

Alaska Student Report Categories of Reporting List for 2016

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English Language Arts Grades 3-8

Category	# of Questions	Description
Reading Overall	34	The reading portion requires students to read and analyze literary and informational texts and answer questions related to central ideas, text structure, language use, word meanings, and making and supporting conclusions.
Literary Text	17	This portion requires students to answer questions based on literary texts (such as stories and poems).
Informational Text	17	This portion requires students to answer questions based on informational texts (such as science articles and historical speeches).
Key Details / Reasoning and Evidence	12	These questions require students to make conclusions and use details and evidence to support ideas.
Central Ideas	8	These questions require students to determine central ideas, key events, and topics and to identify supporting details.
Writing Overall	21	The writing portion requires students to read short writing samples and answer questions related to revising, editing, vocabulary, and language use.
Write or Revise (Narrative, Informative, Opinion)	7	These questions require students to revise provided text by applying writing skills, including using specific story-telling strategies, revising text into a logical order, adding context and detail, and identifying words or phrases to strengthen the text.
Language & Vocabulary Use	7	These questions require students to revise texts by using accurate language and vocabulary that is appropriate to a text's purpose and audience.
Edit	7	These questions require students to clarify messages in a variety of texts by following grade-appropriate grammar, capitalization, punctuation, and spelling rules.

English Language Arts Grades 9-10

Category	# of Questions	Description
Reading Overall	35	The reading portion requires students to read and analyze literary and informational texts and answer questions related to central ideas, text structure, language use, word meanings, and making and supporting conclusions.
Literary Text	17	This portion requires students to answer questions based on literary texts (such as stories and poems).
Informational Text	18	This portion requires students to answer questions based on informational texts (such as science articles and historical speeches).
Key Details / Reasoning and Evidence	14	These questions require students to make conclusions and use details and evidence to support ideas.

Central Ideas	8	These questions require students to determine central ideas, key events, and topics and to identify supporting details.
Word Meanings	6	These questions require students to determine the meanings of words based on context, word relationships, word structure, or use of resources.
Writing Overall	20	The writing portion requires students to read short writing samples and answer questions related to revising, editing, vocabulary, and language use.
Write or Revise (Narrative, Informative, Opinion)	7	These questions require students to revise provided text by applying writing skills, including using specific story-telling strategies, revising text into a logical order, adding context and detail, and identifying words or phrases to strengthen the text.
Language & Vocabulary Use	6	These questions require students to revise texts by using accurate language and vocabulary that is appropriate to a text's purpose and audience.
Edit	7	These questions require students to clarify messages in a variety of texts by following grade-appropriate grammar, capitalization, punctuation, and spelling rules.

Mathematics Grade 3

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Operations and Algebraic Thinking	16	These questions require students to represent and solve problems involving multiplication and division; understand properties of and the relationship between multiplication and division; multiply and divide up to 100; solve problems involving the four operations, and identify and explain patterns in arithmetic.
Number and Operations in Base Ten and Fractions	6	These questions require students to perform multi-digit arithmetic on whole numbers in base ten; develop an understanding of fractions as numbers.
Measurement	12	These questions require students to solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects; understand concepts of area; distinguish between linear and area measures.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 4

Category	# of Questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Operations and Algebraic Thinking	9	These questions require students to use the four operations with whole numbers to solve problems; find factors and multiples; generate and analyze patterns.
Number and Operations in Base Ten	8	These questions require students to generalize place value understanding for multi-digit whole numbers; perform multi-digit arithmetic.
Number and Operations - Fractions	12	These questions require students to compare and order fractions; add, subtract, and multiply fractions; use decimal notation for fractions, and compare decimals and fractions.

Unit Conversion and Line Plots	6	These questions require students to solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit, and involving time; apply area and perimeter formulas; use line plots to represent data.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 5

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Number and Operations in Base Ten	10	These questions require students to use their understanding of place value to use whole number exponents to represent powers of 10; explain patterns in the number of zeroes when multiplying by a power of 10; perform operations with multi-digit whole numbers and with decimals to hundredths.
Number and Operations - Fractions	10	These questions require students to use equivalent fractions as a strategy to add and subtract fractions, as well as multiply and divide fractions.
Measurement and Data	13	These questions require students to convert like measurement units within a given measurement system and solve problems involving time; represent data in line plots; find volume of rectangular prisms.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 6

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Ratios, Proportions, Multiplication and Division with Fractions	10	These questions require students to use ratio reasoning to solve problems as well as multiply and divide fractions.
Multi-digit Computation and Rational Numbers	10	These questions require students to apply and extend previous understandings of numbers to the system of rational numbers and reason with numerical and variable expressions.
Equations, Inequalities, and Quantitative Relationships	10	These questions require students to reason about and solve one-variable equations and inequalities; represent and analyze quantitative relationships between dependent and independent variables.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 7

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Ratios, Proportional Relationships, and the Number System	10	These questions require students to analyze proportional relationships and use them to solve real-world and mathematical problems; add, subtract, multiply and divide rational numbers.
Expressions and Equations	10	These questions require students to use properties of operations to generate equivalent expressions; solve real-world and mathematical problems using numerical and algebraic expressions and equations.
Geometry	6	These questions require students to describe relationships between geometric figures; solve real-world and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability	11	These questions require students to draw inferences and make comparisons between populations; investigate chance processes and develop, use, and evaluate probability models.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 8

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
The Number System and Exponents	7	These questions require students to identify irrational numbers and approximate them by rational numbers; simplify expressions with radicals and integer exponents.
Linear Equations	10	These questions require students to demonstrate understanding of the connections between proportional relationships, lines, and linear equations; analyze and solve linear equations and systems of linear equations.
Functions	7	These questions require students to define, evaluate, and compare functions; use functions to model relationships between quantities.
Geometry	11	These questions require students to identify congruent and similar figures; apply the Pythagorean Theorem; solve real-world mathematical problems involving volume of cylinders, cones, and spheres.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 9

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Expressions and Polynomials	9	These questions require students to interpret the structure of expressions; write expressions in equivalent forms to solve problems; perform arithmetic operations on polynomials.
Creating and Reasoning with Equations	7	These questions require students to create equations and inequalities that describe numbers or relationships; explain the process of solving equations.
Represent and Solve Equations and Inequalities	8	These questions require students to solve equations and inequalities with one or more variables; represent and solve equations and inequalities graphically.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.
Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Mathematics Grade 10

Category	# of questions	Description
Concepts and Procedures	37	These questions require students to explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
Expressions and Polynomials	8	These questions require students to interpret the structure of expressions; write expressions in equivalent forms to solve problems; perform arithmetic operations on polynomials.
Represent and Solve Equations and Inequalities	10	These questions require students to create equations and inequalities that describe numbers or relationships; solve equations and inequalities with one or more variables.
Geometry	9	These questions require students to define trigonometric ratios and solve problems involving right triangles; prove geometric theorems; solve problems involving volume.
Problem Solving	6	These questions require students to solve a range of complex problems using knowledge, problem-solving strategies, and mathematical tools.

Communicating Reasoning	6	These questions require students to explain their reasoning, defend their answers, critique the reasoning of others, and ask clarifying questions.
Modeling and Data Analysis	6	These questions require students to analyze complex, real-world situations, to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.