Smarter Balanced Assessment Consortium
Claims, Targets, and Standard Alignment for Math
Interim Assessment Blocks

The Smarter Balanced Assessment Consortium (SBAC) has created a hierarchy comprised of claims and targets that together can be used to make statements about student achievement. Claims are broad statements that outline the outcomes achieved with mastery of the standards within it. Within each claim are a variety of assessment targets that further clarify the knowledge and specific skills that cross over a cluster of standards.

The following tables layout the claims and targets for each assessment claim. Each target may feature a standard or a variety of standards that make up the skill(s) of the target. Each target lists Depth of Knowledge level(s), item type(s) in which the target may be assessed as well as the Interim Assessment Block (IAB) that the target may be assessed in.

Item Types:

- MC – Multiple Choice, Single Correct Response
- MS – Multiple Choice, Multiple Correct Response
- EQ – Equation/Numeric
- MA – Matching Tables
- TI – Fill-in tables
- DD – Drag and Drop
- HS – Hot Spot
- G – Graphing
- GI – Graphing Interaction
- ST – Short Text

Depth of Knowledge:

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

Major and Additional/Supporting Clusters:
Not all content in a given grade is emphasized equally in the standards. Some clusters require greater emphasis than others based on the depth of ideas, the time they take to master, and/or their importance to future mathematics or the demands of college and career readiness. The following tables identify the additional and supporting work for the grade with shading. If no shading is included, all standards listed are part of the major work for the grade.

Claim	Target	IAB	DOK	Standards	Item Types
1: **Concepts and Procedures**	**A:** Write and interpret numerical expressions.	Operations and Algebraic Thinking	1	**5.OA.1:** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	MC, EQ
				5.OA.2: Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.	
	B: Analyze patterns and relationships.	Operations and Algebraic Thinking	2	**5.OA.3:** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	MC, G, HS
	C: Understand the place value system.	Number and Operations in Base Ten	1, 2	**5.NBT.1:** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	EQ, MC, MA
				5.NBT.2: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	
				5.NBT.3: Read, write, and compare decimals to thousandths. **5.NBT.3a:** Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000). **5.NBT.3b:** Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	
				5.NBT.4: Use place value understanding to round decimals to any place.	

Shaded standards denote additional and supporting clusters

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Claim	Target	IAB	DOK	Standards	Item Types
1: **Concepts and Procedures**	**D:** Perform operations with multi-digit whole numbers and with decimals to hundredths.	Numbers and Operations in Base 10	1, 2	**5.NBT.5:** Fluently multiply multi-digit whole numbers using the standard algorithm.	MC, EQ
				5.NBT.6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
				5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	
	E: Use equivalent fractions as a strategy to add and subtract fractions.	Numbers and Operations -Fractions	1, 2	**5.NF.1:** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)	MC, EQ, TI
				5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.	

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Claim	Target	IAB	DOK	Standards	Item Types
1: **Concepts and Procedures**	**F:** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Numbers and Operations -Fractions	1, 2	**5.NF.3:** Interpret a fraction as division of the numerator by the denominator *(a/b = a ÷ b).* Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	MC, EQ
				5.NF.4: Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. **5.NF.4a:** Interpret the product *(a/b) × q* as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations *a × q ÷ b*. For example, use a visual fraction model to show *(2/3) × 4 = 8/3*, and create a story context for this equation. Do the same with *(2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)* **5.NF.4b:** Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	

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Claim	Target	IAB	DOK	Standards	Item Types
1: **Concepts and Procedures**	**F:** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Numbers and Operations -Fractions	1, 2	**5.NF.5:** Interpret multiplication as scaling (resizing), by: **5.NF.5a:** Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. **5.NF.5b:** Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	MC, EQ
				5.NF.6: Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	
				5.NF.7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **5.NF.7a:** Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. **5.NF.7b:** Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. **5.NF.7c:** Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?	

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1: **Concepts and Procedures**	**G:** Convert like measurement units within a given measurement system.	Measurement and Data	1	**5.MD.1:** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	EQ
	H: Represent and interpret data.	Measurement and Data	1, 2	**5.MD.2:** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	HS, MC, EQ
	I: Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	Measurement and Data	1, 2	**5.MD.3:** Recognize volume as an attribute of solid figures and understand concepts of volume measurement. **5.MD.3a:** A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. **5.MD.3b:** A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	MA, EQ
				5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	

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Claim	Target	IAB	DOK	Standards	Item Types
1: **Concepts and Procedures**	**I:** Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	Measurement and Data	1, 2	**5.MD.5:** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **5.MD.5a:** Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. **5.MD.5b:** Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems. **5.MD.5c:** Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.	MA, EQ

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1: **Concepts and Procedures**	**J:** Graph points on the coordinate plane to solve real-world and mathematical problems.	Geometry	1	**5.G.1:** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	MC, HS, G, DD
				5.G.2: Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	
	K: Classify two-dimensional figures into categories based on their properties.	Geometry	2	**5.G.3:** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.	MA
				5.G.4: Classify two-dimensional figures in a hierarchy based on properties.	

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2: **Problem Solving**	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3) **B:** Select and use appropriate tools strategically. (1, 2, 3) **C:** Interpret results in the context of a situation. (1, 2, 3) **D:** Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3)	Numbers and Operations in Base 10 Numbers and Operations - Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.NBT.5:** Fluently multiply multi-digit whole numbers using the standard algorithm.	MC, MS, EQ, DD, HS GI, MA, TI ST (PT Only)
			5.NBT.6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
			5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	
			5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)	
			5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.	

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2: **Problem Solving**	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3) **B:** Select and use appropriate tools strategically. (1, 2, 3) **C:** Interpret results in the context of a situation. (1, 2, 3) **D:** Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3)	Numbers and Operations in Base 10 Numbers and Operations - Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.NF.3:** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? **5.NF.4:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. **5.NF.4a:** Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.) **5.NF.4b:** Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	MC, MS, EQ, DD, HS GI, MA, TI ST (PT Only)

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Claim	Target/DOK	IAB	Standards	Item Types
2: **Problem Solving**	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3) **B:** Select and use appropriate tools strategically. (1, 2, 3) **C:** Interpret results in the context of a situation. (1, 2, 3) **D:** Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3)	Numbers and Operations in Base 10 Numbers and Operations - Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.MD.1:** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. **5.MD.3:** Recognize volume as an attribute of solid figures and understand concepts of volume measurement. **5.MD.3a:** A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. **5.MD.3b:** A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. **5.MD.4:** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. **5.MD.5:** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **5.MD.5a:** Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. **5.MD.5b:** Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems. **5.MD.5c:** Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	MC, MS, EQ, DD, HS GI, MA, TI ST (PT Only)

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2: **Problem Solving**	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3) **B:** Select and use appropriate tools strategically. (1, 2, 3) **C:** Interpret results in the context of a situation. (1, 2, 3) **D:** Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3)	Numbers and Operations in Base 10 Numbers and Operations - Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.G.1:** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	MC, MS, EQ, DD, HS GI, MA, TI ST (PT Only)
			5.G.2: Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	

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3: **Communicating Reasoning**	**A:** Test propositions or conjectures with specific examples. (2, 3) **B.** Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (2, 3, 4) **C.** State logical assumptions being used. (2, 3) **D.** Use the technique of breaking an argument into cases. (2, 3) **E.** Distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in the argument—explain what it is. (2, 3, 4) **F.** Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)	Numbers and Operations in Base 10 Numbers and Operations – Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.NBT.2:** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	MC, MS, EQ, DD, HS GI, MA, TI, ST (PT Only)
			5.NBT.6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
			5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	
			5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)	
			5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.	

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3: **Communicating Reasoning**	**A:** Test propositions or conjectures with specific examples. (2, 3) **B.** Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (2, 3, 4) **C.** State logical assumptions being used. (2, 3) **D.** Use the technique of breaking an argument into cases. (2, 3) **E.** Distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in the argument—explain what it is. (2, 3, 4) **F.** Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)	Numbers and Operations in Base 10 Numbers and Operations – Fractions Measurement and Data Geometry Operations and Algebraic Thinking Performance Task	**5.NF.3:** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? **5.NF.4:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. **5.NF.7:** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **5.NF.7a:** Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. **5.NF.7b:** Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.	MC, MS, EQ, DD, HS GI, MA, TI, ST (PT Only)

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		5.MD.2: Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	
		5.MD.3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement. **5.MD.3a:** A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. **5.MD.3b:** A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	

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