



Interim Blueprint Mathematics

Spring 2024

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ABOUT KAP MATHEMATICS INTERIM ASSESSMENTS

The Kansas Assessment Program (KAP) interim assessments allow educators to evaluate students' knowledge and skills in a subject area and are designed to inform decisions at the classroom level and beyond (e.g., at the school and district level).

Mathematics interim assessments are given twice during the school year for grades 3–8 and 10. Each interim assessment covers a subset of content standards. This document describes how the [2017 Kansas Mathematics Standards](#) are measured by each interim assessment.

SUGGESTED USES

Educators can use this document to

- better understand each assessment and the standards measured by each assessment.
- ensure that the sequence of instructional plans matches the major emphases of the standards across the year on both interim assessments.
- check the alignment of curriculum and learning activities.
- develop learning goals for students to achieve proficiency.
- build a greater understanding of student, grade-level, school, and district results, and plan for future learning activities accordingly.

ASSESSMENT BLUEPRINTS

The assessment blueprints provide general information related to the development and frequency of items on the interim assessments. The content emphases of the interim assessments reflect the instructional emphases outlined in the Kansas State Department of Education standards documents.

The 2017 Kansas Mathematics Standards serve as the foundation of the assessments. These standards are grouped into domains and clusters. Domains are larger categories and consist of clusters. Clusters are smaller categories and fall within domains. The grade 10 mathematics assessment measures 11 domains, compared to 3–5 domains measured in other grades. Therefore, the domains are grouped into conceptual categories for grade 10 mathematics.

- Grades 3–8 domains
 - Operations and Algebraic Thinking
 - Number and Operations in Base Ten
 - Number and Operations – Fractions
 - Measurement and Data
 - Geometry
 - Ratios and Proportional Relationships
 - The Number System
 - Expressions and Equations
 - Statistics and Probability
 - Functions
- Grade 10 conceptual categories
 - Number and Quantity
 - Algebra
 - Functions
 - Geometry
 - Statistics and Probability

Items on the assessments align to standards that follow the same groupings. The following assessment blueprints provide detail at the cluster level for grades 3–8 and at the domain level for grade 10.

GRADE 3 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Operations and Algebraic Thinking	3.OA.A	Represent and solve problems involving multiplication and division.	11	13	—	—
	3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.	1	3	3	5
	3.OA.C	Multiply and divide within 100 (basic facts up to 10 x 10).	3	5	—	—
	3.OA.D	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	—	—	5	7
Number and Operations in Base Ten	3.NBT.A	Use place value understanding and properties of operations to perform multi-digit arithmetic.	5	7	1	3
Number and Operations – Fractions	3.NF.A	Develop understanding of fractions as numbers. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)	—	—	5	7
Measurement and Data	3.MD.A	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	7	9	—	—
	3.MD.C	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	—	—	11	13
Total Points			27	37	25	35

GRADE 4 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Operations and Algebraic Thinking	4.OA.A	Use the four operations with whole numbers to solve problems.	8	10	—	—
	4.OA.B	Gain familiarity with factors and multiples.	—	—	3	5
	4.OA.C	Generate and analyze patterns.	2	4	—	—
Number and Operations in Base Ten	4.NBT.A	Generalize place value understanding for multi-digit whole numbers.	5	7	—	—
	4.NBT.B	Use place value understanding and properties of operations to perform multi-digit arithmetic.	7	9	3	5
Number and Operations – Fractions	4.NF.A	Extend understanding of fraction equivalence and ordering.	5	6	—	—
	4.NF.B	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	—	—	11	13
Measurement and Data	4.MD.A	Solve problems involving measurement and conversions of measurements from larger units to smaller units.	—	—	7	8
	4.MD.B	Represent and interpret data.	—	—	3	5
Geometry	4.G.A	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	1	3	—	—
Total Points			28	39	27	36

GRADE 5 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Operations and Algebraic Thinking	5.OA.A	Write and interpret numerical expressions.	5	6	—	—
Number and Operations in Base Ten	5.NBT.A	Understand the place value system.	10	12	—	—
	5.NBT.5	Perform operations with multi-digit whole numbers and with decimals to hundredths.	13	15	—	—
Number and Operations – Fractions	5.NF.A	Use equivalent fractions as a strategy to add and subtract fractions.	—	—	6	9
	5.NF.B	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	—	—	15	18
Measurement and Data	5.MD.A	Convert like measurement units within a given measurement system.	1	3	—	—
Geometry	5.G.A	Graph points on the coordinate plane to solve real world and mathematical problems.	—	—	2	4
	5.G.B	Classify two-dimensional figures into categories based on their properties.	1	3	—	—
Total Points			30	39	23	31

GRADE 6 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Ratios and Proportional Relationships	6.RP.A	Understand ratio concepts and use ratio reasoning to solve problems.	8	10	—	—
The Number System	6.NS.A	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	2	4	—	—
	6.NS.B	Compute fluently (efficiently, accurately, and flexibly) with multi-digit numbers and find common factors and multiples.	10	12	—	—
	6.NS.C	Apply and extend previous understandings of numbers to the system of rational numbers.	8	10	6	8
Expressions and Equations	6.EE.A	Apply and extend previous understandings of arithmetic to algebraic expressions.	—	—	6	8
	6.EE.B	Reason about and solve one-variable equations and inequalities.	—	—	13	15
	6.EE.C	Represent and analyze quantitative relationships between dependent and independent variables.	—	—	5	6
Total Points			28	36	30	37

GRADE 7 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Ratios and Proportional Relationships	7.RP.A	Analyze proportional relationships and use them to solve real-world and mathematical problems.	11	13	—	—
The Number System	7.NS.A	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	11	13	5	6
Expressions and Equations	7.EE.A	Use properties of operations to generate equivalent expressions.	—	—	5	7
	7.EE.B	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	5	7	2	4
Geometry	7.G.B	Solve real-life and mathematical problems involving area, surface area, and volume.	—	—	2	4
Statistics and Probability	7.SP.C	Investigate chance processes and develop, use, and evaluate probability models.	—	—	10	12
Total Points			27	33	24	33

GRADE 8 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Domain	Cluster	Cluster Description	Cluster Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
The Number System	8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.	—	—	5	6
Expressions and Equations	8.EE.A	Work with radicals and integer exponents.	2	4	5	6
	8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.	12	14	—	—
	8.EE.C	Analyze and solve linear equations and inequalities.	5	6	—	—
Functions	8.F.A	Define, evaluate, and compare functions.	8	10	—	—
Geometry	8.G.A	Geometric measurement: understand concepts of angle and measure angles.	—	—	16	18
	8.G.B	Understand and apply the Pythagorean Theorem.	—	—	1	3
Total Points			27	34	27	33

GRADE 10 MATHEMATICS INTERIM ASSESSMENT BLUEPRINT

Conceptual Category	Domain	Domain Description	Domain Point Range			
			Interim 1		Interim 2	
			Min	Max	Min	Max
Number and Quantity	N.RN	The Real Number System	—	—	0	1
	N.Q	Quantities	1	3	—	—
Algebra	A.SSE	Seeing Structure in Expressions	—	—	2	4
	A.APR	Arithmetic with Polynomials and Rational Expressions	—	—	0	1
	A.CED	Creating Equations	—	—	1	3
	A.REI	Reasoning with Equations and Inequalities	13	15	—	—
Functions	F.IF	Interpreting Functions	1	2	16	17
	F.BF	Building Functions	—	—	2	3
Geometry	G.CO	Congruence	6	7	—	—
	G.SRT	Similarity, Right Triangles, and Trigonometry	—	—	7	8
Statistics and Probability	S.ID	Interpreting Categorical and Quantitative Data	8	9	—	—
Total Points			29	36	28	37