

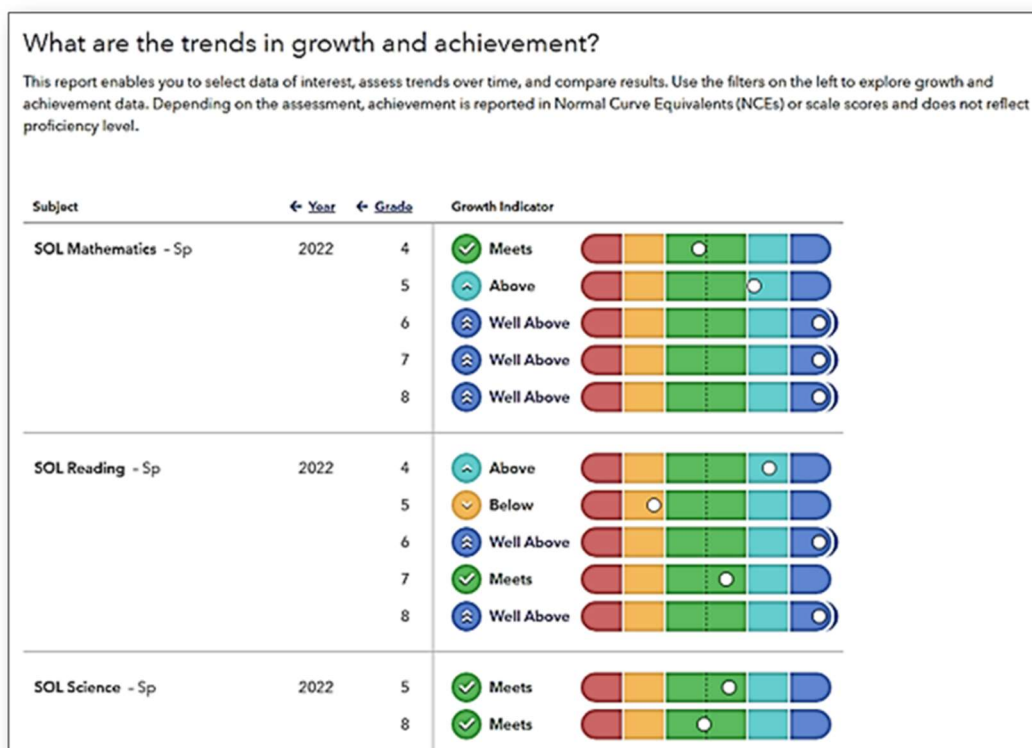
The Virginia Department of Education implemented the Virginia Visualization and Analytics Solution (VVAAS) in 2022 to measure student growth over time, understand how students were recovering from the pandemic, and provide educators and parents feedback on student progress. The VVAAS portal displays measures of students' academic growth over time based on SOL testing data, diagnostic reports for student groups, and student projections to help educators improve student achievement and inform classroom instruction.

Measuring Student Growth with VVAAS

VVAAS Growth Reports provide a measure of academic growth based on SOL testing data for most tested grades and subjects. The academic growth calculation is a multi-step process to determine if a group of students met, exceeded, or did not meet growth.

Key elements of the VVAAS Growth Report predictive modeling include the following:

- The model uses each students' prior SOL testing results to estimate their expected score. This score assumes the student made the average or typical growth observed among all students who took the assessment that year.
- The model does not exclude students with missing test scores or require that students have a certain set of prior test scores, which means more students can be included in the model.
- The model calculates the difference between the average *actual* score and the average *expected* score for a group of students in a school or division.
- This difference is the growth measure, and it is reported alongside its standard error, which provides a measure of certainty that the group of students made more than, less than, or about expected growth.



Using Student Growth in Accountability

Student growth is part of almost every state's accountability system, and over one-fourth of all states use a sophisticated value-added model similar to VVAAS. These models offer important advantages for accountability:

- Sophisticated growth models like VVAAS are not typically related to students' entering achievement, so it provides a different aspect of student learning within divisions and schools.
- Growth models like VVAAS can be adapted to many different types of accountability systems, with outputs translated to 100-point scales, A through F scales, or categorical scales. The outputs can be based on the statistical certainty that students made more than, less than or about expected growth and/or the magnitude of the growth measure.
- Growth models like VVAAS leverage existing assessment data already captured for federal accountability.
- VVAAS can account for *test transitions, student mobility, missing data, and measurement error* in test scores. *This is especially important since the COVID pandemic and the missing year of data in 2020.*

Versions of the VVAAS models have been used for state/federal accountability in Ohio, North Carolina, Pennsylvania, and Tennessee for over ten years.

How VVAAS Can Support Virginia Education:

- **Available to all** divisions and schools in Virginia through a secure web application.
- Includes **public reporting** of growth metrics for divisions.
- Based on **expert research** and **statistically robust** modeling approaches.
- Incorporates **multiple sources** of student data into a single reporting platform.
- Provides dozens of **interactive reports** and visualizations in a user-friendly format

How does VVAAS help Divisions, Schools, and Teachers?

- In addition to providing a value-added estimate for teachers, schools, and divisions, the VVAAS system provides diagnostic information, student projections, customizable reports, and in-depth user information.
- The VVAAS team is continually updating the reports available and developing new reports as states' needs evolve.
- The VVAAS reporting system supports educators in answer a series of critical questions:

