PINE-RICHLAND SCHOOL DISTRICT

Academic Achievement Report

November 9, 2015

Purpose

- Review the **role of assessment** within the strategic plan category of teaching and learning
- Consider the concepts of **achievement and growth** across multiple forms of assessment
- Understand the various **types of assessment** and benefits of each type
- **Analyze results** with an eye towards levels, trends, comparisons, and integration
- Identify concrete **areas of focus** for curriculum and instruction that promote continuous improvement

Perspective

30,000’

Concepts: Achievement and Growth; Teaching and Learning; Multiple Indicators; Curriculum/Instruction/Assessment

20,000’

General Findings: Levels; Trends; Comparisons; Multiple Assessments; Assessment Anchors

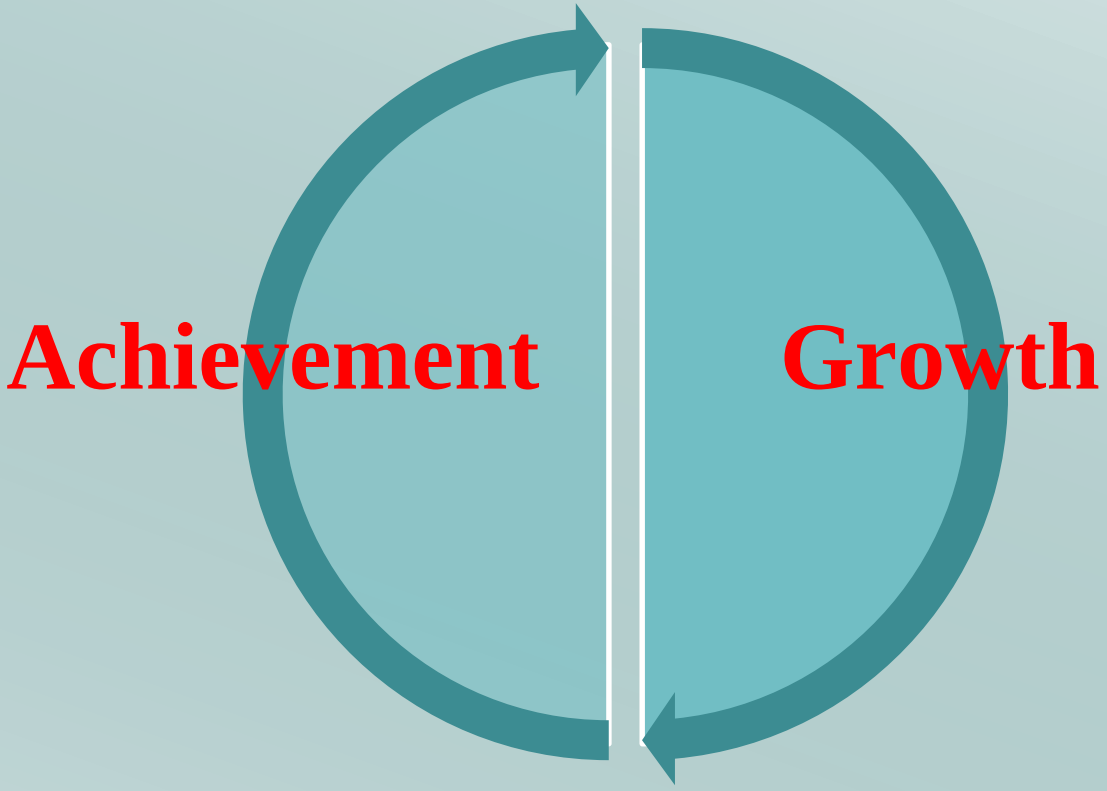
10,000’

Classroom and Student Groups: Eligible Content; Unit-Based Curriculum; Classroom/Teacher

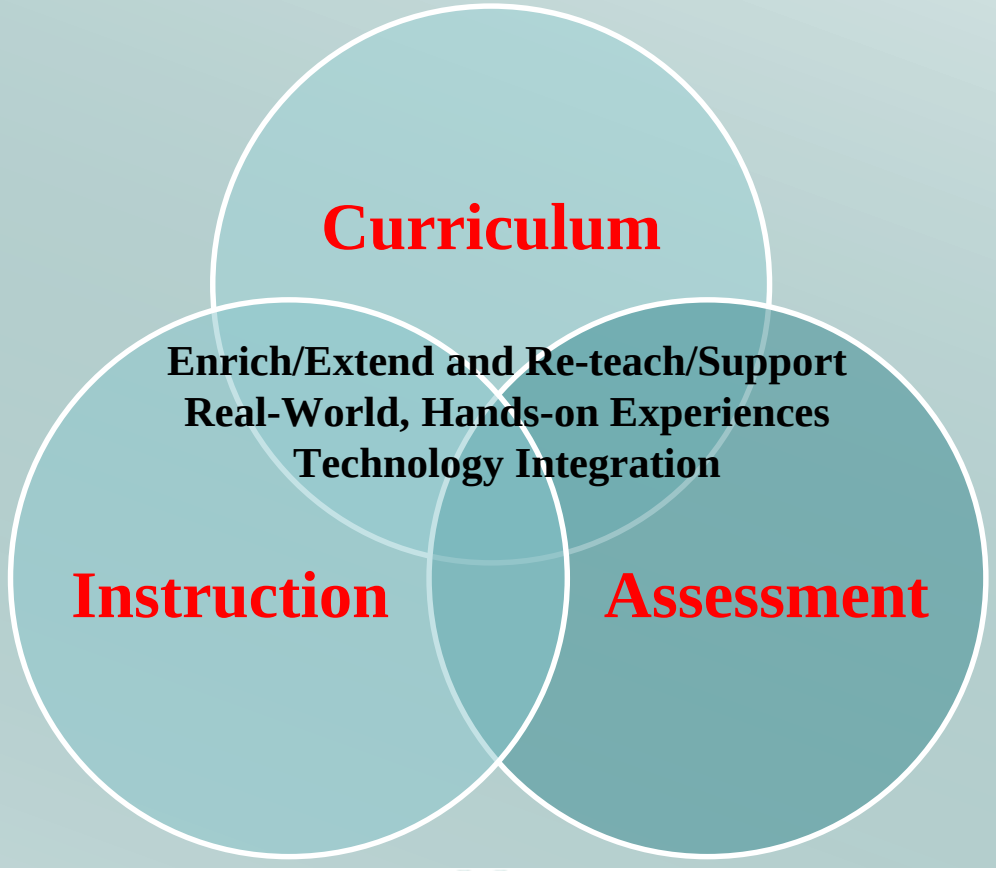
Ground’

Individual Students: Lesson Planning; Flexible Groups; Formative Assessment

Big Idea



Teaching and Learning



Types of Assessments

	Diagnostic	Formative	Benchmark	Summative
Purpose	Guide instruction specifically targeted to meet students' needs, including students' strengths and weaknesses	Inform ongoing classroom instruction so that adjustments to instruction can be made	Determine how well students are progressing toward demonstrating proficiency on a set of designated grade-level curriculum content standards	Determine the degree to which students have mastered a designated set of curriculum content standards
Impact on Instruction	Tools that provide alignment to units, lesson plans, and other resources based on students' needs.	Classroom-based activities integrated into instruction and learning with teachers and students receiving frequent feedback	Low-stakes assessments used to predict how students will do on the high-stakes summative assessments	Assessments used for accountability
Intended Users of the Results	Students, parents, and educators	Students, parents, and educators	Students, parents, and educators	Educators, parents, public at large, and district personnel
Examples	Classroom Diagnostic Tools (CDT) Teacher-created diagnostics	Teacher-selected Classroom assessments Response cards White boards Random selection	Acuity Assess2Know 4-Sight	PSSA Keystone Exams ACCESS for ELLs End of Unit/Chapter Tests District End of Course Exams
Type of Information Provided	Provides a more complete picture of a student's or group of students' strengths and weaknesses so that instruction can be targeted directly at meeting student needs	Provides feedback related to a specific unit or lesson so that feedback can be used to inform classroom instruction and learning during the teaching/learning process	Provides information on the degree to which students have mastered a given concept or how students are progressing toward demonstrating proficiency on grade-level content standards	Provides information on students' mastery of a given set of content standards

Types of Assessments

Assessment of Learning

- Standardized tests
  - PSSA
  - Keystone Exam
  - SAT
  - ACT
  - AP
- End of chapter test prior to moving into the next unit
- Mid-term or Final Exam

Assessment for Learning

- Pre-test to determine prior knowledge
- Quiz or informal check for understanding that leads to an instructional decision by the teacher
- Diagnostic-style assessment to guide decisions
  - CDT

Strategic Connection

- **Long-Term Goal:**
  - Implement a balanced range of national, state and local assessments to monitor student learning and use the results to guide curriculum and instruction.

- **Short-Term Goal:**
  - Evaluate the current standardized assessments and determine an appropriate assessment mix.

Approach to Analysis

- **Levels** – report results on a meaningful scale (e.g., average AP)
- **Trends** – direction or rate of change in results or consistency of results over time (e.g., % of 3+ AP)
- **Comparisons** – provides context for analysis within the district and/or outside the district (e.g., 2015 PSSA results)
- **Integration** – linkage of assessment results into curriculum and instruction (e.g., solving real-world and practical problems involving volume)

Comparisons

- Our goal is to **achieve and grow at the highest levels** in Pennsylvania.
- In the report and presentation, **state averages are utilized as a benchmark** to better understand changes in test rigor. Exceeding the state average is not a goal. We expect to far exceed the state averages.
- It is possible – in the future – to **establish a set of comparator schools** as context for our performance.

Presentation Outline

- The 2015 Academic Achievement Report focuses on a **review and analysis of several standardized assessments** including a summary of changes to the PA Core and PSSA test design.

- In all cases, these test results serve as "**assessments of learning**" received well after the test is administered to provide "**lagging indicators**" of student achievement at a snapshot in time.

Presentation Outline

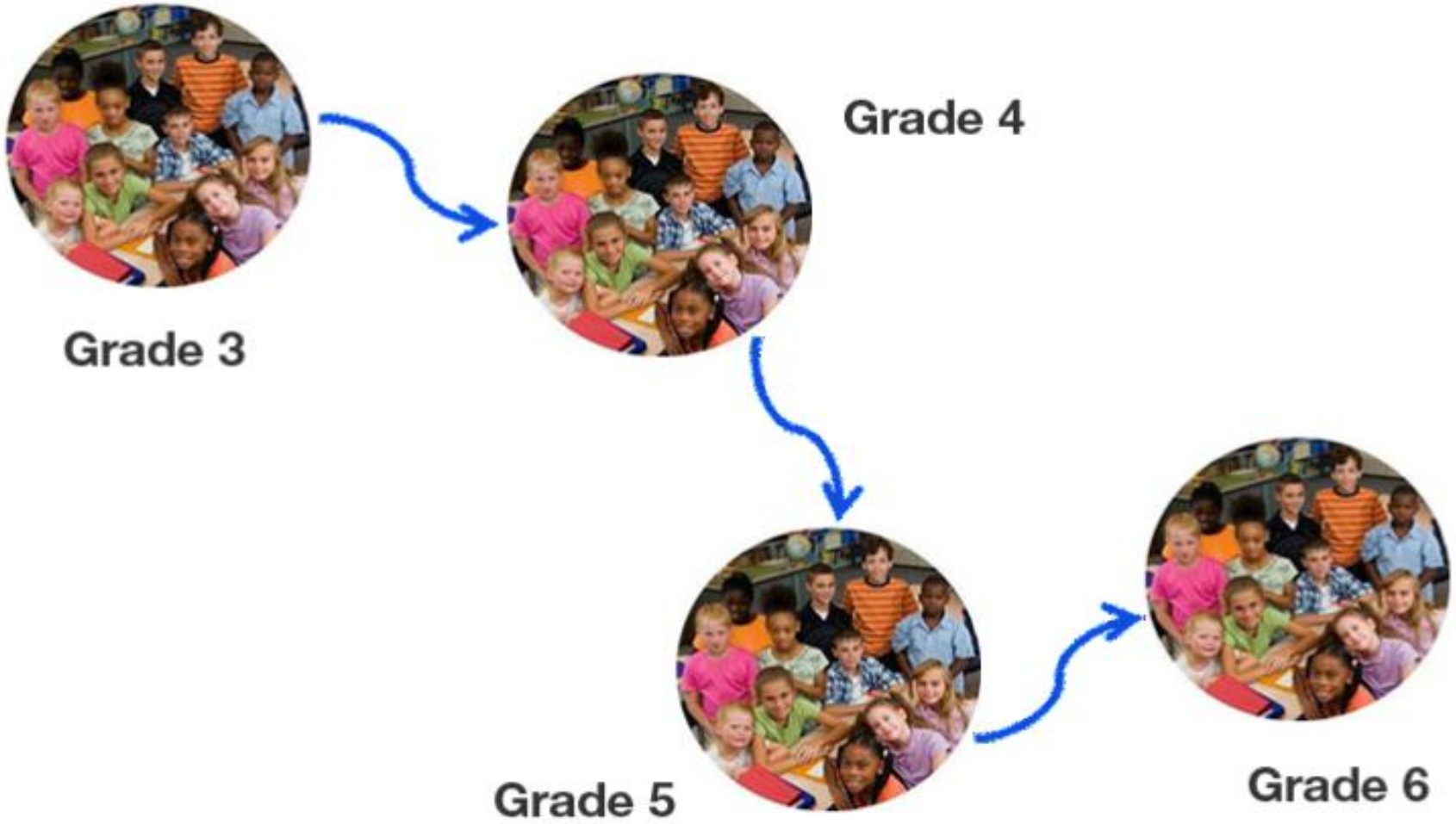
- Tonight's presentation will focus on a selection of high stakes assessments:
  - Pennsylvania System of School Assessment (PSSA) and Keystone Exams
    - Pennsylvania Value-Added Assessment System (PVAAS)
  - Scholastic Aptitude Test (SAT)
  - American College Test (ACT)
  - Advanced Placement (AP)

PVAAS

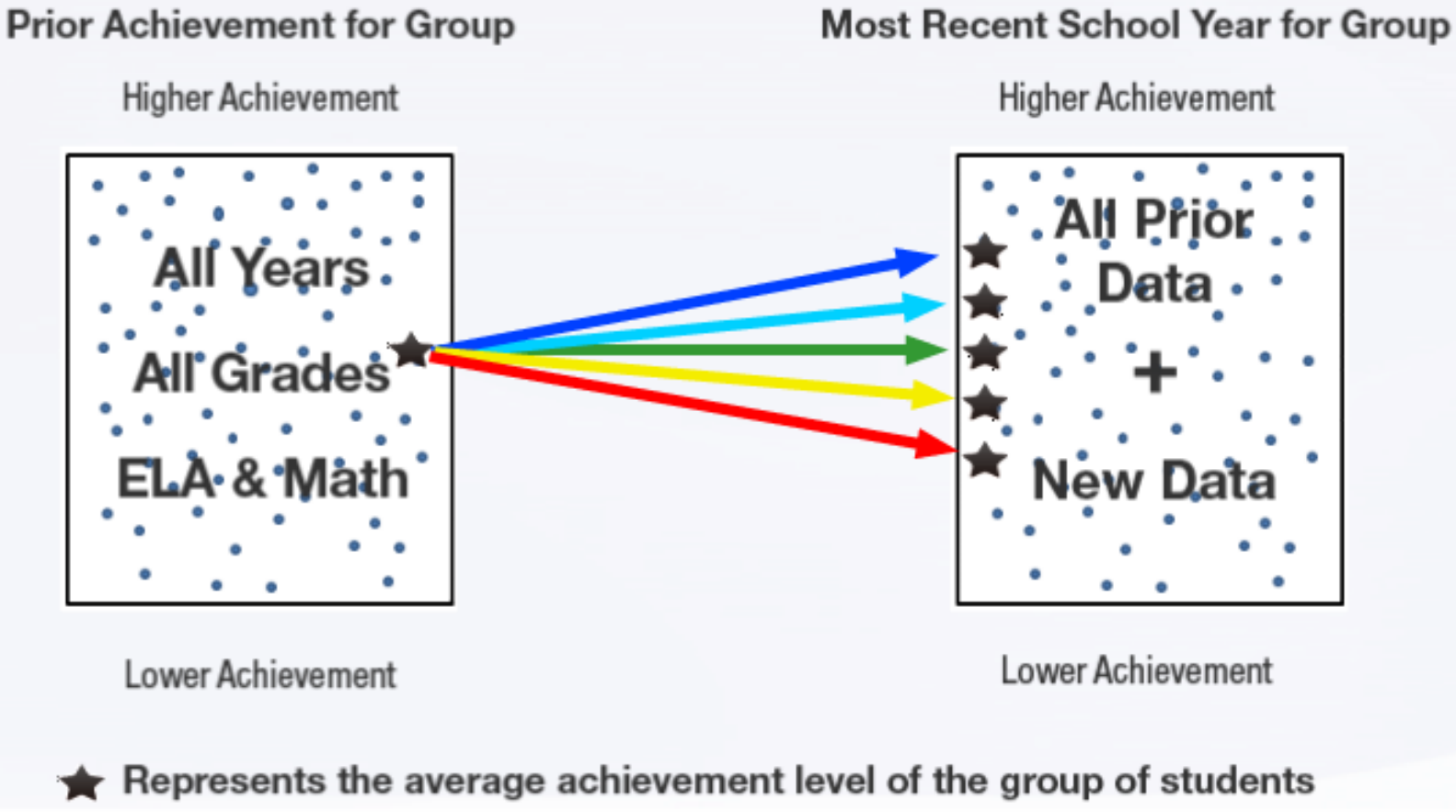
- The Pennsylvania Value-Added Assessment System (PVAAS) is a statistical analysis of state assessment data that provides districts and schools with growth data to add to achievement data (i.e., “year’s worth of growth in a year’s time”).

The Concept

Slide taken from PDE PVAAS

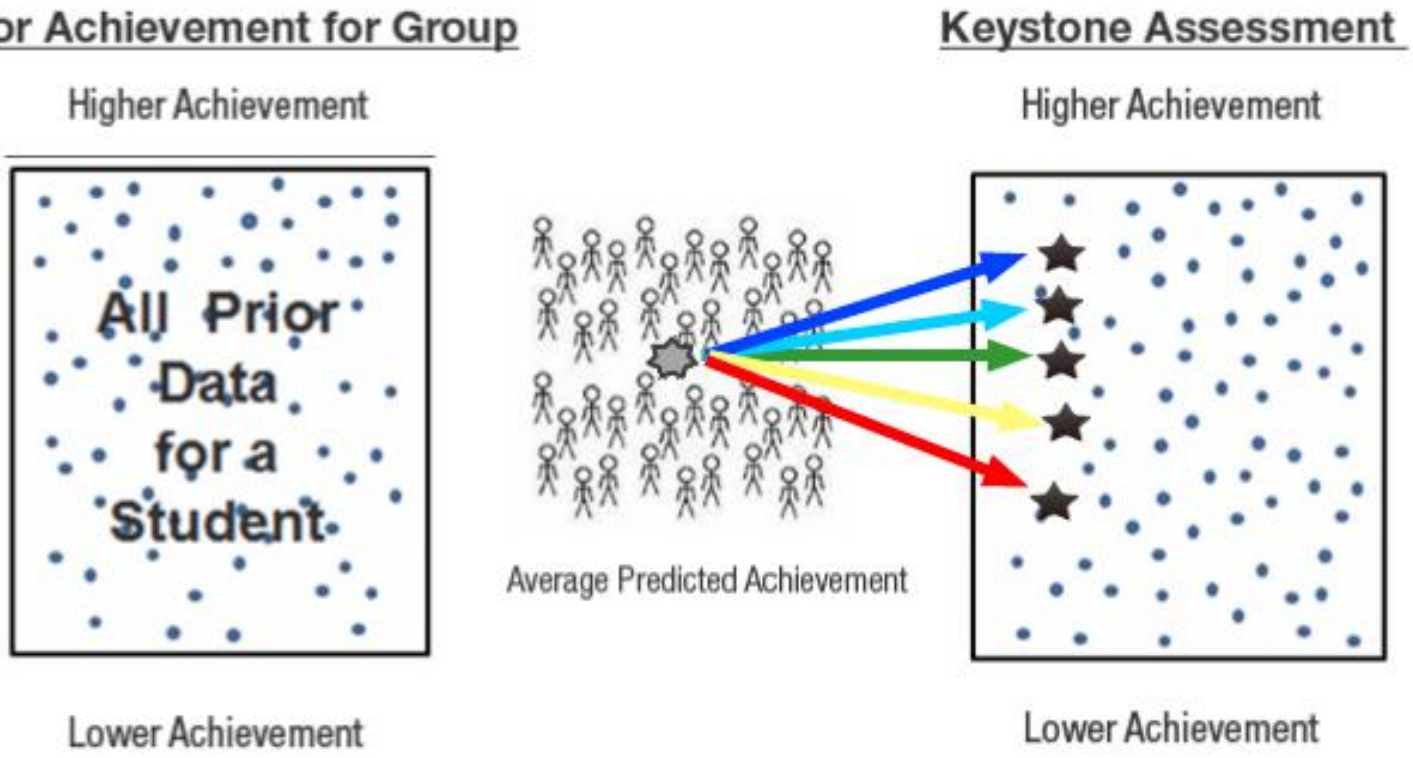


Concept of Measuring Growth in PVAAS–Grades 4-8 ELA & Math



Concept of Measuring Growth in PVAAS

PSSA Science & Keystone Content Areas

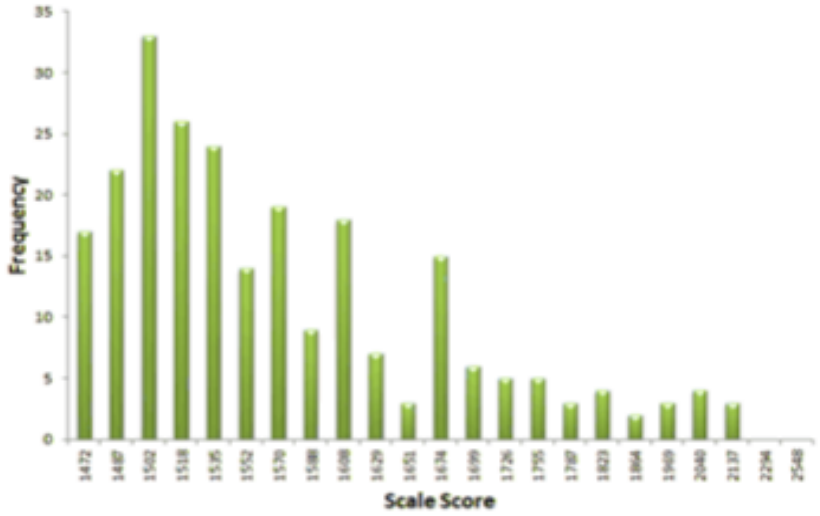


- Represents the average *predicted* achievement level of the group of students
- Represents the average achievement level of the group of students

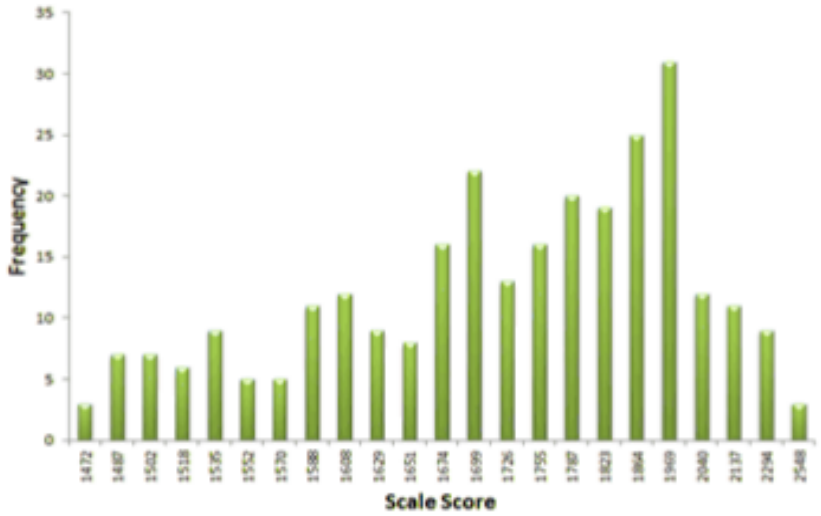
The Concept

Slide taken from PDE PVAAS

Advanced Level



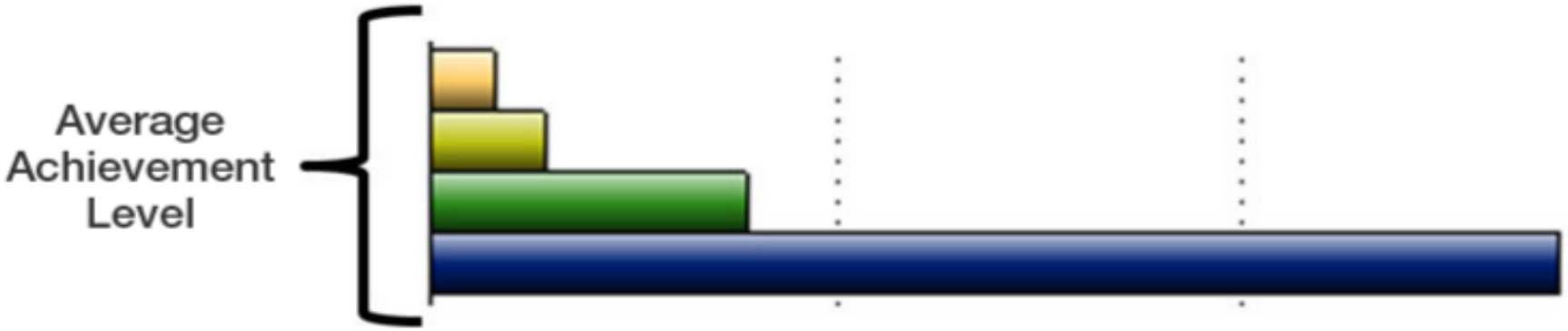
Neon Yellow Middle School



Apricot Middle School

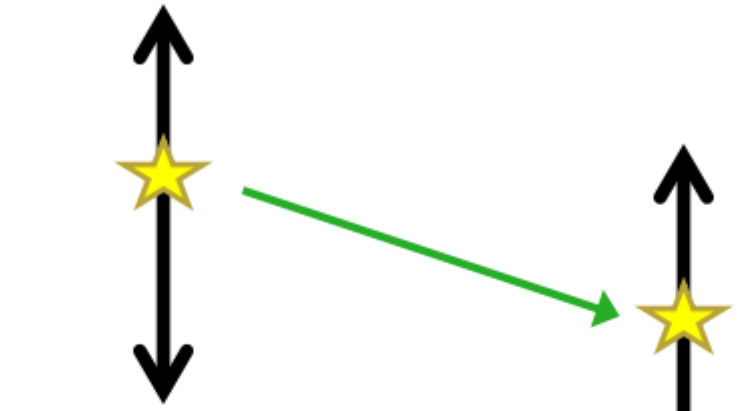
Slide taken from PDE PVAAS

Defining High Achievement



Neon Yellow Middle School	Apricot Middle School
87% Students Proficient or Advanced	
Average Score = 1442	Average Score = 1699

Impact: PVAAS Transition of PA State Assessments



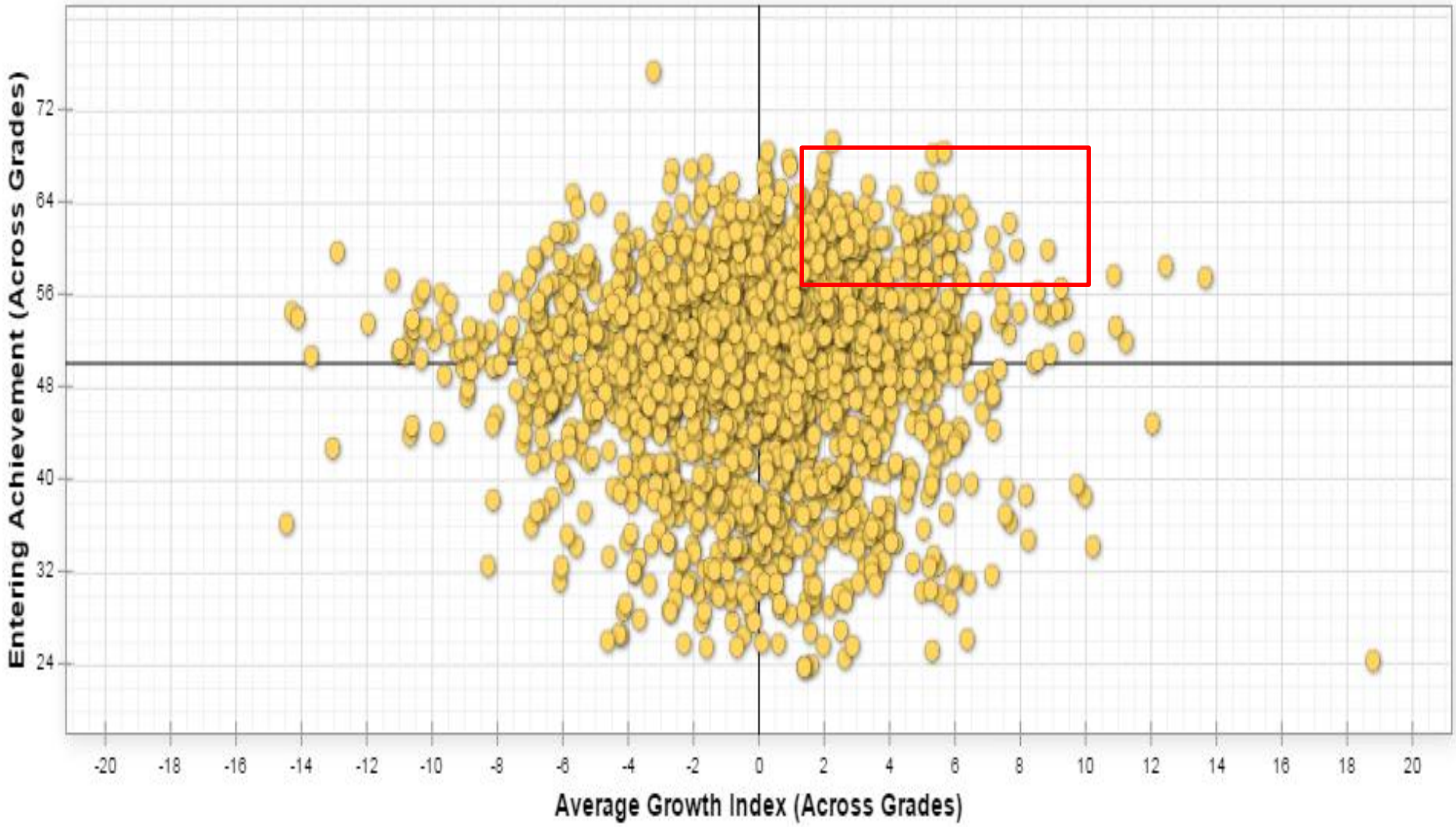
2014 Distribution of PSSA Grade 7 Math Scores (higher % of students P/A)

2015 Distribution of PSSA Grade 8 Math Scores (lower % of students P/A)

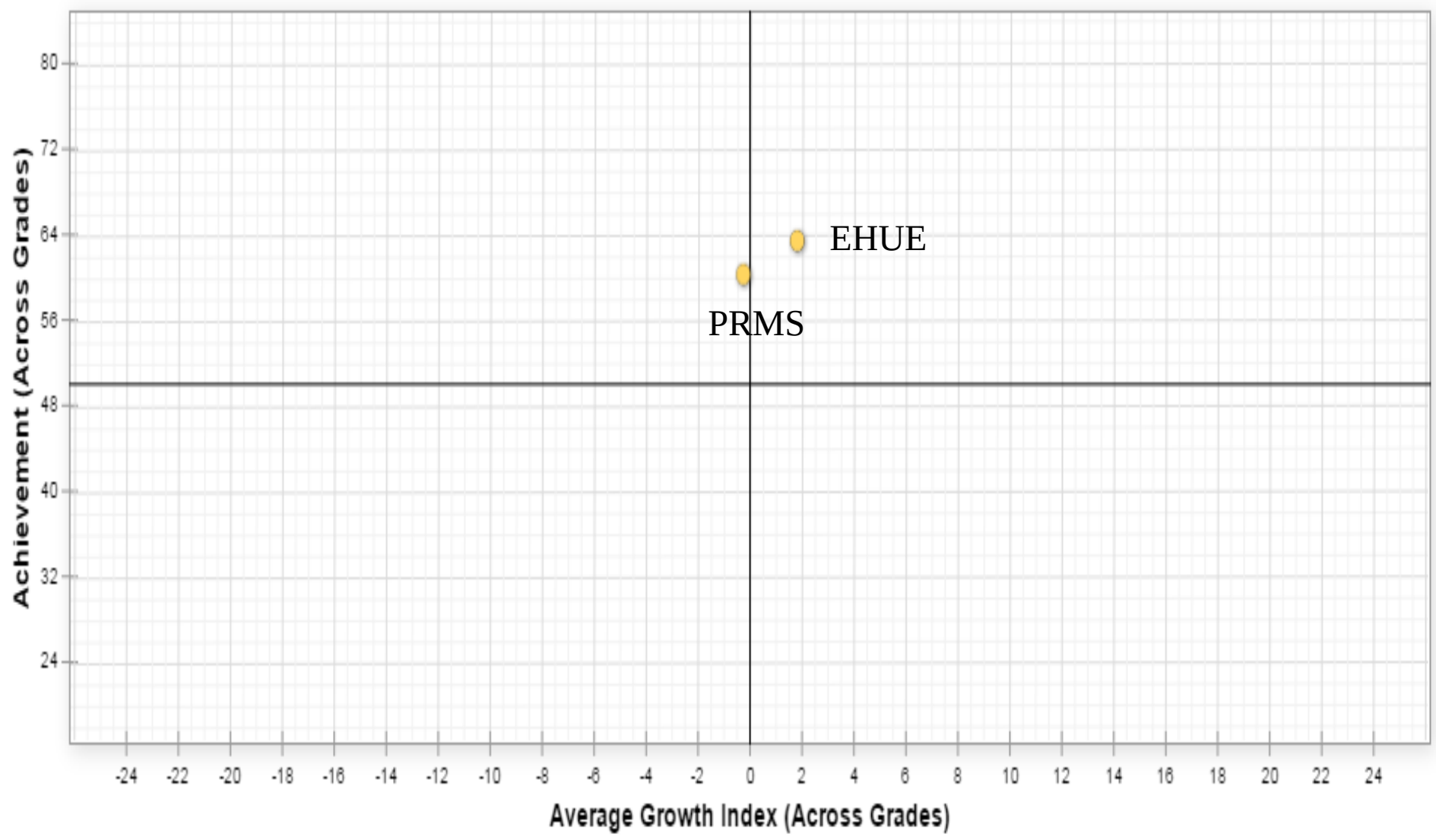
THIS IS AN EXAMPLE ONLY!

Is the group of students (indicated by the yellow star) at the same RELATIVE position in the distribution of statewide scores from SY13-14 to SY14-15?
Yes = Green on PVAAS

State 4 – 8 Math (2014)



Across 4 – 8 Math (2015)



Conclusions

- We are achieving at high levels across multiple standardized assessments…but we have the potential for much higher levels of achievement.
- We are growing across most grades and subjects that includes our higher performing student group…but we have the potential for more significant growth.

PSSA/Keystone Exam

- PSSAs are state assessments for students in grades 3 – 8 in Mathematics and English Language Arts.
  - Shift from PA Academic Standards to PA Core Standards
  - The stand-alone PSSA Writing assessment was eliminated.
- PSSA Science is tested in grades 4 and 8.
- The Keystone Exams are end-of-course assessments in Algebra I, Literature, and Biology.
- The following performance levels are utilized: Advanced; Proficient; Basic; and Below Basic.

Grade 5 Math

GRADE 5 PSSA MATH

HISTORIC Total Student Performance Level Percentages over Time

	2010	2011	2012	2013	2014	PA 2014
ADV	57.1	57.3	61.6	64.4	60.8	44.4
PROF	25.2	28.5	24.0	27.0	24.4	22.8
ADV/PRO	**82.5**	**85.8**	**85.6**	**91.4**	**85.2**	**67.2**
BASIC	13.0	11.0	11.5	8.3	8.9	17.4
BEL BAS	4.5	3.3	2.9	0.3	5.8	15.4
# TESTED	331	337	375	348	360	126693

2015 PA CORE Total Student Performance Level Percentages vs. State

	2015 Percent	PA 2015 Percent
ADV	32.0	15.4
PROF	40.2	27.4
ADV/PRO	**72.2**	**42.8**
BASIC	17.6	31.3
BEL BAS	10.2	25.9
# TESTED	353	126683
Mean Score	1070	990

Note: For SY 2014-2015, PDE created a new PSSA Math Assessment aligned to PA Core Standards. Because Spring 2015 is the first time students took the test, no trend data is available. As this is a newly constructed test, comparisons of achievement test results from Spring 2015 to results from prior years should not be made.

Grade 5 Math

PVAAS – Grade 5 Math

PSSA, Grade 5

2015 | 3Yr A

District Value Added

- Significant evidence that the School exceeded the standard for PA Academic Growth
- Moderate evidence that the School exceeded the standard for PA Academic Growth
- Evidence that the School met the standard for PA Academic Growth
- Moderate evidence that the School did not meet the standard for PA Academic Growth
- Significant evidence that the School did not meet the standard for PA Academic Growth
- No data currently available

PSSA, Grade 5



District Quintile Diagnostic

- Moderate evidence that the group exceeded the standard for PA Academic Growth.
- Evidence that the group met the standard for PA Academic Growth.
- Moderate evidence that the group did not meet the standard for PA Academic Growth.
- There were not enough students to define growth.

Grade 5 Math

GRADE 5 PA CORE MATH Assessment Anchors

Performance Averages vs. State

Numbers and Operations in Base Ten

	Max Points	PR Mean	PR Percent
M5.A-T	18	12.4	68.7
M5.A-T.1	10	6.3	62.6
M5.A-T.2	8	6.1	76.4

Numbers and Operations – Fractions

	Max Points	PR Mean	PR Percent
M5.A-F	20	11.9	59.6
M5.A-F.1	6	3.9	64.6
M5.A-F.2	14	8.1	57.5

Operations and Algebraic Thinking

	Max Points	PR Mean	PR Percent
M5.B-O	11	6.5	58.8
M5.B-O.1	4	3.0	74.4
M5.B-O.2	7	3.5	49.9

M5.A-T	**Numbers and Operations in Base Ten**
M5.A-T.1	Understand the place-value system
M5.A-T.2	Perform operations with multi-digit whole numbers and decimals to hundredths
M5.A-F	**Numbers and Operations - Fractions**
M5.A-F.1	Use equivalent fractions as a strategy to add and subtract fractions
M5.A-F.2	Apply and extend previous understanding of multiplication and division to multiply and divide fractions
M5.B.O	**Operations and Algebraic Thinking**
M5.B-O.1	Write and interpret numerical expressions
M5.B-O.2	Analyze patterns and relationships

Math Benchmarking

PRSD vs. PA Math - Combined Percentage Advanced/Proficient

	PA 3rd	PR 3rd	PA 4th	PR 4th	PA 5th	PR 5th	PA 6th	PR 6th	PA 7th	PR 7th	PA 8th	PR 8th
2014	75.0	96.6	76.2	90.6	67.2	85.2	71.9	89.0	75.7	89.4	73.6	93.0
2015	48.5	80.8	44.4	70.1	42.8	72.2	39.7	69.2	33.0	50.0	29.8	44.7
Delta*	(26.5)	(19.8)	(31.8)	(20.5)	(24.4)	(13.0)	(32.2)	(19.8)	(42.7)	(39.4)	(43.8)	(48.3)

*Different cohorts of students. Data presented to illustrate significant change in test rigor.

Grade 5 ELA

GRADE 5 PSSA READING/ELA

HISTORIC Total Student Performance Level Percentages over Time

	2010	2011	2012	2013	2014	PA 2014
ADV	26.8	29.9	41.5	36.5	34.9	24.2
PROF	47.5	49.7	40.2	44.8	45.5	36.3
ADV/PRO	74.3	79.6	81.7	81.3	80.4	60.5
BASIC	**15.9**	**15.6**	**13.7**	**13.2**	**13.7**	**18.0**
BEL BAS	9.7	4.8	4.6	5.5	5.9	21.4
# TESTED	339	334	371	348	358	126639

2015 ELA PA CORE Total Student Performance Level Percentages vs. State

	2015 Percent	PA 2015 Percent
ADV	30.9	17.8
PROF	52.4	44.1
ADV/PRO	**83.1**	**61.9**
BASIC	13	24.8
BEL BAS	3.7	13.4
# TESTED	353	126501
Mean Score	1090	1030

Note: For SY 2014-2015, PDE created a new PSSA ELA Assessment aligned to PA Core Standards. Because Spring 2015 is the first time students took the test, no trend data is available. As this is a newly constructed test, comparisons of achievement test results from Spring 2015 to results from prior years should not be made.

Grade 5 ELA

PVAAS – Grade 5 ELA

PSSA, Grade 5

2015 | 3Yr A

District Value Added

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PSSA, Grade 5



District Quintile Diagnostic

- Moderate evidence that the group exceeded the standard for PA Academic Growth.
- Evidence that the group met the standard for PA Academic Growth.
- Moderate evidence that the group did not meet the standard for PA Academic Growth.
- There were not enough students to define growth.

GRADE 5 2015 ELA PA CORE Assessment Anchors
Performance Averages vs. State

Key Ideas and Details

	Max Points	PR Mean	PR Percent
E5.F	19	14.0	73.4
E5.A-K.1	9	7.1	79.4
E5.B-K.1	10	6.8	68.1

Craft and Structure/Integration of Knowledge and Ideas

	Max Points	PR Mean	PR Percent
E5.G	7	4.6	66.1
E5.A-C.2	2	1.4	71.2
E5.B-C.3	5	3.2	64.0

Grade 5 ELA

E5.F	**Key Ideas and Details**
E5.A-K.1	Demonstrate understanding of key ideas and details in literature texts
E5.B-K.1	Demonstrate understanding of key ideas and details in informational texts
E5.G	**Craft and Structure/Integration of Knowledge and Ideas**
E5.A-C.2	Demonstrate knowledge of craft and structure of literature texts
E5.B-C.3	Integration of knowledge and ideas; demonstrate understanding of connections within, between, or among informational texts

ELA Benchmarking

PRSD vs. State ELA - Combined Percentage Advanced/Proficient

	PA 3rd	PR 3rd	PA 4th	PR 4th	PA 5th	PR 5th	PA 6th	PR 6th	PA 7th	PR 7th	PA 8th	PR 8th
2014	70.3	92.7	68.6	86.2	60.5	80.4	64.5	84.9	72.0	89.3	79.6	95.8
2015	62.0	84.2	58.6	82.3	61.9	83.1	60.7	83.3	58.6	82.6	58.0	82.5
Delta*	(7.7)	(8.5)	(10.0)	(3.9)	1.4	2.7	(3.8)	(1.6)	(13.4)	(6.7)	(21.6)	(12.7)

*Different cohorts of students. Data presented to illustrate significant change in test rigor.

Grade 4 Science

GRADE 4 PSSA SCIENCE

Total Students Performance Level Percentages over Time

	2011	2012	2013	2014	2015	PA 2015
ADV	63.9	56.4	53.4	61.3	62.8	41.2
PROF	30.2	37.0	38.3	30.6	31.5	36.1
ADV/PRO	**94.0**	**93.4**	**91.7**	**91.9**	**94.3**	**77.3**
BASIC	4.6	4.9	6.5	5.8	3.6	12.2
BEL BAS	1.4	1.7	1.8	2.2	2.1	10.5
# TESTED	368	346	339	359	336	124309
MEAN SCORE					1520	1430

Grade 4 Science

PVAAS – Grade 4 Science

PSSA, Grade 4

2015 | 3Yr A

District Value Added

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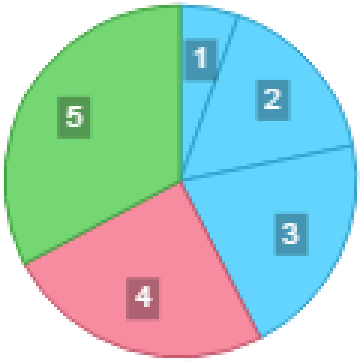
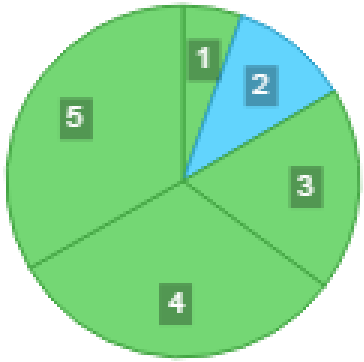
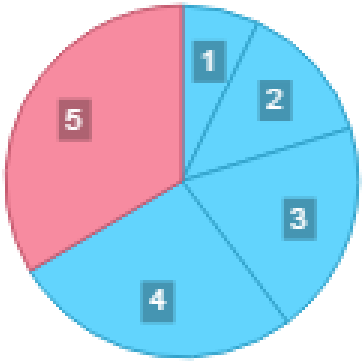
PSSA, Grade 4



District Quintile Diagnostic

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- Evidence that the group met the standard for PA Academic Growth.
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- There were not enough students to define growth.

PVAAS – 8th Grade

	Math		Reading/ELA		Science	
PSSA, Grade 8						
Value Added	2015	3Yr A	2015	3Yr A	2015	3Yr A
Diagnostic						

District Value Added

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District Quintile Diagnostic

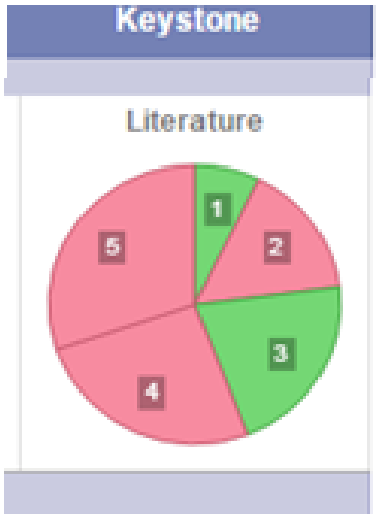
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Keystone Exams

Keystone

Literature

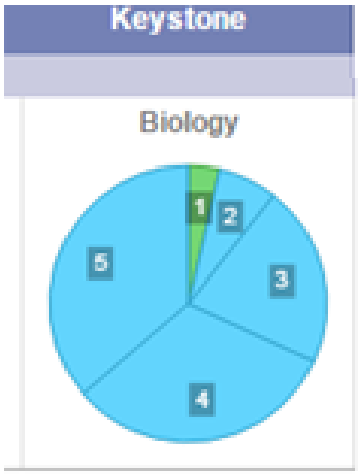
2015 | 3Yr A



Keystone

Biology

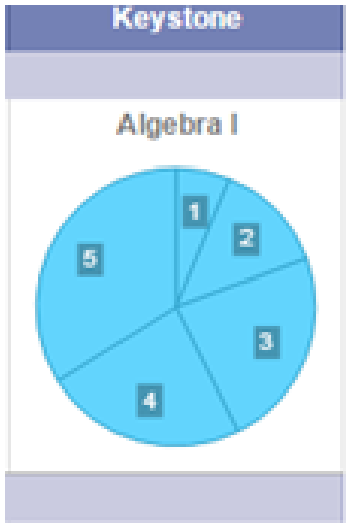
2015 | 3Yr A



Keystone

Algebra I

2015 | 3Yr A



PSSA/Keystone Exam Findings

- Pine-Richland students outperformed the state average at all levels of each assessment.
- Given the changes in PSSA test rigor, the gap between Pine-Richland students and the State average are beneficial/positive for PRSD in almost every case.
- An analysis of relative strengths and weaknesses in the PA Core Assessment Anchors will help the curriculum vertical teams refine their work.
- PVAAS value-added and quintile diagnostic growth analyses indicate that PRSD students met or exceeded the growth standard in most cases. The noted exceptions are all areas of grade 4, grade 7 Math, and Keystone Literature.
- Further analysis at the classroom and student levels may help in the identification and replication of effective practices.
- The end-of-course proficiency levels for the Keystone Exams remain consistent.

SAT

- The SAT is a globally recognized college admission test in reading, writing and math.
- For each of the sub-tests, a score of 800 is possible for a combined total of 2400.
- The results can be compared on a state and global level.

SAT

Percent of Graduating Class Taking the SATs

	2011	2012	2013	2014	2015
Total # taking test	295	331	328	333	341
Total # graduates	333	363	372	367	367
% taking test	88.6	91.2	88.2	90.7	92.9

Participation over Time

	2011	2012	2013	2014	2015
District	295	331	328	333	341
State	105907	104220	101368	99460	96826
TL Group	1647123	1664479	1660047	1672365	1698521

Combined Mean Scores over Time

	2011	2012	2013	2014	2015
District	1650	1639	1676	1638	1634
State	1473	1472	1480	1481	1485
TL Group	1500	1498	1498	1497	1490

SAT

CRITICAL READING

Mean Scores over Time

	2011	2012	2013	2014	2015
PRHS	546	543	549	539	537
State	493	491	494	497	499
TL Group	497	496	496	497	495

MATHEMATICS

Means Scores over Time

	2011	2012	2013	2014	2015
PRHS	571	561	577	562	567
State	501	501	504	504	504
TL Group	514	514	514	513	511

WRITING

Means Scores over Time

	2011	2012	2013	2014	2015
PRHS	533	535	550	537	530
State	479	480	482	480	482
TL Group	489	488	488	487	484

ACT

- The ACT assessment measures skills in English, reading, mathematics, and science reasoning.
- For each category and as a composite, a score of 36 is possible.
- The results can be compared on a state and national level.

ACT

Participation over Time

	2011	2012	2013	2014	2015
TL # PR Students	161	171	206	182	219
TL # PR Graduates	333	363	372	367	367
% of Class Tested	48.3	47.1	55.4	49.6	59.7
# PR Boys Tested	80	77	96	78	96
# PR Girls Tested	81	94	110	104	123
TL # PA Tested	24280	25426	26171	27136	29776
TL # US Tested	1623112	1666017	1799243	1845787	1924436

COMPOSITE

	2011	2012	2013	2014	2015
Pine-Richland	24.5	25.0	24.6	25.4	25.1
Pennsylvania	22.3	22.4	22.7	22.7	22.9
United States	21.1	21.1	20.9	21.0	21.0

SAT/ACT Findings

- As both a percentage and total number, the district had a historically high number of students in the 2015 graduating class take the SAT and the ACT.
- Pine-Richland students consistently outperform State and Total Group/US comparisons over the past five years.
- PRSD student performance on the ACT is stable in all tested areas and in the composite score (i.e., math, reading, English, science, and composite).
- Research and understand changes to the SAT test format.
- Provide professional development to Math and English teachers at the high school level regarding those changes and in the ACT design.
- Investigate and implement both online and face-to-face SAT and ACT preparation course options for PRSD students. Registration fees would offset program delivery.

Advanced Placement

- The Advanced Placement (AP) Exam is a test on which students demonstrate mastery of particular subjects and readiness for a college-equivalent course.
- Students earn a score of 1 – 5 with “5” indicating “extremely well-qualified” and “3” as a “qualified” score.
- The results can be compared on a national level.

AP

PRHS AP Test Participation over Time

	2011	2012	2013	2014	2015	PA 2015	Global 2015
Total AP Students	389	453	450	486	490	68588	2493167
Number of Exams	721	900	944	932	958	121481	4505442
AP Students with Scores 3+	278	326	337	324	349	46874	1512129

PRHS AP Test Performance vs. State and Global Performance over Time

	2011	2012	2013	2014	2015
% PRHS Students Scoring 3+	71.5	72.0	74.9	66.7	71.2
% State Students Scoring 3+	67.1	68.2	68.3	69.1	68.3
% Global Students Scoring 3+	60.2	61.5	60.9	61.3	60.7

AP

2015 PRHS AP Test Results

Subject Area Test	# Tests Taken	# Scored 3+	% Scored 3+	Avg Score
Biology	82	67	81.7	3.21
Calculus AB	23	16	69.6	3.13
Calculus BC	25	23	92.0	4.32
Chemistry	62	57	91.2	3.55
English Language	99	73	73.7	3.22
English Literature	51	44	86.3	3.49
European History	41	31	75.6	3.15
French Language	22	11	50.0	2.32
German Language	6	4	66.7	3.17
Microeconomics	103	59	57.3	2.85
Physics C: Mechanics	11	8	72.7	3.36
Psychology	148	107	72.3	3.30
Spanish Language	7	6	85.7	3.71
Statistics	49	46	93.9	4.14
Studio Art: 2-D	12	11	91.7	3.50
Studio Art: Drawing	6	6	100	4.00
US Government	70	10	14.3	1.61
US History	135	83	61.5	2.90

Sample AP Results Over Time

STATISTICS

	2011	2012	2013	2014	2015	PA 2015	Global 2015
5	35.0	34.5	34.9	25.0	42.9	18.1	13.4
4	60.0	45.6	31.7	45.8	34.7	24.7	19.1
3	5.0	10.9	23.8	12.5	16.3	28.3	25.2
3 and above	100	91.0	90.4	83.3	93.9	71.1	57.7
2	0	7.3	9.5	12.5	6.1	16.0	18.6
1	0	1.8	0	4.2	0	13.0	23.6
Total Tests Taken	20	55	63	24	49	6730	195995
Average Score	4.30	4.04	3.92	3.70	4.14	3.19	2.80

UNITED STATES GOVERNMENT AND POLITICS

	2011	2012	2013	2014	2015	PA 2015	Global 2015
5	0	13.6	12.5	9.4	1.4	11.7	9.7
4	33.3	27.3	7.5	6.2	0	16.4	13.5
3	33.3	18.2	42.5	28.1	12.9	28.5	24.7
3 and above	66.6	59.1	62.5	43.7	14.3	56.5	48.0
2	33.3	36.4	17.5	31.2	30.0	23.2	25.0
1	0	4.5	20.0	25.0	55.7	20.2	27.0
Total Tests Taken	6	22	40	32	70	8211	283090
Average Score	3.00	3.09	2.75	2.44	1.61	2.76	2.54

AP Findings

- The district has seen a significant increase in the number of students participating in an AP class, the number of AP tests taken, and the number of students scoring a 3 or higher; historic levels in 2015.
- Conduct correlation analyses of end-of-course grades and AP test score.
- Monitor changes in College Board curriculum and provide professional development based on teacher interest or student performance results as needed.
- Investigate changes to the AP Physics sequence offered by the College Board and in light of the district's CHS Physics course this analysis should occur within the context of the curriculum review process and program of studies.
- Ensure student awareness of AP course offerings and academic readiness for AP courses within the content specific pathways.
- At the appropriate time, revisit the requirement of AP test participation and reimbursement.

Conclusions

- We are **achieving** at high levels across multiple standardized assessments…but we have the potential for much higher levels of achievement.
- We are **growing** across most grades and subjects that includes our higher performing student group…but we have the potential for more significant growth.
- We need to ensure that the results and findings of these data reach the vertical teams and individual classrooms.
  - Consider relative strengths and needs from the assessment anchors within the curriculum process
  - Understand the format of various assessments to help performance

Questions