



Mathematics Focused Interim Assessment Blocks

2019-20 Blueprint

as of July 2019

The Smarter Balanced Interim Assessment Blocks (IABs) are one of two distinct types of interim assessments being made available by the Consortium; the other type is the Interim Comprehensive Assessment (ICAs). IABs are short, focused sets or blocks of items that measure one or more assessment targets. Results from these assessments provide information about a student's strengths or needs in relation to the Common Core State Standards (CCSS) and, therefore, generate more detailed information for instructional purposes than the summative or ICAs alone. The IABs are currently available as fixed forms. The fixed forms are administered online, using the same delivery software as the summative assessments.

This blueprint presents the specific blocks that are available by grade level for mathematics beginning at grade 3 and continuing through high school. Each block-level blueprint contains information about claim(s), assessment target(s), and depth of knowledge level(s) addressed by the items in that block as well as the numbers of items allocated to each of those categories.

The blueprint can be used by educators to plan how to integrate the IABs effectively within classroom instruction or to better understand results that are reported. Users of the blueprint can become familiar with the number of IABs for each grade level, the general focus of each IAB, (i.e. which assessment targets are addressed in a specific IAB and the emphasis of each target relative to the other targets in the block). A fifth-grade teacher, for example, may wish to collect more information regarding her students' knowledge about geometry. The teacher could use this blueprint to see that there is a block for geometry composed of 13 machined-scored items across the four claims—concepts and procedures, problem solving, modeling and data analysis, and communicating reasoning. After reading the blueprint, she will have a better understanding of the meaning of the geometry block.

Mathematics Focused Interim Assessment Blocks

Grade 3	Grade 4	Grade 5
Multiplication and Division: Interpret, Represent, and Solve	Four Operations: Interpret, Represent, and Solve	Numerical Expressions
Properties of Multiplication and Division	Fraction Equivalence and Ordering	Operations with Whole Numbers and Decimals
Multiply and Divide within 100	Fractions and Decimal Notation	Add and Subtract with Equivalent Fractions
Number and Operations – Fractions	Geometry	Geometry
Number and Operations in Base Ten		
Geometry		
Grade 6	Grade 7	Grade 8
Divide Fractions by Fractions	Equivalent Expressions	Proportional Relationships, Lines, and Linear Equations
One-Variable Expressions and Equations	Algebraic Expressions and Equations	Analyze and Solve Linear Equations
Dependent and Independent Variables	Geometric Figures	Congruence and Similarity
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Expression and Equations II
Geometry	Statistics and Probability	The Number System
Statistics and Probability	The Number System	Functions
High School		
Equations and Reasoning	Number and Quantity	
Solve Equations and Inequalities: Linear and Exponential	Interpreting Functions	
Solve Equations and Inequalities: Quadratic	Seeing Structure in Expressions/Polynomial Expressions	
Geometry and Right Triangle Trigonometry	Statistics and Probability	

GRADE 3

Grade 3 – Multiplication and Division: Interpret, Represent, and Solve (12 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	OA	<p>A. Represent and solve problems involving multiplication and division.</p> <ul style="list-style-type: none"> The student uses multiplication and division within 100 to solve straightforward one-step word problems in situations involving equal groups, arrays, and measurement quantities such as length, liquid volume and masses of objects. The student determines an unknown whole number in a multiplication or division equation relating three whole numbers with single-digit factors within 100. The tasks coding to standards 3.OA.A.1 and 3.OA.A.2, which probe student understanding of the meanings of multiplication and division, will be assessed in Claim 4. Equal groups problems can also be stated in terms of columns, exchanging the order of A and B, so that the same array is described. For example: There are B columns of apples with A apples in each column. How many apples are there? Per the Content Specifications, only a few tasks coding to Standard 3.OA.A.3 will make the method of solution a separate target of assessment. 	1	8	8
2. Problem Solving	Problem Solving	<p>A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.</p> <p>C. Interpret results in the context of a situation.</p>	2, 3	2	2
3. Communicating Reasoning	Communicating Reasoning	<p>D. Use the technique of breaking an argument into cases.</p> <p>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</p>	2 2	2	2

GRADE 3 (continued)

Grade 3 – Properties of Multiplication and Division (11 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	OA	B. Understand properties of multiplication and the relationship between multiplication and division. <ul style="list-style-type: none"> The student uses the properties of operations (Commutative Property of Multiplication, Associative Property of Multiplication, and Distributive Property of Multiplication) as strategies to multiply and divide. The student will represent division as an unknown-factor problem. 	1	9	9
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	1
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	2	1	1

GRADE 3 (continued)

Grade 3 – Multiply and Divide within 100 (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	OA	C. Multiply and divide within 100. <ul style="list-style-type: none"> The student accurately multiplies single-digit factors within 100. The student accurately divides within 100 using single-digit divisors and single digit quotients. The student connects multiplication and division to target fluencies. 	1	14	14

GRADE 3 (continued)

Grade 3 – Number and Operations – Fractions (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NF	F. Develop understanding of fractions as numbers. <ul style="list-style-type: none"> The student recognizes when two or more fractions are equivalent. The student generates equivalent fractions given an initial fraction or fraction model. The student uses the symbols $<$, $>$, and $=$ to compare fractions with different numerators and different denominators. Explaining why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ (CCSS 4.NF.A.1), will be assessed in Claim 3. Recognizing that comparisons are valid only when the two fractions refer to the same whole (CCSS 4.NF.A.2) will be assessed in Claim 3. Justifying the comparison of fractions (CCSS 4.NF.A.2) will be assessed in Claim 3. 	1, 2	13	13
3. Communicating Reasoning	Communicating Reasoning	C. State logical assumptions being used.	3	1	1

GRADE 3 (continued)

Grade 3 – Number and Operations in Base Ten (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NBT	<p>E. Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <ul style="list-style-type: none"> The student solves non-contextual problems using place value understanding to round whole numbers to the nearest 10 or 100. The student solves non-contextual problems by adding and/or subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. The student solves non-contextual computation problems by multiplying one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations. 	1	12	12
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	2	2

GRADE 3 (continued)

Grade 3 – Geometry (12 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	K. Reason with shapes and their attributes.	1	12	12
		<ul style="list-style-type: none"> The student identifies, draws, and classifies shapes (e.g., rhombuses, rectangles, and others) according to their attributes (e.g., having four sides), and recognizes that shared attributes can define a classification category. The student partitions shapes into parts with equal areas and can express the area of each part as a unit fraction of the whole. 			

GRADE 4

Grade 4 – Four Operations: Interpret, Represent, and Solve (14 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	OA	<p>A. Use the four operations with whole numbers to solve problems.</p> <ul style="list-style-type: none"> The student solves contextual problems involving multiplicative comparisons, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. The student solves straightforward, contextual problems using the four operations. Interpreting multiplication equations as multiplicative comparisons and representing verbal statements of multiplicative comparisons as multiplication equations (4.OA.1) will be assessed in Claim 4. Items asking students to solve a word problem by using an equation with an unknown number to represent the problem (4.OA.A.2) will be covered in Claim 4. Items asking students to solve multi-step word problems, interpret a remainder, and/or assess reasonableness of answers (4.OA.A.3) will be covered in Claim 2. Interpreting remainders in context by having students explain or justify why a quotient was rounded to the next whole or why the solution has a fraction remainder (4.OA.A.3) may be assessed in Claim 3. 	1, 2	11	11
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	2
4. Modeling and Data Analysis	Modeling and Data Analysis	F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2	1	
3. Communicating Reasoning	Communicating Reasoning	C. State logical assumptions being used.	2	1	1

GRADE 4 (continued)

Grade 4 – Fraction Equivalence and Ordering (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NF	<p>F. Extend understanding of fraction equivalence and ordering.</p> <ul style="list-style-type: none"> The student recognizes when two or more fractions are equivalent. The student generates equivalent fractions given an initial fraction or fraction model. The student uses the symbols $<$, $>$, and $=$ to compare fractions with different numerators and different denominators. Explaining why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ (CCSS 4.NF.A.1), will be assessed in Claim 3. Recognizing that comparisons are valid only when the two fractions refer to the same whole (CCSS 4.NF.A.2) will be assessed in Claim 3. Justifying the comparison of fractions (CCSS 4.NF.A.2) will be assessed in Claim 3. 	1, 2	10	10
3. Communicating Reasoning	Communicating Reasoning	<p>A. Test propositions or conjectures with specific examples.</p> <p>D. Use the technique of breaking an argument into cases.</p> <p>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</p>	2, 3	3	3

GRADE 4 (continued)

Grade 4 – Fractions and Decimal Notation (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NF	<p>H. Understand decimal notation for fractions, and compare decimal fractions.</p> <ul style="list-style-type: none"> The student expresses a fraction with denominator 10 as an equivalent fraction with denominator 100. The student adds two fractions with respective denominators 10 and 100. The student uses decimal notation to represent fractions with denominators 10 or 100. The student locates decimal numbers to the hundredths place on a number line. The student compares two decimals to the hundredths place by reasoning about their size, using the symbols $<$, $>$, or $=$. Much of 4.NF.C.7 will be measured in Claims 2, 3, and 4. 	1, 2	11	11
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	1
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	2	1	1

GRADE 4 (continued)

Grade 4 – Geometry (11 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	<p>L Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</p> <ul style="list-style-type: none"> The student draws points, lines, line segments, rays, and angles and identifies these in two-dimensional figures. The student classifies two-dimensional figures based on the presence or absence of parallel/perpendicular line segments and angles of a specified size, including identifying right triangles. The student identifies and draws lines of symmetry in line-symmetric figures, and distinguishes line-symmetric figures from line-asymmetric figures. More difficult items for this target may use symmetry as the basis for classification of two-dimensional figures (e.g., What lines of symmetry does a rectangle have to have for it to be considered a square?). 	1, 2	11	11

GRADE 5

Grade 5 – Numerical Expressions (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	OA	A. Write and interpret numerical expressions.	1, 2	14	14
		<ul style="list-style-type: none"> The student writes or identifies a numerical expression that records a calculation represented with words. The student interprets numerical expressions in words without evaluating them. The student evaluates numerical expressions with grouping symbols. 			

GRADE 5 (continued)

Grade 5 – Operations with Whole Numbers and Decimals (12 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NBT	D. Perform operations with multi-digit whole numbers and with decimals to hundredths. <ul style="list-style-type: none"> The student multiplies multi-digit whole numbers. The student determines 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. The student adds, subtracts, multiplies, and divides decimals to the hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Illustrating and explaining the calculation using equations, rectangular arrays, and/or area models will be assessed in Claim 3. 	1, 2	11	11
3. Communicating Reasoning	Communicating Reasoning	C. State logical assumptions being used.	3	1	1

GRADE 5 (continued)

Grade 5 – Add and Subtract with Equivalent Fractions (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NF	<p>E. Use equivalent fractions as a strategy to add and subtract fractions.</p> <ul style="list-style-type: none"> The student adds or subtracts fractions with unlike denominators (including mixed numbers) by using visual fraction models or equations to represent the problem. The student identifies and explains the use of equivalent fractions when adding or subtracting fractions with unlike denominators (including mixed numbers). Items that ask students to write an equation that represents a word problem (5.NF.2) will be assessed in Claim 4. 	1, 2	1	13
3. Communicating Reasoning	Communicating Reasoning	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	2	2

GRADE 5 (continued)

Grade 5 – Geometry (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	J. Graph points on the coordinate plane to solve real-world and mathematical problems. <ul style="list-style-type: none"> The student interprets coordinate values of points graphed on a coordinate plane, or in the context of a given situation. The student graphs points on the coordinate plane representing real-world or mathematical problems. 	1	5	9
		K. Classify two-dimensional figures into categories based on their properties. <ul style="list-style-type: none"> The student classifies two-dimensional figures into categories and/or subcategories based on their properties. Classifying two-dimensional figures in a hierarchy based on an analysis of the relationship between properties of categories and subcategories will be assessed in Claim 3. Determining if a shape “is always,” “is sometimes,” or “is never” classified in a category will also be assessed in Claim 3. 	2	4	
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	2
	Modeling and Data Analysis	F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2	1	
3. Communicating Reasoning	Communicating Reasoning	E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is. C. State logical assumptions being used.	2, 3	2	2

GRADE 6

Grade 6 – Divide Fractions by Fractions (14 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NS	B. Apply and extend previous understandings of numbers to the system of rational numbers. <ul style="list-style-type: none"> The student interprets quotients of fractions using visual fraction models, equations, and the relationship between multiplication and division. The student solves real-world and mathematical one-step problems involving division of fractions by fractions. 	1, 2	12	12
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	2
4. Modeling and Data Analysis	Modeling and Data Analysis	D. Interpret results in the context of a situation.	3	1	

GRADE 6 (continued)

Grade 6 – One Variable Expressions and Equations (14 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	F. Reason about and solve one-variable equations and inequalities. <ul style="list-style-type: none"> The student uses substitution in one-variable equations and inequalities. The student writes one-variable equations and inequalities and solves one-variable equations in real-world and mathematical problems. The student represents solutions of inequalities in real-world and mathematical problems on a number line. Claim 3 tasks will tap into a student's ability to explain inequalities as a set of infinitely many solutions (some connecting the content of this target to 6.NS Target C). 	1, 2	13	13
3. Communicating Reasoning	Communicating Reasoning	C. State logical assumptions being used.	2	1	1

GRADE 6 (continued)

Grade 6 – Dependent and Independent Variables (11 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	G. Represent and analyze quantitative relationships between dependent and independent variables. <ul style="list-style-type: none"> The student writes an equation to express one quantity versus another quantity using dependent and independent variables. The student identifies the relationship between dependent and independent variables from graphs and tables and relates them to equations. 	2	9	9
3. Communicating Reasoning	Communicating Reasoning	E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	3	2	2
		G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	3		

GRADE 6 (continued)

Grade 6 – Ratios and Proportional Relationships (13 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	RP	<p>A. Understand ratio concepts and use ratio reasoning to solve problems.</p> <ul style="list-style-type: none"> The student uses ratio language to describe a ratio relationship. The student determines the unit rate associated with a real-world ratio. The student finds missing values in tables of equivalent ratios. The student plots coordinate pairs to represent equivalent ratios. The student makes tables of equivalent ratios relating quantities with whole-number measurements. The student solves real-world problems involving unit rate. The student solves mathematical problems involving finding the whole, given a part and the percent. The student solves real-world and mathematical problems involving finding a percent of a quantity as a rate per 100. The student uses ratio reasoning to manipulate and transform units appropriately when multiplying or dividing quantities. Real-world problems involving rates, ratios, percentages (finding the whole, given a part and the percent), and measurement conversions that use ratio reasoning will also be assessed in Claim 2, Claim 3, and Claim 4, as appropriate. 	1, 2	11	11
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	1
3. Communicating Reasoning	Communicating Reasoning	G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	2	1	1

GRADE 6 (continued)

Grade 6 – Geometry (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	H. Solve real-world and mathematical problems involving area, surface area, and volume. <ul style="list-style-type: none"> The student determines the area of triangles, special quadrilaterals, and polygons using composition and decomposition in solving real-world and mathematical problems. The student determines the volume of right rectangular prisms with fractional edge lengths in solving real-world and mathematical problems. The student draws polygons in the coordinate plane, given coordinates for the vertices in the context of solving real-world and mathematical problems. The student determines the length of a side of a polygon in the coordinate plane, given coordinates for the vertices in the context of solving real-world and mathematical problems. The student determines the surface area of three-dimensional figures formed by nets of polygons in the context of solving real-world and mathematical problems. Many tasks for this target will provide context for Claims 2–4 and connect the content of this target to several other targets across Claim 1 (see, for example, 6.NS Targets B and C, 6.EE Targets E, F, and G). 	2	11	11
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	2
4. Modeling and Data Analysis	Modeling and Data Analysis	B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2	1	
3. Communicating Reasoning	Communicating Reasoning	G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	3	1	1

GRADE 6 (continued)

Grade 6 – Statistics and Probability (13 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	SP	<p>I. Develop understanding of statistical variability.</p> <ul style="list-style-type: none"> The student recognizes a statistical question as one that anticipates variability. The student identifies statements that describe the center and/or spread, and/or overall shape of a set of data. The student recognizes 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. Tasks for this target will ask students to identify and pose questions that lead to variable responses; identify a reasonable center and/or spread for a given context. In Grade 6, the focus on assessment for the SP standards should be in Claim 4. The most important concept is distribution, which is a foundational idea for all future statistical work. Other concepts include shape, center, and spread of a distribution (not the more technical details often associated with those). 	2	3	13
		<p>J. Summarize and describe distributions.</p> <ul style="list-style-type: none"> The student displays numerical data on line plots, dot plots, histograms, and box plots. The student summarizes numerical data sets by describing the nature of the attribute under investigation, including how it was measured, its units of measurement, and number of observations. The student summarizes numerical data sets by determining quantitative measures of center (median and/or mean) and variability (interquartile range, range, and/or mean absolute deviation). In Grade 6, the focus on assessment for the SP standards should be in Claim 4. The most important concept is distribution, which is a foundational idea for all future statistical work. Other concepts include shape, center, and spread of a distribution (not the more technical details often associated with those). 	1, 2	10	

GRADE 7

Grade 7 – Equivalent Expressions (10 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	C. Use properties of operations to generate equivalent expressions. <ul style="list-style-type: none"> The student adds and subtracts linear expressions with rational coefficients. The student factors linear expressions with rational coefficients. The student generates equivalent linear expressions using a combination of addition and subtraction, factoring, and expansion. 	1, 2	8	8
3. Communicating Reasoning	Communicating Reasoning	A. Test propositions or conjectures with specific examples.	3	2	2
		E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	3		

GRADE 7 (continued)

Grade 7 – Algebraic Expressions and Equations (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	D. Solve real-life and mathematical problems using numerical and algebraic expressions and equations. <ul style="list-style-type: none"> The student identifies equivalency between two rational numbers. The student applies properties of operations to evaluate numeric expressions, including converting between different forms of rational numbers. The student solves 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. The student solves word problems leading to inequalities of the form $px + q > r$ and $px + q < r$, where p, q, and r are specific rational numbers. The student graphs the solution set of an inequality on a number line. 	1, 2	11	11
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	2	2

GRADE 7 (continued)

Grade 7 – Geometric Figures (11 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	E. Draw, construct, and describe geometrical figures and describe the relationships behind them. <ul style="list-style-type: none"> The student determines whether a sample is representative of a population. The student draws inferences about a population using data from a random sample. Other tasks will require students to explain variability in estimates or predictions using data from multiple samples of the same size in Claims 2-4. 	1, 2	9	9
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	2	2
		D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1		

GRADE 7 (continued)

Grade 7 – Ratio and Proportional Relationships (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	RP	A. Analyze proportional relationships and use them to solve real-world and mathematical problems.	2	10	10
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2, 3	1	2
		B. Select and use appropriate tools strategically.	1, 2, 3		
		C. Interpret results in the context of a situation.			
	Modeling and Data Analysis	D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2, 3	1	
		A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.			
		D. Interpret results in the context of a situation.	2, 3, 4		
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.			
E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	1, 2, 3				
C. State logical assumptions being used.		3, 4			
F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					
G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.					
3. Communicating Reasoning	Communicating Reasoning	A. Test propositions or conjectures with specific examples.	2, 3	1	1
		D. Use the technique of breaking an argument into cases.			
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.	2, 3, 4		
		E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.			
		C. State logical assumptions being used.	2, 3		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.			
G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)					

GRADE 7 (continued)

Grade 7 – The Number System (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NS	B. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. <ul style="list-style-type: none"> The student interprets rational number values on a number line, including modeling addition and subtraction expressions. The student applies properties of operations as strategies to add and subtract rational numbers. The student applies properties of operations as strategies to multiply and divide rational numbers. The student converts from a fractional form of rational numbers to a decimal form of rational numbers. The student solves real-world and mathematical problems involving the four operations with rational numbers. 7.NS.A.2a Interpret products of rational numbers by describing real-world contexts will be addressed in Claim 2. Tasks for Claim 3 related to this target will incorporate student understanding of zero as a divisor, quotients of integers being rational, and termination in 0s or repeating for decimal representation of rational numbers. Tasks for Claims 2 and 4 related to this target will integrate operations with rational numbers. 	1, 2	10	10
1. Concepts and Procedures	EE	D. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	1	1	1
4. Modeling and Data Analysis	Modeling and Data Analysis	E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3	1	1
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	3	2	2
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2		

GRADE 7 (continued)

Grade 7 – Statistics and Probability (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	SP	G. Use random sampling to draw inferences about a population. <ul style="list-style-type: none"> The student determines whether a sample is representative of a population. The student draws inferences about a population using data from a random sample. Other tasks will require students to explain variability in estimates or predictions using data from multiple samples of the same size in Claims 2-4. 	1, 2	3	13
		H. Draw informal comparative inferences about two populations. <ul style="list-style-type: none"> The student makes comparisons between two numerical data distributions. Much of the evidence for 7.SP.B will be assessed in Claim 4. 	2	4	
		I. Investigate chance processes and develop, use, and evaluate probability models. <ul style="list-style-type: none"> The student understands the likelihood of an event as a probability between 0 and 1. The student finds probabilities of simple events. The student compares predicted probabilities to observed frequencies. The student finds probabilities of compound events. 7.SP.C.7 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 will be assessed in Claims 2 and 3. 	1, 2	6	
4. Modeling and Data Analysis	Modeling and Data Analysis	C. State logical assumptions being used. F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2, 3	2	

GRADE 8

Grade 8 – Proportional Relationships, Lines, and Linear Equations (10 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	<p>C. Understand the connections between proportional relationships, lines, and linear equations.</p> <ul style="list-style-type: none"> The student graphs proportional relationships. The student interprets the unit rate as the slope of the graph of a proportional relationship. The student compares two different proportional relationships represented in different formats. The student finds the equation $y = mx$ or $y = mx + b$ for a line. Tasks for this target will ask students to compare two different proportional relationships presented in different forms. Many of these tasks will contribute evidence to Claims 2 and 4. 	2	8	8
3. Communicating Reasoning	Communicating Reasoning	<p>E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.</p>	2	2	2
		<p>F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.</p>	2		

GRADE 8 (continued)

Grade 8 – Analyze and Solve Linear Equations (12 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE	D. Analyze and solve linear equations and pairs of simultaneous linear equations. <ul style="list-style-type: none"> The student identifies and writes examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. The student solves linear equations in one variable with rational coefficients, including equations with solutions that require expanding expressions using the distributive property and collecting like terms. The student estimates solutions by graphing systems of two linear equations in two variables. The student recognizes when a system of two linear equations in two variables has one solution, no solution, or infinitely many solutions. The student solves a system of two linear equations in two variables algebraically, or solves real-world and mathematical problems leading to two linear equations in two variables. 8.EE.C.8a will be assessed in connection with targets from Claims 2 and 3. 	1, 2	7	7
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	3	2	2
		D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2		
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	2, 3	3	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		

GRADE 8 (continued)

Grade 8 – Congruence and Similarity (12 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	<p>G. Understand congruence and similarity using physical models, transparencies, or geometry software.</p> <ul style="list-style-type: none"> The student verifies that rigid transformations preserve distance and angle measures. The student describes sequences of rotations, reflections, translations, and dilations that can verify whether two-dimensional figures are similar or congruent to each other. The student constructs a new figure that is the result of dilating, rotating, reflecting, or translating the original figure. The student describes the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. Much of the evidence for 8.G.A will be assessed in Claim 3. 	1, 2	7	7
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	3	5	5
		E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	3		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2		

GRADE 8 (continued)

Grade 8 – Expressions & Equations II with Statistics (13 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	EE SP	D. Analyze and solve linear equations and pairs of simultaneous linear equations. <ul style="list-style-type: none"> The student identifies and writes examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. The student solves linear equations in one variable with rational coefficients, including equations with solutions that require expanding expressions using the distributive property and collecting like terms. The student estimates solutions by graphing systems of two linear equations in two variables. The student recognizes when a system of two linear equations in two variables has one solution, no solution, or infinitely many solutions. The student solves a system of two linear equations in two variables algebraically, or solves real-world and mathematical problems leading to two linear equations in two variables. 8.EE.C.8a will be assessed in connection with targets from Claims 2 and 3. 	1, 2	5	10
		J. Investigate patterns of association in bivariate data. <ul style="list-style-type: none"> The student interprets patterns of association between two quantities in a scatter plot (clustering in reference to the line of best fit, positive or negative association, linear association, nonlinear association, and the effect of outliers) and interprets the slope and y-intercept in terms of the context. The student identifies the slope (rate of change) and intercept (initial value) of a line suggested by examining bivariate measurement data in a scatter plot. The student constructs and interprets a two-way table summarizing data on two categorical variables collected from the same subjects. The student uses relative frequencies calculated for rows or columns to describe possible association between the two variables. Assessing the fit of a model (8.SP.A.2) will be assessed in Claim 4. Interpreting the slope and y-intercept in context (8.SP.A.3) will be assessed in Claims 2 and 4. 	1, 2	5	
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	2
4. Modeling and Data Analysis	Modeling and Data Analysis	C. State logical assumptions being used.	2	1	
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	2	1	1

GRADE 8 (continued)

Grade 8 – Expressions & Equations II with Statistics (13 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NS	<p>A. Know that there are numbers that are not rational, and approximate them by rational numbers.</p> <ul style="list-style-type: none"> The student classifies real numbers as rational or irrational. The student converts repeating decimals to fractions. The student writes approximations of irrational numbers as rational numbers. The student compares the sizes of irrational numbers by using rational approximations of irrational numbers. The student approximates the locations of irrational numbers on the number line by using rational approximations of irrational numbers. An item measuring the “explain” part of this target and standard may be assessed in Claim 3. 	1, 2	13	13

GRADE 8 (continued)

Grade 8 – The Number System (13 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NS	A. Know that there are numbers that are not rational, and approximate them by rational numbers.	1, 2	13	13
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2, 3	0	0
		B. Select and use appropriate tools strategically.	1, 2, 3		
		C. Interpret results in the context of a situation. D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).			
	Modeling and Data Analysis	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace. D. Interpret results in the context of a situation.	2, 3	0	
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	2, 3, 4		
		C. State logical assumptions being used. F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1, 2, 3		
		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3, 4		
3. Communicating Reasoning	Communicating Reasoning	A. Test propositions or conjectures with specific examples. D. Use the technique of breaking an argument into cases.	2, 3	0	0
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. 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		
		C. State logical assumptions being used. F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions. G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	2, 3		

GRADE 8 (continued)

Grade 8 – Functions (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	F	E. Define, evaluate, and compare functions. <ul style="list-style-type: none"> The student recognizes that a function is a rule that assigns to each input exactly one output. The student identifies or produces input and output pairs for given functions. The student recognizes the same function written in different functional forms (algebraic, graphic, tabular, or verbal). The student compares properties of two functions, each represented in a different way (algebraic, graphic, tabular, or verbal). The student recognizes and gives examples of functions that are not linear. Function notation is not required in grade 8. Items and tasks developed for the grade 8 Function domain should not use formal function notation [i.e., $f(x)$]. 	1, 2	6	11
		F. Use functions to model relationships between quantities. <ul style="list-style-type: none"> The student constructs a function to model a linear relationship between two quantities. The student determines the rate of change and initial value of a function, either from a description of a relationship or from two (x, y) values, including reading the rate of change and/or the value of the function from a table or a graph. The student interprets the rate of change and the initial value of a linear function in terms of the situation it models, its graph, or a table of values. The student qualitatively describes the functional relationship between two quantities by analyzing a graph (e.g., whether the function is increasing or decreasing, or whether the graph is linear or nonlinear). The student draws a graph that exhibits the qualitative features of a function that has been described in writing. Function notation is not required in Grade 8. Items and tasks developed for the Grade 8 Function domain should not use formal function notation [i.e., $f(x)$]. 	1, 2	5	
2. Problem Solving	Problem Solving	D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2	1	2
4. Modeling and Data Analysis	Modeling and Data Analysis	D. Interpret results in the context of a situation.	2	1	
3. Communicating Reasoning	Communicating Reasoning	A. Test propositions or conjectures with specific examples.	3	2	2
		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		

High School

High School – Equations and Reasoning (11 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	A/F II	<p>H. Understand solving equations as a process of reasoning and explain the reasoning.</p> <ul style="list-style-type: none"> The student solves radical and/or simple rational equations in one variable, including identifying the number and type of real solutions that might exist for the equation (e.g., one, two, infinite, or no real). The student evaluates proposed solutions to radical or simple rational equations, and recognizes where extraneous solution(s) might arise during the solving of the equation. The student solves radical or rational equations in multiple variables. The student identifies equivalent equations to an equation with rational or radical expressions. Items that assess A.REI.A and A.REI.A.1 will be measured in Claim 3. 	1, 2	9	9
3. Communicating Reasoning	Communicating Reasoning	E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	3	2	2

High School (continued)

High School – Solve Equations and Inequalities: Linear and Exponential (12 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	A/F I	I. Solve equations and inequalities in one variable. <ul style="list-style-type: none"> The student solves linear equations in one variable with numeric coefficients. The student solves linear inequalities in one variable with numeric coefficients. The student solves linear inequalities in one variable with letter coefficients or identifies appropriate value(s) of a letter coefficient given specific information about a variable in a linear equation or inequality. The student recognizes equivalent equations to given linear or quadratic equations in one variable. 	1, 2	10	10
4. Modeling and Data Analysis	Modeling and Data Analysis	D. Interpret results in the context of a situation.	3	1	
3. Communicating Reasoning	Communicating Reasoning	E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	3	1	1

High School (continued)

High School Solve Equations and Inequalities: Quadratic (10 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	A/F II	I. Solve equations and inequalities in one variable. <ul style="list-style-type: none"> The student solves quadratic equations in one variable by taking square roots, completing the square, using the quadratic formula, or by factoring. The student recognizes when the quadratic formula gives complex solutions (no real solutions). The student writes complex solutions for the quadratic formula in the form $a \pm bi$ where a and b are real numbers. The student recognizes equivalent equations to given linear or quadratic equations in one variable. 	2	9	9
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	1

High School (continued)

High School – Geometry and Right Triangle Trigonometry (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	G	<p>O. Define trigonometric ratios and solve problems involving right triangles.</p> <ul style="list-style-type: none"> The student uses the definitions of trigonometric ratios for acute angles in a right triangle. The student uses similar triangles to define and determine trigonometric ratios in right triangles. The student explains and uses the relationship between the sine and cosine of complementary angles. The student uses the Pythagorean Theorem and trigonometric ratios to solve problems involving right triangles in mathematical or real-world context. 	1, 2	11	11
2. Problem Solving	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	3	1	1
3. Communicating Reasoning	Communicating Reasoning	A. Test propositions or conjectures with specific examples.	2	3	3
		<p>C. State logical assumptions being used.</p> <p>F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.</p>	2, 3		

High School (continued)

High School – Number and Quantity (15 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NQ	<p>A. Extend the properties of exponents to rational exponents.</p> <ul style="list-style-type: none"> The student rewrites expressions in radical form into an equivalent expression with rational exponents. The student will be able to rewrite expressions with rational exponents into an equivalent expression in radical form. The student uses the properties of exponents to write equivalent expressions involving radicals and rational exponents. The student solves equations that require an understanding of the definitions of radicals and rational exponents. The student finds exact or approximate values of numeric expressions involving rational exponents or radicals. The student compares expressions involving rational exponents or radicals with other numbers. 	1, 2	4	11
		<p>B. Use properties of rational and irrational numbers.</p> <ul style="list-style-type: none"> The student provides examples of addition or multiplication problems that will have sums or products of a specified type (rational or irrational). The student determines whether the sum of two numbers is a rational number or an irrational number. The student determines whether the product of two numbers is a rational number or an irrational number. The student provides an abstract generalization that the sum or product of any two rational numbers is rational, the sum of a rational number and an irrational number is irrational, and the product of a nonzero rational number and an irrational number is irrational. 	1, 2	2	
		<p>C. Reason quantitatively and use units to solve problems.</p> <ul style="list-style-type: none"> The student chooses units consistently in formulas. The student chooses the scales for graphs and data displays. The student chooses appropriate quantities for answering a question in a real-world context. Tasks for this target will require students to choose and interpret units in formulas and the scale in a graph. In Claims 2-4, this reasoning will be extended to include defining appropriate quantities when modeling and choosing appropriate levels of accuracy for units in the context of a real-world or mathematical problem (e.g., explaining the effects of rounding π to the nearest whole number in an area calculation). Interpreting scales and origins will be assessed in Claims 2 and 4. 	1, 2	5	
4. Modeling and Data Analysis	Modeling and Data Analysis	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	1	1

High School – Number and Quantity (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	3	3	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		
		G. At later grades, determine conditions under which an argument does and does not apply.	2		

High School (continued)

High School – Interpreting Functions (14 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	NQ	<p>K. Understand the concept of a function and use function notation.</p> <ul style="list-style-type: none"> The student understands that a function from one set (the domain) to another set (the range) assigns to each element of the domain exactly one element of the range (e.g., distinguish between functions and non-functions). The student understands that the graph of f is the graph of the equation $y = f(x)$. The student recognizes that sequences are functions whose domain is a subset of the integers. Some items aligned to this target will be assessed in Claim 3 and Claim 4 and may require students to explain and/or justify why a graph is or is not a function (e.g., explain the vertical line test). 	1, 2	3	10
		<p>L. Interpret functions that arise in applications in terms of the context.</p> <ul style="list-style-type: none"> The student interprets key features of a graph or a table representing a function modeling a relationship between two quantities. The student sketches graphs showing key features given a verbal description of a relationship between two quantities that can be modeled with a function. The student relates the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. The student calculates and interprets the average rate of change of a function presented symbolically or as a table and estimates the rate of change of a function from a graph. Tasks for this target will require students to sketch graphs based on given key features and to interpret key features of graphs, with emphasis on interpreting the average rate of change over a specified interval. Interpretation of rate of change and other key features (intercepts, relative maximums and minimums, symmetries, and end behavior) will often be assessed in the context of problems associated with Claims 2– 4. 	1, 2	7	
2. Problem Solving	Problem Solving	C. Interpret results in the context of a situation.	2	1	3
4. Modeling and Data Analysis	Modeling and Data Analysis	<p>A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.</p> <p>D. Interpret results in the context of a situation.</p>	3	2	
3. Communicating Reasoning	Communicating Reasoning	G. At later grades, determine conditions under which an argument does and does not apply.	3	1	1

High School (continued)

High School – Seeing Structure in Expressions/Polynomial Expressions (15 items)

Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	A	D. Interpret the structure of expressions. <ul style="list-style-type: none"> The student uses the structure of an expression to identify ways of rewriting it. Tasks for Claims 2 and 4 will ask students to interpret expressions or parts of expressions in the context of a problem. 	1, 2	4	11
		E. Write expressions in equivalent forms to solve problems. <ul style="list-style-type: none"> The student understands that the factored form of a quadratic expression reveals the zeros of the function it defines. The student understands that completing the square for a quadratic expression reveals the maximum or minimum value of the function it defines. The student uses the properties of exponents to transform exponential expressions. 	1, 2	2	
		F. Perform arithmetic operations on polynomials. <ul style="list-style-type: none"> The student adds or subtracts polynomials. The student multiplies polynomials. 	2	5	
4. Modeling and Data Analysis	Modeling and Data Analysis	D. Interpret results in the context of a situation.	3	1	1
3. Communicating Reasoning	Communicating Reasoning	D. Use the technique of breaking an argument into cases.	3	3	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.	3		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	3		

High School (continued)

High School – Statistics and Probability (12 items)

High School – Statistics and Probability (12 items)					
Claim	Content Category	Assessment Targets	DOK	Number of Items	Total Items per Reporting Category
1. Concepts and Procedures	SP	P. Summarize, represent, and interpret data on a single count or measurement variable. <ul style="list-style-type: none">The student will be able to represent data on the real number line with a dot plot, histogram, or box plot.The student will be able to use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.The student will be able to interpret the differences in shape, center, and spread in the context of the data sets.The student will be able to interpret the effects of outliers on the shape, center, and spread of a data set.Much of standard S-ID.A.3 will be assessed at the Claim 4 level.	2	6	6
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2	3	6
		B. Select and use appropriate tools strategically. D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2		
	Modeling and Data Analysis	D. Interpret results in the context of a situation.	3	3	
		C. State logical assumptions being used. F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	2		