

Algebra I and College Preparatory Diploma Outcomes among Virginia Students Who Completed Algebra I in Grades 7–9

Education leaders in Virginia use early access to Algebra I as one method to increase students’ likelihood of graduating from high school prepared for college and careers. This study used administrative data to calculate descriptive statistics on Algebra I outcomes and attainment of college preparatory diplomas among students by their grade 5 math proficiency level and when they completed Algebra I (grade 7, 8, or 9). The study found that even among students who scored at the same grade 5 math proficiency level, the timing of Algebra I completion and the rates of earning a college preparatory diploma varied across the overall study population and by students’ economic status and English learner status. The results can help Virginia stakeholders review and refine policies and practices that may unintentionally contribute to differences in student access to Algebra I and subsequent outcomes.

Key findings

- **Among students who scored at the advanced proficient level in grade 5 math, the percentage who earned a college preparatory diploma was higher for those who completed Algebra I in grade 7 than for those who completed it in grade 8 or 9.** About 80 percent of students who completed Algebra I in grade 7 earned a college preparatory diploma compared with 75 percent of those who completed Algebra I in grade 8 and 44 percent of those who completed Algebra I in grade 9 (see table).
- **Among students who scored at the advanced proficient level in grade 5 math, lower percentages of economically disadvantaged students passed Algebra I and earned a college preparatory diploma compared with the overall study population, regardless of when they completed Algebra I.** Among students who scored at the advanced proficient level in grade 5 math and completed Algebra I in grade 7, the Algebra I pass rate was 80 percent for economically disadvantaged students compared with 90 percent for the overall study population, and the percentage who earned a college preparatory diploma was 62 percent for economically disadvantaged students compared with 80 percent for the overall study population.

Among students who scored at the advanced proficient level in grade 5 math, the percentages who passed Algebra I and who earned a college preparatory diploma were lower for economically disadvantaged students than for the overall study population, 2009/10–2016/17

Grade level of Algebra I completion	Passed Algebra I	Earned college preparatory diploma
All students who scored at the advanced proficient level in grade 5 math		
Grade 7 (n = 8,928)	90	80
Grade 8 (n = 19,320)	89	75
Grade 9 (n = 9,650)	76	44
All economically disadvantaged students who scored at the advanced proficient level in grade 5 math		
Grade 7 (n = 1,983)	80	62
Grade 8 (n = 4,916)	81	60
Grade 9 (n = 3,973)	71	33

Source: Authors’ analysis using data from the Virginia Longitudinal Data System, 2009/10–2016/17.