

Report to the School Committee: 2015 PARCC Assessment System Performance, Growth, and Results

Introduction

The Shrewsbury School Committee voted to take the PARCC exam in place of the MCAS exam in grades 3-8 for the Spring 2015 state testing program. Students at the elementary level took the paper based version of the test, while students at the middle level took the computer based version of the test. By selecting this option, the district and students were provided with with a low stakes opportunity to become familiar with the PARCC exam. The district approached this testing with the perspective that the 2015 PARCC assessment results would provide educators, parents and students with an initial baseline of how well individual students and the district as a whole are prepared to successfully respond to expectations of the next generation of assessments. Please find below for a breakdown of district assessment choices for Spring of 2015. All Massachusetts public school districts continued to administer the MCAS in ELA and Math for grade 10 and for Science in grades 5, 8, and 10.

It should be noted that Accountability data has not yet been released by the DESE for districts that administered the PARCC in the Spring of 2015/

Assessment Choices for Spring 2015							
Spring 2015	Number of public districts	MCAS			PARCC		
		# of districts	% of districts	# of students	# of districts	% of districts	# of students
Grades 3-8	359	165	46%	202,000	194	54%	229,500
PARCC for Grade 9 and/or 11 (optional)	295	N/A	N/A	N/A	69	23%	22,500

2015 Participation Rates			
Spring 2015	Enrolled	Tested	Part. Rate
MCAS Grades 3-8	202,000	200,000	99%
PARCC Grades 3-8	229,500	223,500	98%
MCAS Grade 10	71,500	70,000	98%



Given the many variables associated with the PARCC testing in 2015, the PARCC data contained in this report should be viewed tentatively given the early stages of this assessment’s development and in on-line testing in general. Additionally, the state has released overall student result comparisons between PARCC and MCAS which are outlined in the table below. Given the discrepancies with students achieving “Proficient” with MCAS as compared to PARCC, this report does not look to compare year over year progress in PARCC tested grades.

2015 PARCC and MCAS Results—Statewide

Percent of Students Scoring *Proficient* or Higher on MCAS or *Meeting Expectations* on PARCC

	English Language Arts			Mathematics		
	PARCC*	MCAS*	Difference	PARCC*	MCAS*	Difference
Grade 3	54%	60%	-6	55%	70%	-15
Grade 4	57%	53%	+4	47%	47%	0
Grade 5	63%	71%	-8	55%	67%	-12
Grade 6	60%	71%	-11	53%	62%	-9
Grade 7	60%	70%	-10	45%	51%	-6
Grade 8	64%	80%	-16	53%	60%	-7
Grade 8 Algebra I	NA	NA	NA	80%	NA	NA
All Grades	60%	68%	-8	52%	60%	-8

* Statistically representative samples were used to report state trends in grades 3-8



Test Administration by Grade Level and Subject

This table shows the subject areas and grade levels that were assessed using PARCC and those that were assessed with MCAS. The DESE has communicated that all students will continue to take MCAS in Grade 10 at least through the class of 2018 (this year’s current sophomores). As PARCC was only designed to assess students in ELA and Mathematics; the MCAS Science test continues to be given at the usual grade levels.

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9/10
English Language Arts/Reading - PARCC							
English Language Arts/Reading - MCAS							
Mathematics - PARCC							
Mathematics - MCAS							
Science and Technology - MCAS							

This report is broken down into three main sections, each providing information and data related to 2015 PARCC and MCAS testing results. The first section focuses on performance results, how Shrewsbury students performed in terms of achievement scoring. The second section concerns student growth. Student growth, which was utilized on a full scale for the first time in Massachusetts in 2010, provides a metric for how students 'grow' in comparison to peers with similar testing histories. Finally, the third section focuses on plans and focus area for the future.

The information in this report is meant to provide a macro view of PARCC and MCAS results for the entire district. Over the coming weeks the Department of Elementary and Secondary Education will be making available a wide range of in-depth reports that will allow for more detailed analysis which will help us guide and modify instruction as needed.

PARCC Performance Levels

PARCC differs from MCAS in the way that it reports out performance levels. PARCC does not use the *Advanced, Proficient, Needs Improvement and Warning* labels, instead, it uses a system of 5 levels of performance. Results that fall in the Level 4 or 5 categories are considered evidence of proficiency. Please see below for a description of each category:

- Level 1: Did not yet meet expectations
- Level 2: Partially met expectations
- Level 3: Approached expectations
- Level 4: Met expectations
- Level 5: Exceeded expectations

Performance Results – English Language Arts

Five-year history of Shrewsbury's MCAS/PARCC results in English Language Arts

Five -year history of *Advanced/Proficient* (Grade 10 MCAS only)

Five-year history of *Advanced* (Grade 10 MCAS only)

District Subgroup Performance (Grade 10 MCAS only, district data not available for PARCC)

District % Level 4/Level 5 (Grades 3-8) and Advanced/Proficient Comparison (Grade 10)

1. Five-year history of Shrewsbury's MCAS/PARCC results in English Language Arts (ELA)

Grade 3 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	27	57	13	3	
2012	36	48	14	3	
2013	33	47	17	2	
2014	28	50	18	5	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	22	58	13	5	2

Grade 4 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	42	43	11	4	
2012	49	40	9	3	
2013	35	49	13	3	
2014	39	41	17	3	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	45	41	10	3	1

Grade 5 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	32	54	11	3	
2012	41	42	12	5	
2013	39	45	13	4	
2014	35	46	16	3	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	14	61	17	6	2

Grade 6 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	40	46	12	3	
2012	44	43	9	4	
2013	39	50	8	4	
2014	37	50	11	3	
	Level 5	Level 4	Level 3	Level 2	Level 1
	25	53	16	4	1

Grade 7 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	34	56	9	1	
2012	32	58	8	3	
2013	29	60	9	2	
2014	24	64	9	3	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	35	45	10	6	3

Grade 8 ELA

	Advanced	Proficient	Needs Improvement	Warning	
2011	45	46	6	2	
2012	31	62	5	2	
2013	35	55	7	4	
2014	33	59	6	3	
	Level 5	Level 4	Level 3	Level 2	Level 1

Grade 10 ELA

	Advanced	Proficient	Needs Improvement	Failing
2011	59	37	2	2
2012	62	35	1	2
2013	72	26	1	1
2014	70	27	2	1
2015	76	23	1	0

2. Combined Performance in Advanced/Proficient Categories

% Students Scoring in Advanced or Proficient 2011-2015

Grade and Subject	Shrewsbury % Adv/Pro. 2011	Shrewsbury % Adv/Pro. 2012	Shrewsbury % Adv/Pro. 2013	Shrewsbury % Adv/Pro. 2014	Shrewsbury % Adv/Pro. 2015	% Change 14-15	State Avg. % Level 4/5. 2015
Grade 10ELA	96	97	97	97	97	0	91

3. Performance in Advanced Category

% Students Scoring Advanced in ELA 2011-2015

Grade and Subject	% of students Advanced 2011	% of students Advanced 2012	% of students Advanced 2013	% of students Advanced 2014	% of students Advanced 2015	% Change 14-15	State % of students Advanced 2015
Gr 10 ELA	59	62	72	70	74	4	49

4. District Subgroup Performance -ELA

Currently, district-wide sub-group data for the Spring 2015 administration of PARCC is not available. The 2015 data reflects Grade 10 ELA only

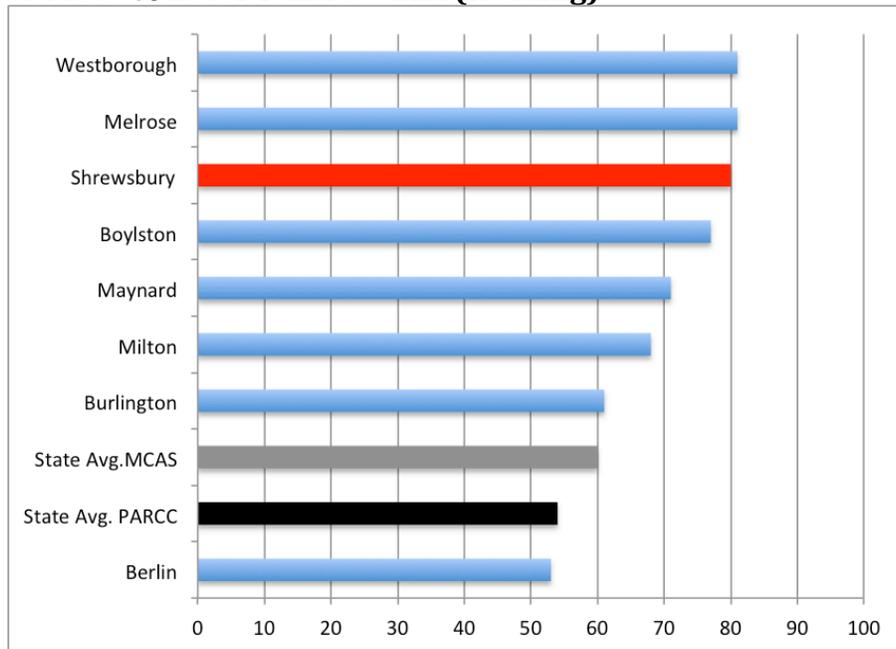
AYP Subgroup (2015)	Shrewsbury Adv./Prof. 2015	State Avg %Adv/Pro 2015
All Students (418)	97	91
Stud. w/Disab. (479)	77	67
LEP/FLEP (137)	no data	
Low-Income (538)	97	84
African Am/Black (63)	no data	
Asian (719)	100	94
Hispanic/Latino (178)	95	79
White (2,236)	96	94

5. District Comparisons % Level 4 and 5 - ELA

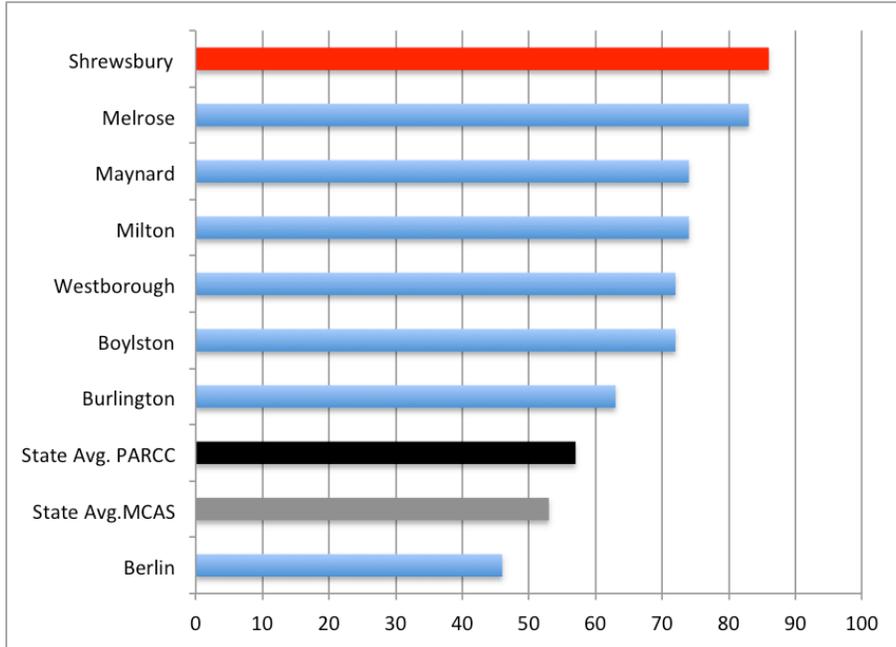
The following graphs focus on achievement in English language arts and illustrate Shrewsbury's grade level performance (2015) in the area of combined Level 4 and Level 5 percentiles in comparison to other districts that administered PARCC in the Spring of 2015. Comparison Districts were selected if they were in either in the Assabet Valley Collaborative or if they were designated as comparison districts by the DESE.

Shrewsbury's ranking ranged from first (grades four and six) to fourth (grade eight) in regards to these comparison districts.

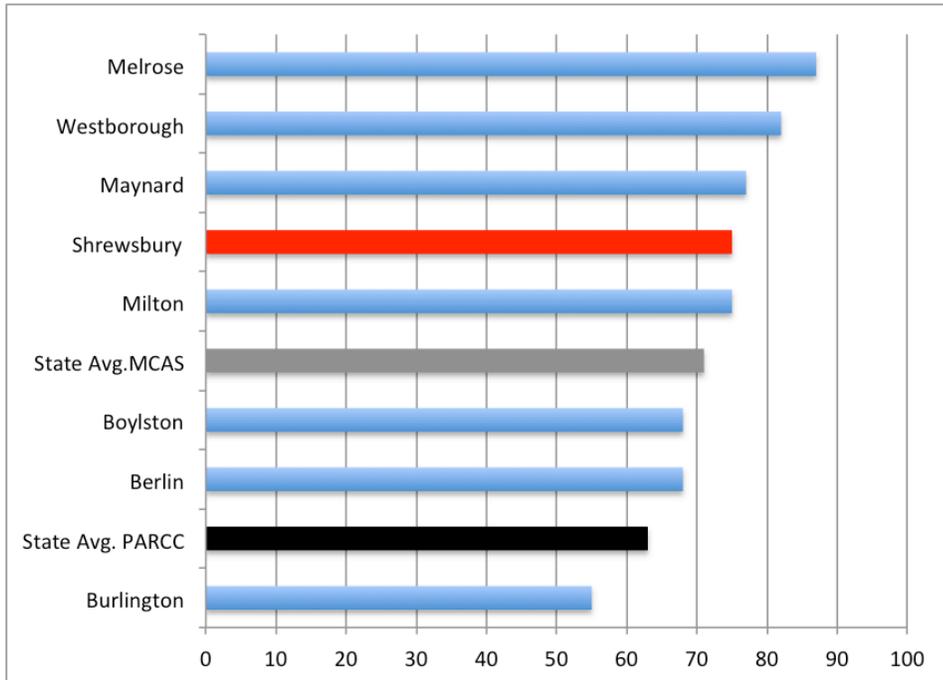
Grade 3 % Level 4 and 5 - ELA (Reading)



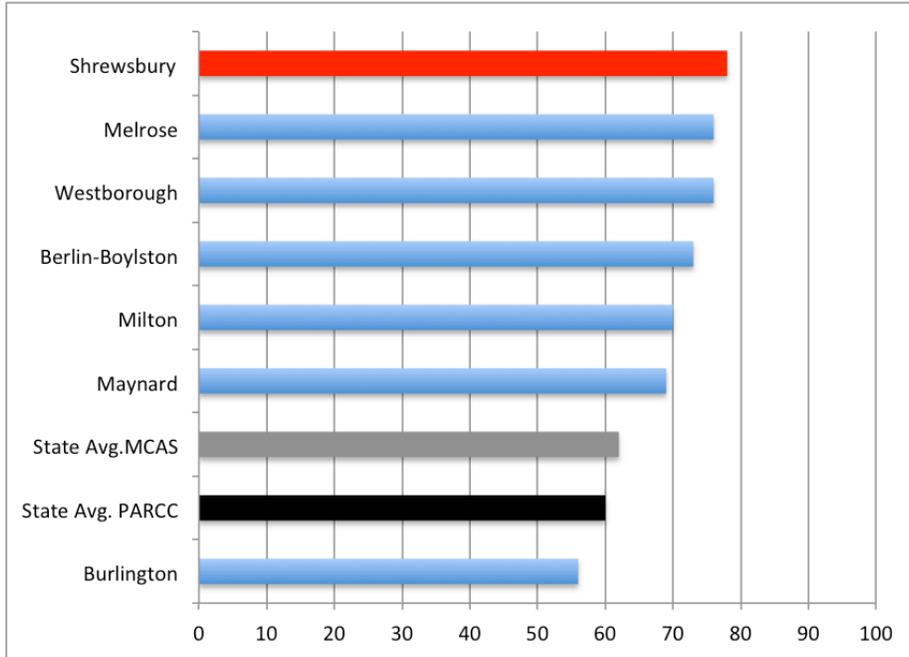
Grade 4 % Level 4 and 5 - ELA



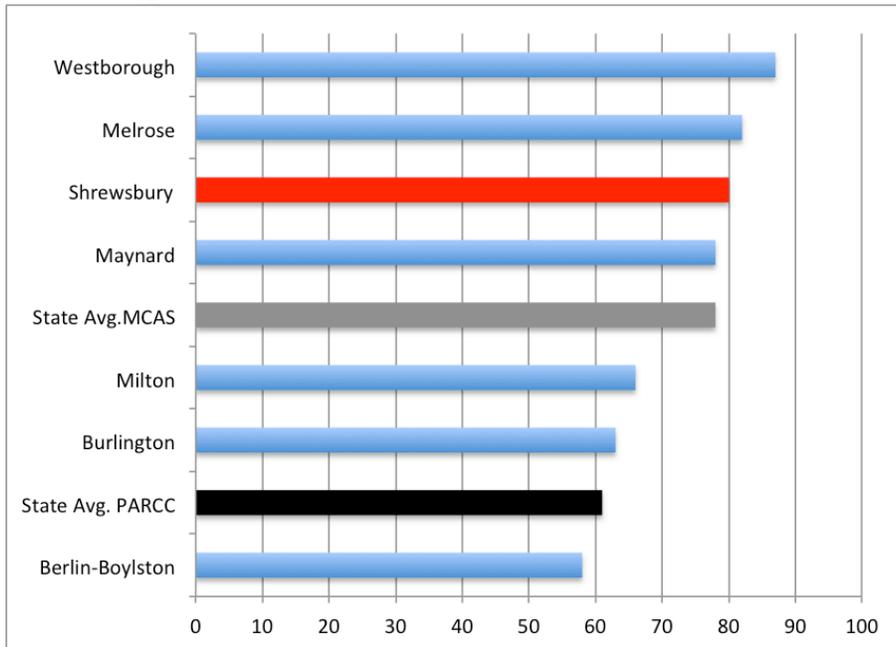
Grade 5 % Level 4 and 5 - ELA



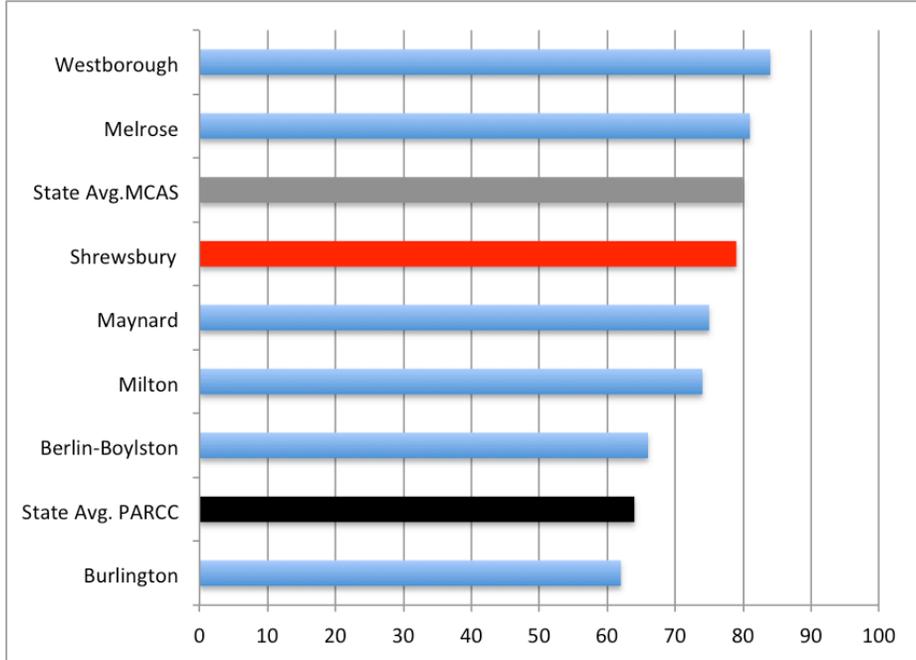
Grade 6 % Level 4 and 5 - ELA



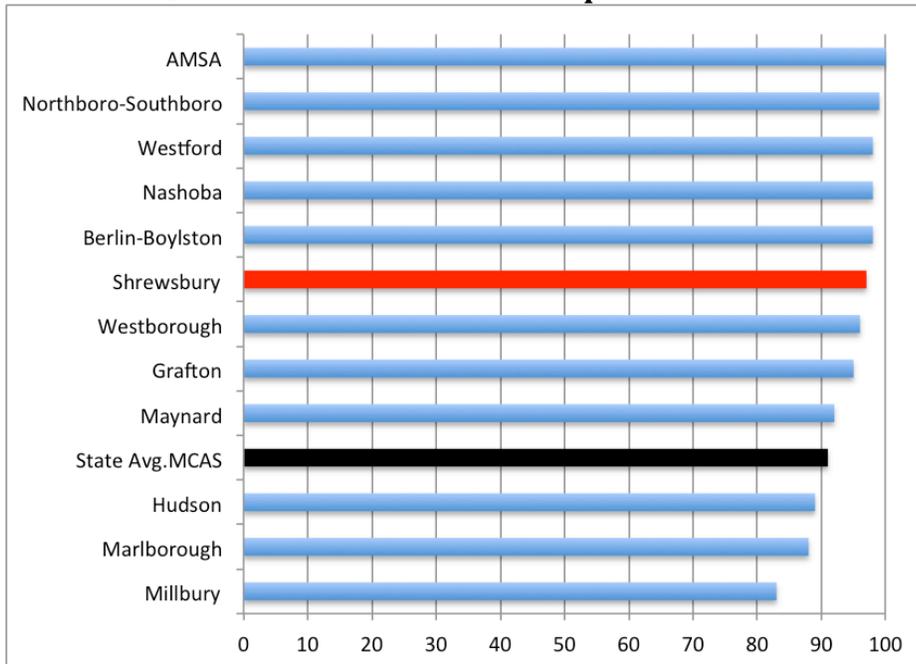
Grade 7 % Level 4 and 5 - ELA



Grade 8 % Level 4 and 5 - ELA



Grade 10 % Advanced & Proficient Comparisons - ELA



Performance Results – Math

The performance results section is broken down by subject area and each section includes the following components:

Five-year history of Shrewsbury's MCAS/PARCC results in Mathematics

Five -year history of *Advanced/Proficient* (Grade 10 MCAS only)

Five-year history of *Advanced* (Grade 10 MCAS only)

District Subgroup Performance (Grade 10 MCAS only, district data not available for PARCC)

District % Level 4/Level 5 (Grades 3-8) and Advanced/Proficient Comparison (Grade 10)

1. Five-year history of Shrewsbury's MCAS/PARCC results in Mathematics

Grade 3 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	34	52	25	10	
2012	64	24	8	4	
2013	59	29	8	4	
2014	56	30	9	5	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	34	43	16	4	2

Grade 4 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	41	38	18	4	
2012	44	40	13	3	
2013	42	36	19	3	
2014	47	34	16	3	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	25	55	16	4	1

Grade 5 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	46	32	16	7	
2012	48	30	15	7	
2013	49	30	16	5	
2014	51	30	14	5	
	Level 1	Level 2	Level 3	Level 4	Level 5
2015	22	50	19	7	2

Grade 6 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	54	28	12	6	
2012	58	25	11	5	
2013	51	32	13	4	
2014	54	27	13	6	
	Level 5	Level 4	Level 3	Level 3	Level 1
2015	16	53	21	9	1

Grade 7 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	43	34	17	6	
2012	43	33	16	7	
2013	40	35	17	8	
2014	26	43	19	11	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	12	50	27	10	2

Grade 8 Mathematics

	Advanced	Proficient	Needs Improvement	Warning	
2011	46	29	16	9	
2012	46	30	17	7	
2013	50	27	14	8	
2014	35	38	19	8	
	Level 5	Level 4	Level 3	Level 2	Level 1
2015	17	52	18	9	3

Grade 10 Mathematics

	Advanced	Proficient	Needs Improvement	Failing
2011	70	22	3	3
2012	74	19	5	3
2013	80	13	4	3
2014	81	14	3	1
2015	79	13	6	2

2. 5-year History of Advanced/Proficient Categories (Grade 10 Mathematics MCAS only)

3.

	Shrewsbury % Adv/Pro. 2011	Shrewsbury % Adv/Pro. 2012	Shrewsbury % Adv/Pro. 2013	Shrewsbury % Adv/Pro. 2014	Shrewsbury % Adv/Pro.. 2015	% Change 14-15	State Avg. 2014 %Adv/Pro
Grade 10 Math	92	93	93	95	91	-4	80

3. 5-year History of Advanced Category (Grade 10 Mathematics MCAS only)

	% of students Advanced 2011	% of students Advanced 2012	% of students Advanced 2013	% of students Advanced 2014	% of students Advanced 2015	% Change 14-15	State % of students Advanced 2015
Grade 10 Math	70	74	80	81	79	-2	14

4. District Subgroup Performance - Mathematics

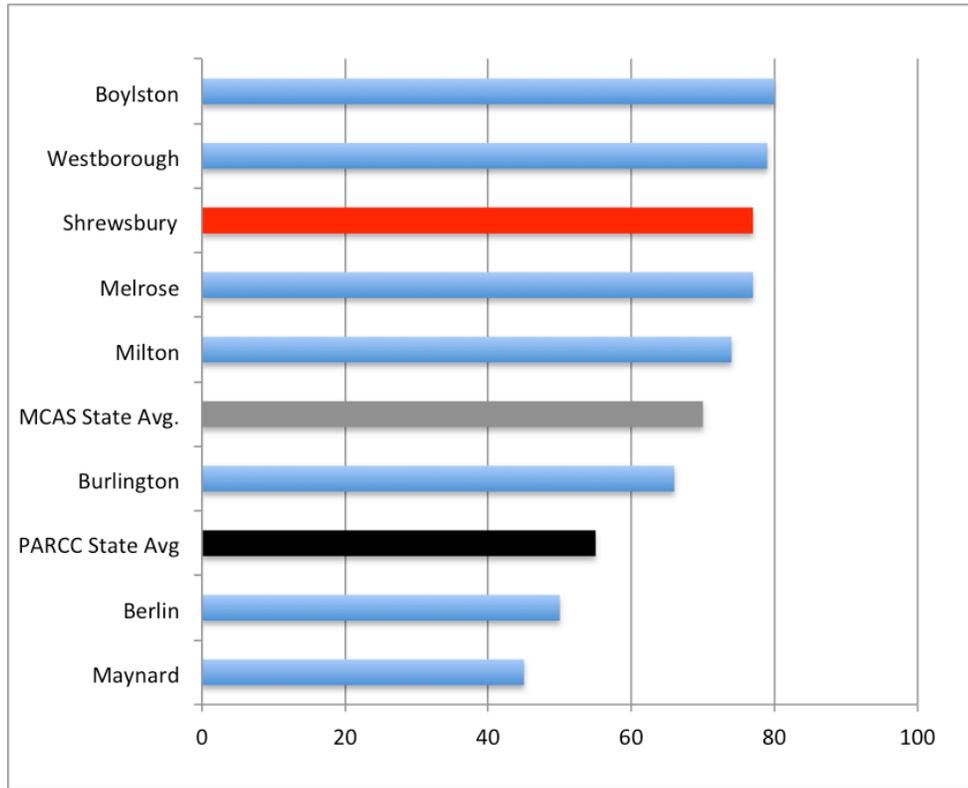
AYP Subgroup (2015)	Shrewsbury Adv./Prof. 2015	State Avg %Adv/Pro 2015
All Students (421)	92	78
Stud. w/Disab. (479)	53	39
LEP/FLEP (137)	no data	
Low-Income (538)	97	84
African Am/Black (63)	80	62
Asian (719)	96	91
Hispanic/Latino (178)	73	56
White (2,236)	91	85

5. District % Advanced & Proficient Comparison - Math

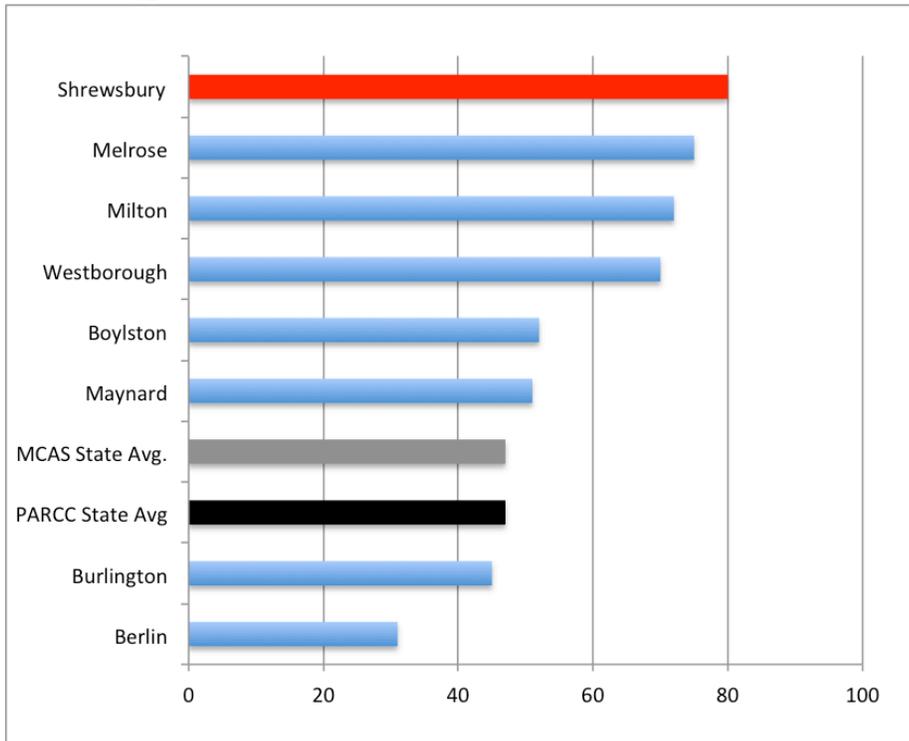
The following graphs focus on achievement in Mathematics and illustrate Shrewsbury's grade level performance (2015) in the area of combined Level 4 and Level 5 percentiles in comparison to other districts that also administer PARCC in the Spring of 2015. Comparison Districts were selected if they were in either in the Assabet Valley Collaborative or if they were designated as comparison districts by the DESE.

Shrewsbury's ranking ranged from first (grade four) to fourth (grade eight) in regards to these comparison districts.

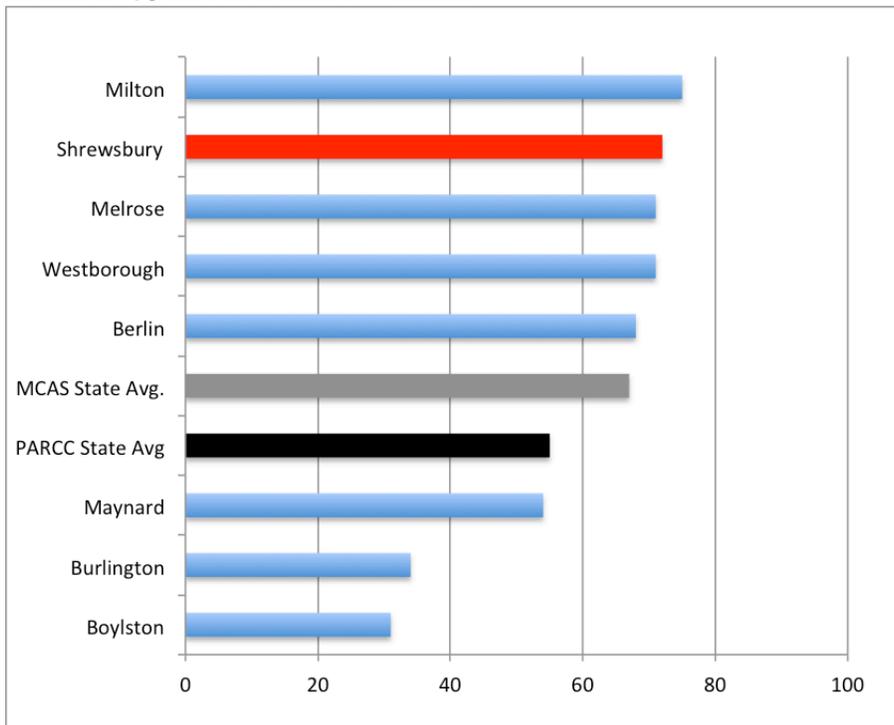
Grade 3 % Level 4 and 5 - Math



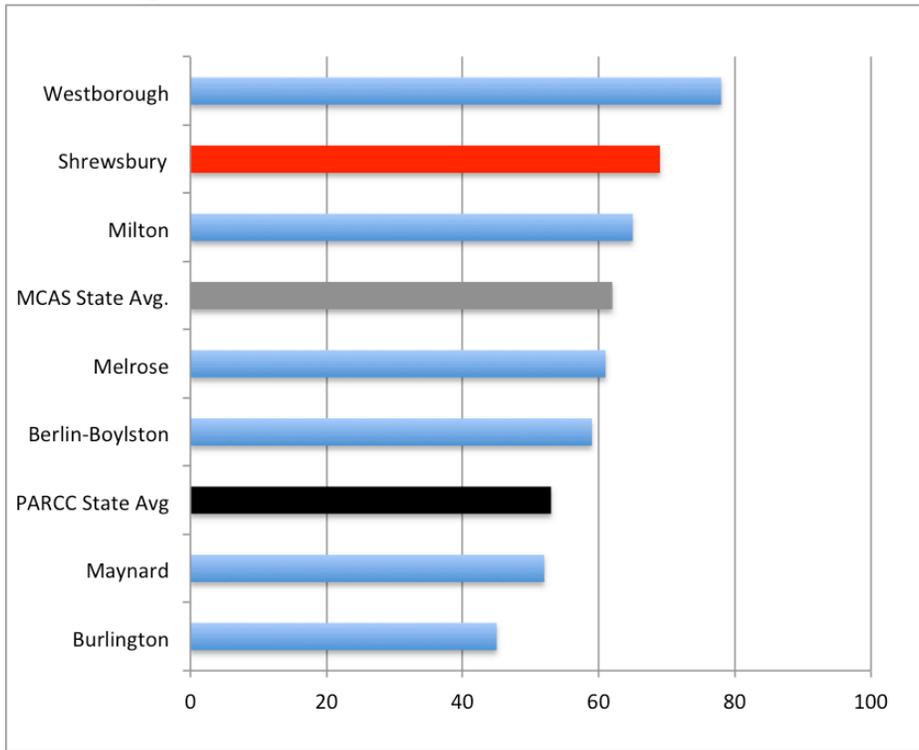
Grade 4 % Level 4 and 5 - Math



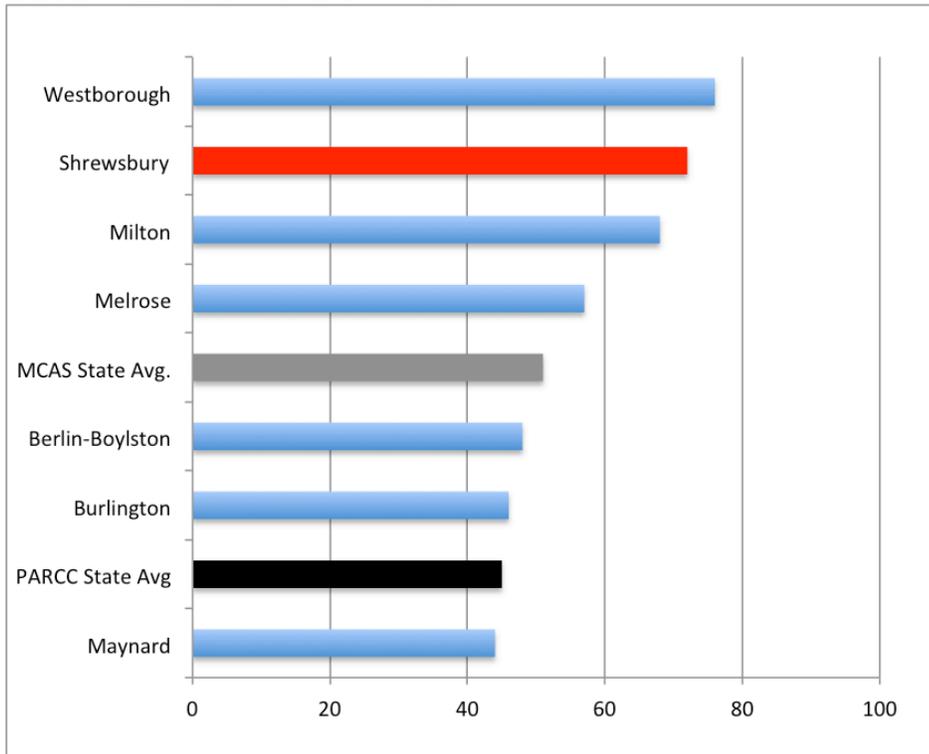
Grade 5 % Level 4 and 5 - Math



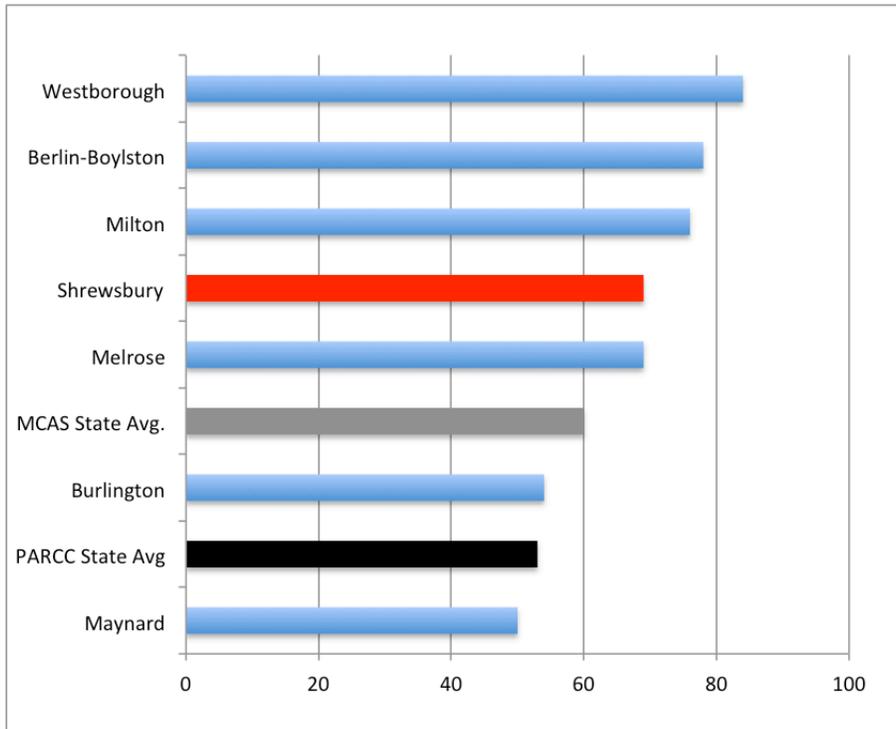
Grade 6 % Level 4 and 5 - Math



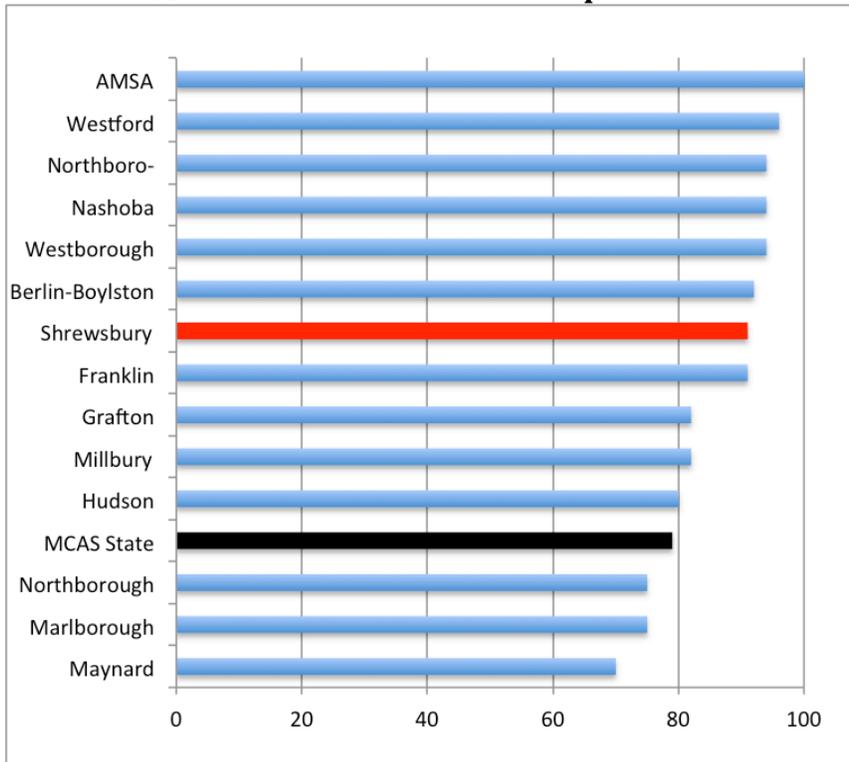
Grade 7 % Level 4 and 5 - Math



Grade 8 % Level 4 and 5 - Math



Grade 10 % Advanced & Proficient Comparison - Math



Performance Results – Science & Technology

This is the ninth year for state reporting of data for the high school tests in this subject, which are now part of the graduation requirement that started with the Class of 2010. Because the science and technology test is only administered in grades five, eight, and nine/ten there is no growth data produced for this testing area.

1. Five-year history of Shrewsbury’s MCAS results in Science & Technology Summary

Grade 5 Science and Technology

	Advanced	Proficient	Needs Improvement	Warning
2011	28	45	23	4
2012	44	33	20	4
2013	39	34	23	4
2014	31	41	23	4
2015	31	40	25	4

Grade 8 Science and Technology

	Advanced	Proficient	Needs Improvement	Warning
2011	12	49	33	5
2012	10	50	32	8
2013	13	50	31	7
2014	14	55	26	5
2015	9	53	33	6

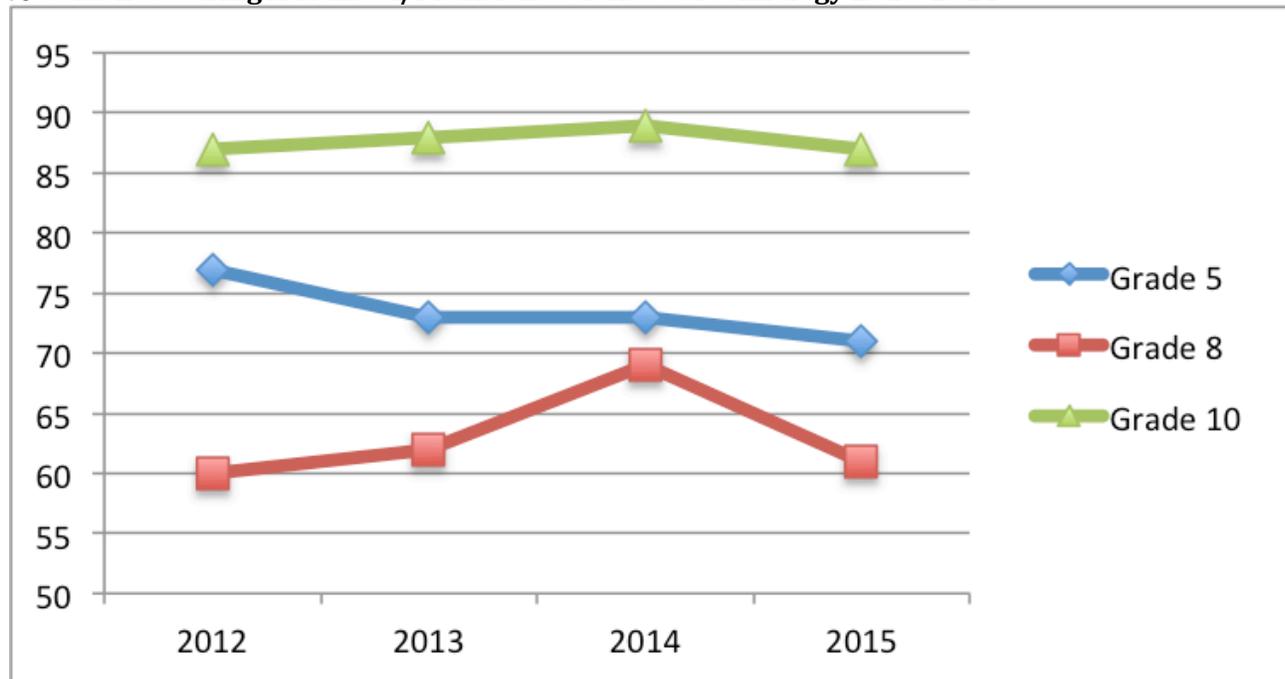
Grade 10 Science and Technology

	Advanced	Proficient	Needs Improvement	Warning
2011	34	49	15	2
2012	45	42	10	2
2013	46	42	10	1
2014	50	39	10	1
2015	46	40	12	1

2. Combined Performance in Advanced/Proficient Categories

Grade and Subject	Shrewsbury % Advanced /Proficient 2011	Shrewsbury % Advanced /Proficient 2012	Shrewsbury % Advanced /Proficient 2013	Shrewsbury % Advanced /Proficient 2014	Shrewsbury % Advanced /Proficient 2015	% Change from 14-15	State Avg. 2015 %Adv/Pro.
Grade 5 Science/Tech	73	77	73	73	71	-2	51
Grade 8 Science/Tech	61	60	62	69	61	-6	42
Grade 10 Science/Tech	83	87	88	89	87	-2	72

% Students scoring Advanced/Proficient Science & Technology 2010-2014

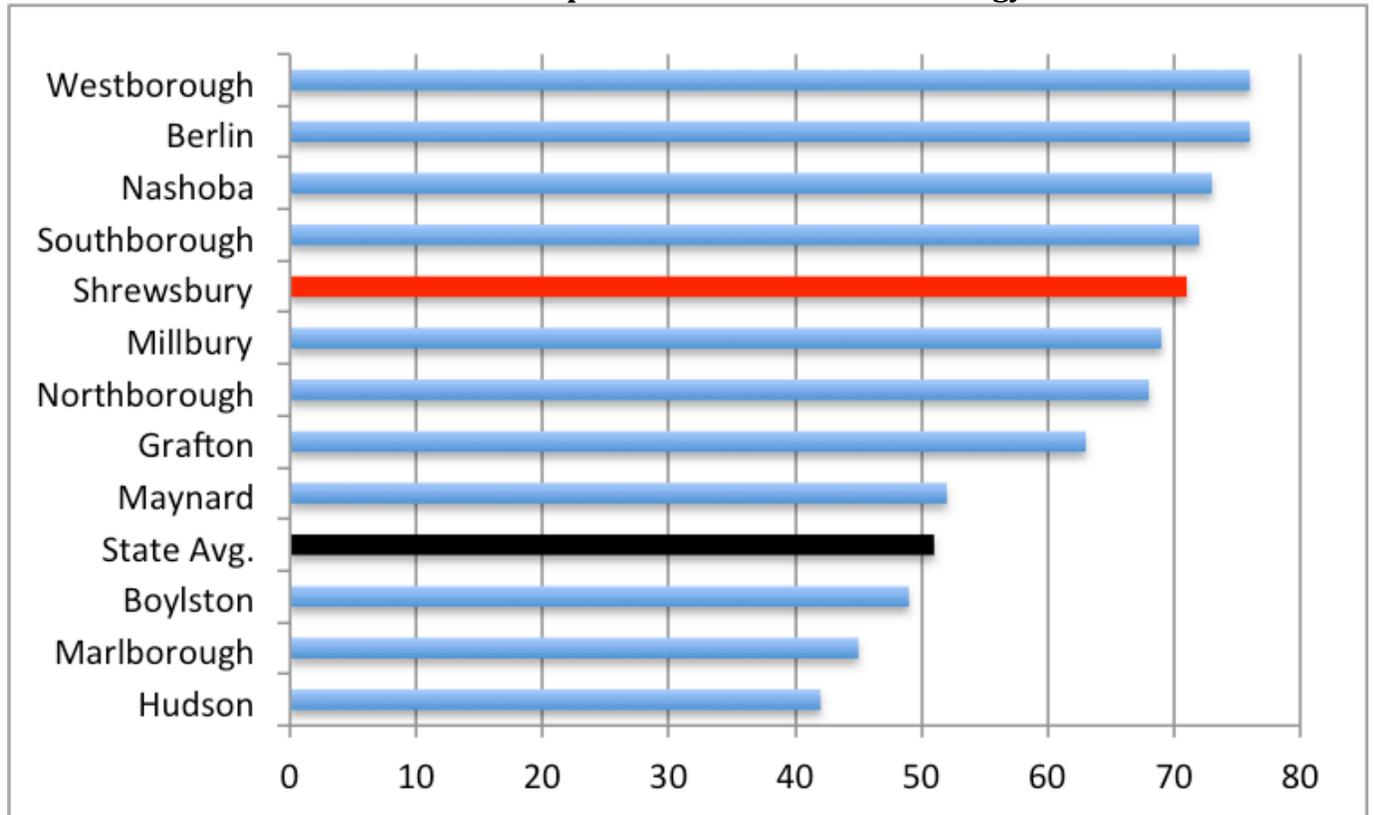


3. District % Advanced & Proficient Comparison – Science & Technology

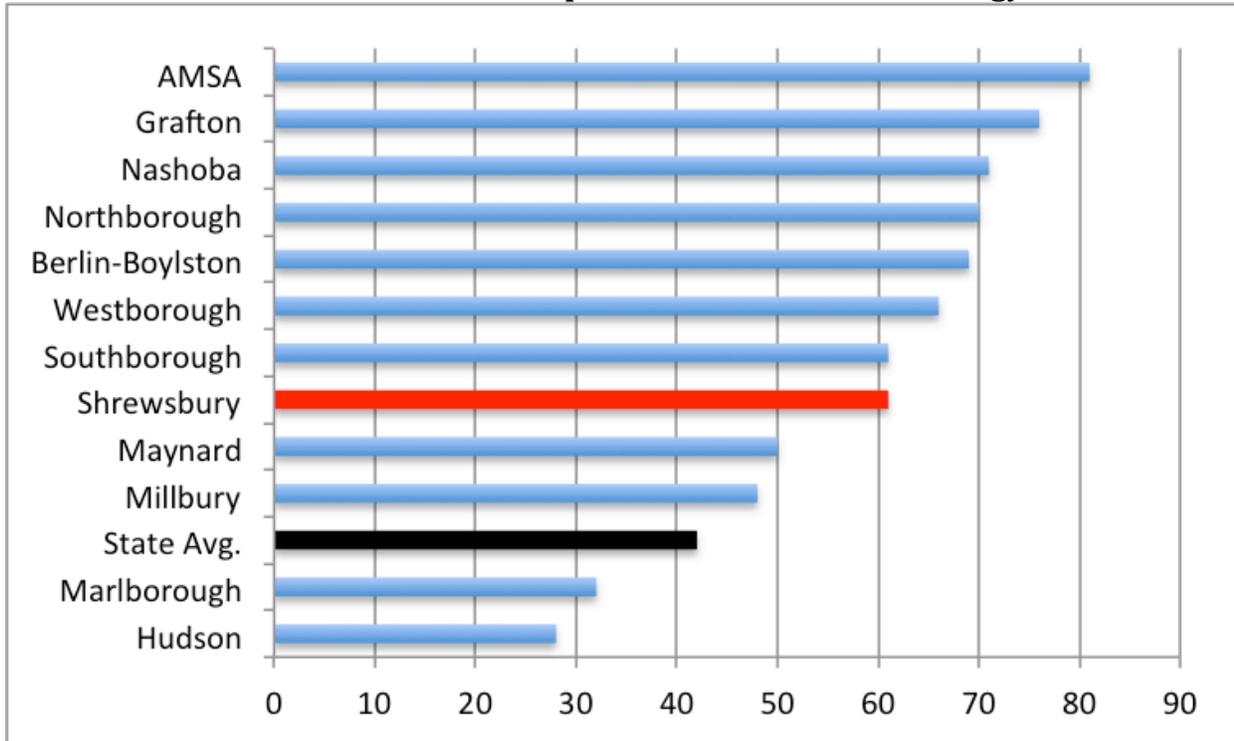
Summary

The following graphs compare Shrewsbury's performance (2015) to districts within the Assabet Valley. The graphs focus on combined advanced and proficient achievement in science & technology.

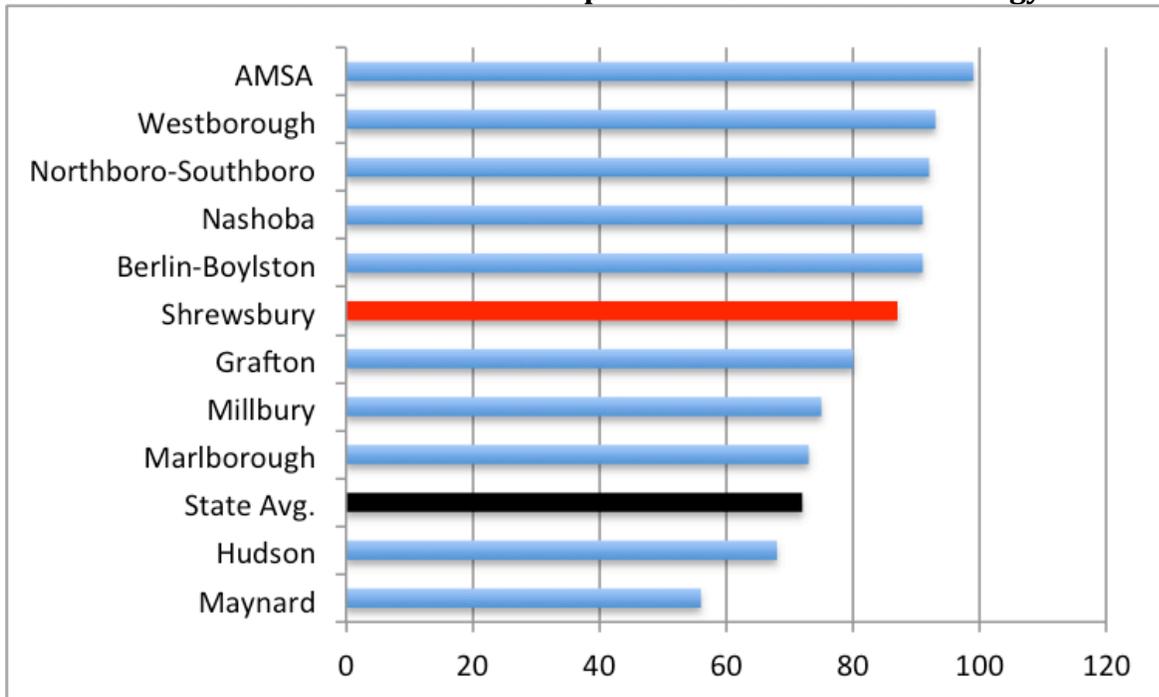
Grade 5 % Advanced & Proficient Comparison – Science & Technology



Grade 8 % Advanced & Proficient Comparison – Science & Technology



Grade 10 % Advanced & Proficient Comparison – Science & Technology



Growth Model Results

Introduction

Originally, MCAS results had only been provided in absolute measures and provided insight into how individual students, as well as groups of students, performed in terms of state curriculum standards. Attempts to quantify individual and cohort growth based on traditional MCAS data had been highly speculative. Massachusetts now utilizes a growth model system to measure growth.

By utilizing a growth model system, the state is attempting to do a better job answering the question, “How much academic progress did a student or group of students make in one year as measured by MCAS?”. This measure of student growth provides us with additional information that helps us better answer this question within the district and build on the exceptional instruction being provided.

The use of growth model percentiles helps the state (and districts) put MCAS achievement into greater context. MCAS achievement scores answer one central question, “How did a student fare relative to grade level standards in a given year?”. MCAS student growth percentiles add another layer of understanding, providing a measure of how a student changed from one year to the next relative to other students with similar MCAS test score histories.

The term ‘growth model’ describes a method of measuring student growth by tracking their progress on MCAS from one year to the next. Students are tracked by comparing their individual performance on MCAS testing to the performance of their ‘academic peers,’ those students who have similar MCAS score histories. Student growth percentiles range from 1 to 99, higher numbers represent higher levels of growth and lower numbers represent lower levels of growth.

The growth model method operates independently of MCAS performance levels. Therefore, all students, no matter what their scores were on past MCAS tests, have an equal chance to demonstrate growth at any of the 99 percentiles on the next year’s test. Growth percentiles are calculated in ELA and mathematics for students in grades 4 through 8 and 10. The state’s growth model requires at least two years of MCAS results to calculate growth percentiles. Therefore no growth scores are available for grade 3.

Individual Student Examples

The growth model measures change in performance rather than absolute performance. This change is measured in percentiles that provide values that express the percentage of cases that fall below a certain score. For example:

- A student with a growth percentile of 80 in 5th grade mathematics grew as much or more than 80 percent of her academic peers (students with similar score histories) from the 3rd and 4th grade math MCAS to the 5th grade math MCAS. Only 20% of her academic peers grew more in math than she did.
- A student with a growth percentile of 33 in 8th grade ELA grew as well or better than 33 percent of his academic peers (students with similar score histories) from the 6th and 7th grade ELA MCAS to the 8th grade ELA MCAS. This student grew less than 67% of his academic peers.

Aggregate Growth Percentiles

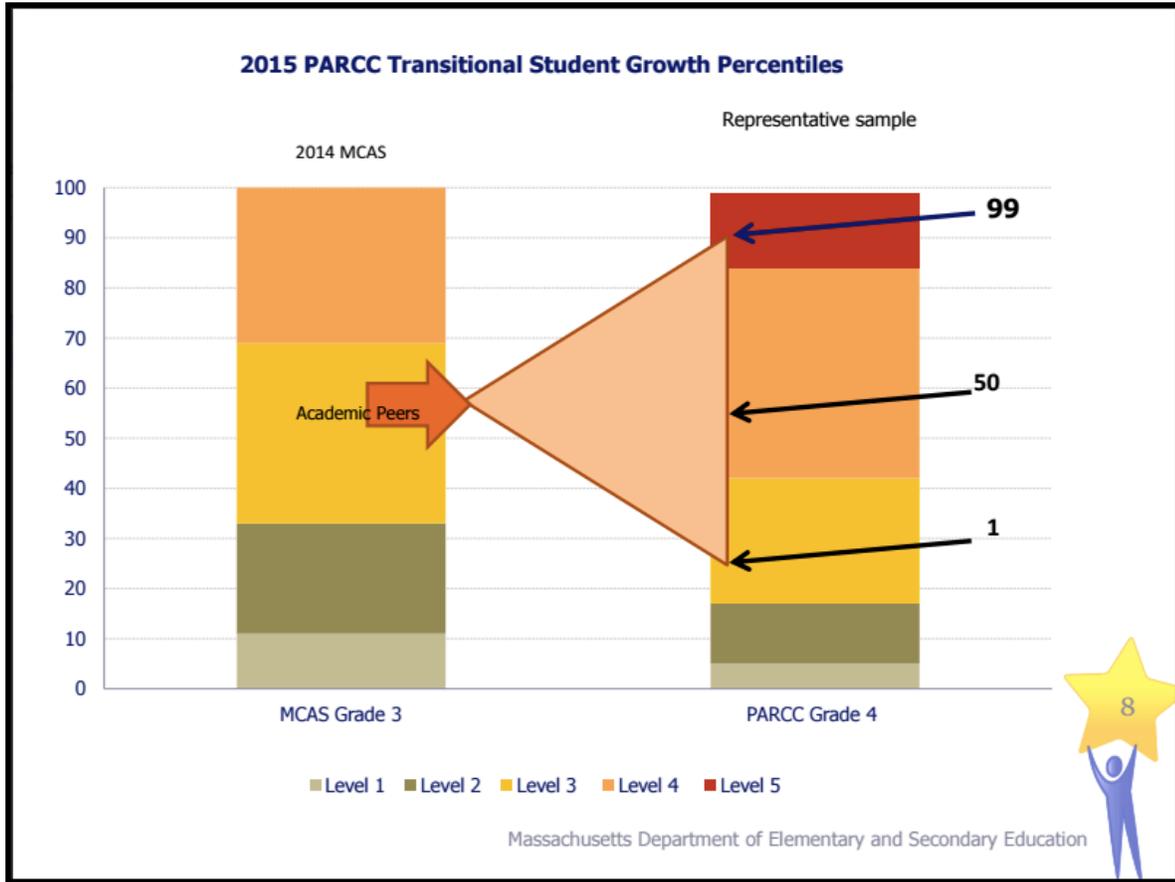
While student growth percentiles enable educators to chart the growth of an individual student compared to that of academic peers, student growth percentiles may also be aggregated to understand growth at the subgroup, school, or district level.

The most effective way to report growth for a group is through the use of the median student growth percentile (the middle score if one ranks the individual student growth percentiles from highest to lowest). A typical school or district in the commonwealth would have a median student growth percentile of 50.

When using student growth percentiles, it is important to be aware that the statistic and interpretation does not change. For example, if we look at the student growth percentile of low-income status students at the district level we see that this group's median student growth percentile is 56. This means that this particular group of students, on average, achieved higher than their academic peers – a group of students with similar MCAS test score histories. It does not mean that our low-income students improved more than 56 percent of other low-income status students, nor does it mean that this particular group of students improved more than 56 percent of non low-income status students, it simply means that in comparison to other students with similar score histories, our low-income status students improved more than 56 percent of their academic peers.

Student Growth Percentiles and PARCC

In order to calculate student growth scores for PARCC the state identified the academic peers of students based on the 2014 MCAS, and then looked at the students in this group that took the PARCC assessment in 2015. The growth score was then calculated as below.



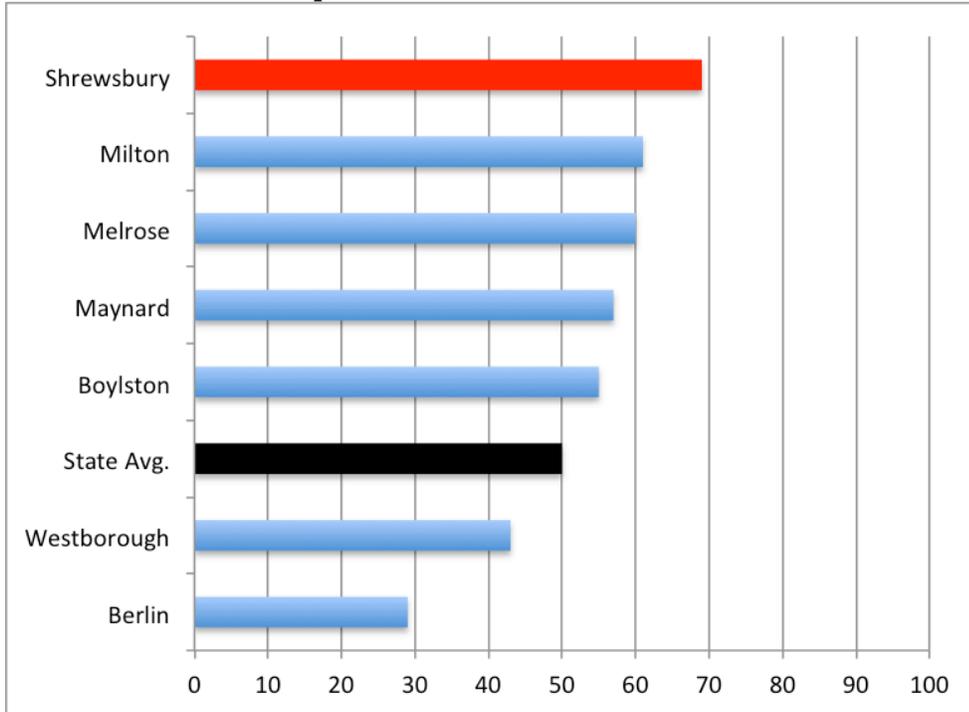
Growth Model Results - ELA

Growth Comparison - ELA

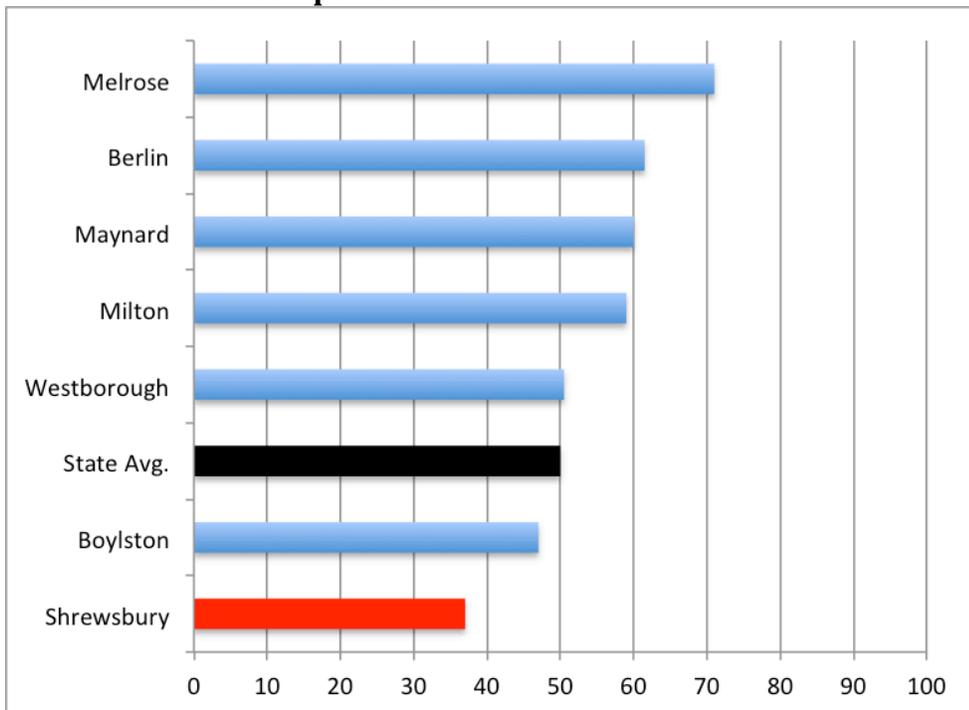
Grade and Subject	Shrewsbury Median Student Growth Percentile 2011	Shrewsbury Median Student Growth Percentile 2012	Shrewsbury Median Student Growth Percentile 2013	Shrewsbury Median Student Growth Percentile 2014	Shrewsbury Median Student Growth Percentile 2015	% Change 2014-2015
Grade 3 ELA	N/A	N/A	N/A	N/A	N/A	N/A
Grade 4 ELA	83	83	77	65	69	-4
Grade 5 ELA	44	49	42	45	37	-8
Grade 6 ELA	60	63	55.5	50	46	-4
Grade 7 ELA	58	50	46.5	42	36.5	-5.5
Grade 8 ELA	56	49.5	48	51	50	-1
Grade 10 ELA	57	58	60	54	53	-1
All Grades ELA	60	59	54	52	Not Available	N/A

District Growth Comparison - English Language Arts

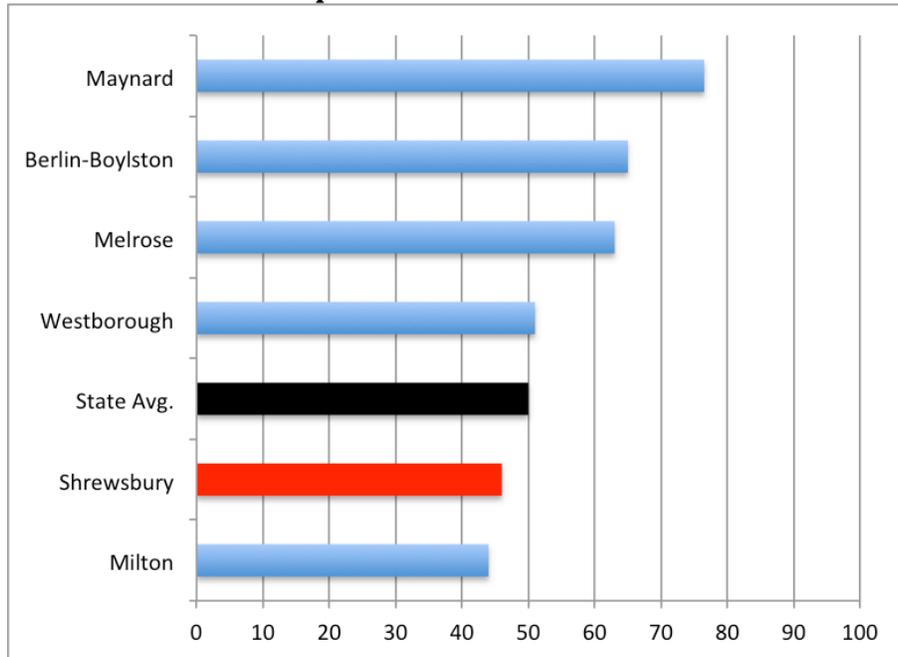
Grade 4 ELA SGP Comparisons



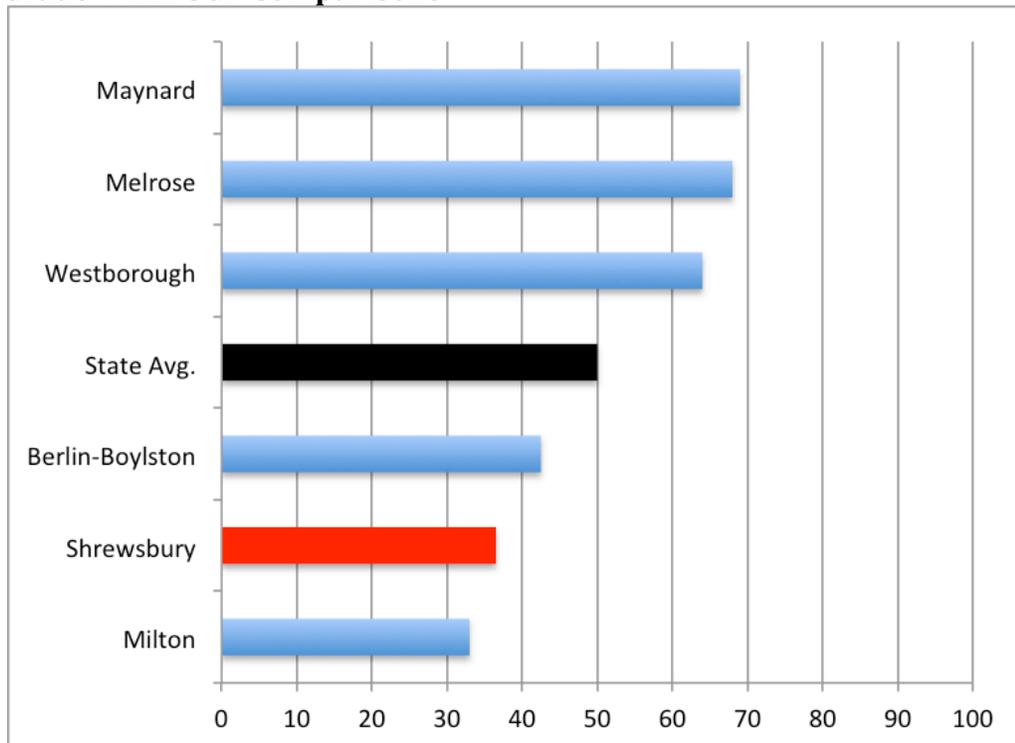
Grade 5 ELA SGP Comparisons



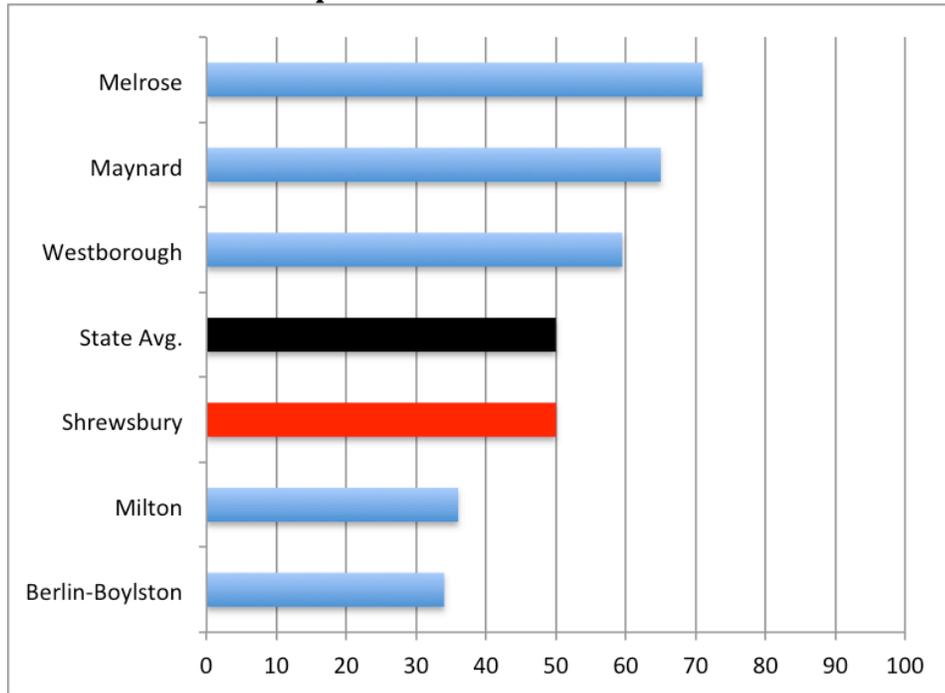
Grade 6 ELA SGP Comparisons



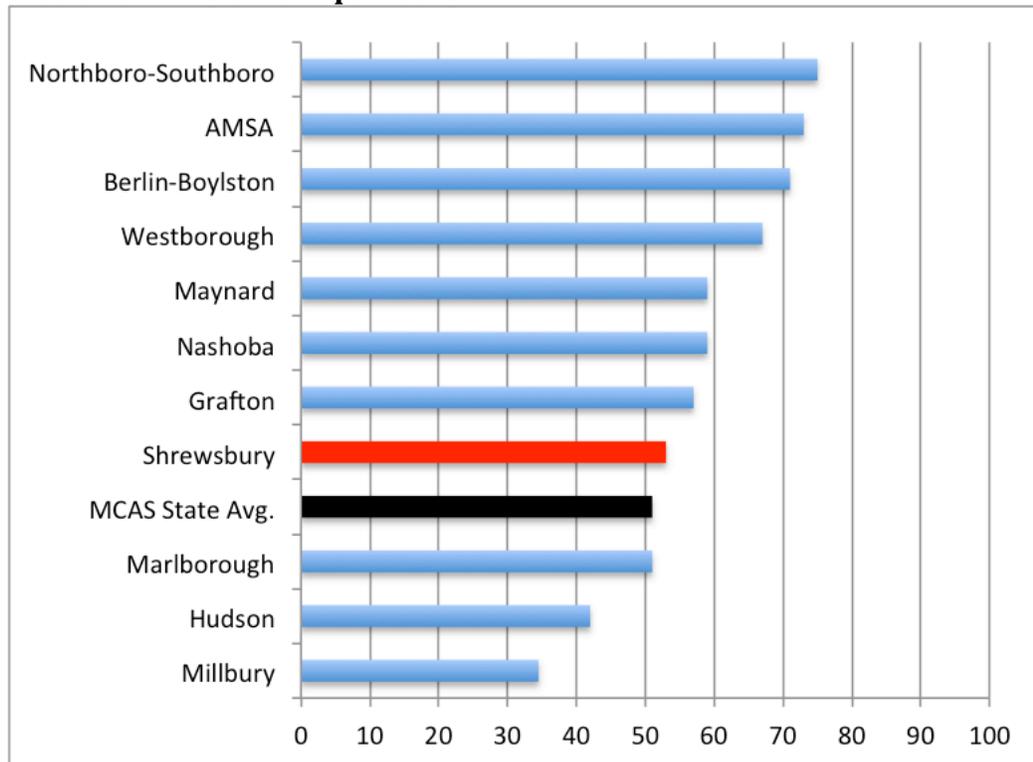
Grade 7 ELA SGP Comparisons



Grade 8 ELA SGP Comparisons



Grade 10 ELA SGP Comparisons



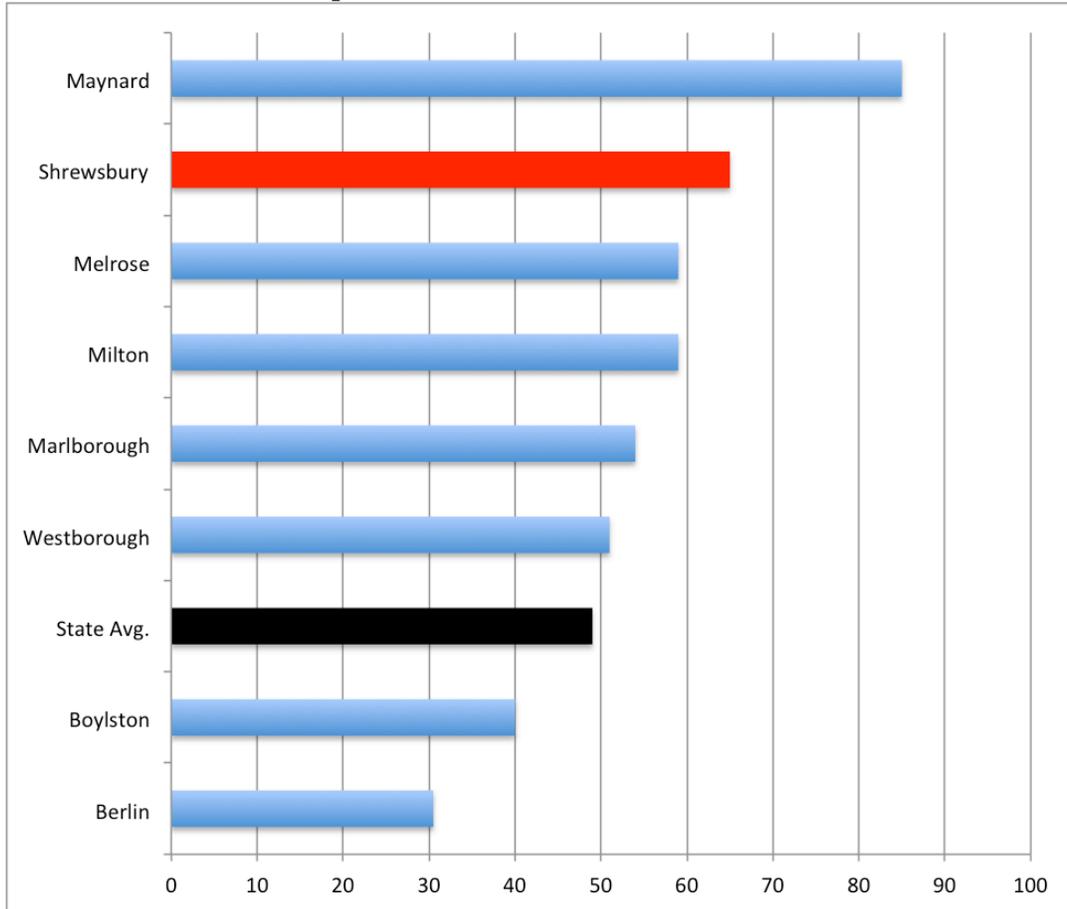
Growth Model Results – Math

Growth Comparison – Mathematics

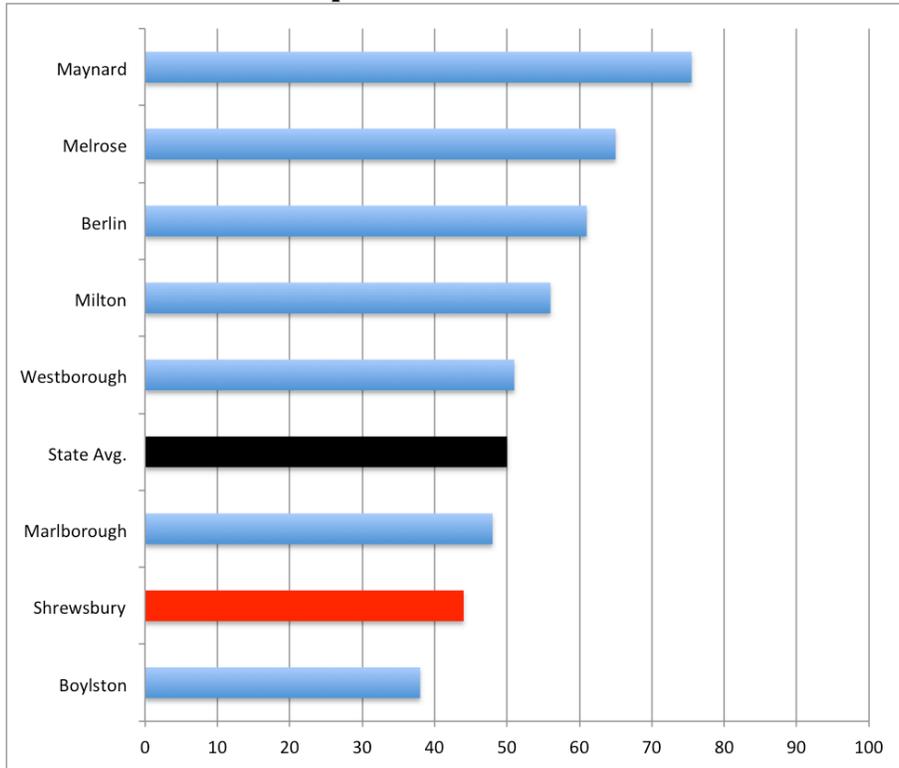
Grade and Subject	Shrewsbury Median Student Growth Percentile 2011	Shrewsbury Median Student Growth Percentile 2012	Shrewsbury Median Student Growth Percentile 2013	Shrewsbury Median Student Growth Percentile 2014	Shrewsbury Median Student Growth Percentile 2015	% Change 2014-2015
Grade 3 Math	N/A	N/A	N/A	N/A	N/A	N/A
Grade 4 Math	62	69	58	67	65	-2
Grade 5 Math	37	46	42	45	44	-1
Grade 6 Math	65	66.5	57	53.5	38	-15.5
Grade 7 Math	55	55.5	42	36	30	-6
Grade 8 Math	50	52.5	61	45	39	-6
Grade 10 Math	57	54	55	62	53	-9
All Grades Math	55.5	59	51	50	Not Available	N/A

District Growth Comparison - Mathematics

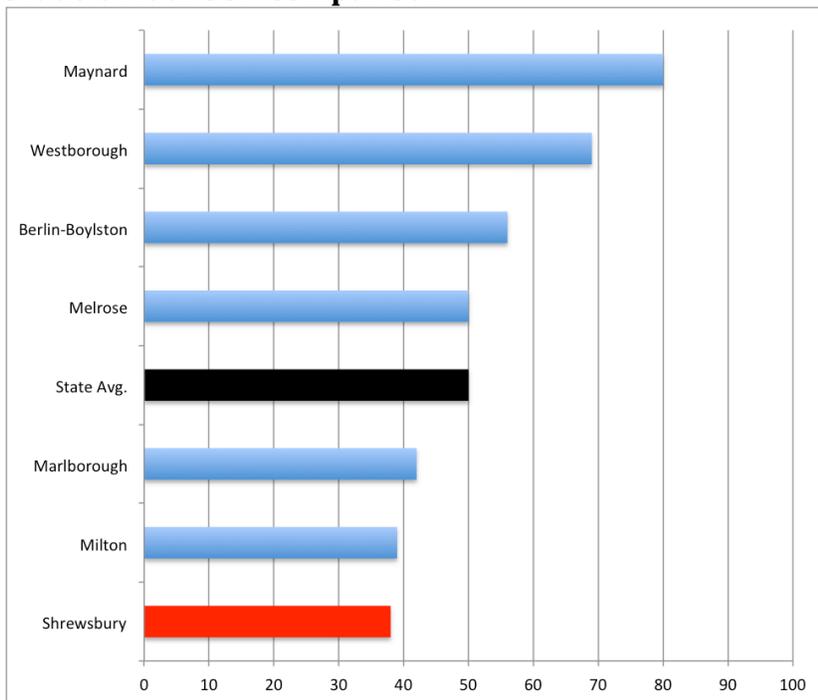
Grade 4 Math SGP Comparison



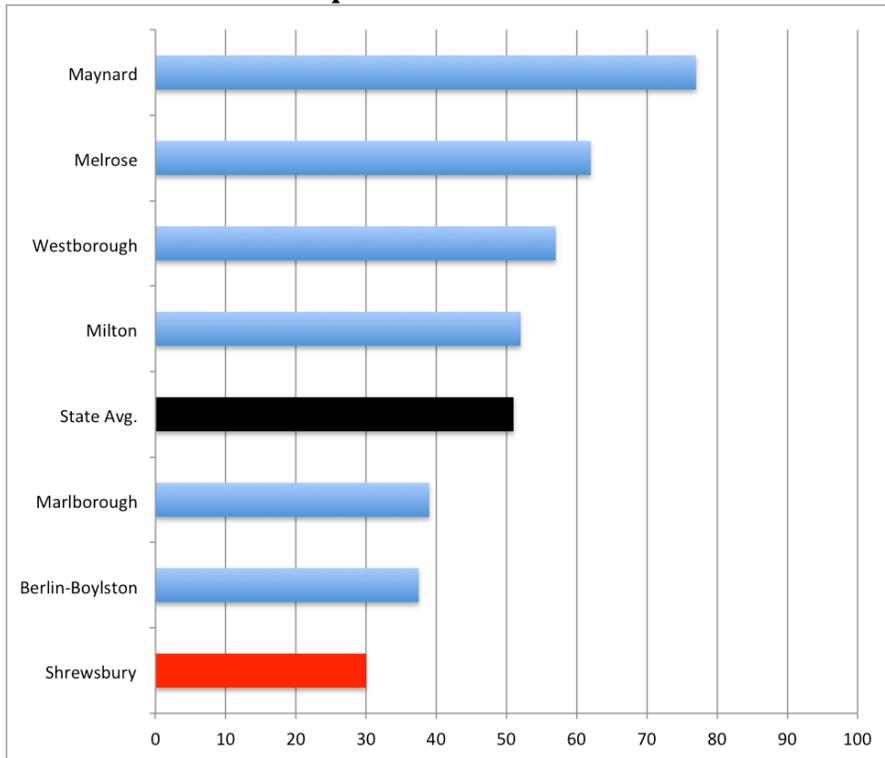
Grade 5 Math SGP Comparison



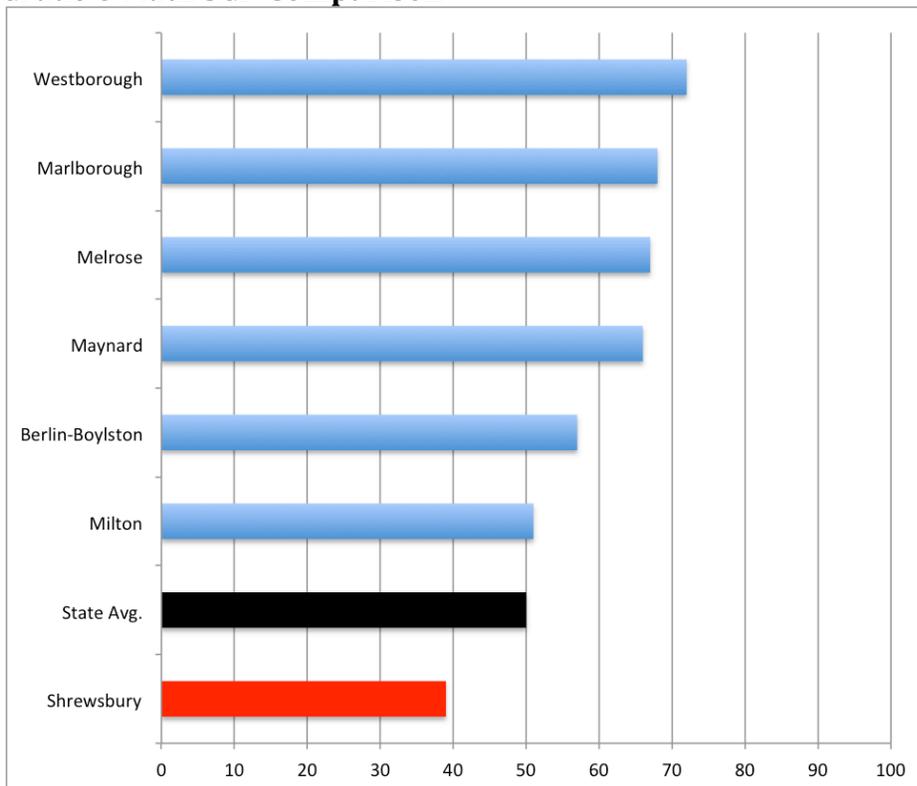
Grade 6 Math SGP Comparison



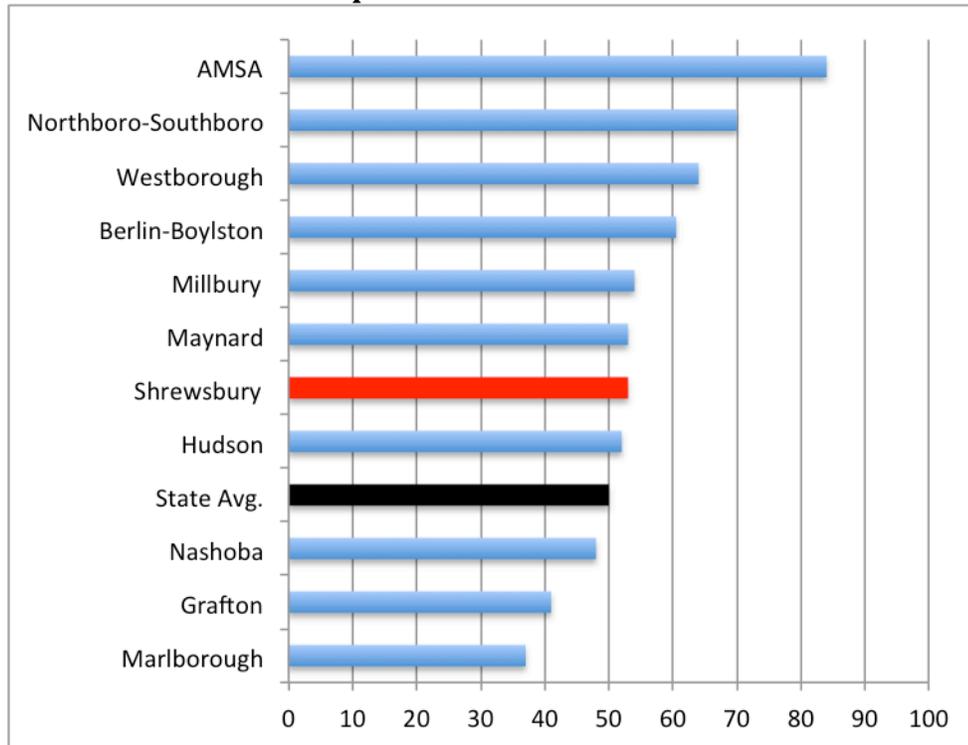
Grade 7 Math SGP Comparison



Grade 8 Math SGP Comparison



Grade 10 Math SGP Comparison



Looking Forward

- Districts that administered PARCC during the Spring of 2015 are currently awaiting specific information around how students responded to the various test items. The analysis of this data will be very beneficial in understanding where Shrewsbury students have both strengths and challenges in terms of state standards and expectations for the next generation of assessments.
- The DESE will formally release new Science Standards this year. A committee has been formed to review the Shrewsbury science curriculum and to prepare for the changes anticipated with new state standards.
- It is anticipated that the DESE will make available PARCC individual student reports the first week of December. We will be mailing out these reports shortly after receipt. The parent report from PARCC will differ from the previous MCAS reports. Please visit the link below to better understand what this new report will look like.

<https://www.youtube.com/watch?v=67G12fhSXmA>