

VMAST

Virginia **M**odified **A**chievement **S**tandards **T**est

Test Blueprint

Grade 5 Mathematics

**Virginia Modified Achievement Standards
Test Based on the
2009 Mathematics Standards of Learning**

**This test blueprint will be effective with the administration
of the 2011-2012 Mathematics Virginia Modified
Achievement Standards Tests (VMAST).**

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Grade 5 Mathematics

Virginia Modified Achievement Standards Test

Test Blueprint

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General Test Information

Virginia Modified Achievement Standards Test Background Information

The Virginia Modified Achievement Standards Test (VMAST) is an online grade level alternate assessment based on modified achievement standards designed for eligible students with disabilities. Students participating in the VMAST are expected to learn the Standards of Learning (SOL) objectives for grade level content; however, they may require additional time and a variety of instructional and assessment supports. The achievement expectations are modified, and rigor is reduced by including supports and simplifications that allow participating students to access and demonstrate knowledge of grade level content.

Test Blueprint

Much like the blueprint for a building, a test blueprint serves as a guide for test construction. The blueprint indicates the content areas that will be addressed by the test and the number of items that will be included by content area and for the test as a whole. The VMAST blueprint is based on the SOL test blueprint but includes 20% fewer items.

Reporting Categories

Each test covers a number of Standards of Learning. In the test blueprint, the SOL are grouped into categories that address related content and skills. These categories are labeled as reporting categories. For example, a reporting category for the Grade 5 Mathematics Virginia Modified Achievement Standards Test is *Computation and Estimation*. Each of the SOL in this reporting category addresses computation using addition, subtraction, multiplication, or division or requires the student to estimate the answer to a problem. When the results of the VMAST tests are reported, the scores will be presented for each reporting category and as a total test score. The VMAST blueprint includes the same reporting categories as the SOL test, but there are 20% fewer items in each reporting category.

Assignment of Standards of Learning to Reporting Category

In the Grade 5 Mathematics VMAST, each SOL is assigned to only one reporting category. For example, SOL 5.2a-b is assigned to “Number and Number Sense.”

Standards of learning Excluded from Testing

In some content areas, there are SOL that do not lend themselves to assessment within the current format of the VMAST. The SOL not tested are listed as “Excluded from Testing” at the end of the blueprint for each test. For example, in Grade 5 Mathematics, SOL 5.16a cannot be assessed within the current format.

Coverage of Standards of Learning

Due to the large number of SOL in each grade level content area, *every* Standard of Learning will not be assessed on every version (form) of a VMAST. By necessity, to keep the length of a test reasonable, each version will sample from the SOL within a reporting category. Every SOL in the blueprint will be tested within a three year period, and *all of these* SOL are eligible for inclusion on each version of a VMAST.

Use of the Curriculum Framework

The Grade 5 Mathematics Standards of Learning, amplified by the Curriculum Framework, define the essential understandings, knowledge, and skills that are measured by the Virginia Modified Achievement Standards Test. The Curriculum Framework asks essential questions, identifies essential understandings, defines essential content knowledge, and describes essential skills students need to master.

Use of Calculators

The first section of the test will be taken without use of a calculator, unless stated otherwise in the students’ Individualized Education Program (IEP), as a testing accommodation. The SOL 5.2a-b, 5.4, 5.5a-b, 5.6, and 5.7 will be assessed in the first section of the Grade 5 mathematics test. All other SOL will be assessed in the second section with the use of a calculator.

VMAST Grade 5 Mathematics
Test Blueprint Summary Table

Reporting Category	Grade 5 SOL	Number of VMAST Items
Number and Number Sense	5.1 5.2a-b* 5.3a-b	6
Computation and Estimation	5.4 * 5.5a-b* 5.6 * 5.7 *	10
Measurement and Geometry	5.8a-e 5.9 5.10 5.11 5.12a-b 5.13a-b	10
Probability, Statistics, Patterns, Functions, and Algebra	5.14 5.15 5.16b-d 5.17 5.18a-d 5.19	14
Excluding from Testing		5.16a
Number of Operational Items		40
Number of Field-Test Items**		8
Total Number of Items on Test		48

* Items measuring these SOL will be completed without the use of a calculator.

**Field-test items are being tried out with students for potential use on subsequent tests and will not be used to compute students' scores on the test.

VMAST Grade 5 Mathematics
Expanded Test Blueprint

Reporting Category: Number and Number Sense

Number of Items: 6

Standards of Learning:

- 5.1 The student, given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth.
- 5.2 The student will (*complete items without the use of a calculator*)
 - a) recognize and name fractions in their equivalent decimal form and vice versa; and
 - b) compare and order fractions and decimals in a given set from least to greatest and greatest to least.
- 5.3 The student will
 - a) identify and describe the characteristics of prime and composite numbers; and
 - b) identify and describe the characteristics of even and odd numbers.

Reporting Category: Computation and Estimation

Number of Items: 10

Standards of Learning:

- 5.4 The student will create and solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division with and without remainders of whole numbers (*complete items without the use of a calculator*).
- 5.5 The student will (*complete items without the use of a calculator*)
 - a) find the sum, difference, product, and quotient of two numbers expressed as decimals through thousandths (divisors with only one nonzero digit); and
 - b) create and solve single-step and multistep practical problems involving decimals.
- 5.6 The student will solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers and express answers in simplest form (*complete items without the use of a calculator*).
- 5.7 The student will evaluate whole number numerical expressions, using the order of operations limited to parentheses, addition, subtraction, multiplication, and division (*complete items without the use of a calculator*).

Reporting Category: Measurement and Geometry

Number of Items: 10

Standards of Learning:

- 5.8 The student will
- find perimeter, area, and volume in standard units of measure;
 - differentiate among perimeter, area, and volume and identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation;
 - identify equivalent measurements within the metric system;
 - estimate and then measure to solve problems, using U.S. Customary and metric units; and
 - choose an appropriate unit of measure for a given situation involving measurement using U.S. Customary and metric units.
- 5.9 The student will identify and describe the diameter, radius, chord, and circumference of a circle.
- 5.10 The student will determine an amount of elapsed time in hours and minutes within a 24-hour period.
- 5.11 The student will measure right, acute, obtuse, and straight angles.
- 5.12 The student will classify
- angles as right, acute, obtuse, or straight; and
 - triangles as right, acute, obtuse, equilateral, scalene, or isosceles.
- 5.13 The student, using plane figures (square, rectangle, triangle, parallelogram, rhombus, and trapezoid), will
- develop definitions of these plane figures; and
 - investigate and describe the results of combining and subdividing plane figures.

Reporting Category: Probability, Statistics, patterns, Functions, and Algebra
Number of Items: 14
Standards of Learning:

- 5.14 The student will make predictions and determine the probability of an outcome by constructing a sample space.
- 5.15 The student, given a problem situation, will collect, organize, and interpret data in a variety of forms, using stem-and-leaf plots and line graphs.
- 5.16 The student will
- a) describe mean as fair share;
 - b) find the mean, median, mode, and range of a set of data; and
 - c) describe the range of a set of data as a measure of variation.
- 5.17 The student will describe the relationship found in a number pattern and express the relationship.
- 5.18 The student will
- a) investigate and describe the concept of variable;
 - b) write an open sentence to represent a given mathematical relationship, using a variable;
 - c) model one-step linear equations in one variable, using addition and subtraction; and
 - d) create a problem situation based on a given open sentence, using a single variable.
- 5.19 The student will investigate and recognize the distributive property of multiplication over addition.

Standards of Learning Excluded from Testing:

- 5.16 The student will
- a) describe mean, median, and mode as measures of center.