

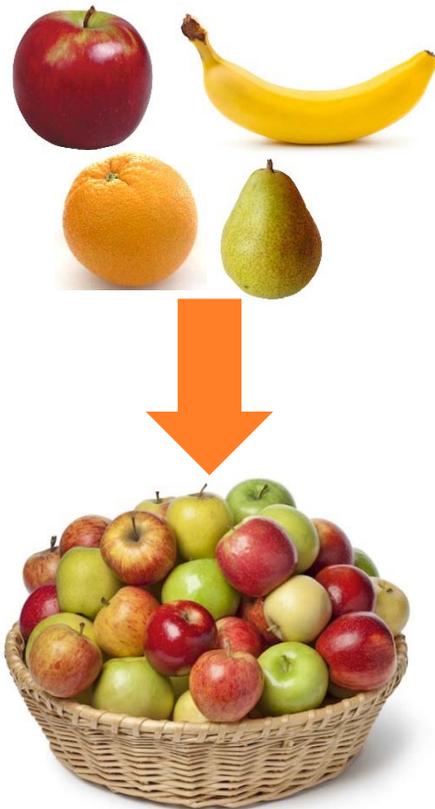
MEASURING STUDENT GROWTH IN VIRGINIA

THE NEED FOR AN ADVANCED ANALYTICAL MODEL

NADJA YOUNG, M.ED., NCBT, EDUCATION SPECIALIST, SAS INSTITUTE



MEASURING STUDENT GROWTH



WHY DOES VIRGINIA NEED A NEW SYSTEM?

Formative Classroom Assessment Pre-K through 12				
Primary	Upper Elementary	Middle School	Early High School	Advanced High School
Diagnostic Assessment Measure for Reading/Language (not used for accountability ratings)	Growth Measure (e.g. CAT) for Mathematics Grades 3-5	Growth Measure (e.g. CAT) for Mathematics Grades 6-8	Achievement Measure for Algebra I, Geometry, and Algebra II (at least 1 Required)	Option 1: Earn Industry or Workplace Credential
Diagnostic Assessment Measure for Math Literacy (not used for accountability ratings)	Growth Measure (e.g. CAT) for Reading Grades 3-5	Growth Measure (e.g. CAT) for Reading Grades 6-8	Achievement Measure for High School Reading by Grade 10	Option 2: Successfully Complete an Apprenticeship and/or Internship
	Locally Administered and Scored Performance Assessment for Virginia Studies (Grade 4 or 5)	High Quality Civics Assessment* with Writing Component (Grade 7 or 8)	High Quality Science Assessment* (Earth Science or Biology) with Writing Component (at least 1 Required)	Option 3: Complete a series of Dual Enrollment or AP Courses (Early College)
	High Quality Science Assessment* with Writing Component (Grade 5)	High Quality Science Assessment* with Writing Component (Grade 7 or 8)	Option for Substitute tests (e.g. PSAT or VPT) to meet graduation requirements for ELA and Mathematics	Option 4: Complete Traditional High School Program and Successfully Complete a Locally Scored Portfolio Assessment
<i>English Language Learners – Alternative Measure (e.g. WIDA ACCESS for ELLs (K-12))</i> <i>Students with Significant Disabilities – Alternative Measure (e.g. Virginia Alternate Assessment Program (K-12))</i>				

Figure 1: SOL Innovation Committee's Proposed Framework for Assessing Student Learning, Revised 10/29/15

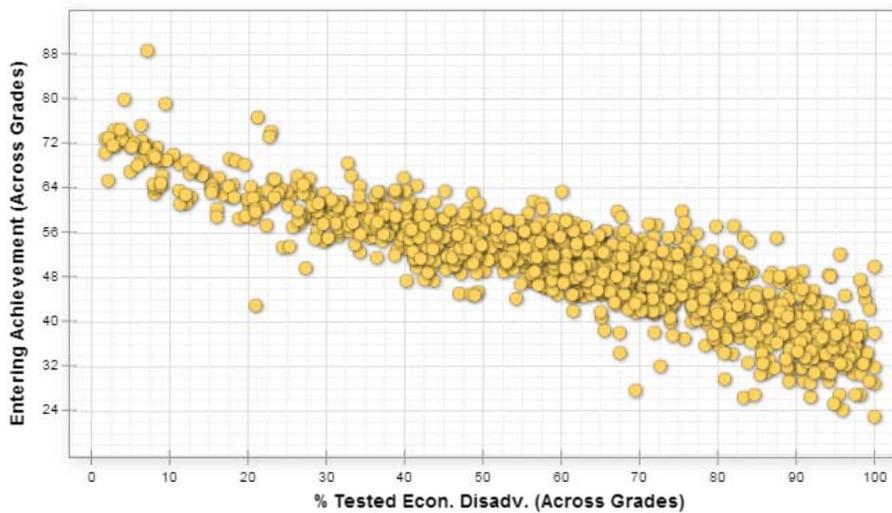
WHY DOES VIRGINIA NEED A NEW SYSTEM?

1. Incorporate more assessments (SOL, Alternative Assessments, PSAT, SAT)
2. Incorporate more students
 1. Those with missing prior test scores
 2. Those within performance bands
3. Provide seamless growth measures as tests continue to change over time
4. Provide more diagnostic feedback to educators about their programs, practices, curriculum, etc.
5. Provide predictive information about student performance in order to guide course placement, intervene and enrich sooner

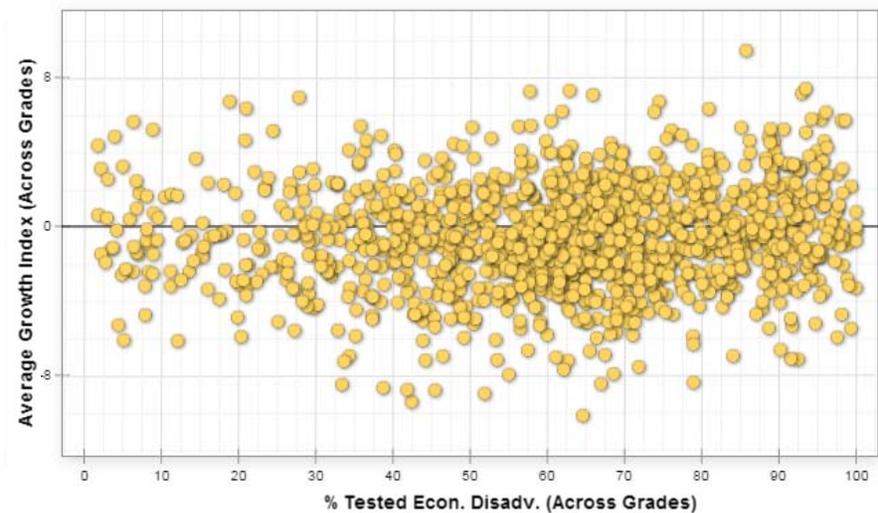
MEASURING STUDENT GROWTH

A DIFFERENT PICTURE OF STUDENT LEARNING

Achievement



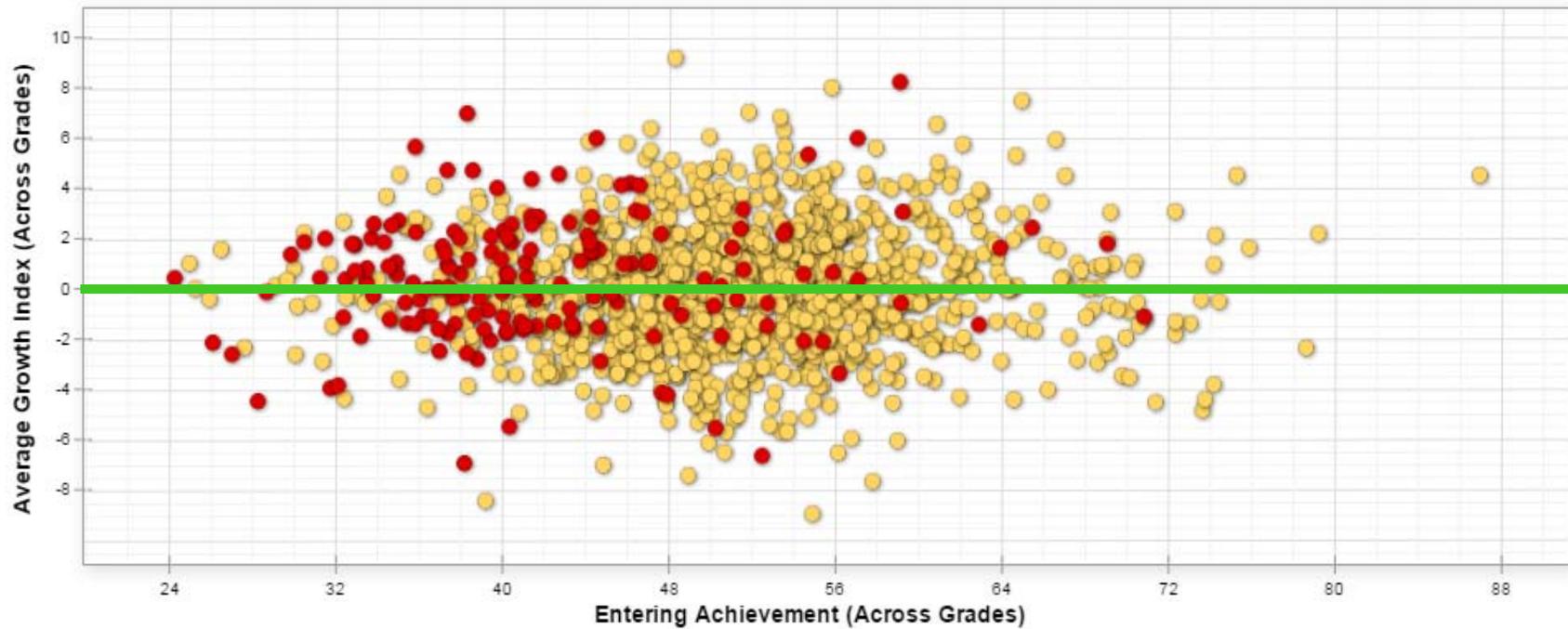
Growth



Source: www.tvaas.sas.com Public Tennessee 2015 data by school for TCAP Reading across grades 4-8.
Each dot is a school in TN.

MEASURING STUDENT GROWTH

A MORE COMPLETE PICTURE OF STUDENT LEARNING



Source: www.tvaas.sas.com Public Tennessee 2015 data by school for TCAP Reading across grades 4-8.
Each dot is a school in TN. Red dots represent Shelby County/Memphis District.

SAS EVAAS | TWO KEY METRIC TYPES

Value-Added Metrics

Student Projections



The intent is to answer two key questions:

1. How much have educational entities influenced student progress in the **past**?
2. How likely are students to be successful in the **future**?

SAS EVAAS SAMPLE REPORT

COMPARING SCHOOLS WITHIN A DISTRICT

Estimated School Growth Measure by Grade						
School Name		4	5	6	7	8
Seagull Elementary/Middle School	3-Yr-Avg	1.8	-2.4	-1.2	0.5	-1.2
	2016	6.8	7.0	-9.8	1.6	6.0
Shrimo Upper Elementary School	3-Yr-Avg	4.9	4.5	1.0	2.5	0.6
	2016	2.8	6.4	-1.4	-7.1	--
Skunk Upper Elementary School	3-Yr-Avg	4.3	1.0	-2.4	-2.7	--
	2016	--	--	--	--	0.8
Sloth Intermediate School	3-Yr-Avg	--	--	--	--	-0.1
	2016	-3.0	-3.6	-7.4	2.1	2.7
Snake Upper Elementary School	3-Yr-Avg	1.4	-4.3	-2.3	0.5	0.5
	2016	--	--	1.7	3.8	4.4
Snowy Owl Middle School	3-Yr-Avg	--	--	3.2	0.1	-4.2
	2016	-5.7	-2.9	--	--	--
Sparrow Elementary School	3-Yr-Avg	-2.2	1.7	--	--	--
	2016	2.6	-2.2	-8.3	5.0	--
Starling Elementary School	3-Yr-Avg	1.2	-2.5	-1.5	3.0	--
	2016	-0.7	-1.2	4.1	1.9	--
Steer Elementary School	3-Yr-Avg	4.0	-1.5	-3.5	0.8	--
	2016	--	--	0.6	-0.1	8.4
Tamarin Middle School	3-Yr-Avg	--	--	2.4	-3.4	0.5
	2016	-8.7	3.0	-2.5	-8.8	--

	Significant evidence that the school's students made more progress than the Growth Standard
	Moderate evidence that the school's students made more progress than the Growth Standard
	Evidence that the school's students made progress similar to the Growth Standard
	Moderate evidence that the school's students made less progress than the Growth Standard
	Significant evidence that the school's students made less progress than the Growth Standard
	-- The school does not have data for this test and subject in the most recent year.

SAS EVAAS SAMPLE REPORT

FOCUSING ON A SINGLE SCHOOL'S GROWTH

Report: School Value Added Test: EOG 
 School: Snowy Owl Middle School Subject: Math
 District: Big City School District
 Year: 2016

Estimated School Growth Measure				
Grade	6	7	8	Growth Measure over Grades Relative to Growth Standard
Growth Standard	0.0	0.0	0.0	
2014 Growth Measure	-3.8 R*	-6.8 R*	2.7 G*	-2.9 R*
Standard Error	1.2	0.9	1.1	0.6
2015 Growth Measure	2.7 G*	1.8 G	5.4 G*	3.3 G*
Standard Error	1.2	1.4	0.9	0.7
2016 Growth Measure	1.7 G	3.8 G*	4.4 G*	3.3 G*
Standard Error	1.2	0.9	1.1	0.6
3-Yr-Avg Growth Measure	0.2 Y	-0.4 Y	4.2 G*	1.2 G*
Standard Error	0.7	0.6	0.6	0.4

Estimated School Avg Achievement			
Grade	6	7	8
State NCE Average	50.0	50.0	50.0
2013 Avg Achievement	47.5	44.5	54.7
2014 Avg Achievement	29.5	40.9	47.5
2015 Avg Achievement	41.6	31.9	46.3
2016 Avg Achievement	56.0	45.0	36.2

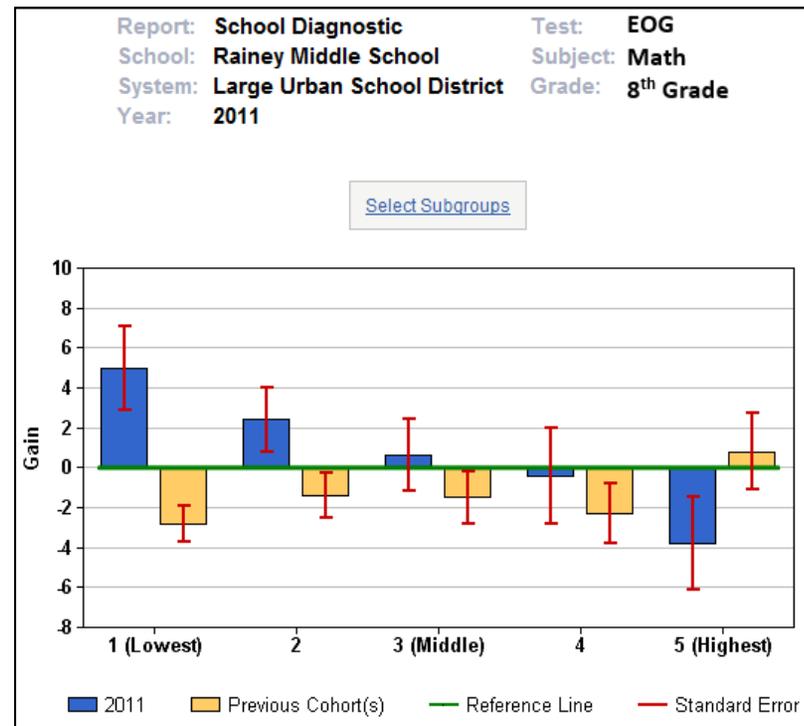
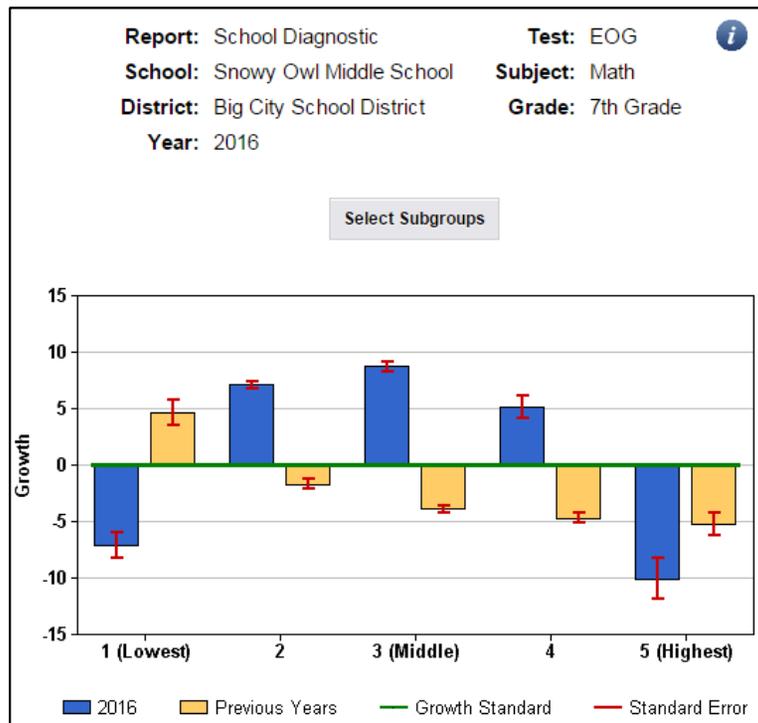
- G* Significant evidence that the school's students made more progress than the Growth Standard
- G Moderate evidence that the school's students made more progress than the Growth Standard
- Y Evidence that the school's students made progress similar to the Growth Standard
- R Moderate evidence that the school's students made less progress than the Growth Standard
- R* Significant evidence that the school's students made less progress than the Growth Standard

Achievement results and growth results must be used together to get a complete picture of student learning.

To view additional reports, click on the underlined numbers or words.

SAS EVAAS SAMPLE REPORT

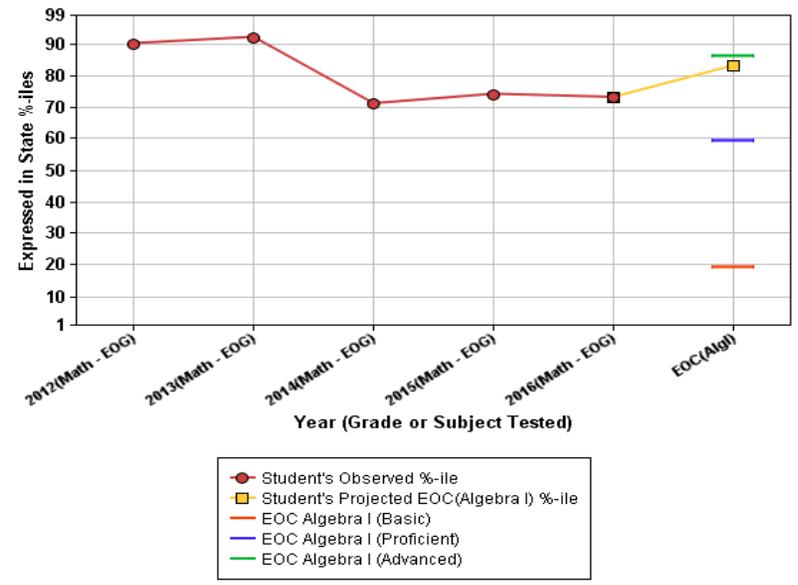
DIGGING DEEPER TO LOOK FOR TRENDS WITH DIFFERENT TYPES OF STUDENTS



EVAAS PROJECTION SAMPLE REPORT

STUDENT PROJECTION REPORT

Report: Student Projection Report 
 Student: NICOLE MCGILL
 Projection: EOC Algebra I



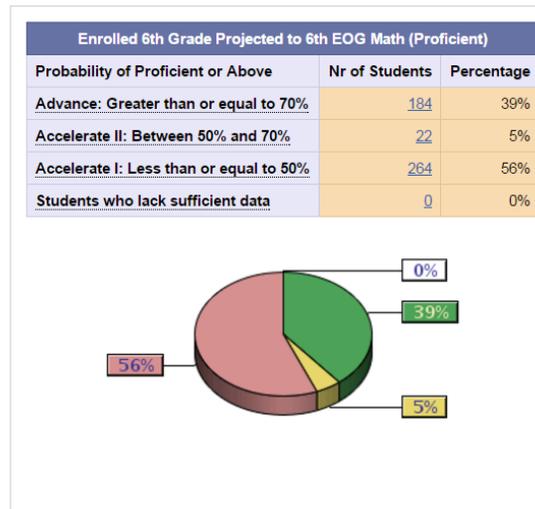
Projection: EOC Algebra I			
Projected State Percentile	Probability of scoring the indicated Performance Level or above		
	Basic	Proficient	Advanced
83	99.9%	94.5%	47.1%

EVAAS PROJECTION SAMPLE REPORT

GROUP-LEVEL PROJECTIONS FOR ENTERING STUDENTS

Report: School (Single Enrolled Grade) Projection Summary **Grade:** 6th Grade
School: Snowy Owl Middle School **Projection:** 6th EOG Math (Proficient)
District: Big City School District
Year: 2016

Select Subgroups



MEASURING STUDENT GROWTH

PROPOSED PATHS

Pilot- FY 2016

- VDOE to select a mix of pilot divisions/schools with up to 60,000 tested students
- Consult VDOE on model selection, business rules, and growth expectations
- Collect, clean, analyze data
- Build web application with reporting at division, school, subject/grade, and student levels
- Deliver reflective student growth and diagnostic measures, individual and group projections
- \$150K included in Governor's budget

Statewide Implementation- FY 2017

- 133#1s (DOE/COO) Student Assessment Growth Model – SB30 (McDougle)
- Enable execution of SOL Innovation Committee Recommendations (#2,3e,5a,6) to Incorporate growth measures into School Accreditation and School Performance Report Cards
- Develop Advanced Analytical Model to measure student growth at division, school, and subject/grade levels
- Use Student Projections for student placement decisions in Algebra I an Advanced Placement coursework
- Anticipate \$2.5M to be offset by anticipated cost savings from reduction in SOL tests in FY 2018.
- Anticipate elimination of Algebra Readiness testing in FY2019 – additional cost savings

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The Growth Project

H. Alan Seibert
Division Superintendent

January 28, 2016

Growth Models

- Parents of students ranging from the gifted to those with special needs want to know if their child is learning and growing.
- Teachers long to celebrate not just a point in time test score, but how much individual children have progressed in their classroom.
- Virginia's approach to assessment was not meeting these needs in Salem

STUDENT DETAIL REPORT

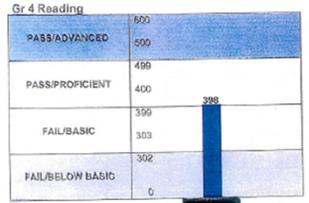
Admin: Spring 2013 Non-Writing
 State Testing Identifier: [REDACTED]
 Student Number: [REDACTED]
 School: [REDACTED]
 Grade: 04
 Division: [REDACTED]
 Form #: R0223

[REDACTED] Performance on Gr 4 Reading



Virginia Standards of Learning

Performance Level:
 Scaled Score: 398



← "Equated" Scaled Score "Fail"

[REDACTED] performance in each reporting category

Results by Reporting Category	# Correct	# Possible	Scaled Score	0	10	20	30	40	50
Gr 4 Reading									
1. Use word analysis strategies and word reference materials	6	7	36	[Progress bar]					
2. Demonstrate comprehension of fictional texts	11	17	30	[Progress bar]					
3. Demonstrate comprehension of nonfiction texts	8	16	28	[Progress bar]					
Performance	25	40		[Progress bar]					

25/40 Cut Score Met!

Reporting Category Scaled Score: Each SOL test is divided into reporting categories that represent related content or skills. Reporting category scores, which are on a scale of 0-50, can be used to identify students' strengths and weaknesses. A score of 30 or above indicates a strength. A score of less than 30 indicates that the student may benefit from additional instruction in this area.

For more information about the reporting categories included in this test, please visit the Virginia Department of Education's Web site at http://www.doe.virginia.gov/testing/test_administration/index.shtml

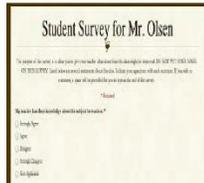
For descriptions of Performance Levels on the SOL test, please visit: http://www.doe.virginia.gov/testing/scoring/performance_level_descriptors/index.shtml



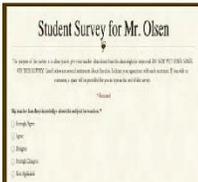
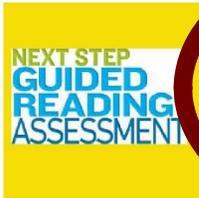


KEYS TO Informing Instruction for Student Growth

Measuring and USING Student Data

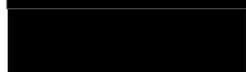


Measuring and USING Student Data



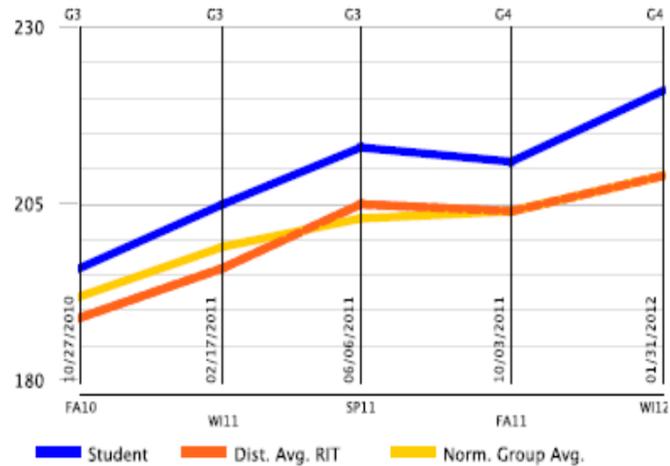


Student Progress Report



Term: Winter 2011-2012
 District: [Redacted]
 School: [Redacted]
 Growth Measured from: Fall to Winter

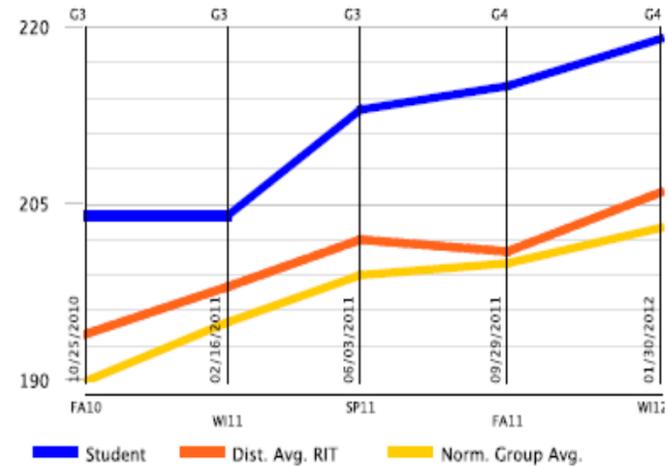
Mathematics



Mathematics Goals Performance - Winter 2011-2012

Number and Number Sense	High
Computation and Estimation	HiAvg
Measurement	Avg
Geometry	High
Probability and Statistics	HiAvg
Patterns, Functions, and Algebra	High

Reading



Reading Goals Performance - Winter 2011-2012

Word Origins, Expand Vocabulary, Semantics	High
Comprehension of a Variety of Fictional Texts	HiAvg
Comprehension of a Variety of Nonfiction Texts	High
Lexile® Range: 843-993L	

MAP Value Added Growth Data for Reading

Report: District Value Added

Test: MAP



District: Salem City School District

Subject: Reading

Year: 2015

Grade: Across Grades

Estimated District Growth Measure					
Year	From Semester	To Semester	Growth Measure	Standard Error	Growth Standard
2013	Fall	Spring	2.8 G*	0.7	0.0
2014	Fall	Spring	3.5 G*	0.7	0.0
2015	Fall	Spring	5.3 G*	0.8	0.0

Estimated District Average Achievement			
Year	Semester	Average Achievement	Achievement Norm
2013	Fall	57.0	50.0
	Spring	59.7	50.0
2014	Fall	55.9	50.0
	Spring	59.4	50.0
2015	Fall	55.0	50.0
	Spring	60.3	50.0

G*	Significant evidence that the district's students made more progress than the Growth Standard
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Authentic Measures of Individual Student Growth

In SCS, we measure our success,
not by SOL pass rates, but by
adding value to every child.

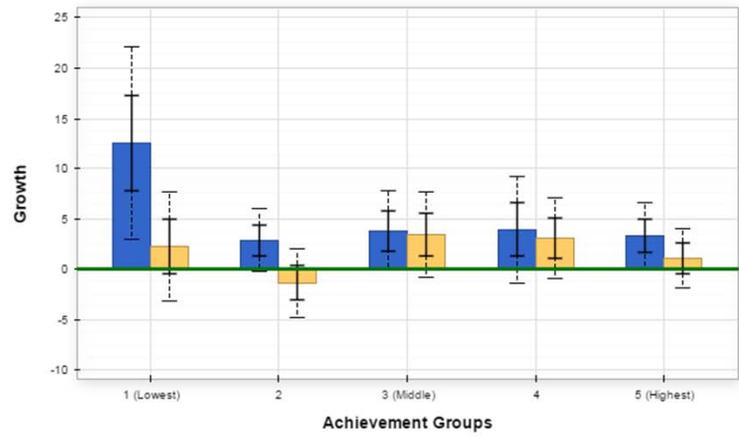
By measuring the growth of every
individual child, the reporting
groups are inherently,
simultaneously addressed

Performance by Group

Year: 2015
Semesters: Fall to Spring

School Diagnostic School Performance Diagnostic School Custom Diagnostic

Filter By: Subgroup



2015 Previous Years Two Standard Errors One Standard Error Growth Standard

2015 Achievement Groups (60)

- ▶ 1 (Lowest) (11)
- ▶ 2 (10)
- ▶ 3 (Middle) (17)
- ▶ 4 (11)
- ▶ 5 (Highest) (11)

**Trust matters! Use data as a
flashlight...not a hammer!**



**Must have *multiple* measures
over *multiple* years**

Thank you!

Questions?

H. Alan Seibert

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