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

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. The claim is a broad statement that will 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 claims 1-4. Each target may feature a standard or a variety of standards that make up the skill(s) of the target. Each target also features a Depth of Knowledge level(s) and item type(s) in which the target may be assessed.

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

Work:
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 by shading. If no shading is included, all standards listed are part of the major work for that level.

Claim	Target	DOK	Standards	Item Types
1: Concepts and Procedures: Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	**A:** Write and interpret numerical expressions.	1, 2	**5.OA.1:** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **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.	MC, EQ
	B: Analyze patterns and relationships.	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.	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. **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.4:** Use place value understanding to round decimals to any place.	EQ, MC, MA

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target	DOK	Standards	Item Types
1: Concepts and Procedures: Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	**D:** Perform operations with multi-digit whole numbers and with decimals to hundredths.	1, 2	**5.NBT.5:** Fluently multiply multi-digit whole numbers using the standard algorithm. **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.	MC, EQ
	E: Use equivalent fractions as a strategy to add and subtract 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, $a/b + c/d = (ad + bc)/bd$.) **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 $3/7 < 1/2$.	MC, EQ

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target	DOK	Standards	Item Types
1: **Concepts and Procedures:** Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	**F:** Apply and extend previous understandings of multiplication and division to multiply and divide 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.5: Interpret multiplication as scaling (resizing), by: **a.** 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. **b.** 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×a)/(n×b) to the effect of multiplying a/b by 1.	
			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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target	DOK	Standards	Item Types
1: **Concepts and Procedures:** Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	**G:** Convert like measurement units within a given measurement system.	1, 2	**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.	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.	1, 2	**5.MD.3:** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	MA, EQ
			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.	
	J: Graph points on the coordinate plane to solve real-world and mathematical problems.	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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target	DOK	Standards	Item Types
1: **Concepts and Procedures:** Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.	**K:** Classify two-dimensional figures into categories based on their properties.	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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
2: **Problem Solving:** Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3)	**5.NBT.5:** Fluently multiply multi-digit whole numbers using the standard algorithm.	MC, MS, EQ, GI, MA, TI
		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.	
	B: Select and use appropriate tools strategically. (1, 2)	**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.	
	C: Interpret results in the context of a situation. (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, $a/b + c/d = (ad + bc)/bd$.)	
	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)	**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 $3/7 < 1/2$.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
2: **Problem Solving:** Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3)	**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, MS, EQ, GI, MA, TI
	B: Select and use appropriate tools strategically. (1, 2)	**5.NF.4:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	
	C: Interpret results in the context of a situation. (2)	**5.NF.5:** Interpret multiplication as scaling (resizing), by: **a.** 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. **b.** 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×a)/(n×b) to the effect of multiplying a/b by 1.	
	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)	**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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
2: Problem Solving: Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.	**A:** Apply mathematics to solve well-posed problems in pure mathematics and rising in everyday life, society, and the workplace. (2, 3)	**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	MC, MS, EQ, GI, MA, TI
		5.MD.3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
		5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
	B: Select and use appropriate tools strategically. (1, 2)	**5.MD.5:** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	
	C: Interpret results in the context of a situation. (2)	**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).	
	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)	**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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
3: **Communicating Reasoning:** Students clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of other.	**A:** Test propositions or conjectures with specific examples. (2)	**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, GI, MA, TI, ST[1]
	B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (3, 4)	**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.	
	C. State logical assumptions being used. (2, 3)	**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.	
	D. Use the technique of breaking an argument into cases. (2, 3)	**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, $a/b + c/d = (ad + bc)/bd$.)	
	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)	**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 $3/7 < 1/2$.	
	F. Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)		

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
3: **Communicating Reasoning**: Students clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of other.	**A:** Test propositions or conjectures with specific examples. (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, MS, EQ, GI, MA, TI, ST[1]
	B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (3, 4)		
	C. State logical assumptions being used. (2, 3)	**5.NF.4:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	
	D. Use the technique of breaking an argument into cases. (2, 3)	**5.NF.5:** Interpret multiplication as scaling (resizing), by: **a.** 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. **b.** 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×a)/(n×b) to the effect of multiplying a/b by 1.	
	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)	**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.	
	F. Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)	**5.NF.7:** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
3: **Communicating Reasoning:** Students clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of other.	**A:** Test propositions or conjectures with specific examples. (2)	**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.	MC, MS, EQ, GI, MA, TI, ST[1]
	B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (3, 4)	**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.	
	C. State logical assumptions being used. (2, 3)	**5.MD.3:** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
		5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
	D. Use the technique of breaking an argument into cases. (2, 3)	**5.MD.5:** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	
	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)	**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.	
	F. Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)		

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
3: Communicating Reasoning: Students clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of other.	**A:** Test propositions or conjectures with specific examples. (2)	**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.	MC, MS, EQ, GI, MA, TI, ST[1]
	B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. (3, 4)	**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.	
	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)	**5.G.4:** Classify two-dimensional figures in a hierarchy based on properties.	
	F. Base arguments on concrete references such as objects, drawings, diagrams, and actions. (2, 3)		

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
4: Modeling and Data Analysis: Students can analyze complex ,real-world scenarios and can construct and use mathematical models to interpret and solve problems.	**A:** Apply mathematics to solve problems arising in everyday life, society, and the workplace. (2, 3) **B:** Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. (2, 3, 4) **C:** State logical assumptions being used. (1, 2) **D:** Interpret results in the context of a situation. (2, 3) **E:** Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon. (3, 4) **F:** Identify important quantities I a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3) **G*:** Identify, analyze, and synthesize relevant external resources to pose or solve problems. (3, 4)	**5.NBT.5:** Fluently multiply multi-digit whole numbers using the standard algorithm. **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.	MC, MS, EQ, GI, MA, TI

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.

Claim	Target/DOK	Standards	Item Types
4: Modeling and Data Analysis: Students can analyze complex ,real-world scenarios and can construct and use mathematical models to interpret and solve problems.	**A:** Apply mathematics to solve problems arising in everyday life, society, and the workplace. (2, 3)	**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.	MC, MS, EQ, GI, MA, TI
	B: Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. (2, 3, 4)	**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.	
	C: State logical assumptions being used. (1, 2)	**5.MD.3:** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
	D: Interpret results in the context of a situation. (2, 3)	**5.MD.4:** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
	E: Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon. (3, 4)	**5.MD.5:** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	
	F: Identify important quantities I a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). (1, 2, 3)	**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).	
	G*: Identify, analyze, and synthesize relevant external resources to pose or solve problems. (3, 4)	**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.	

* Denotes that target is measured in Performance Tasks only; Shaded standards denote additional and supporting clusters; [1] Denotes that item type is only applicable to target E; Tables were created using the released item specification tables provided by SBAC published on 2/04/2014.