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Students Make New Gains on Mathematics SOLs

Student achievement improved during 2013-2014 on challenging mathematics Standards of Learning (SOL) tests first introduced three years ago, the Virginia Department of Education (VDOE) reported today.

The online mathematics SOL tests — taken by Virginia students since 2011-2012 — require students to apply critical-thinking skills as well as knowledge of mathematics to solve multistep problems. The assessments reflect revisions to the commonwealth's K-12 mathematics standards adopted by the Board of Education in 2009 as part of an effort to better prepare students for success in college and the work force.

Statewide, 74 percent of students passed the mathematics assessment for their grade level or course, compared with 71 percent during 2012-2013. Students posted gains on eight of the nine individual grade-level and end-of-course mathematics SOL tests, with the biggest increases in grades 4, 5, 7, 8, Algebra I and Algebra II. Achievement is up on all of the mathematics tests since the introduction of the more challenging assessments in 2011-2012.

Mathematics Test	2011-2012	2012-2013	2013-2014
Grade 3 Mathematics	64	65	67
Grade 4 Mathematics	70	74	80
Grade 5 Mathematics	67	69	73
Grade 6 Mathematics	74	77	76
Grade 7 Mathematics	58	61	65
Grade 8 Mathematics	60	61	67
Algebra I	75	76	79
Geometry	74	76	77
Algebra II	69	76	82
Combined Mathematics	68	71	74

“The gains students made show that — despite all of the weather-related interruptions last winter — the statewide focus on teaching students to be problem solvers and to apply what they have learned in mathematics in real-life situations is producing results,” Superintendent of Public Instruction Steven R. Staples said. “VDOE acknowledges the hard work of staff in local school divisions and will continue to work in partnership with them to share best practices and to provide the resources and support teachers need to help their students succeed.”

Students in 110 of Virginia's 132 school divisions improved their overall performance in mathematics, and in 13 divisions, overall mathematics achievement was unchanged. Most divisions saw increased achievement on the end-of-course tests (Algebra I, Geometry and Algebra II) students must pass to earn diplomas.

- Algebra I — 86 divisions improved, 60 divisions had pass rates of 80 percent or higher, and 105 had pass rates of 70 percent or higher.

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- Geometry — 79 divisions improved, 42 divisions had pass rates of 80 percent or higher, and 92 had pass rates of 70 percent or higher.
- Algebra II —100 divisions improved, 86 divisions had pass rates of 80 percent or higher, and 114 had pass rates of 70 percent or higher.

Statewide performance in reading, writing and science was relatively flat compared with achievement in 2012-2013. The 2013-2014 school year was the second in which students took tests reflecting the rigor of revised reading, writing and science standards adopted by the Board of Education in 2010. Reading, writing and science SOL tests also include questions and problems that require students to think critically and apply their content knowledge and comprehension skills.

“The emphasis of the entire SOL program has shifted from minimum statewide expectations for competency to college and career readiness,” Board of Education President Christian N. Braunlich said. “The board knew that, with 132 school divisions and more than 1,850 schools, meeting these expectations would be a multiyear process as teachers, principals and other educators align curriculum and pedagogy to the higher standards.”

In reading, 74 percent of students passed the SOL test for their grade level, and 75 percent passed in writing. Students in 48 school divisions improved their overall performance in reading, and in 20 divisions, overall reading achievement remained the same. Students in 43 divisions improved their overall performance in writing, and in 13 divisions, writing achievement was unchanged.

The highest pass rates in reading and writing were on the assessments most students take in their junior year of high school and must pass to earn a Standard or Advanced Studies diploma. There is no limit on the number of times a student may take a test he or she needs to pass to earn a diploma.

- On the high school reading test, 81 divisions improved, students in 121 divisions achieved pass rates of 80 percent or higher, and all divisions administering the test achieved pass rates of 70 percent or higher.
- On the high school writing test, 37 divisions improved, students in 87 divisions achieved pass rates of 80 percent or higher, and 124 achieved pass rates of 70 percent or higher.

Reading Test	2011-2012 (Old Tests)	2012-2013	2013-2014
Grade 3 Reading	86	72	69
Grade 4 Reading	88	70	70
Grade 5 Reading	89	73	73
Grade 6 Reading	89	73	73
Grade 7 Reading	88	74	76
Grade 8 Reading	89	71	70
End-of-Course Reading	94	89	90
Combined Reading	89	75	74

Writing Test	2011-2012 (Old Tests)	2012-2013	2013-2014
Grade 5 Writing	87	71	71
Grade 8 Writing	88	70	70
End-of-Course Writing	93	87	84
Combined Writing	89	76	75

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Students in 41 school divisions achieved overall increases in science and the performance of students in 14 divisions was unchanged. Statewide, 80 percent of students passed their grade-level or end-of-course tests (Biology, Chemistry and Earth Science), compared with 81 percent in 2012-2013. The highest pass rates were on the grade-3 test and the high school tests. Students must pass at least one end-of-course science test to earn a Standard Diploma and at least two for an Advanced Studies Diploma.

- On the Earth Science end-of-course test, 63 divisions improved, 87 school divisions had pass rates of at least 80 percent, and 118 had pass rates of 70 percent or higher.
- On the Chemistry test, 81 divisions improved, 108 divisions had pass rates of 80 percent or higher, and 118 had pass rates of 70 percent or higher.
- On the Biology test, 77 divisions improved, 85 divisions had pass rates of 80 percent or higher, and 127 had pass rates of 70 percent or higher.

Science Test	2011-2012 (Old Tests)	2012-2013	2013-2014
Grade 3 Science	90	84	83
Grade 5 Science	88	75	73
Grade 8 Science	92	76	74
Biology	92	83	83
Chemistry	93	86	87
Earth Science	91	83	83
Combined Science	91	81	80

Students in 39 school divisions achieved overall increases in history and social science, and the performance of students in 20 divisions was unchanged. The percentage of students statewide passing grade-level or end-of-course tests in history/social science during 2013-2014 was 84 percent, a one-point decline from the previous year.

History Test	2011-2012	2012-2013	2013-2014
Grade 3 History	88	87	86
VA Studies	89	87	85
US History I	81	83	81
US History II	82	82	81
Civics & Economics	84	85	83
Geography	85	86	86
World History I	85	84	85
World History II	85	85	86
VA & US History	85	86	87
Combined History	85	85	84

State accreditation ratings will be issued next month, along with updated school and division report cards.

“The increase that we will see next month in the number of schools that fall short of the state’s accreditation standards must be viewed in the context of the higher standards and changing assessments,” Staples said. “Students are not learning less; the state has raised the bar, and the academic reviews VDOE will conduct this year will provide opportunities for school divisions and the department to identify best practices that will help students meet these new standards.”

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