusing on specific parts of a standard** – For example: 8.F.5-1 and 8.F.5-2 were derived from splitting standard 8.F.5:

   - 8.F.5-1 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).
   - 8.F.5-2 Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

   Together these two evidence statements are standard 8.F.5:

   Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or 2 decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

3. **Be integrative (Int) –** Integrative evidence statements allow for the testing of more than one of the standards on a single item/task without going beyond the standards to create new requirements. An integrative evidence statement might be integrated across all content within a grade/course, all standards in a high school conceptual category, all standards in a domain, or all standards in a cluster. For example:

   - **Grade/Course – 4.Int.2[1]** (Integrated across Grade 4)
   - **Conceptual Category – F.Int.1[1]** (Integrated across the Functions Conceptual Category)
   - **Domain – 4.NBT.Int.1[1]** (Integrated across the Number and Operations in Base Ten Domain)
   - **Cluster – 3.NF.A.Int.1[1]** (Integrated across the Number and Operations – Fractions Domain, Cluster A)

4. **Focus on mathematical reasoning–** A reasoning evidence statement (keyed with C) will state the type of reasoning that an item/task will require and the content scope from the standard that the item/task will require the student to reason about. For example:

   - 3.C.2[1] -- Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division.
     - Content Scope: Knowledge and skills are articulated in 3.OA.6
   - 7.C.6.1[1] – Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.
     - Content Scope: Knowledge and skills are articulated in 7.RP.2

   Note: When the focus of the evidence statement is on reasoning, the evidence statement may also require the student to reason about securely held knowledge from a previous grade.

5. **Focus on mathematical modeling –** A modeling evidence statement (keyed with D) will state the type of modeling that an item/task will require and the content scope from the standard that the item/task will require the student to model about. For example:

   - 4.D.2[1] – Solve multi-step contextual problems with degree of difficulty appropriate to Grade 4 requiring application of knowledge and skills articulated in 3.OA.A, 3.OA.8,3.NBT, and/or 3.MD.

     Note: The example 4.D.2 is of an evidence statement in which an item/task aligned to the evidence statement will require the student to model on grade level, using securely held knowledge from a previous grade.

   - HS.D.5[1] - Given an equation or system of equations, reason about the number or nature of the solutions.
     - Content scope: A-REI.11, involving any of the function types measured in the standards.

[1] The numbers at the end of the integrated, modeling and reasoning Evidence Statement keys are added for assessment clarification and tracking purposes. For example, 4.Int.2 is the second integrated Evidence Statement in Grade 4.

Grade 7 Evidence Statements Listing by Type I, Type II, and Type III

The Evidence Statements for Grade 3 Mathematics are provided starting on the next page. The list has been organized to indicate whether items designed are aligned to an Evidence Statement used for Type I items (sub-claims A and B), Type II items (reasoning/sub-claim C), or Type III items (modeling/sub-claim D).

Evidence Statements are presented in the order shown below and are color coded:

Peach – Evidence Statement is applicable to Type I items.

Lavender – Evidence Statement is applicable to Type II items.

Aqua – Evidence Statement is applicable to Type III items.

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim A (20 of 52 points) & Sub-claim B (10 of 52 points)					
A	7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*	i) Tasks have a real-world context. ii) Tasks do not assess unit conversions.	MP.2 MP.4 MP.6	Yes
A	7.RP.2a	Recognize and represent proportional relationships between quantities: a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	i) Tasks have "thin context"[2] or no context. ii) Tasks are not limited to ratios of whole numbers. iii) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.5	Yes
A	7.RP.2b	Recognize and represent proportional relationships between quantities: b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	i) Tasks may or may not have a context. ii) Tasks sample equally across the listed representations (graphs, equations, diagrams, and verbal descriptions). iii) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.5 MP.8	No
A	7.RP.2c	Recognize and represent proportional relationships between quantities: c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*	i) Tasks have a context. ii) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.8	No
A	7.RP.2d	Recognize and represent proportional relationships between quantities. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	i) Tasks require students to interpret a point (x, y) on the graph of a proportional relationship in terms of the situation. For the explain aspect of 7.RP.2d, see 7.C.6.1. ii) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.4	No

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	7.RP.3-1	Use proportional relationships to solve multistep ratio problems.	i) Tasks will include proportional relationships that only involve positive numbers.	MP.1 MP.2 MP.6	Yes
A	7.RP.3-2	Use proportional relationships to solve multistep percent problems. *Examples: simple interest, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	-	MP.1 MP.2 MP.5 MP.6	Yes
A	7.NS.1a	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	-	MP.5	No
A	7.NS.1b-1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative.	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks involve a number line. iv) Tasks do not require students to show in general that a number and its opposite have a sum of 0; for this aspect of 7.NS.1b-1, see 7.C.1.1 and 7.C.2.	MP.5 MP.7	No
A	7.NS.1b-2	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b. Interpret sums of rational numbers by describing real-world contexts.	i) Tasks require students to produce or recognize real-world contexts that correspond to given sums of rational numbers. ii) Tasks are not limited to integers. iii) Tasks do not require students to show in general that a number and its opposite have a sum of 0; for this aspect of 7.NS.1b-1, see 7.C.1.1 and 7.C.2	MP.2 MP.3 MP.5	No

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	7.NS.1c-1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Apply this principle in real-world contexts.	i) Tasks may or may not have a context. ii) Tasks are not limited to integers. iii) Contextual tasks might, for example, require students to create or identify a situation described by a specific equation of the general form p – q = p + (–q) such as 3 – 5 = 3 + (–5). iv) Non-contextual tasks are not computation tasks but rather require students to demonstrate conceptual understanding, for example, by identifying a difference that is equivalent to a given difference. For example, given the difference −1/3 − (1/5 + 5/8), the student might be asked to recognize the equivalent expression –1/3 + –(1/5 + 5/8).	MP.2 MP.5 MP.7	No
A	7.NS.1d	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d. Apply properties of operations as strategies to add and subtract rational numbers	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks may involve sums and differences of 2 or 3 rational numbers. iv) Tasks require students to demonstrate conceptual understanding, for example, by producing or recognizing an expression equivalent to a given sum or difference. For example, given the sum −8.1 + 7.4, the student might be asked to recognize or produce the equivalent expression –(8.1 – 7.4).	MP.5 MP.7	No
A	7.NS.2a-1	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers.	i) Tasks do not have a context. ii) Tasks require students to demonstrate conceptual understanding, for example by providing students with a numerical expression and requiring students to produce or recognize an equivalent expression using properties of operations. For example, given the expression (−3)(6 + −4 + −3), the student might be asked to recognize that the given expression is equivalent to (−3)(6 + −4) + (−3)(−3).	MP.7	No
A	7.NS.2a-2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Interpret products of rational numbers by describing real-world contexts.	-	MP.2 MP.4	No

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	7.NS.2b-1	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (–p)/q =p/(–q).	i) Tasks do not have a context. ii) Tasks require students to demonstrate conceptual understanding, for example, by providing students with a numerical expression and requiring students to produce or recognize an equivalent expression.	MP.7	No
A	7.NS.2b-2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. b. Interpret quotients of rational numbers by describing real-world contexts.	-	MP.2 MP.4	No
A	7.NS.2c	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. c. Apply properties of operations as strategies to multiply and divide rational numbers.	i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks may involve products and quotients of 2 or 3 rational numbers. iv) Tasks require students to compute a product or quotient, or demonstrate conceptual understanding, for example, by producing or recognizing an expression equivalent to a given expression. For example, given the expression (−8)(6)/(−3), the student might be asked to recognize or produce the equivalent expression −(8/3)(−6).	MP.7	No
A	7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers.	i) Tasks are one-step word problems. ii) Tasks sample equally between addition/subtraction and multiplication/division. iii) Tasks involve at least one negative number. iv) Tasks are not limited to integers.	MP.1 MP.4	No
A	7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	i) Tasks are not limited to integer coefficients. ii) Tasks may involve issues of strategy, e.g., by providing a factored expression such as y(3+x+k) and a fully expanded expression 3y + xy + ky, and requiring students to produce or identify a new expression equivalent to both (such as y(3+x) + yk).	MP.7	No
A	7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*	-	MP.7	No

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	7.EE.3	*Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*	-	MP.5	Yes
A	7.EE.4a-1	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. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers.	i) Comparison of an algebraic solution to an arithmetic solution is not assessed here; for this aspect of 7.EE.4a, see 7.C.5.	MP.1 MP.2 MP.6 MP.7	No
A	7.EE.4a-2	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. a. Fluently solve equations of the form px + q = r and p(x+q) = r, where p, q, and r are specific rational numbers.	i) Each task requires students to solve two equations (one of each of the given two forms). Only the answer is required. ii) Comparison of an algebraic solution to an arithmetic solution is not assessed here; for this aspect of 7.EE.4a, see 7.C.5.	MP.6 MP.7	No
A	7.EE.4b	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. b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	i) Tasks may involve <, >, ≤ or ≥.	MP.1 MP.2 MP.5 MP.6 MP.7	No

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	i) Tasks may or may not have context.	MP.2 MP.5	Yes
B	7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	i) Tasks do not have a context. ii) Most of the tasks should focus on the drawing component of this evidence statement.	MP.3 MP.5 MP.6	Yes
B	7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	i) Tasks have "thin context" or no context.	MP.5	Yes
B	7.G.4-1	Know the formulas for the area and circumference of a circle and use them to solve problems.	i) Tasks may or may not have context. ii) Tasks may require answers to be written in terms of π.	MP.4 MP.5	Yes
B	7.G.4-2	Give an informal derivation of the relationship between the circumference and area of a circle	i) Tasks require students to identify or produce a logical conclusion about the relationship between the circumference and the area of a circle.	MP.2 MP.5	Yes
B	7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	i) Tasks may or may not have context. ii) Tasks involving writing or solving an equation should not go beyond the equation types described in 7.EE.4a. [px +q = r and p(x + q) = r where p, q, and r are specific rational numbers.]	MP.5 MP.6	Yes
B	7.G.6	Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	i) Tasks may or may not have context.	MP.1 MP.5	Yes
B	7.SP.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	-	MP.4	Yes

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*	-	MP.4	Yes
B	7.SP.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*	i) Tasks may use mean absolute deviation, range, or interquartile range as a measure of variability.	MP.4	Yes
B	7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh grade science book are generally longer than the words in a chapter of a fourth grade science book.*	-	MP.4	Yes
B	7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	i) Tasks may involve probabilities that are certain (1) or impossible (0).	MP.4	Yes
B	7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*	i) Tasks require the student to make a prediction based on long-run relative frequency in data from a chance process.	MP.4	Yes

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	7.SP.7a	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*	i) Simple events only. ii) Simple events can be defined as the single outcome of the performed experiment or it is an event, which cannot be broken down any more.	MP.4	Yes
B	7.SP.7b	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*	-	MP.4	Yes
B	7.SP.8a	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	i) Compound events are the combination of two or more simple events. It can also be defined as an event that contains more than one sample points in it, such as rolling a 2 or 3 on a 6-sided number cube.	MP.4 MP.5	Yes
B	7.SP.8b	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space, which compose the event.	-	MP.4 MP.5	Yes
B	7.SP.8c	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*	i) Items addressing the use of a simulation should define the situation that is being simulated.	MP.4 MP.5	Yes

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim C (10 of 52 points)					
C	7.C.1.1	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 7.NS.1 and 7.NS.2.	i) Tasks should not require students to identify or name properties.	MP.1 MP.2 MP.3 MP.5 MP.6 MP.7	Yes
C	7.C.1.2	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 7.EE.1.	i) Tasks should not require students to identify or name properties.	MP.3 MP.6 MP.7	Yes
C	7.C.2	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 7.NS.1 and 7.NS.2.	-	MP.1 MP.2 MP.3 MP.5 MP.6 MP.7	Yes
C	7.C.3	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.NS.A.	-	MP.1 MP.2 MP.3 MP.5 MP.6 MP.7	Yes
C	7.C.4	Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.RP.A.	i) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.3 MP.5 MP.6	Yes
C	7.C.5	Given an equation, present the solution steps as a logical argument that concludes with the set of solutions (if any). Content Scope: Knowledge and skills articulated in 7.EE.4a.	-	MP.1 MP.2 MP.3 MP.6 MP.7	Yes

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
C	7.C.6.1	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 7.RP.2.	i) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.2 MP.3 MP.6	Yes
C	7.C.7.1	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.RP.3.	i) Tasks use only coordinates in Quadrant 1 and use only a positive constant of proportionality.	MP.1 MP.3 MP.6 MP.7 MP.8	Yes
C	7.C.7.2	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.NS.2d.	i) Tasks focus on demonstrating understanding that a number is rational. ii) Tasks do not directly assess the ability to divide two whole numbers.	MP.1 MP.3 MP.6 MP.7 MP.8	Yes
C	7.C.7.3	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.NS.3.	-	MP.1 MP.3 MP.6 MP.7 MP.8	Yes

Grade 7 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
C	7.C.7.4	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 7.EE.3.	-	MP.1 MP.3 MP.6 MP.7 MP.8	Yes
C	7.C.8	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 6.NS.C, 6.EE.A, 6.EE.B.	i) Tasks may have scaffolding[1], if necessary, in order to yield a degree of difficulty appropriate to Grade 7.	MP.3 MP.6	Yes

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim D (12 of 52 points)					
D	7.D.1	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 7, requiring application of knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Tasks may have scaffolding, if necessary, in order to yield a degree of difficulty appropriate to Grade 7. ii) Tasks involving writing or solving an equation should not go beyond the equation types described in 7.EE.4a. [px +q = r and p(x + q) = r where p, q, and r are specific rational numbers.]	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	7.D.2	Solve multi-step contextual problems with degree of difficulty appropriate to grade 7, requiring application of knowledge and skills articulated in 6.RP.A, 6.EE.C, and 6.G.	i) Tasks may have scaffolding, if necessary, in order to yield a degree of difficulty appropriate to Grade 7.	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	7.D.3	Micro-models: Autonomously apply a technique from pure mathematics to a real-world situation in which the technique yields valuable results even though it is obviously not applicable in a strict mathematical sense (e.g., profitably applying proportional relationships to a phenomenon that is obviously nonlinear or statistical in nature). Content Scope: Knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Tasks may have scaffolding, if necessary, in order to yield a degree of difficulty appropriate to Grade 7.	MP.1 MP.2 MP.4, MP.5 MP.7	Yes
D	7.D.4	Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity. Content Scope: Knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Tasks may have scaffolding, if necessary, in order to yield a degree of difficulty appropriate to Grade 7.	MP.1 MP.2 MP.4 MP.5 MP.7	Yes

[1] Scaffolding in a task provides the student with an entry point into a pathway for solving a problem. In unscaffolded tasks, the student determines his/her own pathway and process. Both scaffolded and unscaffolded tasks will be included in reasoning and modeling items.

[2] "Thin context" is a sentence or phrase that establishes a concrete referent for the quantity/quantities in the problem, in such a way as to provide meaningful avenues for mathematical intuition to operate, yet without requiring any sort of further analysis of the context. For example, a task could provide a reason for the use of scientific notation such as, "The number represents the distance between two planets."

Evidence Statement Tables
Grade 8 Mathematics

Evidence Statement Keys

Evidence statements describe the knowledge and skills that an assessment item/task elicits from students. These are derived directly from the Common Core State Standards for Mathematics (the standards), and they highlight the advances of the standards, especially around their focused coherent nature. The evidence statement keys for grades 3 through 8 will begin with the grade number. High school evidence statement keys will begin with "HS" or with the label for a conceptual category.

An Evidence Statement might:

1. **Use exact standard language** – For example:

   - 8.EE.1 - Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$. This example uses the exact language as standard 8.EE.1

2. **Be derived by focusing on specific parts of a standard** – For example: 8.F.5-1 and 8.F.5-2 were derived from splitting standard 8.F.5:

   - 8.F.5-1 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).
   - 8.F.5-2 Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

   Together these two evidence statements are standard 8.F.5:

   Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or 2 decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

3. **Be integrative (Int) –** Integrative evidence statements allow for the testing of more than one of the standards on a single item/task without going beyond the standards to create new requirements. An integrative evidence statement might be integrated across all content within a grade/course, all standards in a high school conceptual category, all standards in a domain, or all standards in a cluster. For example:

   - **Grade/Course – 4.Int.2**[1] (Integrated across Grade 4)
   - **Conceptual Category – F.Int.1**[1] (Integrated across the Functions Conceptual Category)
   - **Domain – 4.NBT.Int.1**[1] (Integrated across the Number and Operations in Base Ten Domain)
   - **Cluster** – **3.NF.A.Int.1**[1] (Integrated across the Number and Operations – Fractions Domain, Cluster A)

4. **Focus on mathematical reasoning–** A reasoning evidence statement (keyed with C) will state the type of reasoning that an item/task will require and the content scope from the standard that the item/task will require the student to reason about. For example:

- 3.C.2[1] -- Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division.
    - Content Scope: Knowledge and skills are articulated in 3.OA.6
- 7.C.6.1[1] – Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.
    - Content Scope: Knowledge and skills are articulated in 7.RP.2

Note: When the focus of the evidence statement is on reasoning, the evidence statement may also require the student to reason about securely held knowledge from a previous grade.

5. **Focus on mathematical modeling –** A modeling evidence statement (keyed with D) will state the type of modeling that an item/task will require and the content scope from the standard that the item/task will require the student to model about. For example:

- 4.D.2[1] – Solve multi-step contextual problems with degree of difficulty appropriate to Grade 4 requiring application of knowledge and skills articulated in 3.OA.A, 3.OA.8,3.NBT, and/or 3.MD.

  Note: The example 4.D.2 is of an evidence statement in which an item/task aligned to the evidence statement will require the student to model on grade level, using securely held knowledge from a previous grade.

- HS.D.5[1] - Given an equation or system of equations, reason about the number or nature of the solutions.
    - Content scope: A-REI.11, involving any of the function types measured in the standards.

[1] The numbers at the end of the integrated, modeling and reasoning Evidence Statement keys are added for assessment clarification and tracking purposes. For example, 4.Int.2 is the second integrated Evidence Statement in Grade 4.

Grade 8 Evidence Statements Listing by Type I, Type II, and Type III

The Evidence Statements for Grade 3 Mathematics are provided starting on the next page. The list has been organized to indicate whether items designed are aligned to an Evidence Statement used for Type I items (sub-claims A and B), Type II items (reasoning/sub-claim C), or Type III items (modeling/sub-claim D).

Evidence Statements are presented in the order shown below and are color coded:

Peach – Evidence Statement is applicable to Type I items.

Lavender – Evidence Statement is applicable to Type II items.

Aqua – Evidence Statement is applicable to Type III items.

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim A (20 of 52 points) & Sub-claim B (10 of 52 points)					
B	8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational number.	i) Tasks do not have a context. ii) An equal number of tasks require students to write a fraction a/b as a repeating decimal, or write a repeating decimal as a fraction. iii) For tasks that involve writing a repeating decimal as a fraction, the given decimal should include no more than two repeating decimals without non-repeating digits after the decimal point (i.e. 2.16666…, 0.23232323…).	MP.7 MP.8	No
B	8.NS.2	Use rational approximations of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g. π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	i) Tasks do not have a context.	MP.5 MP.7 MP.8	No
A	8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 1/3^3 = 1/27$.*	i) Tasks do not have a context. ii) Tasks focus on the properties and equivalence, not on simplification. iii) Half of the expressions involve one property; half of the expressions involve two or three properties. iv) Tasks should involve a single common base or a potential common base, such as, a task that includes 3, 9 and 27.	MP.7	No
A	8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2=p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	i) Tasks may or may not have a context. ii) Students are not required to simplify expressions such as $\sqrt{8}$ to $2\sqrt{2}$. Students are required to express the square roots of 1, 4, 9, 16, 25, 36, 49, 64, 81 and 100; and the cube roots of 1, 8, 27, and 64.	MP.7	No
A	8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.*	-	MP.4	No
A	8.EE.4-1	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	i) Tasks have "thin context" [2] or no context. ii) Rules or conventions for significant figures are not assessed. iii) Some of the tasks involve both decimal and scientific notation.	MP.6 MP.7 MP.8	No
A	8.EE.4-2	Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	i) Tasks have "thin context" [2]. ii) Tasks require students to recognize 3.7E-2 (or 3.7e-2) from technology as 3.7×10^{-2}.	MP.6 MP.7 MP.8	Yes

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	8.EE.5-1	Graph proportional relationships, interpreting the unit rate as the slope of the graph.	i) Tasks may or may not contain context.	MP.1 MP.5	Yes
A	8.EE.5-2	Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has a greater speed.*	i) Tasks may or may not contain context.	MP.7	Yes
A	8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.	i) Tasks do not have a context. ii) Given a non-vertical line in the coordinate plane, tasks might for example require students to choose two pairs of points and record the rise, run, and slope relative to each pair and verify that they are the same. iii) For the explain aspect of 8.EE.6, see 8.C.5.1. iv) Tasks may assess simple graphing of lines from a linear equation in slope-intercept form.	MP.2 MP.7	Yes
A	8.EE.7b	Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms	i) Tasks do not have a context.	MP.6 MP.7	No
A	8.EE.8a	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersections of their graphs, because points of intersection satisfy both equations simultaneously.	i) Tasks do not have a context.	MP.2 MP.5 MP.6 MP.7	No
A	8.EE.8b-1	Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically.	i) An equal number of tasks have: • a zero coefficient, e.g., as in the system $-s + (3/4)t = 2$, $t = 6$, or; • non-zero whole-number coefficients, and whole-number solutions, or; • non-zero whole-number coefficients, and at least one fraction among the solutions, or; • non-zero integer coefficients (with at least one coefficient negative), or; • non-zero rational coefficients (with at least one coefficient negative and at least one coefficient a non-integer).	MP.1 MP.6 MP.7	No
A	8.EE.8b-2	Analyze and solve pairs of simultaneous linear equations. b. Estimate solutions [to systems of two linear equations in two variables] by graphing the equations.	i) An equal number of tasks have: • a zero coefficient, e.g., as in the system $-s + (3/4)t = 2$, $t = 6$, or; • non-zero whole-number coefficients, and whole-number solutions, or; • non-zero whole-number coefficients, and at least one fraction among the solutions, or; • non-zero integer coefficients (with at least one coefficient negative), or; • non-zero rational coefficients (with at least one coefficient negative and at least one coefficient a non-integer).	MP.5 MP.6 MP.7	No

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	8.EE.8b-3	Analyze and solve pairs of simultaneous linear equations. b. Solve simple cases [of systems of two linear equations in two variables] by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*	i) Tasks have whole number or integer coefficients, one coefficient in either or both equations possibly zero. ii) Equal number of tasks involve: • inconsistent systems, where the inconsistency is plausibly visible by inspection as in the italicized example, or; • degenerate systems (infinitely many solutions), where the degeneracy is plausibly visible by inspection, as for example in 3x + 3y = 1, 6x + 6y = 2, or; • systems with a unique solution and one coefficient zero, where the solution is plausibly visible by inspection, as for example in y = 1, 3x + y = 1. iii) Tasks assess solving by inspection.	MP.7	No
A	8.EE.8c	Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	i) Tasks may have three equations, but students are only required to analyze two equations at a time.	MP.1 MP.5 MP.6 MP.7	Yes
A	8.EE.C.Int.1	Solve word problems leading to linear equations in one variable whose solutions require expanding expressions using the distributive property and collecting like terms.	i) Most of the tasks involve contextual real-world word problems.	MP.4 MP.6 MP.7	Yes
A	8.F.1-1	Understand that a function is a rule that assigns to each input exactly one output.	i) Tasks do not involve the coordinate plane or the "vertical line test." ii) Some of the functions in tasks are non-numerical. iii) Tasks should involve clearly defined inputs and outputs.	MP.2	No
A	8.F.1-2	[Understand that] the graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	i) Functions are limited to those with inputs and outputs in the real numbers. ii) Most of the tasks require students to graph functions in the coordinate plane or read inputs and outputs from the graph of a function in the coordinate plane. iii) Some of the tasks require students to tell whether a set of points in the plane represents a function. iv) Tasks should involve clearly defined inputs and outputs.	MP.2 MP.5	No
A	8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greatest rate of change.*	i) Tasks have "thin context" [2] or no context. ii) Equations can be presented in forms other than y = mx + b, for example, 2x + 2y = 7.	MP.2 MP.5	Yes

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	8.F.3-1	Interpret the equation, y=mx + b as defining a linear function, whose graph is a straight line.	i) Tasks have "thin context" [2] or no context. ii) Equations can be presented in forms other than y = mx + b, for example, 2x + 2y =7.	MP.2 MP.7	No
A	8.F.3-2	Give examples of functions that are not linear and prove that they are not linear.	i) Tasks have "thin context" [2] or no context. ii) Tasks may require students to give examples of equations that are non-linear or pairs of points to show a function is non-linear. iii) Students are not required to produce a formal proof. For this aspect of 8.F.3, see 8.C.3.1.	MP.7	No
B	8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph.	i) Tasks may or may not have a context.	MP.2 MP.4	Yes
B	8.F.5-1	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).	i) Tasks may or may not have a context.	MP.2 MP.5	No
B	8.F.5-2	Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	i) Tasks may or may not have a context.	MP.2 MP.5 MP.7	No
A	8.G.1a	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length.	i) Tasks do not have a context.	MP.3 MP.5 MP.8	No
A	8.G.1b	Verify experimentally the properties of rotations, reflections, and translations: b. Angles are taken to angles of the same measure.	i) Tasks do not have a context.	MP.3 MP.5 MP.8	No
A	8.G.1c	Verify experimentally the properties of rotations, reflections, and translations: c. Parallel lines are taken to parallel lines.	i) Tasks do not have a context.	MP.3 MP.5 MP.8	No
A	8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	i) Tasks do not have a context. ii) Figures may be drawn in the coordinate plane, but do not include the use of coordinates. iii) Tasks require students to make connections between congruence and transformations.	MP.2 MP.7	No

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
A	8.G.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	i) Tasks have "thin context" [2] no context. ii) Tasks require the use of coordinates in the coordinate plane. iii) For items involving dilations, tasks must state the center of dilation. iv) Centers of dilation can be the origin, the center of the original shape or the vertices of the original shape.	MP.2 MP.3 MP.5	No
A	8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	i) Tasks do not have a context. ii) Figures may be drawn in the coordinate plane, but do not include the use of coordinates. iii) Tasks require students to make connections between similarity and transformations.	MP.2 MP.7	No
A	8.G.7-1	Apply the Pythagorean Theorem in a simple planar case.	i) Tasks have "thin context" [2] or no context. ii) An equal number of tasks require the answer to be given as a whole number or as an irrational number written to approximately three decimal places.	-	Yes
A	8.G.7-2	Apply the Pythagorean Theorem in a simple three-dimensional case.	i) Tasks have "thin context" [2] or no context. ii) An equal number of tasks require the answer to be given as a whole number or as an irrational number written to approximately three decimal places.	-	Yes
A	8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	-	-	Yes
B	8.G.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	-	MP.1 MP.5	Yes
B	8.SP.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	-	MP.3 MP.5 MP.7	No

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
B	8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	-	MP.2 MP.5 MP.7	No
B	8.SP.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*	-	MP.2 MP.4 MP.6 MP.7	Yes
B	8.SP.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*	i) An equal number of tasks require students to: • Answer basic comprehension questions about a two-way table, or; • To compute marginal sums or marginal percentages, or; • To interpret patterns or association.	MP.2 MP.4 MP.5 MP.7	Yes

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim C (10 of 52 points)					
C	8.C.1.1	Base reasoning on the principle that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane. Content Scope: Knowledge and skills articulated in 8.EE.6.	i) Tasks require students to derive the equation y=mx for a line through the origin and the equation *y*=m*x*+b for a line intersecting the vertical axis at b.	MP.2 MP.3 MP.7 MP.8	Yes
C	8.C.1.2	Base reasoning on the principle that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane. Content Scope: Knowledge and skills articulated in 8.EE.8a.	-	MP.2 MP.3 MP.5 MP.6 MP.7	Yes
C	8.C.2	Given an equation or system of equations, present the solution steps as a logical argument that concludes with the set of solutions (if any). Content Scope: Knowledge and skills articulated in 8.EE.7a, 8.EE.7b, 8.EE.8b.	i) Tasks may have three equations, but students are only required to analyze two equations at a time.	MP.3 MP.6	Yes
C	8.C.3.1	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 8.F.3-2.	i) Tasks require students to justify whether a given function is linear or nonlinear.	MP.3 MP.6	Yes
C	8.C.3.2	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 8.G.2, 8.G.4.	-	MP.3 MP.5 MP.6	Yes
C	8.C.3.3	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 8.G.5.	-	MP.3 MP.5 MP.6	Yes
C	8.C.4.1	Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equals signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as 1 + 4 = 5 + 7 = 12, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions. Content Scope: Knowledge and skills articulated in 8.EE.8c.	-	MP.1 MP.2 MP.3 MP.6 MP.7	Yes

Grade 8 Evidence Statements

Type I **Type II** **Type III**

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
C	8.C.5.1	Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions. Content Scope: Knowledge and skills articulated in 8.EE.6.	-	MP.2 MP.3 MP.5	Yes
C	8.C.5.2	Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions. Content Scope: Knowledge and skills articulated in 8.G.2, 8.G.4.	-	MP.2 MP.3 MP.5	Yes
C	8.C.5.3	Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions. Content Scope: Knowledge and skills articulated in 8.G.B.	i) Some of the tasks require students to use the converse of the Pythagorean Theorem.	MP.2 MP.3 MP.5	Yes
C	8.C.6	Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Content Scope: Knowledge and skills articulated in 7.RP.A, 7.NS.A, 7.EE.A.	i) Some of the tasks may use scaffolding[1].	MP.3 MP.6	Yes

Sub-Claim	Evidence Statement Key	Evidence Statement Text	Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks	Relationship to MPs	Calculator
Sub-claim D (12 of 52 points)					
D	8.D.1	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 8, requiring application of knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Some of the tasks may use scaffolding[1].	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	8.D.2	Solve multi-step contextual problems with degree of difficulty appropriate to grade 8, requiring application of knowledge and skills articulated in 7.RP.A, 7.NS.3, 7.EE, 7.G, and 7.SP.B.	i) Some of the tasks may use scaffolding[1].	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	8.D.3	Micro-models: Autonomously apply a technique from pure mathematics to a real-world situation in which the technique yields valuable results even though it is obviously not applicable in a strict mathematical sense (e.g., profitably applying proportional relationships to a phenomenon that is obviously nonlinear or statistical in nature). Content Scope: Knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements.	i) Some of the tasks may use scaffolding[1].	MP.1 MP.2 MP.4 MP.5 MP.7	Yes
D	8.D.4	Reasoned estimates: Use reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity. Content Scope: Knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements .	i) Some of the tasks may use scaffolding[1].	MP.1 MP.2 MP.4 MP.5 MP.7	Yes

[1] Scaffolding in a task provides the student with an entry point into a pathway for solving a problem. In unscaffolded tasks, the student determines his/her own pathway and process. Both scaffolded and unscaffolded tasks will be included in reasoning and modeling items.

[2] "Thin context" is a sentence or phrase that establishes a concrete referent for the quantity/quantities in the problem, in such a way as to provide meaningful avenues for mathematical intuition to operate, yet without requiring any sort of further analysis of the context. For example, a task could provide a reason for the use of scientific notation such as, "The number represents the distance between two planets."