

Virginia

Standards of Learning Assessments

Test Blueprint
Algebra 1
2023 Mathematics
Standards of Learning

This test blueprint will be effective with the administration of the spring 2025 Mathematics Standards of Learning (SOL) tests.

Algebra 1 Standards of Learning

Test Blueprint

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General Test Information

Test Blueprint

Much like the blueprint for a building, a test blueprint serves as a guide for test construction. The blueprint indicates the content standards that will be addressed by the test and the number of items that will be included by reporting category and for the test as a whole. There is a blueprint for each test (e.g., Grade 3 Reading, Grade 5 Mathematics, Grade 8 Science, Virginia and United States History).

The Algebra 1 test blueprint contains information for the online and traditional/paper format test. All students who take a particular version (online, paper, large print, or braille) of the test respond to the same test questions.

All students are required to take the online version of the SOL tests except for students who meet the criteria for needing a paper test. All test questions for Algebra 1 have been determined to meet the criteria for Universal Design. The Universal Design principles require that language that is not specific to the content area (e.g., mathematics) be simplified and test questions be written so they are accessible by all populations of students. The SOL test questions have been reviewed by Virginia teachers and have been determined to meet the criteria for Universal Design.

Reporting Categories

Each test covers a number of standards. In the test blueprint, the SOL are grouped into reporting categories that address related content and skills. For example, a reporting category for the Algebra 1 SOL test is *Equations and Inequalities*. Each of the SOL in this reporting category addresses representing, solving, and interpreting the solution(s) to linear and quadratic equations, linear inequalities, and systems of equations and inequalities. When the results of the SOL tests are reported, the scores will be presented for each reporting category and as a test scaled score.

Assignment of Standards of Learning to Reporting Category

In the Algebra 1 SOL test, each standard is assigned to only one reporting category as described by the Algebra 1 SOL. For example, SOL A.EI.3 is assigned to *Equations and Inequalities*.

Coverage of Standards of Learning

Due to the large number of SOL in each grade level content area, every standard will not be assessed on every SOL test. By necessity, to keep the length of a test reasonable, each test will sample from the SOL within a reporting category. All SOL are eligible for inclusion in the online and traditional/paper forms.

[Use of 2023 Mathematics Standards of Learning Resource Documents](#)

The Algebra 1 SOL, amplified by the Understanding the Standards and Instructional Guides, define the essential understandings, knowledge, and skills that are measured by the SOL tests. These resource documents include the mathematics understandings and key concepts that assist teachers in planning standards-focused instruction of the 2023 Mathematics SOL.

Use of Calculators

Algebra 1 SOL test items will have the online Desmos Virginia Graphing calculator included with the item on the toolbar in the online test.

Assessment Resources

[Standards of Learning Introduction to TestNav 8: Multiple-Choice/Technology-Enhanced Item Tests](#): This document is an introduction to the online navigation, online tools, accessibility features, and overall functionality and appearance of multiple-choice/technology-enhanced item tests in TestNav 8. It is highly recommended that teachers or other adults read this document prior to reading the Guided Practice Suggestions for a practice item set. This document also provides an overview of the various technology-enhanced items students may receive in the online test.

[SOL Practice Items](#): Practice item sets are available for each grade to provide online practice with content that measures the 2023 Mathematics SOL.

Guided Practice Suggestions: Mathematics Items Practice: This document, available on the [SOL Practice Items web page](#), provides specific suggestions for teachers as they lead students through a practice item set. Following these suggestions will ensure that students are exposed to the different tools within TestNav, the different functionality features of technology-enhanced items (TEI), and common messages that may appear as students complete TEI.

Mathematics Tools Practice: This document, available on the [SOL Practice Items web page](#), provides practice suggestions for each question in the Mathematics Tools practice item set. The “Guided Practice Suggestions” contains information for teachers to use at various grade levels as they guide students through the items. For instance, guided practice suggestions can state, “Use the ruler tool to measure line segment AB” or “Use the protractor to measure an angle.” Following the suggestions in the table will ensure that students are exposed to all the different tools within TestNav 8 and experience using these tools with their mouse, keypad, or touchscreen.

Mathematics formula sheets may be found on the [Ancillary Test Materials](#) web page.

Algebra 1 Mathematics Test Blueprint Summary Table

Reporting Category	Algebra 1 SOL	Number of Items
Expressions and Operations	A.EO.1 A.EO.2 A.EO.3 A.EO.4	12 items Approximately 25% of test
Equations and Inequalities	A.EI.1 A.EI.2 A.EI.3	18 items Approximately 38% of test
Functions and Statistics	A.F.1 A.F.2	18 items Approximately 38% of test
	A.ST.1	
Number of Operational Items		48
Number of Field-Test Items*		8

*Field-test items will be administered to students for potential use on subsequent tests and will not be used to compute the final test score.