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Mathematics Computer Adaptive Testing: Frequently Asked Questions

Computer adaptive testing is part of the Virginia Department of Education's (VDOE) continuing effort to improve the testing experience of students. Beginning in 2014-2015, the Grade-6 Mathematics Standards of Learning (SOL) test was administered in a computer adaptive format. Beginning in 2015-2016, most students taking the grades 3, 6, 7 and 8 mathematics tests were administered a computer adaptive version of the Standards of Learning (SOL) test. In 2016-2017, the online grades 3-8 mathematics SOL tests will be administered as computer adaptive tests.

What is computer adaptive testing?

Computer adaptive testing is an assessment format that provides a customized assessment for every student. The computer selects questions and problems that are neither too difficult nor too easy based on the content knowledge demonstrated by each test taker.

How does computer adaptive testing work?

When a student takes a computer adaptive test, answers are scored as each question or problem is completed and the computer selects subsequent items based on the student's performance. Tests begin with a question or problem of moderate difficulty. If a student answers the item correctly, the computer selects a slightly more challenging question or problem as the next item. Conversely, an incorrect or incomplete response results in the selection of a slightly less difficult question or problem.

How are computer adaptive tests scored?

Scores are determined by the number of questions a student answers correctly and the relative difficulty of the correctly answered items. While the questions and problems on computer adaptive tests vary in difficulty from student to student, all students must answer the same number of items to complete a test. Because student responses on a computer adaptive test are scored in the sequence in which they are presented, students are not able to skip items or return to previous answers.

Did students have an opportunity to try computer adaptive testing before VDOE decided to introduce the testing format statewide?

Yes. During 2013-2014, approximately 3,000 students participated in a pilot of computer adaptive testing. Students took computer adaptive versions of either the Grade-7 Mathematics SOL test or the Grade-8 Reading SOL test.

What are the benefits of computer adaptive testing?

States employing computer adaptive testing in elementary and secondary schools report increased student engagement and fewer security risks.

Is computer adaptive testing new?

No. Computer adaptive testing is a well-established scientifically validated and widely used assessment format. The Algebra Readiness Diagnostic Test, which Virginia students have been taking since 2002, is administered in a computer adaptive format. In addition, computer adaptive testing is used by professional boards, the military and other organizations to accurately measure knowledge and ability.