**Comparison of a Mathematics Standard of Learning (SOL) Computer Adaptive Test and a Traditional SOL Test**

A Computer Adaptive Test (CAT) is an assessment that is customized for every student based on how the student responds to the questions. This is in contrast to the traditional test in which all students who take a particular version of the test respond to the same test questions.

Computer Adaptive Testing is similar to traditional testing in many ways, but there are also some differences. This table highlights some of the characteristics that a Mathematics SOL CAT and a traditional SOL test have in common and some of the characteristics that are different. Explanations are included for clarity.

| **Test Characteristics** | **Same** | **Different** | **Explanation** |
| --- | --- | --- | --- |
| **Content assessed** | X |  | Each test format assesses the Standards of Learning (SOL) for a particular course. |
| **Question types/format** | X |  | Each test format has multiple-choice questions and technology-enhanced items (TEI). The number of TEI can range from 10% to 30% as the test adapts to the performance level of the individual student. |
| **Number of test questions** |  | X | For a particular course, the number of test items on a CAT may be different than the number of items on a traditional SOL test. However, all students taking a CAT for a particular course are administered the same number of items. As well, all students taking a traditional form of the test are administered the same number of items. See the [SOL Test Blueprint](https://www.doe.virginia.gov/teaching-learning-assessment/instruction/mathematics/standards-of-learning-for-mathematics) for each mathematics test on the Virginia Department of Education Web site for additional information. |
| **Test questions presented to each student** |  | X | A CAT is customized for each student. In a traditional test, all students administered the same test form are presented with the same questions. |
| **Presentation of content** | X |  | Mathematics test questions are generally presented in order of reporting category. Each test format continues to do this. |
| **Time to complete the test** | X |  | SOL tests are untimed in both formats. Students should be afforded as much time as needed to complete the test, but are generally expected to complete the test in one day. School divisions have the option of administering the grades 3, 4, and 5 SOL Mathematics tests over two days; however, school divisions are strongly encouraged to consider the changes that have been implemented in the online elementary school SOL tests when finalizing their test administration plans. |
| **Allowable test manipulatives** | X |  | Each test format allows students access to the same test manipulatives such as a calculator or scratch paper. The SOL Test Examiner’s Manual contains a complete list for each SOL test. |
| **Online tools within TestNav** | X |  | Online tools are available in each format within the testing software such as the choice eliminator and highlighter. The SOL Test Examiner’s Manual contains a complete list for each SOL test. Practice test items are available in the TestNav application to provide an introduction to online navigation and online tools. |
| **Navigation through the test** |  | X | In a mathematics SOL CAT, questions must be answered in the order they are presented. Each question must be answered completely before the student can move on to the next question. A student cannot skip any questions, nor return to a previously answered question. This is in contrast to the traditional test, where students can answer questions in a section of the test in any order. For specific CAT navigation instructions, refer to the [Introduction to TestNav 8: Multiple-Choice/Technology-Enhanced Item Tests](https://www.doe.virginia.gov/teaching-learning-assessment/student-assessment/sol-practice-items-all-subjects) document on the Virginia Department of Education website. |
| **Special test accommodations** | X |  | The special test accommodations provided for each test format are the same, but the manner in which some test accommodations are delivered to students may vary for a CAT. The SOL Test Examiner’s Manual provides instructions. |
| **Scaled scores** | X |  | Scaled scores remain on a scale of 0 to 600, with 400 indicating pass/proficient and 500 indicating pass/advanced for both test formats. Scaled scores for a CAT are computed using the number of questions answered correctly, as well as the difficulty level of the questions answered correctly. |