



Lincoln Public Schools

Patricia Kinsella
Assistant Superintendent of Schools

To: School Committee
From: Patricia Kinsella
Re: Report on the Results of Key Yearly Measures for 2015-16
Date: October 20, 2016 (Revised version)

This is the second annual report on the results of the district's Key Yearly Measures (KYMs), five literacy and math assessments used as internal barometers of student growth and achievement. Longitudinal analysis of these measures will yield insight into growth trends and programmatic effectiveness as we accumulate year-over-year data. Ongoing analysis of KYMs will also allow for more efficient response to student needs and more effective deployment of the district's intervention resources.

One of the primary goals in the identification and use of the Key Yearly Measures was to drive improvements to the district's assessment practices, from test administration, to scoring, data collection, analysis, and reporting. We believe that the first steps in these improvements are beginning to take place.

A description of the five Key Yearly Measures may be found in Appendix A.

For the second year, Rob Ford has played a critical role in the creation of this report on KYM results. Rob has worked collaboratively with administrators and faculty leaders to gather and analyze assessment data; he also created all data charts in the appendices, excluding the MCAS charts provided by DESE. The district expresses its gratitude to Rob for his leadership.

Key Yearly Measures of Academic Achievement 2015-16						
Gr.	MCAS	<u>LITERACY</u> Common Writing	F&P	MCAS	<u>MATH</u> Student Interview	STAR
K		✓	✓		✓	
1		✓	✓		✓	
2		✓	✓		✓	
3	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓		✓
5	✓	✓	✓	✓		✓
6	✓	✓		✓		✓
7	✓	✓		✓		✓
8	✓	✓		✓		✓

MCAS

This report examines school- and grade-level results of the 2016 Massachusetts Comprehensive Assessment System (MCAS) testing results in ELA and Math for the Lincoln Public Schools. The district analyzes the MCAS data through the lens of two key dimensions:

- I. **Performance Levels:** How do students perform relative to the expectation of proficiency in English Language Arts (ELA), mathematics, and science/engineering?
- II. **Student Growth:** What are some indicators of individual and grade level growth in performance over the past few years of MCAS testing?

This year's report places less emphasis on MCAS student growth percentiles (SGPs) because of temporary changes to its calculation. DESE has not provided statewide achievement or growth averages this year for either ELA or Math in grades 3-8, as the majority of students in the state participated in PARCC, not MCAS. A caveat is warranted, therefore, regarding the student, school, and district SGPs that have been provided. These SGPs were developed by combining the populations of students taking MCAS and PARCC and converting MCAS scores to PARCC equivalencies using a state-developed concordance table.

During a phone call with LPS, a representative of the Department's assessment division described the growth percentiles reported this year as "transitional" given their adjusted method of calculation; the representative was surprised to learn, however, that publicly available data sets continued to omit the "transitional" label at the time of the call (10/7/16).

A second report, to be presented in November, will provide information on subgroup performance. That report will include discussion of the accountability ratings for both individual schools and the district overall, as well.

The current report does not include analysis of Science/Technology results, as MCAS has not yet been aligned to the new Science, Technology, and Engineering standards adopted this year.

PART I MCAS PERFORMANCE LEVELS

Lincoln School (see Appendix B for detailed scores)

ACHIEVEMENT	Percentage of students in Lincoln School at Proficient or Advanced in 2016; state comparisons for MCAS not available			
	ELA		Math	
	Lincoln Sch.	State	Lincoln Sch.	State
Gr. 3	81	-	91	-
Gr. 4	85	-	79	-
Gr. 5	92	-	82	-
Gr. 6	91	-	75	-
Gr. 7	99	-	86	-
Gr. 8	98	-	87	-

Lincoln School students continue to demonstrate strong overall performance in ELA and Math. Taken together, 91% of students in grades 3-8 score at Proficient or Advanced levels in ELA; in Math, the combined A/P levels is 83% (up from 84% and 73% the year before).

ELA

Areas of strength in ELA in Lincoln School include the results for grades 4 and 8. In Gr. 4, the percentage of students scoring at A/P levels increases to 85% (from 74%). In Gr. 8, the percentage of students scoring at Advanced increases to 45% (from 37%).

In grades 4, 7, and 8, not a single student scores at the W level. In grades 3, 5 and 6, only one or two students per grade score at the W level. In grades 7 and 8, every student except for one at each grade level scores A/P.

Math

Areas of strength in Math in Lincoln School include grades 3 and 8, with both showing an increase in the percentage of students scoring at the A level (from 67% to 75% in Gr. 3 and 48% to 57% in Gr. 8). In Gr. 4, 79% of students score at A/P (up from 62% the year before). The number of students scoring at W/NI in Gr. 4 is reduced by almost half.

In grades 3, 4, 5, and 7, only one or two students per grade score at the W level in Math.

Areas for further investigation at Lincoln School include Gr. 3 ELA, which shows a drop of four percentage points in the number of students scoring at A/P. (The overall achievement level, however, remains high, with 81% of students in Gr. 3 scoring A/P.) Grades 5 and 6 show small drops in Math, with dips of two to seven percentage points either in overall A/P levels or between A and P levels. Again, in both grades, scores remain generally high with over three-quarters of all students scoring A/P in Math.

The cohort performance chart (Appendix C) shows that scores maintain a multiple-year trend of increasing achievement in the Lincoln School as students move up in grades. A comparison of Lincoln School MCAS scores to those in surrounding communities may be found in Appendix D.

6-YEAR COMPARISON		Comparison of students in Lincoln School at Proficient or Advanced in Gr. 8 (2016) compared to same cohort's achievement in Gr. 3 (2011)							
		ELA				Math			
	% A	% P	% NI	% W	% A	% P	% NI	% W	
2010 (Gr. 3)	19	60	19	2	32	49	17	2	
2016 (Gr. 8)	46	52	2	0	57	30	7	7	

Hanscom Schools (see Appendix B for detailed scores)

ACHIEVEMENT Percentage of students in HPS & HMS at Proficient or Advanced in 2016; state comparisons for MCAS not available				
	ELA		Math	
	Hanscom	State	Hanscom	State
Gr. 3	37	-	51	-
Gr. 4	51	-	29	-
Gr. 5	75	-	69	-
Gr. 6	86	-	58	-
Gr. 7	83	-	55	-
Gr. 8	93	-	49	-

This report does not include a longitudinal cohort analysis over more than two years for the Hanscom schools, given the high level of turnover in the student population. In 2016, for instance, there were only 117 students on the Hanscom campus in grades 4-8 who took MCAS who had also taken the test the year before. By comparison, on the Lincoln campus, there were almost twice as many students (231) who took MCAS in both 2015 and 2016.

When looking across all grades 4-8 in Hanscom Middle School, 76% of students score A/P in ELA and 52% score A/P in Math.

ELA

Areas of specific strength in ELA are the combined A/P rates for grades 5-8: Gr. 5 – 75%; Gr. 6 – 86%; Gr. 7 – 83%, and Gr. 8 – 93%.

In addition, in grades 5 and 7, we see an increase in the number of students scoring at the A level in ELA. Gr. 5 increases its A scores by ten percentage points (while also reducing its W scores by three quarters), and Gr. 7 increases its A level scores almost ninefold, from 3% of students in 2015 to 26% of students in 2016.

Only 1-3 students in each of the grades 5-8 at Hanscom Middle School scores at the W level in ELA.

Given the highly transient nature of the Hanscom population, the strong showing of HMS middle school students on the ELA MCAS is particularly notable. The district congratulates the students, faculty, and administration on this important achievement.

Math

Strengths in Math on the Hanscom campus include grades 3, 5, and 6, each of which shows an increase of seven or eight percentage points in the number of students scoring at the A/P level. In addition, the number of Gr. 3 students scoring at the A level tripled from 2015 to 2016, from 6% to 18%. The number of students scoring at the W level in Gr. 6 is reduced to zero, down from 18% of students in 2015.

Areas for further investigation include Gr. 3 in ELA, with 37% of students scoring at the A/P level and 63% scoring at NI/W. Scores for the prior year's cohort in Gr. 3 had been 56% at A/P and 45% at NI/W. Hanscom Primary School recognized the academic challenges its Gr. 3 cohort presented early in the 2015-16 school year and made significant adjustments to its literacy program to support these students. Internal reading scores (discussed in the Fountas

and Pinnell section of this report) indicate that the Gr. 3 cohort made significant gains in its reading achievement. Without the support of the revised Gr. 3 reading model at HPS, it may be that the MCAS scores in 2016 for that grade would have been significantly lower.

In Math, Gr. 4 shows a small dip in the number of students scoring at A/P levels, from 33% in 2015 to 29% for 2016.

PART II STUDENT GROWTH PERCENTILE (SGP) (see Appendix E for detailed scores)

In the past, the Student Growth Percentile (SGP) has reflected a student's progress over at least two years of MCAS testing relative to that of students across the state who are considered "academic peers." The rate of growth is expressed as a percentile score, which has been calculated using the performance scores of other students who have a similar test score history on MCAS. While the achievement score indicates how a student performed relative to grade level standards in a single given year, the SGP provides a measure of how a student changed from one year to the next.

As discussed in the introduction to the MCAS section of this report, Lincoln Public Schools is sharing the school-level SGP scores while placing less emphasis on them given the novel method of their calculation in 2016.

DESE offers three points of guidance when using SGP scores:

- Typical student growth percentiles are between 40 and 60 on most tests.
- Students or groups outside this range have higher or lower than typical growth.
- Differences of fewer than 10 SGP points are likely not educationally meaningful.

See Appendix D for charts that show ELA and Math SGP score distributions for grades 4-8 in the Lincoln School and the Hanscom Middle School.

Common Writing Assessment (See Appendix F for detailed scores)

The Common Writing Assessment is an important measure of our students' ability to write in response to a prompt. LPS educators have adapted the Six-Trait Writing Rubric for use in scoring, and students receive from five to nine subscores, depending on the grade level.

This year's KYM report includes scores for grades 6-8 in the Common Writing Assessment for the first time.

For each subscore, we have calculated the number of students who meet the end-of-year benchmark in the fall and in the spring. To illustrate, in the first grade on the Hanscom campus, 6% of the students met the end-of-year benchmark for idea development in their fall Common Writing Assessment. By the spring, 61% of the first graders met the end-of-year benchmark.

Observations

- There are instances of widely divergent scores in adjacent grades on the same campus. For example, Gr. 2 has relatively high scores and Gr. 3 has relatively low scores at HPS, and Gr. 1 has high scores and Gr. 2 has relatively lower scores in Lincoln School.

- Divergent scores are also noted when looking at the same grade level across the two campuses. In grades 2, 6 and 8, Hanscom scores are higher than those in Lincoln School. In grades 1, 3, 4, and 5, the opposite is true.
- For most grade levels on both campuses, spring scores indicate significant growth over fall scores, with the exception of grades 5, 7, and 8 in Lincoln School and Gr. 8 in HMS.
- On both campuses, there is great diversity in terms of the grades in which a majority of students reaches the benchmark in the subscores related to the craft of writing (Idea Development, Organization, and Sentence Fluency).
- There are some grades on both campuses in which a majority of students reaches the benchmark in all subscores: grades 2, 6, 7, and 8 on the Hanscom campus, and grades 5 and 7 in Lincoln School.

Two key questions and initial comments

- *Teachers did not come together across campuses to score the Common Writing Assessment during 2015-16. What impact did this have on consistency of scores across the two campuses?*

Recognizing that consistency may suffer when teachers do not score as cross-campus teams, the district modified its process for scoring the Common Writing Assessment in the fall of 2016. We both refined the actual protocol for calibrating scores, and we brought faculty together across campuses to score each other's student writing. At some grade levels, teachers discovered they had varying understandings of what meeting the benchmark looks like in student writing. These types of conversations can be challenging, and they are essential to clarifying expectations around teaching and learning. If students are to be given the opportunity to meet district benchmarks, every educator must be clear about what the benchmarks look like in practice at their grade level.

- *What does it mean when students in one grade have solid scores in a specific area like Idea Development in the spring, yet in the following fall, scores in Idea Development are significantly lower?*

In the spring of 2015, the district conducted a professional development session in writing with vertical teams across grades K-5. Faculty had the opportunity to compare expectations for writing at multiple grade levels; they also had the opportunity to examine samples of actual student writing from multiple grade levels. Many teachers shared the emerging insight that they were not sufficiently aware of what was expected of students in writing at multiple grade levels. Teachers were clear that they wanted to learn more about exactly what students needed to know in writing in the grade levels above and below the grade they taught.

While it would have been timely to build upon the energy and interest of that spring PD session, the district chose, for valid reasons, to focus its literacy PD efforts in the following school year on small group reading instruction.

The spread of scores for the Common Writing Assessment in 2015-16 suggests, however, that the district must restart the conversation about the vertical alignment of expectations in student writing.

Fountas and Pinnell (See Appendix G for detailed scores)

The Fountas and Pinnell (F&P) Benchmark Assessment System is the district's primary reading assessment, given twice per year (September and March), for students in grades K-5. Different from the Common Writing Assessment and the Student Interview Model in math, F&P uses different benchmarks for each assessment cycle and not a single end-of-year benchmark. In the fall, for instance, a score at Level C would be considered appropriate for a first grader, whereas a Level C at the end of the year for a first grader would be of concern. The district uses these adjusted benchmarks in recognition of the developmental process of becoming a more sophisticated reader throughout the school year.

With this report, we have the opportunity to examine F&P results for grades K-5 in one place. We have created stacked bars that indicate, for each grade and for each assessment cycle, the percentage of students whose scores exceed, meet, approach, and do not meet expectations. This visual presentation allows for comparisons across grades and across time.

Observations**Hanscom**

- Hanscom scores show variation in the number of students scoring in March in the exceeding expectations category, with a range of 15-72%. When looking at a combined category of meets/exceeds expectations, there is similar variation, with a range of 43-80% in March.
- In both grades 1 and 2 in HPS, over half of the students exceed expectations for reading in the March assessment cycle.
- In grades 1 and 2, there is an increase from September to March in the number of students who exceed expectations in reading. In grades 3-5, the percentage of students in the exceeding expectations category drops slightly.
- In Gr. 3, 43% of students meet or exceed expectations in the March, and 57% of students approach or do not meet expectations. The MCAS spread is wider, 37% at Advanced or Proficient and 63% at Warning or Needs Improvement.

Lincoln

- On the Lincoln campus, the percentage of students exceeding expectations in March is fairly consistent across the grades, with a range of 42-58%. When combining the meeting and exceeding categories, the range becomes wider, from 73-95%.
- In Gr. 5 in Lincoln School, 95% of students meet or exceed the reading benchmark in March.
- In all grade levels in Lincoln, the percentage of students who exceed expectations in March is smaller than the percentage who exceed expectations in September.

Questions and Comments

- *How do the F&P results correlate to other measures of reading, including report cards and MCAS?*

A next step in examining assessment data will be the systematic comparison of our internal reading measure, F&P, with the state's standardized measure, MCAS. In those cases in which the two scores are not congruent, it would be preferable for the F&P score to be more stringent, i.e., we would hope that any student scoring well on F&P is almost certain to score well on MCAS. Conversely, it should be unusual for a student to score well on MCAS and not on the F&P.

- *How does the district ensure that F&P scores are consistent among grades and between the two campuses?*

The professional development module on small group reading instruction in 2015-16 included a review of F&P assessment procedures for all faculty in grades K-5. Faculty practiced the recording, scoring, and analyzing of students' oral reading behaviors. Faculty also practiced how to score the comprehension conversation. Perhaps most importantly, faculty investigated how to use the results of F&P assessments to identify specific reading behaviors for each student that would be the proximate targets of instruction. It is clear, however, that the district will need to provide ongoing opportunities for all faculty who use F&P to share and refine their assessment practices.

- *How are the results of F&P assessments being used to drive instruction?*

As discussed in response to the previous questions, teachers are using the specifics of student F&P results to identify reading behaviors to teach for. In addition, grade-level teams review F&P results in data meetings to identify students who may need intervention services.

Student Math Interview (See Appendix H for detailed scores)

For this analysis, we measure whether students are meeting the end-of-year benchmark in the Student Math Interview, in exactly the way we do with the Common Writing Assessment. The result is a visually simple graph, with a design that shows the percentage of students in grades K-3 who meet the end-of-year benchmark. Different from F&P, the Student Interview Model uses a single benchmark: the end-of-year expectations of skill and understanding.

The Student Interview Model includes four to six tasks each cycle, depending on grade level. The current report includes analysis of a subset of the tasks.

Observations

- The Student Interview Model shows clear growth in all grade levels from the fall to the spring; different from the Common Writing Assessment, there is no grade on either campus in which limited growth is noted on multiple tasks.
- Results from the fall cycle in Gr. 2 show the positive results of identifying new tasks for this grade level. Last year's KYM report showed that the existing tasks were too easy for the great majority of students; the task did not, therefore, yield information that was valuable to teacher planning of instruction. The new tasks appear to be challenging for the students in the fall, with only one task on one campus having a majority of students reaching the benchmark in the fall. Excellent growth by the spring is noted for all three tasks, with a success range of 66-88%.

- Scores for the Student Interview Model shows greater consistency between the two campuses at all grade levels than do the Common Writing Assessment or F&P scores. In grades K-2, the average difference in the spring scores between the two campuses was fewer than ten percentage points.
- Overall achievement in the spring is generally high. For every task on both campuses, a majority of students meets the benchmark. In multiple cases, more than three-quarters of students meet the end-of-year benchmark in the spring.

Questions

- *Why are the scores for the Student Interview Model more consistent across the campuses than the scores for writing and reading?*

This is an area for us to investigate. There are multiple possibilities: Teachers could be administering the assessment with greater consistency, and student scores are therefore closer together across the campuses and among the grades. If students' skills are actually more divergent than the scores suggest, it may be that test administration is not consistent – which happens to result with these cohorts on this assessment in similar scoring patterns.

- *How are teachers using the results of this assessment to plan and improve instruction?*
At some grade levels, teams of faculty, in conjunction with their Math Specialists, have dissected the assessment to understand the specific cognitive demands each task requires. This process then provides faculty with a strong baseline for correlating the cognitive demands of the task(s) with their upcoming instruction. It also allows grade-level teams to identify exactly which students may need additional support in specific areas of math.

STAR Math (See Appendix I for detailed scores)

The district has now completed two full years of STAR Math assessments. The attached STAR results include data from six assessment cycles: fall, winter, and spring from 2014-15 and 2015-16.

Developed by Renaissance Learning, STAR Math has a multitude of report templates from which to choose when analyzing data. A significant portion of the district's learning process has been dedicated to understanding the variety of reports and the utility of the information each provides. Some reports compare student achievement against national norms; some compare them to Massachusetts state standards. STAR Math provides both a scaled score and achievement levels; reports can be generated to use benchmarks linked to either MCAS or PARCC.

Last year's KYM report took an initial look at the STAR results for individual students compared against the students' results on MCAS. For this year, we are looking at the achievement of student cohorts rather than individual student results-. Appendix I includes a longitudinal representation of the data for each cohort that has participated in the STAR assessment in all six cycles over the past two years, with student achievement measured against MCAS-aligned end-of-year benchmarks. The scores are then color-coded to represent the four achievement levels on MCAS: Advanced, Proficient, Needs Improvement, and Warning.

The student cohorts are described through their year of graduation, as follows:

YOG 2016 = Gr. 8 in spring 2016

YOG 2017 = Gr. 7 “

YOG 2018 = Gr. 6 “

YOG 2019 = Gr. 5 “

YOG 2020 = Gr. 4 “

Observations

- In most grades on both campuses, there is a clear pattern of increasing achievement against the year-end benchmarks from fall to winter to spring. We would expect to see this pattern, as students develop content and skill through the year in relation to year-end benchmarks.
- The combined categories of A/P and W/Ni on the spring 2016 STAR results generally correlate to the same combined categories on the spring 2016 MCAS scores.
- The percentage of students scoring A in spring 2016 STAR is, in most cases, larger than the percentage of students scoring A in the spring 2015 MCAS.
- In several cases, the discrepancy between A scores on the two tests is quite large. In Gr. 4 on the Lincoln campus, for example, 24% of students score A on MCAS in spring 2016, while over 60% score A on the STAR. Hanscom Gr. 5 shows a similar discrepancy, with almost 60% scoring A in STAR and 33% scoring A in MCAS.

Questions

- *What is the relationship between STAR Math results and student performance in the classroom?*
Reports from Math Specialist conversations with classroom teachers indicate that STAR results, in a broad sense, confirm what teachers observe during classroom instruction and on district math assessments.
- *How do national benchmarks, such as the MCAS-aligned benchmarks used in the STAR assessment, relate to the internal expectations of the Lincoln Public Schools?*
STAR results for LPS suggest that many of our students are currently achieving above grade level. This is welcome news. At the same time, although overall patterns of achievement on STAR do correlate with teacher observations, STAR appears to over-represents the degree to which students may be advanced beyond their grade level. We have multiple reports from faculty of students whose STAR results suggest they are several years beyond grade level, while the students' work in the classroom, even though excellent, is firmly within expectations for that grade level within the Lincoln Public Schools.
- *How do we most effectively use the big-picture and student-level results of STAR to improve math teaching and learning?*
As an adaptive, online assessment, STAR does not maintain a record of the specific problems given to each student. Teachers, therefore, do not know the exact content or degree of difficulty on which a particular student was assessed. The student's score is a single number, with suggestions for each student's instructional program generated by STAR based on that single summative score, not on the student's response to specific test items in various strands of math content. For this reason, faculty use STAR more frequently to understand the overall pattern of achievement for their class and to identify outliers whose STAR scores indicate an additional look at

student progress may be indicated. The strength of STAR is not currently viewed as being in the area of identifying specific areas of strength or concern for any one individual student.

NEXT STEPS

The Administrative Council will review the KYM data shortly before it is shared at the 10/20/16 School Committee meeting. We expect that Admin Council will have rich conversations about the data, with creative and practical suggestions for how best to share the results with faculty as a next step in the process.

The Facilitative Leadership and Collaborative Practices work dovetails beautifully with the need to analyze and utilize the data in this report. We expect that faculty groups, including grade-level teams, collaborative practice groups, and content-area departments will include the attached graphs when digging into questions of student learning over the coming months.

The preparation of this second annual KYM report proceeded more smoothly than it did during the first year. While data processing systems continue to improve in the district, the amount of labor required to gather, analyze, and display the data for the KYMs is still considerable. We will continue to seek ways of making the process timelier and less labor-intensive.

The November report about student achievement will discuss achievement gaps in light of subgroup performance on the Key Yearly Measures. We will present a more detailed explanation of action steps at the school and district levels with that November report.

2016 KYM RESULTS: APPENDICES

Appendix A: Description of Key Yearly Measures

Appendix B: MCAS

2016 Performance Levels: District and Schools by Grade in ELA, Math

Appendix C: MCAS

2012-2016 Grade 8 Cohort Comparisons at Lincoln School by Grade in ELA, Math, Science/Engineering

Appendix D: MCAS

Comparison to Surrounding Communities

2016 Proficient + Advanced and SGP for Lincoln School and Lexington

Appendix E: MCAS

2016 School Achievement and Growth (SGP): ELA and Math by grade level (4-8) and school

Appendix F: Common Writing Assessment

2016, Grades 1-8 by school; depicted as percentage of students meeting end-of-year benchmark

Appendix G: Fountas and Pinnell Reading Assessments (F&P)

2016, Grades 1-5 by school; depicted as percentage of students exceeding, meeting, approaching, and not meeting expectations for time-dependent benchmarks

Appendix H: Student Interview Model in Math

2016, Grades K-3 by school; depicted as percentage of students meeting end-of-year expectations

Appendix I: STAR Math

Longitudinal Student Performance, PARCC-Aligned Benchmarks, by Campus and Year of Graduation, 2014-15 and 2015-16

Appendix A

Descriptions of Key Yearly Measures

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Descriptions of Key Yearly Measures

KEY LITERACY ASSESSMENTS

1. MCAS, once per year

As the state's existing measure of academic achievement, MCAS provides a yearly snapshot of our students' abilities in both reading and writing in grades 3-8. The data services provided by the Department of Elementary and Secondary Education (DESE) allow the district to analyze results in numerous ways, including growth scores over time. The English Language Arts MCAS provides information about both reading and writing.

<http://www.doe.mass.edu/mcas/>

2. Common Writing Assessment, twice per year

The common writing assessment is a measure designed by educators within the Lincoln Public Schools. For most grades, the writing prompts given in the fall and spring are identical. This similarity allows for a clear analysis of the student's growth within one writing genre. Classroom teachers implement the assessment in a group setting, and scoring takes place as a collaborative process. The scoring criteria derive from the Six-Trait Writing Rubric, a guide used widely across the country.

<http://educationnorthwest.org/traits/traits-rubrics>

3. Fountas and Pinnell (F&P), twice per year

The Benchmark Assessment System, developed by Fountas and Pinnell (F&P) is designed to give insight not only into a student's current levels of reading achievement, but also into the specific reading strategies over which the student has control and does not yet have control.

There are two segments to the administration of F&P: oral reading and the comprehension conversation. The student first reads aloud from a short text the assessor has selected. As the student reads, the assessor records every vocalization made by the student. During the comprehension conversation, the assessor invites the student to comment on the text and then asks a series of prompts designed to elicit information about the student's understanding within, beyond, and about the text.

A typical administration of F&P may include the use of two to five texts. After administration of the first text, the assessor makes a determination as to which text should be read next: students who score well initially will read a slightly more difficult text, and students who struggle will read a slightly less challenging text. The assessment continues until the assessor has obtained clear information about reading levels that may be considered instructional, independent, and/or hard for the student. Every administration of F&P will include both fiction and non-fiction texts.

http://www.heinemann.com/fountasandpinnell/BAS2_Overview.aspx

KEY MATH ASSESSMENTS

1. MCAS, once per year

The use of MCAS as a measure of achievement in mathematics parallels its use previously described in literacy.

<http://www.doe.mass.edu/mcas/>

2. Student Interview Model, 2-3 times per year

In grades K-3, teachers assess student understanding in math through a student interview model. In grades K-2, we use Assessing Math Concepts, a student interview protocol created by noted math educator Kathy Richardson, whose protocols allow assessors to probe for children's mathematical understandings via guided, standardized conversations. In grade 3, the district has developed its own measure, one focused on multiplication, modeling it after the Assessment Math Concepts/Kathy Richardson protocols.

The student interviews yield in-depth and nuanced information about student skills and content knowledge. Similar to the Fountas and Pinnell assessment in reading, this model requires the assessor to adapt the protocol depending on the performance of the child during the interview. If a student completes one aspect of the math task with ease, for instance, the assessor may opt to skip steps in the assessment sequence in order to probe at a more sophisticated level. Scoring of the student interviews describe levels of facility with the assessed concepts, with the descriptors "applies," "practice," and "instructional" used at multiple points of each administration of the assessment.

<http://www.didax.com/KathyRichardson/>

3. STAR Math, three times per year

After an extensive review of options, LPS selected STAR Math as a measure that would provide information not only about individual student skills, but also an overall picture of achievement in mathematics longitudinally through time. 2015-2016 marks the second year of full implementation, with three cycles: at the beginning, middle, and end of the school year.

STAR Math is a brief online measure of student growth and achievement. Each administration takes roughly thirty minutes for students to complete.

STAR Math is an adaptive assessment, meaning that the program adapts its level of challenge as a student progresses through the test. When a student answers a question in geometry correctly, for instance, the next question related to geometry will be slightly more difficult.

The online environment of the measure and its adaptive nature require that we make judgments about the utility of the assessment only after the district has had significant experience with it.

<http://www.renaissance>

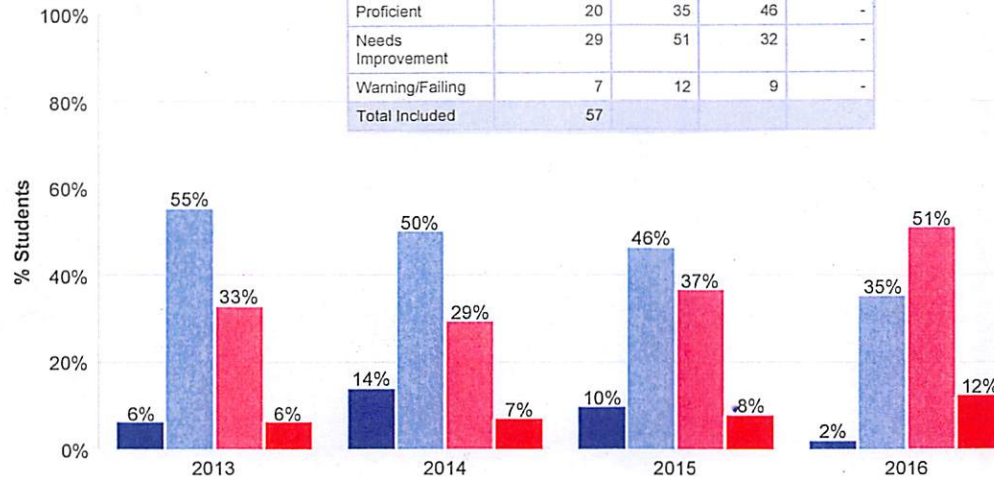
Appendix B

MCAS Results

2016 Performance Levels:

District and Schools by Grade in ELA and Math

Student Group: All Students



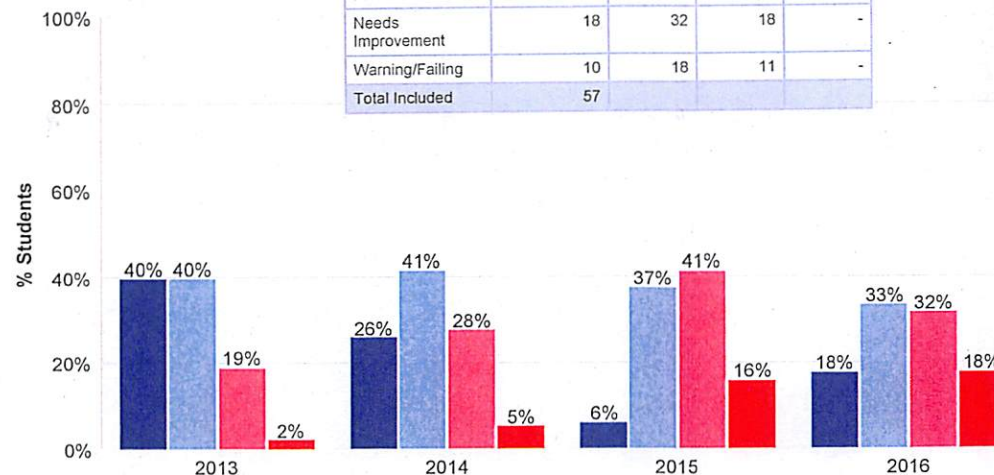
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	6%	12%	12%	14%	17%	12%	10%	24%	11%	2%	13%
Proficient	55%	55%	45%	50%	53%	46%	46%	49%	49%	35%	46%
Needs Improvement	33%	26%	36%	29%	25%	33%	37%	24%	32%	51%	32%
Warning/Failing	6%	6%	8%	7%	4%	10%	8%	4%	9%	12%	9%
N Students	49	125	70,499	58	126	68,283	52	127	24,217	57	134
CPI	83.7	87.2	83.3	84.5	88.7	82.6	78.8	88.0	83.4	76.8	84.9
Median SGP											

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



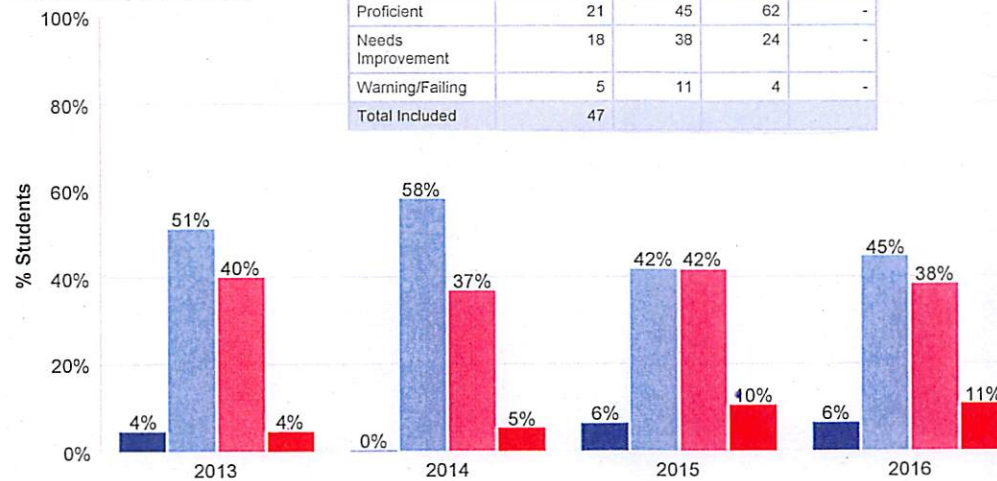
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	40%	44%	31%	26%	47%	31%	6%	40%	32%	18%	45%
Proficient	40%	39%	36%	41%	30%	38%	37%	31%	39%	33%	26%
Needs Improvement	19%	13%	22%	28%	18%	21%	41%	21%	18%	32%	18%
Warning/Failing	2%	4%	11%	5%	5%	11%	16%	7%	11%	18%	11%
N Students	48	126	70,581	58	125	68,218	51	126	24,152	57	135
CPI	91.7	93.5	84.3	84.9	89.8	85.1	71.1	85.7	85.4	78.9	87.8
Median SGP											

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



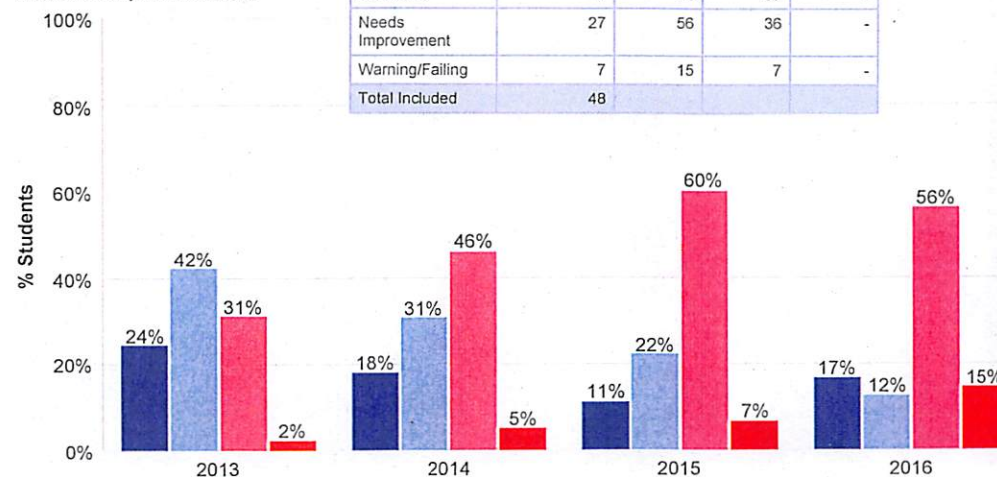
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	4%	8%	10%	0%	10%	13%	6%	12%	11%	6%	10%
Proficient	51%	56%	43%	58%	52%	41%	42%	47%	43%	45%	62%
Needs Improvement	40%	34%	33%	37%	29%	33%	42%	34%	33%	38%	24%
Warning/Failing	4%	3%	13%	5%	9%	13%	10%	7%	14%	11%	4%
N Students	45	117	70,605	38	113	68,980	48	115	24,006	47	119
CPI	82.2	84.6	78.9	84.2	85.8	79.1	77.6	82.6	78.5	76.6	87.4
Median SGP	49.0	52.5	49.0	41.0	44.0	49.0	37.0	45.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



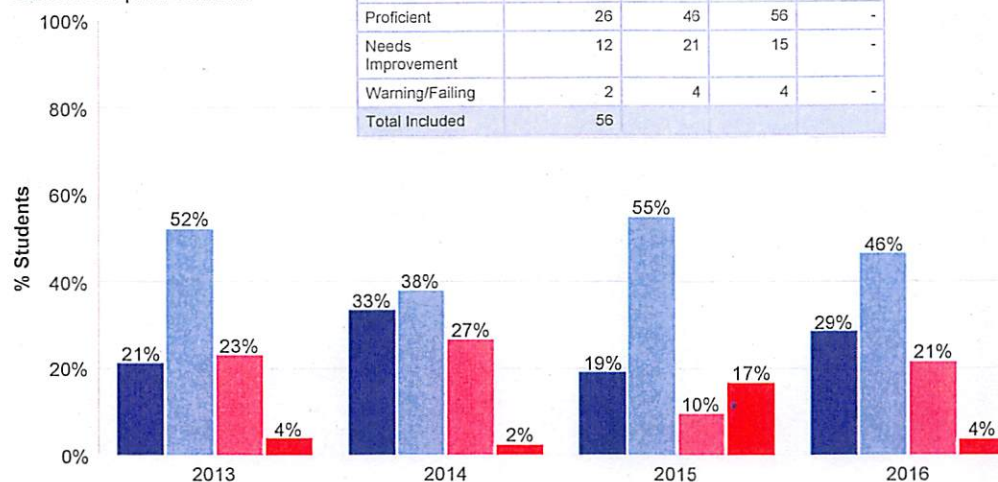
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	24%	28%	18%	18%	29%	20%	11%	19%	19%	17%	21%
Proficient	42%	36%	34%	31%	32%	32%	22%	29%	29%	12%	37%
Needs Improvement	31%	34%	38%	46%	32%	36%	60%	45%	40%	56%	36%
Warning/Failing	2%	2%	10%	5%	7%	12%	7%	6%	13%	15%	7%
N Students	45	117	70,903	39	115	69,499	45	113	24,037	48	120
CPI	89.4	88.5	80.2	82.1	86.3	79.6	73.3	79.4	77.2	71.9	84.0
Median SGP	32.0	50.0	54.0	42.0	43.0	50.0	37.0	27.0	49.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	21%	28%	18%	33%	32%	18%	19%	29%	23%	29%	25%
Proficient	52%	53%	47%	38%	43%	46%	55%	49%	48%	46%	56%
Needs Improvement	23%	17%	24%	27%	23%	26%	10%	12%	20%	21%	15%
Warning/Failing	4%	2%	10%	2%	2%	10%	17%	9%	9%	4%	4%
N Students	52	121	70,879	45	112	69,826	42	120	24,893	56	123
CPI	88.9	93.2	84.7	90.0	91.5	84.5	86.9	90.8	87.3	91.1	92.3
Median SGP	63.0	66.0	52.0	82.0	68.0	50.0		66.0	50.0		

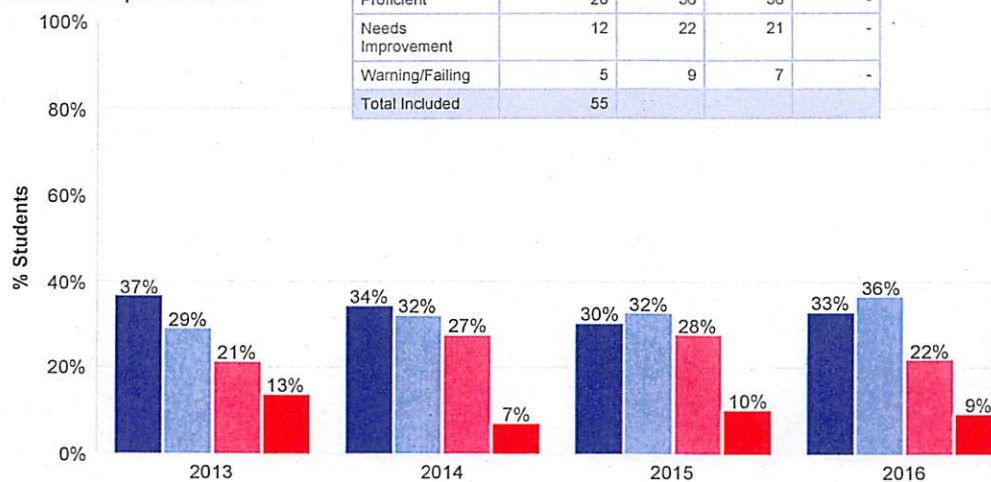
Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Hanscom Middle
Grade: 05

Student Group: All Students



MCAS Achievement Level

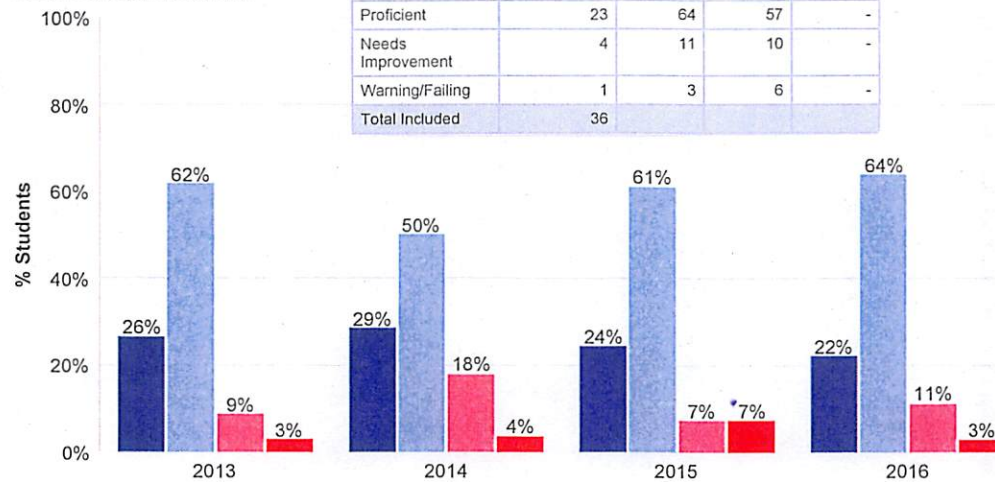
- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	37%	47%	28%	34%	39%	30%	30%	41%	35%	33%	34%
Proficient	29%	28%	33%	32%	39%	30%	32%	31%	32%	36%	38%
Needs Improvement	21%	18%	25%	27%	17%	24%	28%	19%	21%	22%	21%
Warning/Failing	13%	7%	14%	7%	5%	15%	10%	8%	12%	9%	7%
N Students	52	123	70,926	44	113	69,839	40	118	24,893	55	123
CPI	82.2	88.6	80.6	88.1	91.2	80.4	84.4	88.6	83.6	86.4	88.2
Median SGP	55.0	63.0	54.0	51.0	55.0	50.0	66.5	58.5	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	26%	21%	16%	29%	26%	16%	24%	25%	19%	22%	26%
Proficient	62%	69%	51%	50%	57%	52%	61%	59%	52%	64%	57%
Needs Improvement	9%	7%	23%	18%	13%	23%	7%	12%	19%	11%	10%
Warning/Failing	3%	3%	10%	4%	3%	9%	7%	4%	10%	3%	6%
N Students	34	90	71,602	56	127	69,579	41	110	24,086	36	110
CPI	94.9	95.6	85.1	92.0	93.9	85.8	95.7	95.7	86.6	94.4	93.6
Median SGP	73.0	65.0	52.0	78.0	59.0	50.0	58.0	53.5	50.0		

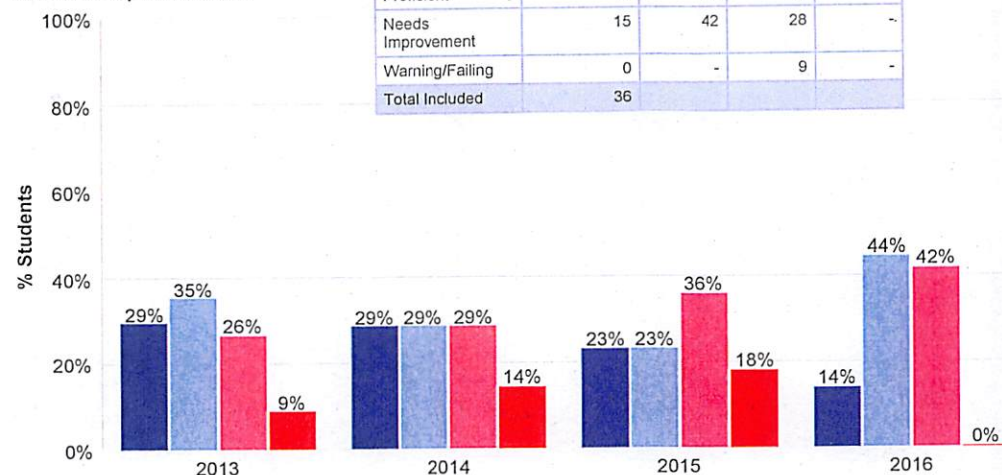
Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Hanscom Middle
Grade: 06

Student Group: All Students



MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	29%	30%	25%	29%	38%	29%	23%	32%	30%	14%	24%
Proficient	35%	39%	35%	29%	28%	31%	23%	35%	32%	44%	39%
Needs Improvement	26%	25%	24%	29%	23%	25%	36%	25%	24%	42%	28%
Warning/Failing	9%	5%	15%	14%	10%	15%	18%	7%	14%	0%	9%
N Students	34	92	71,642	56	128	69,851	39	108	24,058	36	113
CPI	83.1	85.9	80.3	79.9	83.8	80.2	76.3	86.1	81.5	81.9	84.3
Median SGP	28.0	41.0	50.0	40.0	42.0	50.0	33.0	33.0	50.0		

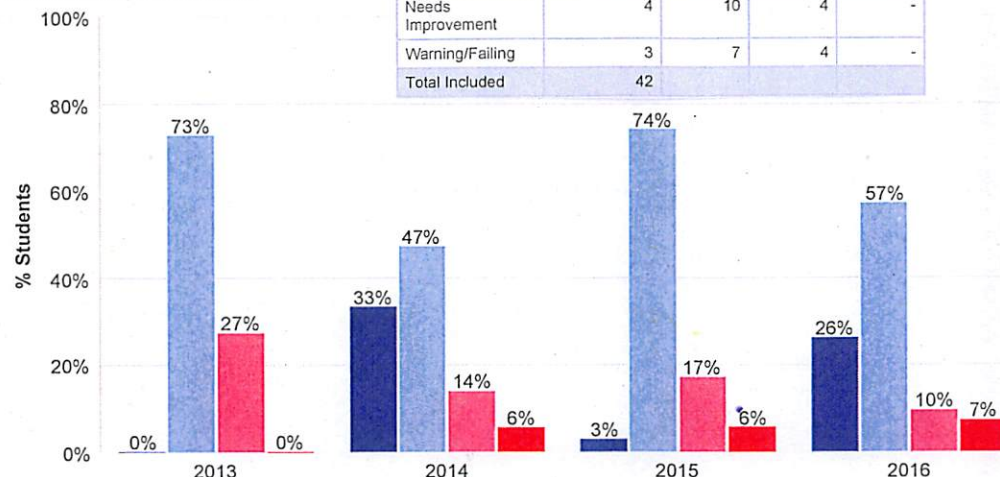
Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year English Language Arts

District: Lincoln
School: Hanscom Middle
Grade: 07

Student Group: All Students



MCAS Achievement Level
 ■ Advanced
 ■ Proficient
 ■ Needs Improvement
 ■ Warning/Failing

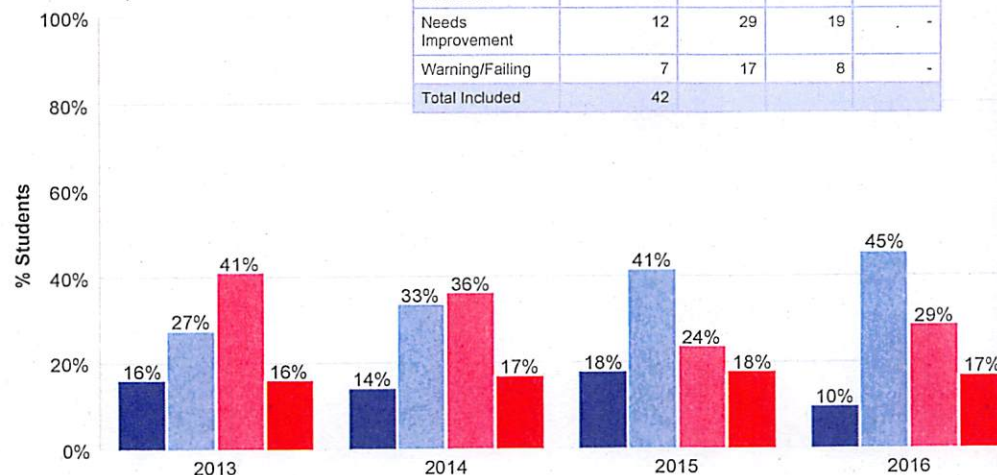
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	0%	18%	12%	33%	18%	11%	3%	16%	9%	26%	25%
Proficient	73%	61%	59%	47%	67%	61%	74%	70%	60%	57%	67%
Needs Improvement	27%	18%	22%	14%	13%	21%	17%	12%	23%	10%	4%
Warning/Failing	0%	3%	7%	6%	2%	7%	6%	3%	8%	7%	4%
N Students	44	119	71,699	36	93	70,612	35	103	24,816	42	118
CPI	92.6	92.6	88.4	92.4	94.4	88.3	90.0	94.2	87.0	91.7	96.2
Median SGP	43.0	52.0	48.0	66.0	49.0	50.0	44.5	53.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
 NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year Mathematics

District: Lincoln
School: Hanscom Middle
Grade: 07

Student Group: All Students



MCAS Achievement Level
 ■ Advanced
 ■ Proficient
 ■ Needs Improvement
 ■ Warning/Failing

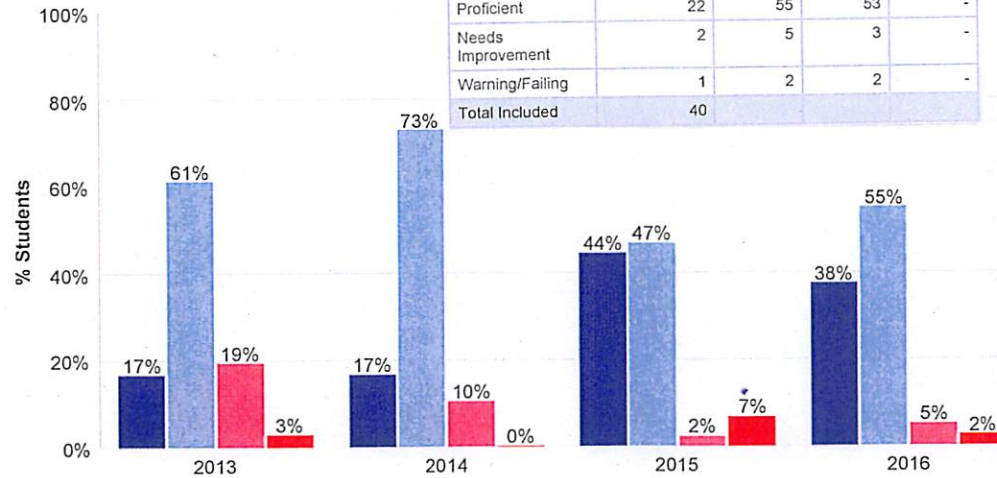
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	16%	33%	19%	14%	26%	17%	18%	35%	20%	10%	27%
Proficient	27%	33%	33%	33%	35%	33%	41%	38%	30%	45%	46%
Needs Improvement	41%	24%	27%	36%	27%	26%	24%	17%	26%	29%	19%
Warning/Failing	16%	11%	21%	17%	12%	24%	18%	10%	23%	17%	8%
N Students	44	119	72,021	36	95	70,978	34	102	24,863	42	118
CPI	71.6	82.1	74.4	72.2	80.3	72.5	77.9	86.0	73.0	76.8	87.7
Median SGP	51.0	64.0	46.0	26.0	60.0	50.0	55.5	71.5	51.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
 NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
English Language Arts

District: Lincoln
School: Hanscom Middle
Grade: 08

Student Group: All Students



English Language Arts	N Included	% School	% District	% State
Advanced	15	38	42	-
Proficient	22	55	53	-
Needs Improvement	2	5	3	-
Warning/Failing	1	2	2	-
Total Included	40			

MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

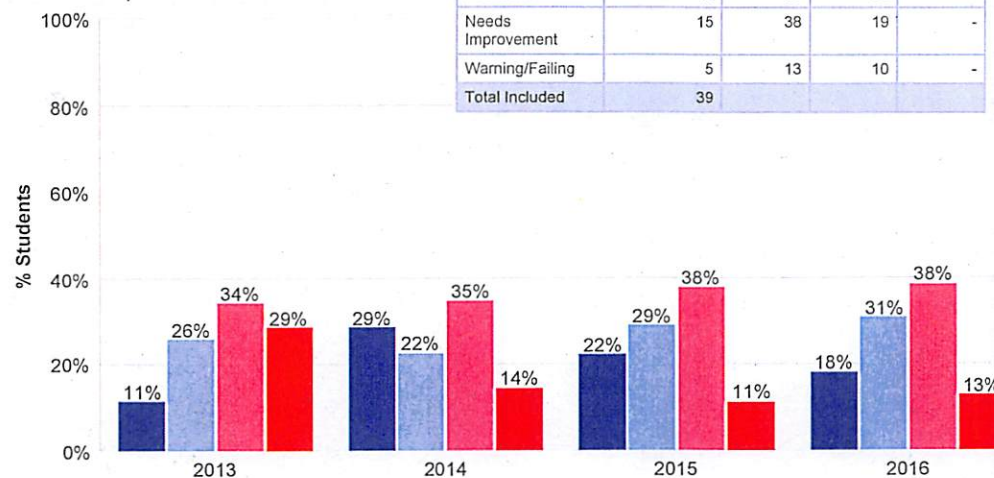
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	17%	31%	20%	17%	31%	14%	44%	40%	26%	38%	42%
Proficient	61%	62%	58%	73%	63%	65%	47%	56%	54%	55%	53%
Needs Improvement	19%	7%	15%	10%	6%	14%	2%	1%	14%	5%	3%
Warning/Failing	3%	1%	7%	0%	1%	8%	7%	3%	6%	2%	2%
N Students	36	121	72,194	48	121	70,999	45	101	24,627	40	102
CPI	91.7	97.3	90.1	96.9	97.7	90.2	94.4	97.5	91.4	96.9	97.5
Median SGP	53.5	67.5	50.0	59.0	67.5	50.0	47.5	63.5	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Hanscom Middle
Grade: 08

Student Group: All Students



Mathematics	N Included	% School	% District	% State
Advanced	7	18	42	-
Proficient	12	31	30	-
Needs Improvement	15	38	19	-
Warning/Failing	5	13	10	-
Total Included	39			

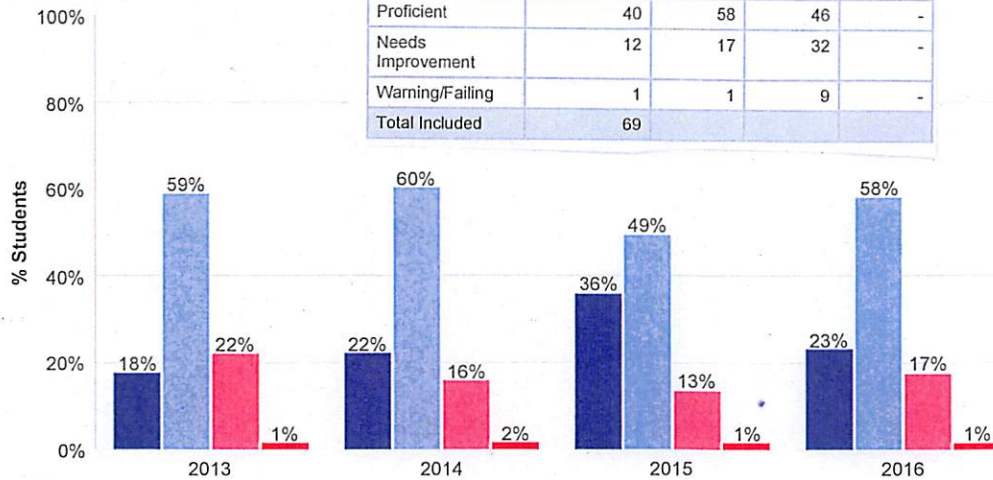
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	11%	27%	22%	29%	34%	19%	22%	34%	29%	18%	42%
Proficient	26%	40%	32%	22%	33%	33%	29%	29%	31%	31%	30%
Needs Improvement	34%	20%	25%	35%	23%	29%	38%	29%	23%	38%	19%
Warning/Failing	29%	12%	20%	14%	10%	19%	11%	7%	17%	13%	10%
N Students	35	121	72,196	49	124	71,296	45	102	24,594	39	101
CPI	65.0	83.5	76.0	75.0	83.5	74.7	76.7	83.8	78.7	73.7	84.9
Median SGP	43.0	54.5	50.0	63.0	61.0	50.0	45.0	55.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	18%	12%	12%	22%	17%	12%	36%	24%	11%	23%	13%
Proficient	59%	55%	45%	60%	53%	46%	49%	49%	49%	58%	46%
Needs Improvement	22%	26%	36%	16%	25%	33%	13%	24%	32%	17%	32%
Warning/Failing	1%	6%	8%	2%	4%	10%	1%	4%	9%	1%	9%
N Students	68	125	70,499	63	126	68,283	67	127	24,217	69	134
CPI	91.5	87.2	83.3	94.8	88.7	82.6	95.1	88.0	83.4	93.8	84.9
Median SGP											

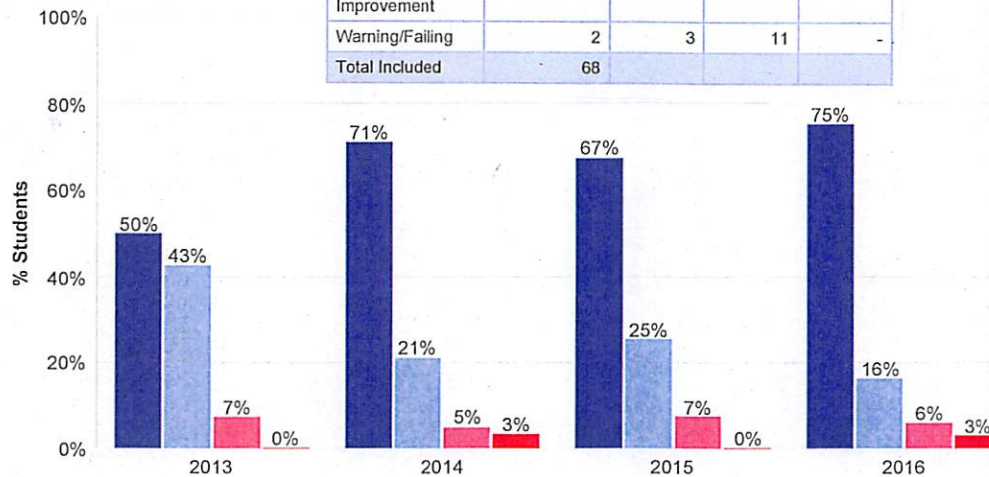
Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Lincoln School
Grade: 03

Student Group: All Students



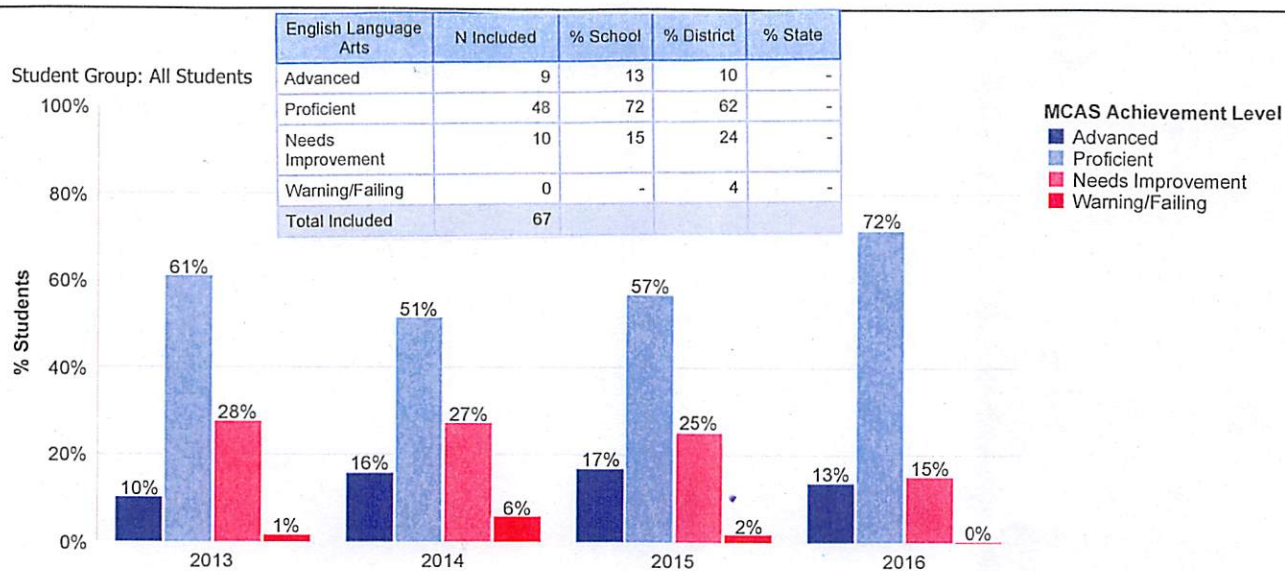
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	50%	44%	31%	71%	47%	31%	67%	40%	32%	75%	45%
Proficient	43%	39%	36%	21%	30%	38%	25%	31%	39%	16%	26%
Needs Improvement	7%	13%	22%	5%	18%	21%	7%	21%	18%	6%	18%
Warning/Failing	0%	4%	11%	3%	5%	11%	0%	7%	11%	3%	11%
N Students	68	126	70,581	62	125	68,218	67	126	24,152	68	135
CPI	97.4	93.5	84.3	96.4	89.8	85.1	97.0	85.7	85.4	96.3	87.8
Median SGP											

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

NOTE: Achievement level percentages are not calculated for student groups of less than 10.

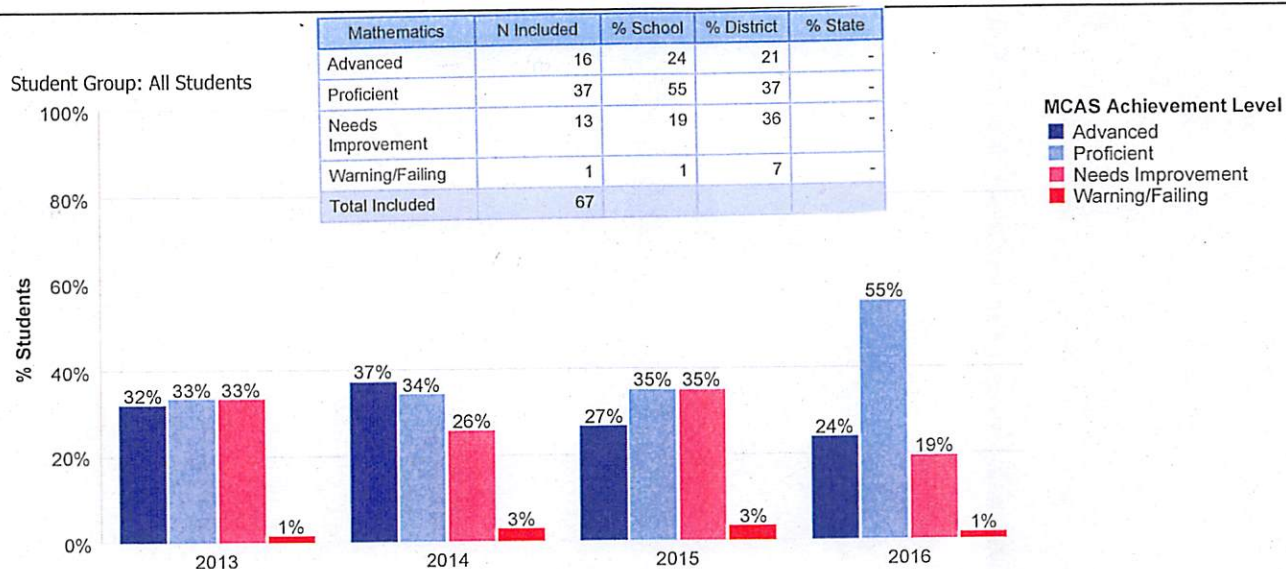


	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	10%	8%	10%	16%	10%	13%	17%	12%	11%	13%	10%
Proficient	61%	56%	43%	51%	52%	41%	57%	47%	43%	72%	62%
Needs Improvement	28%	34%	33%	27%	29%	33%	25%	34%	33%	15%	24%
Warning/Failing	1%	3%	13%	6%	9%	13%	2%	7%	14%	0%	4%
N Students	69	117	70,605	70	113	68,980	60	115	24,006	67	119
CPI	87.7	84.6	78.9	86.1	85.8	79.1	90.0	82.6	78.5	94.0	87.4
Median SGP	56.0	52.5	49.0	45.0	44.0	49.0	48.0	45.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

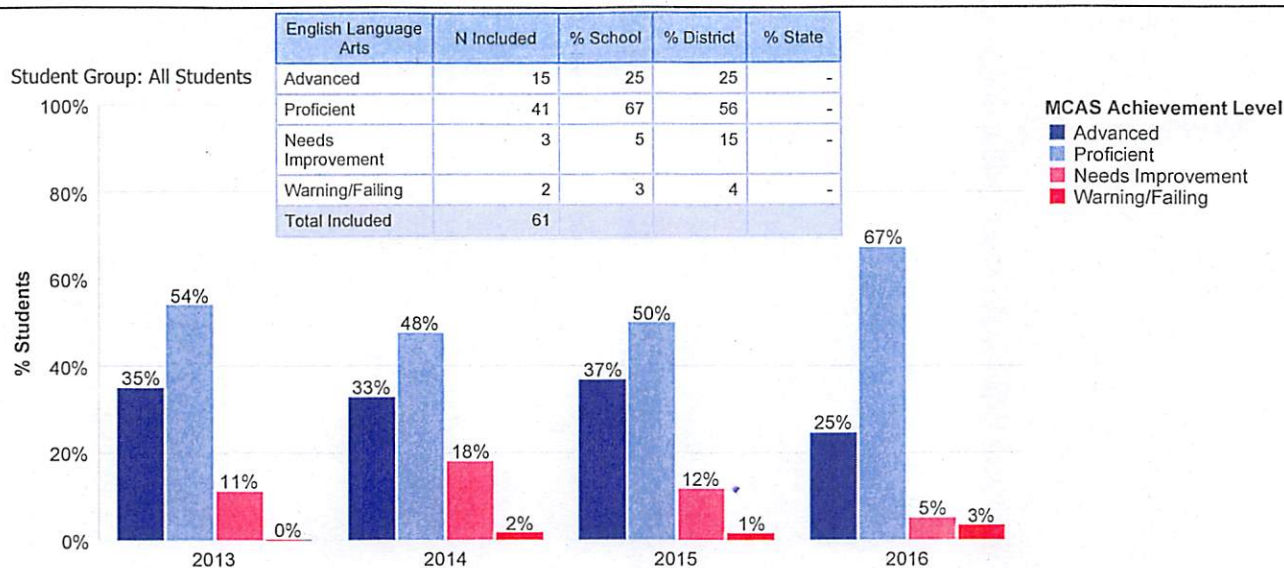
School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Lincoln School
Grade: 04



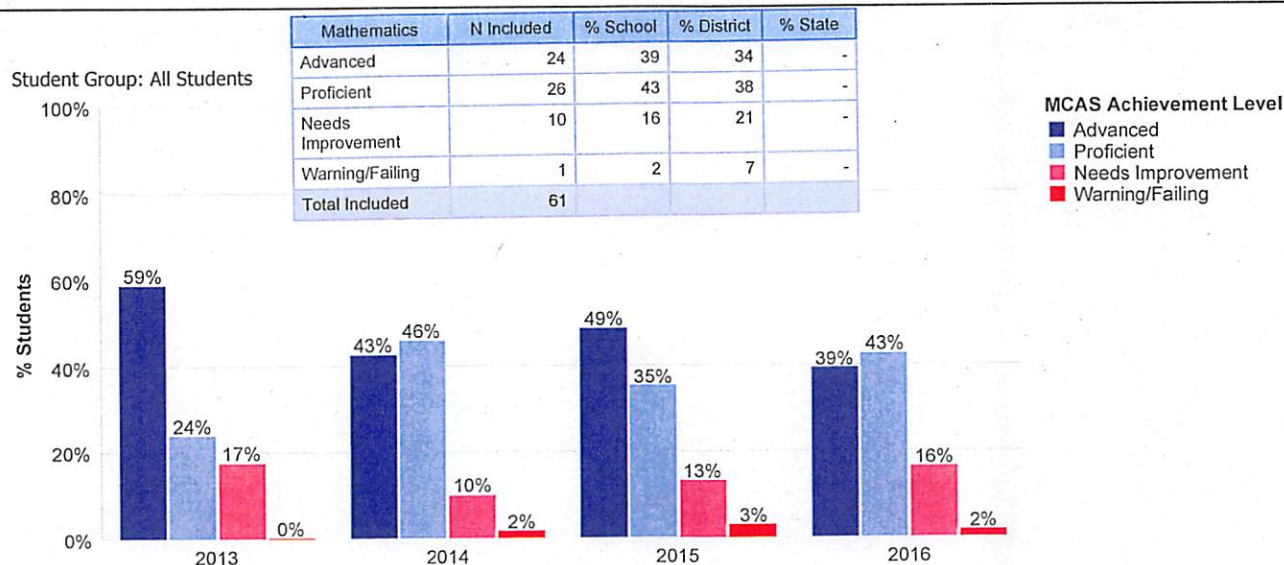
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	32%	28%	18%	37%	29%	20%	27%	19%	19%	24%	21%
Proficient	33%	36%	34%	34%	32%	32%	35%	29%	29%	55%	37%
Needs Improvement	33%	34%	38%	26%	32%	36%	35%	45%	40%	19%	36%
Warning/Failing	1%	2%	10%	3%	7%	12%	3%	6%	13%	1%	7%
N Students	69	117	70,903	70	115	69,499	60	113	24,037	67	120
CPI	88.8	88.5	80.2	89.3	86.3	79.6	85.8	79.4	77.2	93.3	84.0
Median SGP	52.0	50.0	54.0	43.0	43.0	50.0	26.0	27.0	49.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.



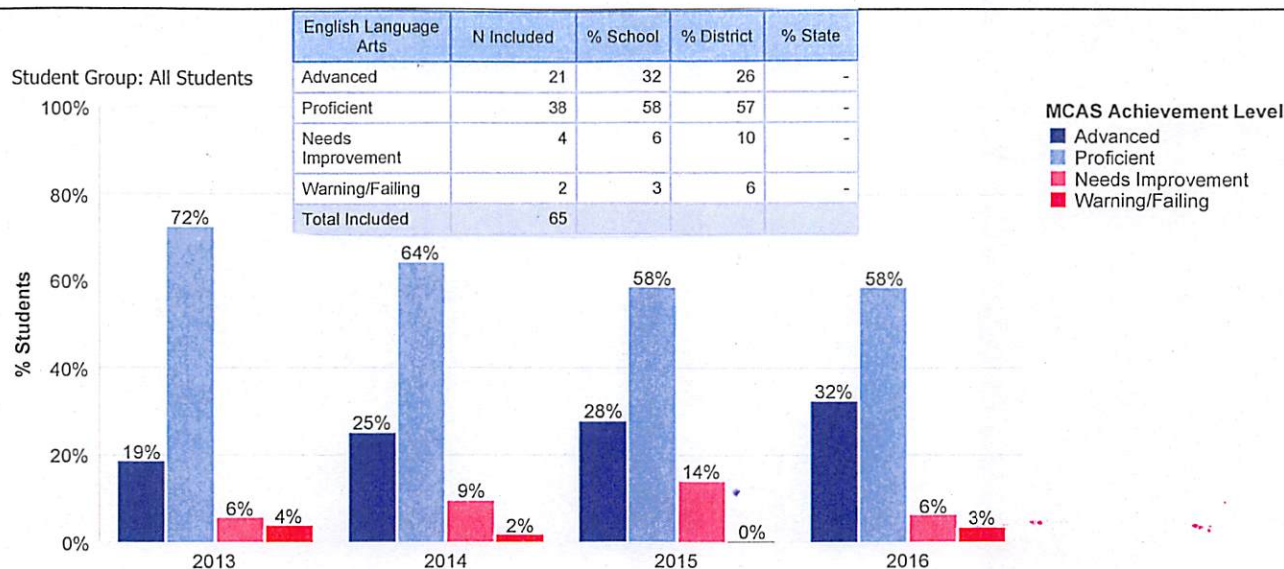
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	35%	28%	18%	33%	32%	18%	37%	29%	23%	25%	25%
Proficient	54%	53%	47%	48%	43%	46%	50%	49%	48%	67%	56%
Needs Improvement	11%	17%	24%	18%	23%	26%	12%	12%	20%	5%	15%
Warning/Failing	0%	2%	10%	2%	2%	10%	1%	9%	9%	3%	4%
N Students	63	121	70,879	61	112	69,826	68	120	24,893	61	123
CPI	96.8	93.2	84.7	93.9	91.5	84.5	95.2	90.8	87.3	95.5	92.3
Median SGP	71.0	66.0	52.0	56.0	68.0	50.0	65.0	66.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.



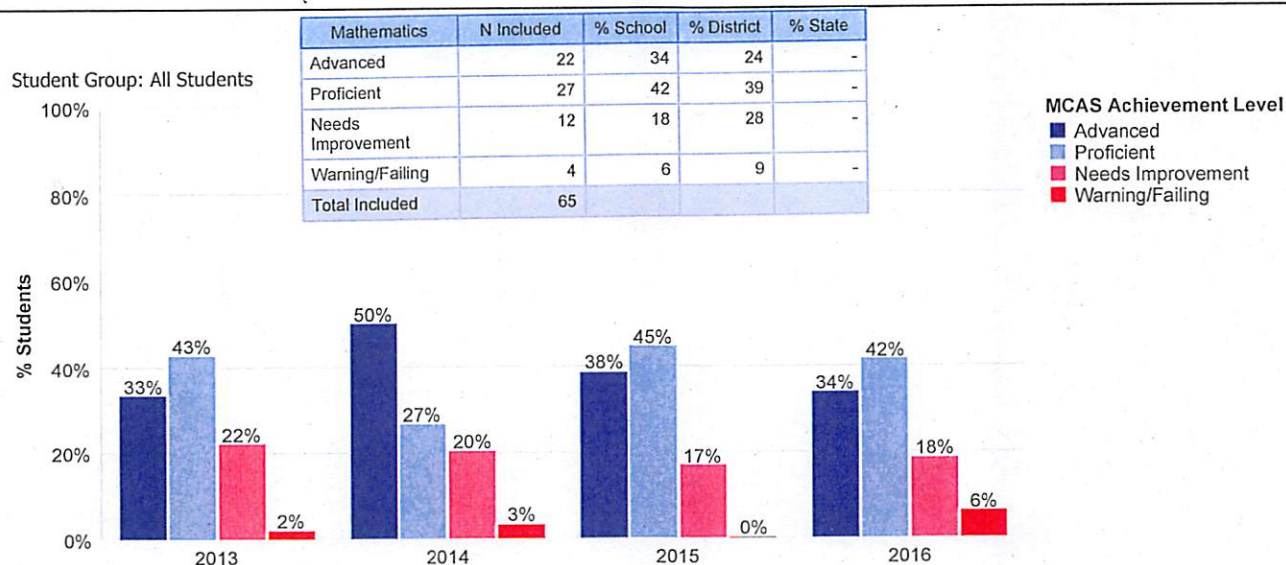
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	59%	47%	28%	43%	39%	30%	49%	41%	35%	39%	34%
Proficient	24%	28%	33%	46%	39%	30%	35%	31%	32%	43%	38%
Needs Improvement	17%	18%	25%	10%	17%	24%	13%	19%	21%	16%	21%
Warning/Failing	0%	7%	14%	2%	5%	15%	3%	8%	12%	2%	7%
N Students	63	123	70,926	61	113	69,839	68	118	24,893	61	123
CPI	94.0	88.6	80.6	95.1	91.2	80.4	93.0	88.6	83.6	93.4	88.2
Median SGP	65.0	63.0	54.0	56.5	55.0	50.0	54.0	58.5	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.



	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	19%	21%	16%	25%	26%	16%	28%	25%	19%	32%	26%
Proficient	72%	69%	51%	64%	57%	52%	58%	59%	52%	58%	57%
Needs Improvement	6%	7%	23%	9%	13%	23%	14%	12%	19%	6%	10%
Warning/Failing	4%	3%	10%	2%	3%	9%	0%	4%	10%	3%	6%
N Students	54	90	71,602	64	127	69,579	65	110	24,086	65	110
CPI	95.8	95.6	85.1	96.5	93.9	85.8	95.8	95.7	86.6	95.4	93.6
Median SGP	62.5	65.0	52.0	49.5	59.0	50.0	54.0	53.5	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.



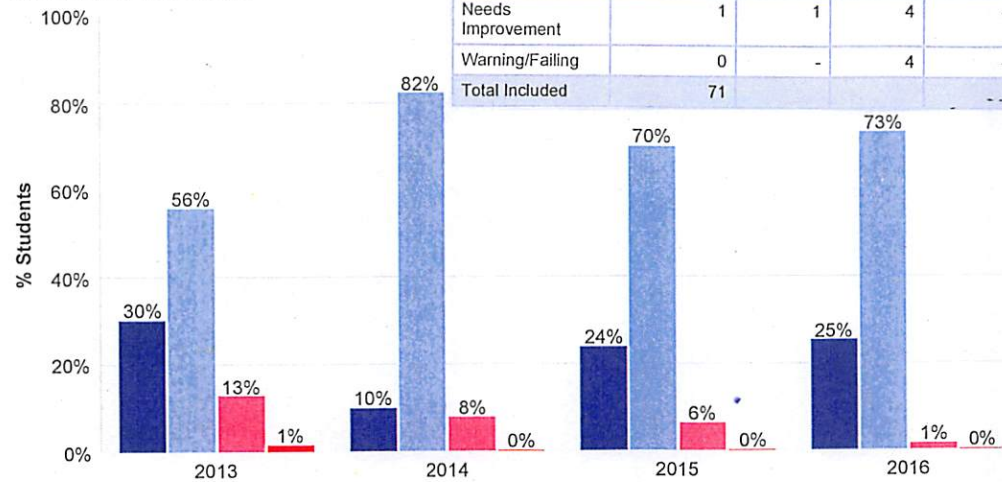
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	33%	30%	25%	50%	38%	29%	38%	32%	30%	34%	24%
Proficient	43%	39%	35%	27%	28%	31%	45%	35%	32%	42%	39%
Needs Improvement	22%	25%	24%	20%	23%	25%	17%	25%	24%	18%	28%
Warning/Failing	2%	5%	15%	3%	10%	15%	0%	7%	14%	6%	9%
N Students	54	92	71,642	64	128	69,851	65	108	24,058	65	113
CPI	89.8	85.9	80.3	89.5	83.8	80.2	92.7	86.1	81.5	89.2	84.3
Median SGP	42.0	41.0	50.0	45.0	42.0	50.0	35.0	33.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
English Language Arts

District: Lincoln
School: Lincoln School
Grade: 07

Student Group: All Students



MCAS Achievement Level
 ■ Advanced
 ■ Proficient
 ■ Needs Improvement
 ■ Warning/Failing

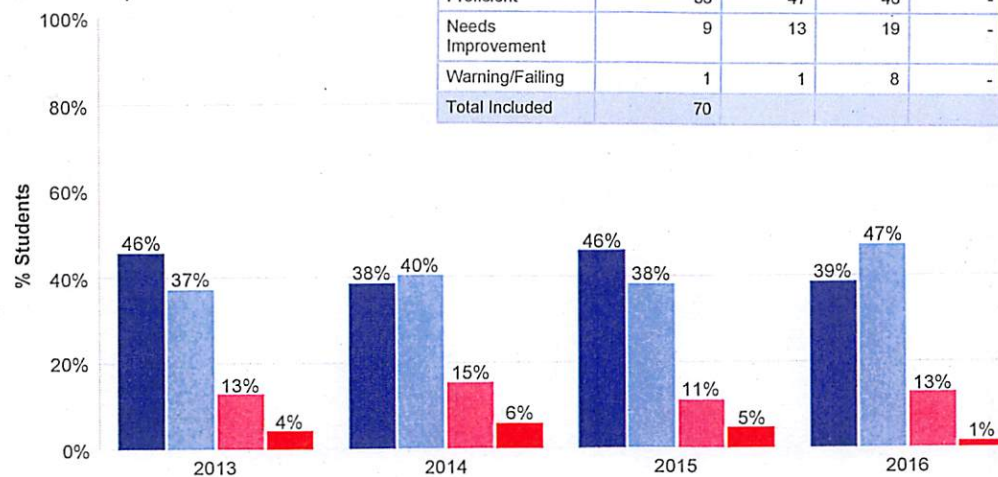
	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	30%	18%	12%	10%	18%	11%	24%	16%	9%	25%	25%
Proficient	56%	61%	59%	82%	67%	61%	70%	70%	60%	73%	67%
Needs Improvement	13%	18%	22%	8%	13%	21%	6%	12%	23%	1%	4%
Warning/Failing	1%	3%	7%	0%	2%	7%	0%	3%	8%	0%	4%
N Students	70	119	71,699	51	93	70,612	63	103	24,816	71	118
CPI	95.4	92.6	88.4	97.5	94.4	88.3	98.0	94.2	87.0	99.6	96.2
Median SGP	57.0	52.0	48.0	46.0	49.0	50.0	61.0	53.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
 NOTE: Achievement level percentages are not calculated for student groups of less than 10.

School Achievement Distribution by Year
Mathematics

District: Lincoln
School: Lincoln School
Grade: 07

Student Group: All Students

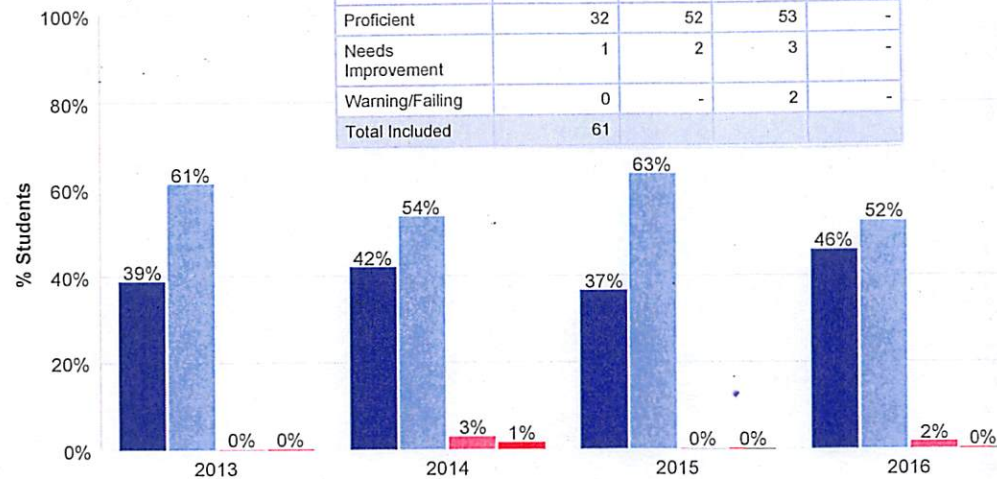


MCAS Achievement Level
 ■ Advanced
 ■ Proficient
 ■ Needs Improvement
 ■ Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	46%	33%	19%	38%	26%	17%	46%	35%	20%	39%	27%
Proficient	37%	33%	33%	40%	35%	33%	38%	38%	30%	47%	46%
Needs Improvement	13%	24%	27%	15%	27%	26%	11%	17%	26%	13%	19%
Warning/Failing	4%	11%	21%	6%	12%	24%	5%	10%	23%	1%	8%
N Students	70	119	72,021	52	95	70,978	63	102	24,863	70	118
CPI	91.8	82.1	74.4	90.9	80.3	72.5	92.5	86.0	73.0	95.0	87.7
Median SGP	75.0	64.0	46.0	71.5	60.0	50.0	77.0	71.5	51.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
 NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



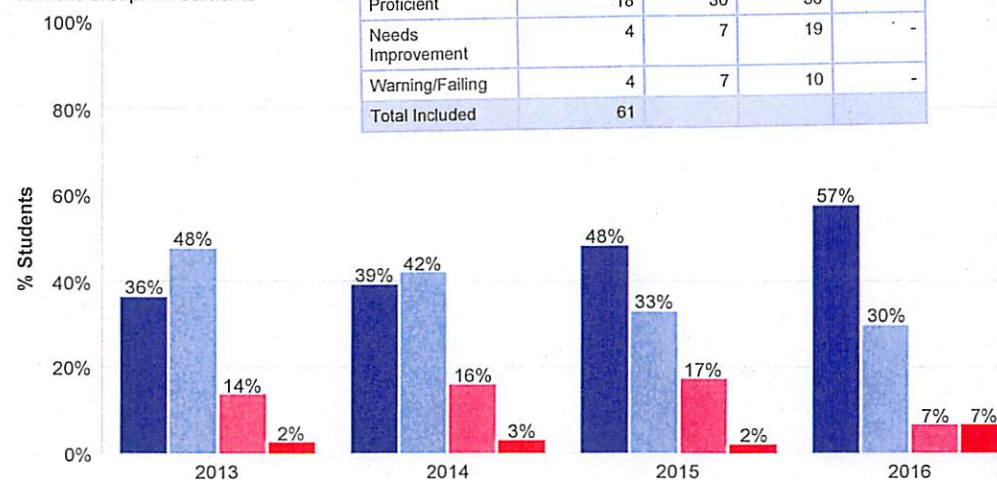
MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	39%	31%	20%	42%	31%	14%	37%	40%	26%	46%	42%
Proficient	61%	62%	58%	54%	63%	65%	63%	56%	54%	52%	53%
Needs Improvement	0%	7%	15%	3%	6%	14%	0%	1%	14%	2%	3%
Warning/Failing	0%	1%	7%	1%	1%	8%	0%	3%	6%	0%	2%
N Students	80	121	72,194	69	121	70,999	52	101	24,627	61	102
CPI	100.0	97.3	90.1	98.2	97.7	90.2	100.0	97.5	91.4	99.2	97.5
Median SGP	70.0	67.5	50.0	68.0	67.5	50.0	69.0	63.5	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Student Group: All Students



MCAS Achievement Level

- Advanced
- Proficient
- Needs Improvement
- Warning/Failing

	2013			2014			2015			2016	
	School	District	State	School	District	State	School	District	State	School	District
Advanced	36%	27%	22%	39%	34%	19%	48%	34%	29%	57%	42%
Proficient	48%	40%	32%	42%	33%	33%	33%	29%	31%	30%	30%
Needs Improvement	14%	20%	25%	16%	23%	29%	17%	29%	23%	7%	19%
Warning/Failing	2%	12%	20%	3%	10%	19%	2%	7%	17%	7%	10%
N Students	80	121	72,196	69	124	71,296	52	102	24,594	61	101
CPI	93.8	83.5	76.0	91.7	83.5	74.7	92.8	83.8	78.7	93.4	84.9
Median SGP	59.0	54.5	50.0	56.0	61.0	50.0	58.0	55.0	50.0		

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.
NOTE: Achievement level percentages are not calculated for student groups of less than 10.

Appendix C

MCAS Results

2012-2016 Cohort Comparisons at Lincoln School in
ELA, Math, and Science/Engineering

Appendix C

5-Year MCAS Cohort Comparison Lincoln School, 2012-2016

ELA	% Advanced					% Proficient					% Needs Improvement					% Warning				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Gr. 3	23	36	22	18	20	58	49	60	59	57	17	13	16	22	21	1	1	2	1	1
Gr. 4	13	17	16	10	13	72	57	51	61	67	15	25	27	28	19	0	2	6	1	0
Gr. 5	25	37	33	35	21	67	50	48	54	62	5	12	18	11	12	3	1	2	0	4
Gr. 6	32	28	25	19	46	58	58	64	72	42	6	14	9	6	10	3	0	2	4	1
Gr. 7	25	24	10	30	22	73	70	82	56	66	1	6	8	13	10	0	0	0	1	1
Gr. 8	46	37	42	39	43	52	63	54	61	52	2	0	3	0	5	0	0	1	0	0

MATH	% Advanced					% Proficient					% Needs Improvement					% Warning				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Gr. 3	75	67	71	50	53	16	25	21	43	30	6	7	5	7	16	3	0	3	0	1
Gr. 4	24	27	37	32	33	55	35	34	33	43	19	35	26	33	24	1	3	3	1	0
Gr. 5	39	49	43	59	48	43	35	46	24	30	16	13	10	17	16	2	3	2	0	5
Gr. 6	34	38	50	33	39	42	45	27	43	39	18	17	20	22	14	6	0	3	2	7
Gr. 7	39	46	38	46	31	47	38	40	37	44	13	11	15	13	24	1	5	6	4	1
Gr. 8	57	48	39	36	55	30	33	42	48	25	7	17	16	14	16	7	2	3	2	4

SCI.	% Advanced					% Proficient					% Needs Improvement					% Warning				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Gr. 5	23	25	39	52	34	56	51	39	29	45	20	24	21	19	20	2	0	0	0	2
State	16	16	20	20	22	31	35	33	31	30	38	37	34	36	34	14	13	13	12	14
Gr. 8	26	4	23	9	21	52	67	51	61	57	20	27	21	28	12	2	2	4	2	9
State	6	3	4	4	5	35	39	38	35	38	40	40	41	43	38	19	18	18	18	20

Appendix D

MCAS Results

2016 Comparison of Gr. 8 Performance to Surrounding Communities:
Proficient + Advanced and SGP
for Lincoln School, Hanscom Middle School,
Lincoln Public Schools, and Lexington Public Schools

Appendix D

MCAS, Spring 2016: Comparison to Other Communities

Please note that two different cohorts of eighth grade students are represented by the 2015 and 2016 statistics below. Districts without scores for 2016 are those that participated in PARCC.

GR. 8 ACHIEVEMENT		Percentage of students at Proficient or Advanced			
		ELA % P + A		Math % P + A	
		2016	2015	2016	2015
Bedford		--	--	--	--
Concord		--	--	--	--
Lexington		94	95	88	89
LPS: District		95	96	71	64
LPS: HMS		93	91	49	51
LPS: Lincoln School		98	100	87	81
Sudbury		--	--	--	--
Wayland		--	--	--	--
Weston		--	--	--	--

GR. 8 GROWTH		Median Student Growth Percentile (SGP)*				
		ELA			Math	
		2016 SGP	2016 N students	2015 SGP	2016 SGP	2015 SGP
Bedford		--	--	--	--	--
Concord		--	--	--	--	--
Lexington		58	504	56	50	65
Lincoln Public Schools		73	84	64	45	55
LPS: Hanscom Middle School		74	24	48	25	45
LPS: Lincoln School		74	59	69	62	58
Sudbury		--	--	--	--	--
Wayland		--	--	--	--	--
Weston		--	--	--	--	--

*From MA DESE: *Spring 2016 state-level achievement and growth results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test. Lincoln Public Schools places less emphasis in the analysis of SGP scores for the spring 2016 MCAS, as DESE has tabulated these scores by combining both the MCAS and PARCC student populations and converting the MCAS scores using a concordance table.*

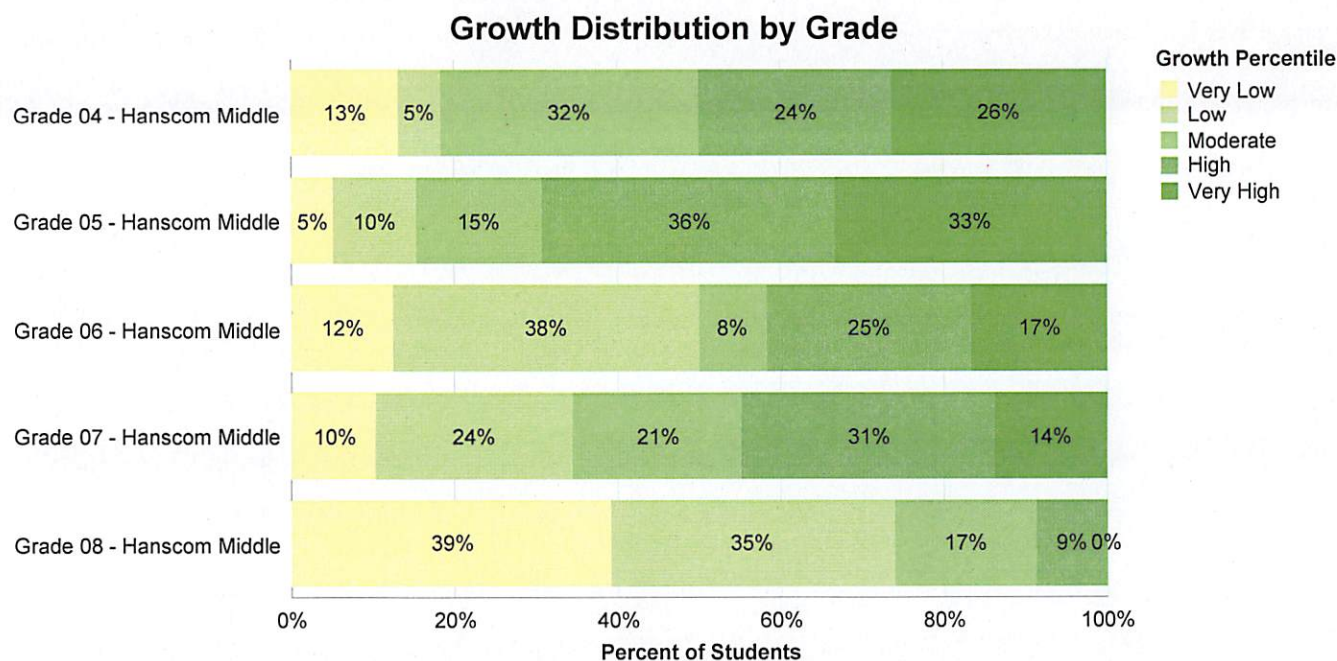
Appendix E

MCAS Results

2016 Student Growth Percentiles (SGP): ELA and Math
by Grade Level 4-8, Hanscom Middle School and Lincoln School

Spring 2016 MCAS School Growth Distribution Mathematics

District: Lincoln
Subject: Mathematics



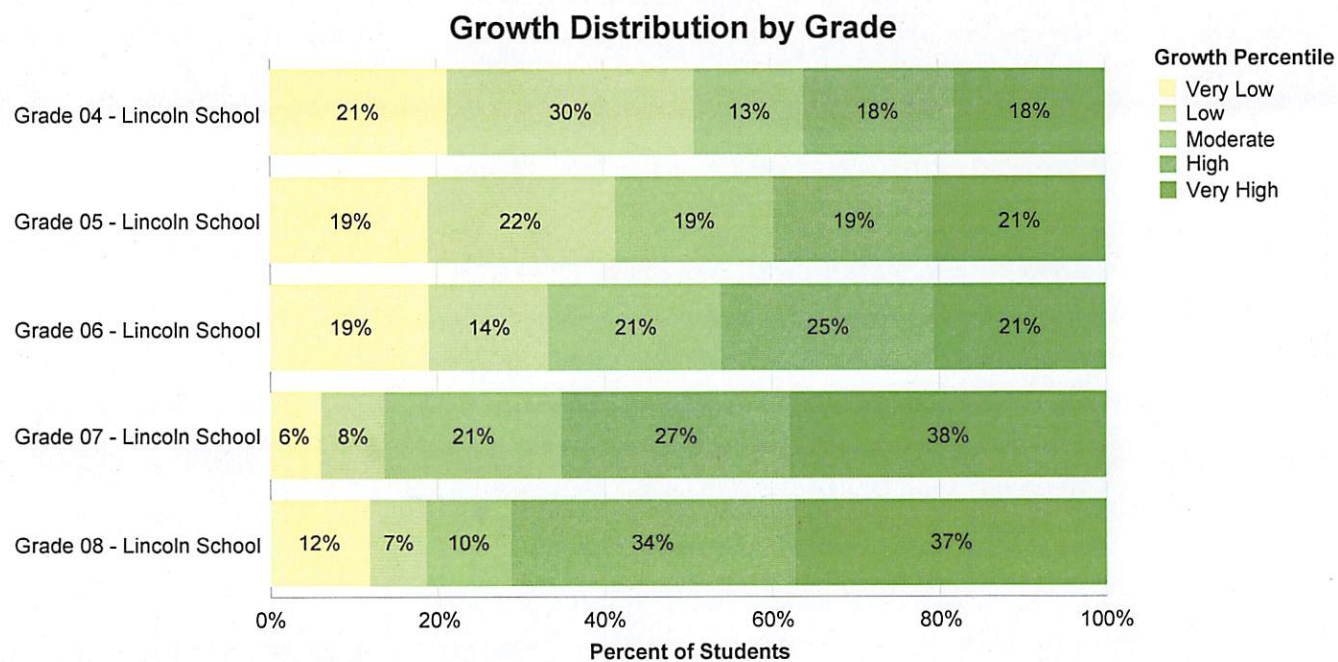
Vertical lines at 20%, 40%, 60%, 80% and 100% represent the Statewide distribution for very low, low, moderate, high and very high growth.

	Very Low	Low	Moderate	High	Very High	Median SGP	N Students (SGP)	% Proficient or Higher	N Students (Ach. Level)
Grade 04 - Hanscom Middle	5	2	12	9	10	60.5	38	29	48
Grade 05 - Hanscom Middle	2	4	6	14	13	72.0	39	69	55
Grade 06 - Hanscom Middle	3	9	2	6	4	39.0	24	58	36
Grade 07 - Hanscom Middle	3	7	6	9	4	56.0	29	55	42
Grade 08 - Hanscom Middle	9	8	4	2	0	25.0	23	49	39

Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

Spring 2016 MCAS School Growth Distribution English Language Arts

District: Lincoln
Subject: English Language Arts



Vertical lines at 20%, 40%, 60%, 80% and 100% represent the Statewide distribution for very low, low, moderate, high and very high growth.

	Very Low	Low	Moderate	High	Very High	Median SGP	N Students (SGP)	% Proficient or Higher	N Students (Ach. Level)
Grade 04 - Lincoln School	13	18	8	11	11	40.0	61	85	67
Grade 05 - Lincoln School	11	13	11	11	12	51.0	58	92	61
Grade 06 - Lincoln School	12	9	13	16	13	58.0	63	91	65
Grade 07 - Lincoln School	4	5	14	18	25	70.5	66	99	71
Grade 08 - Lincoln School	7	4	6	20	22	74.0	59	98	61

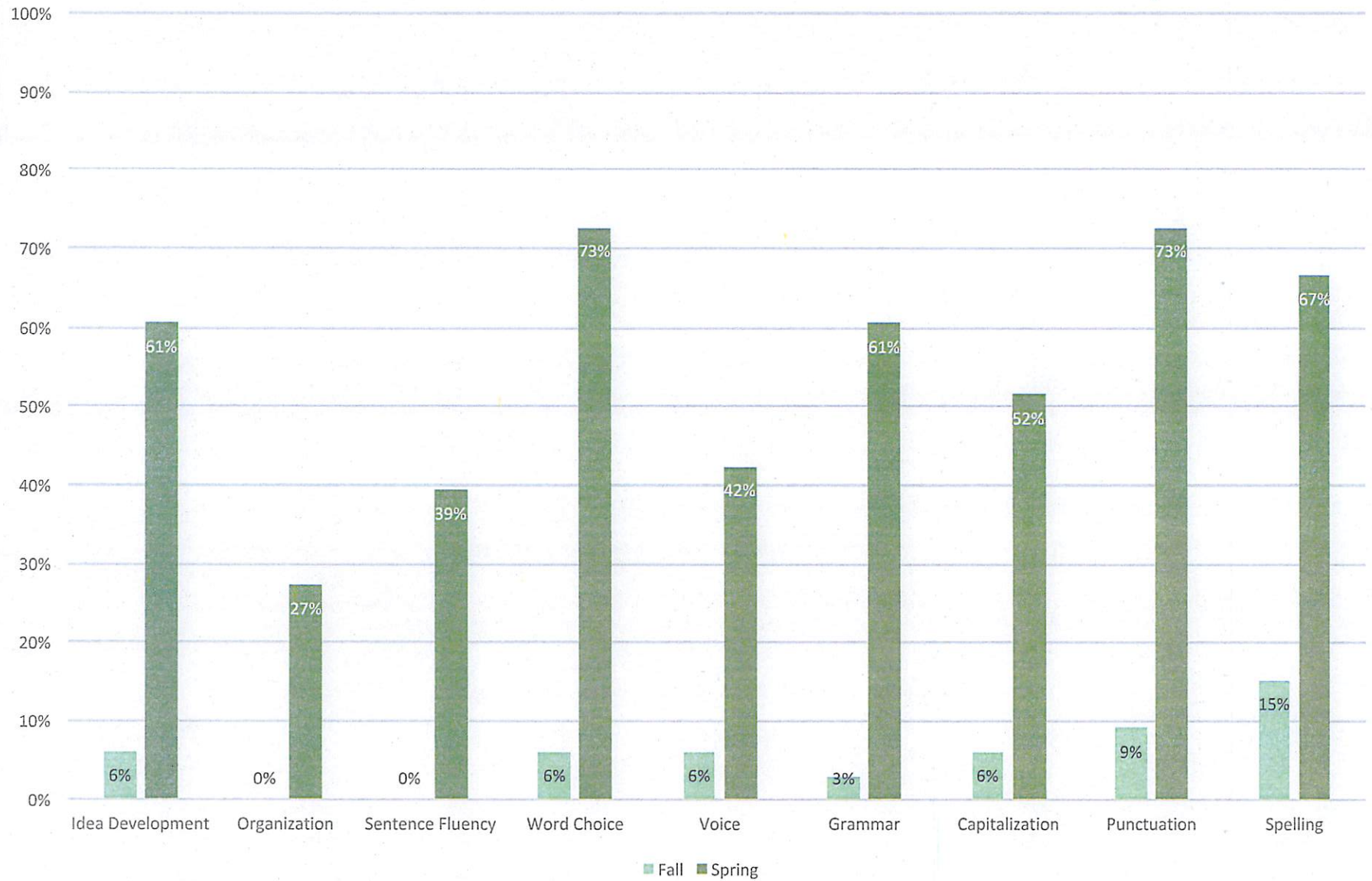
Spring 2016 state-level results in grades 3-8 ELA and Mathematics are not reported because most students in Massachusetts participated in the PARCC test.

Appendix F

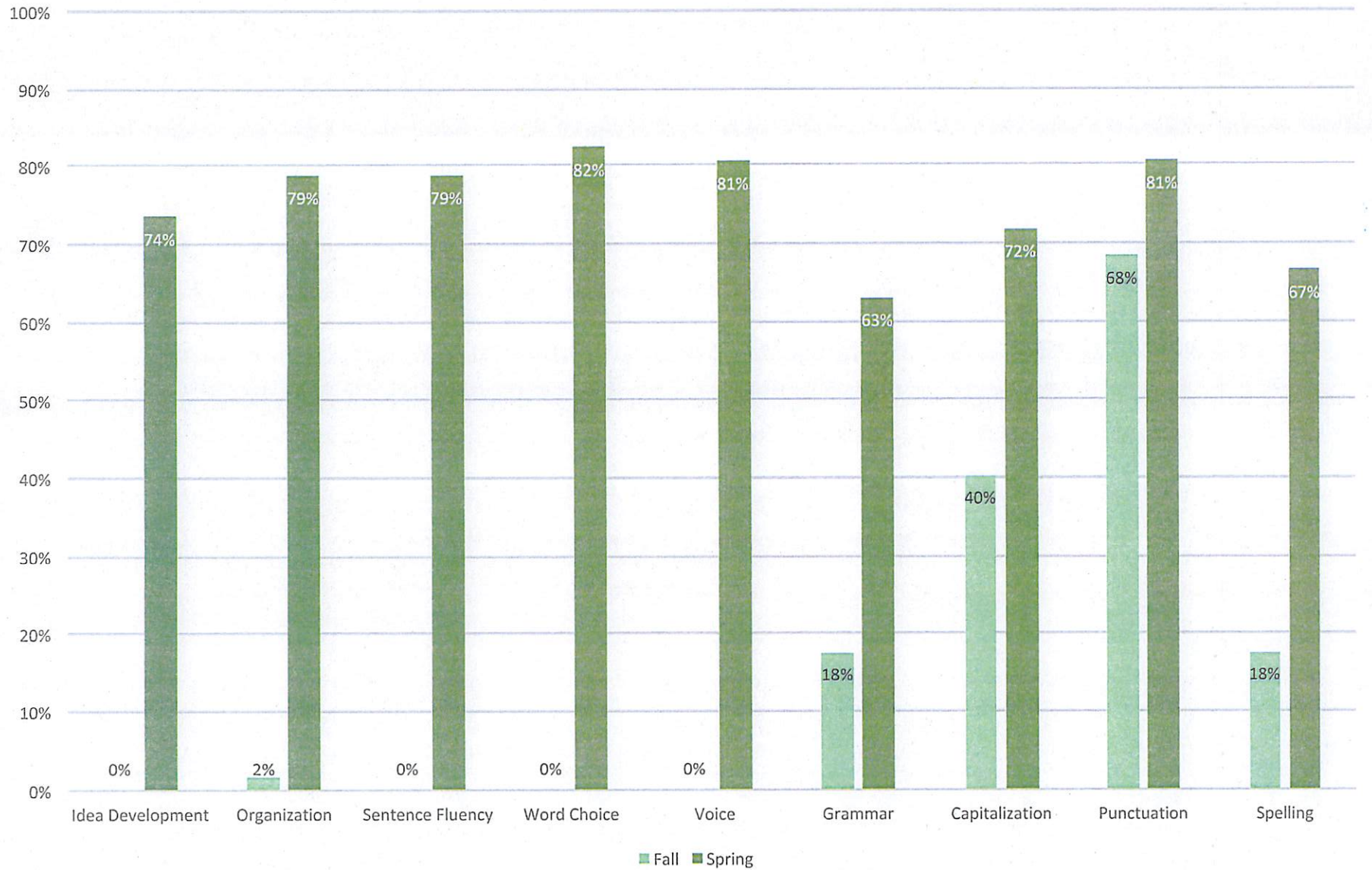
Common Writing Assessment

2015-16 Grades 1-8 by school;
depicted as percentage of students meeting end-of-year benchmark

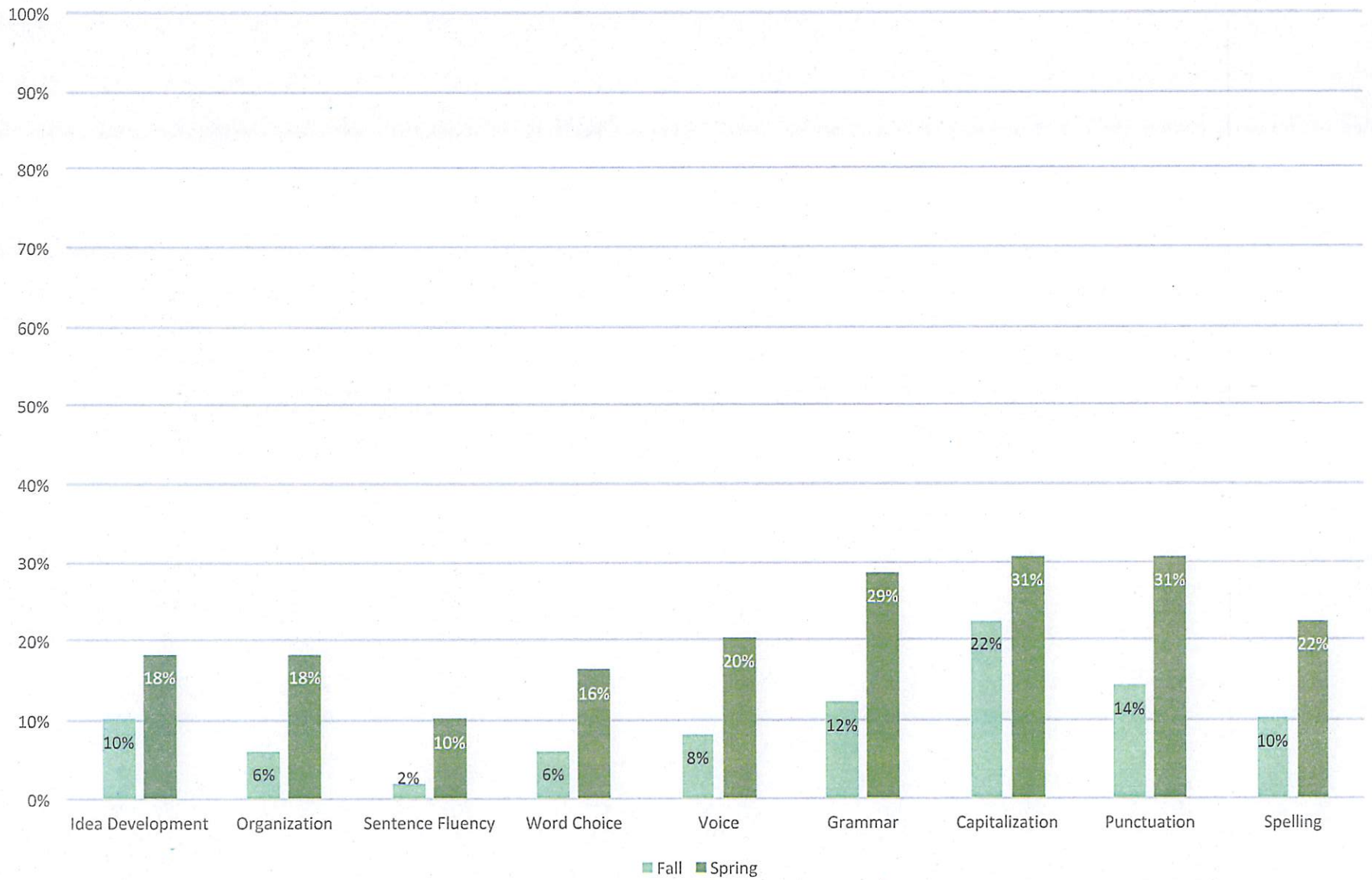
2015-2016 Hanscom Grade 1 Writing Assessment
% of Assessed Students Meeting Benchmark



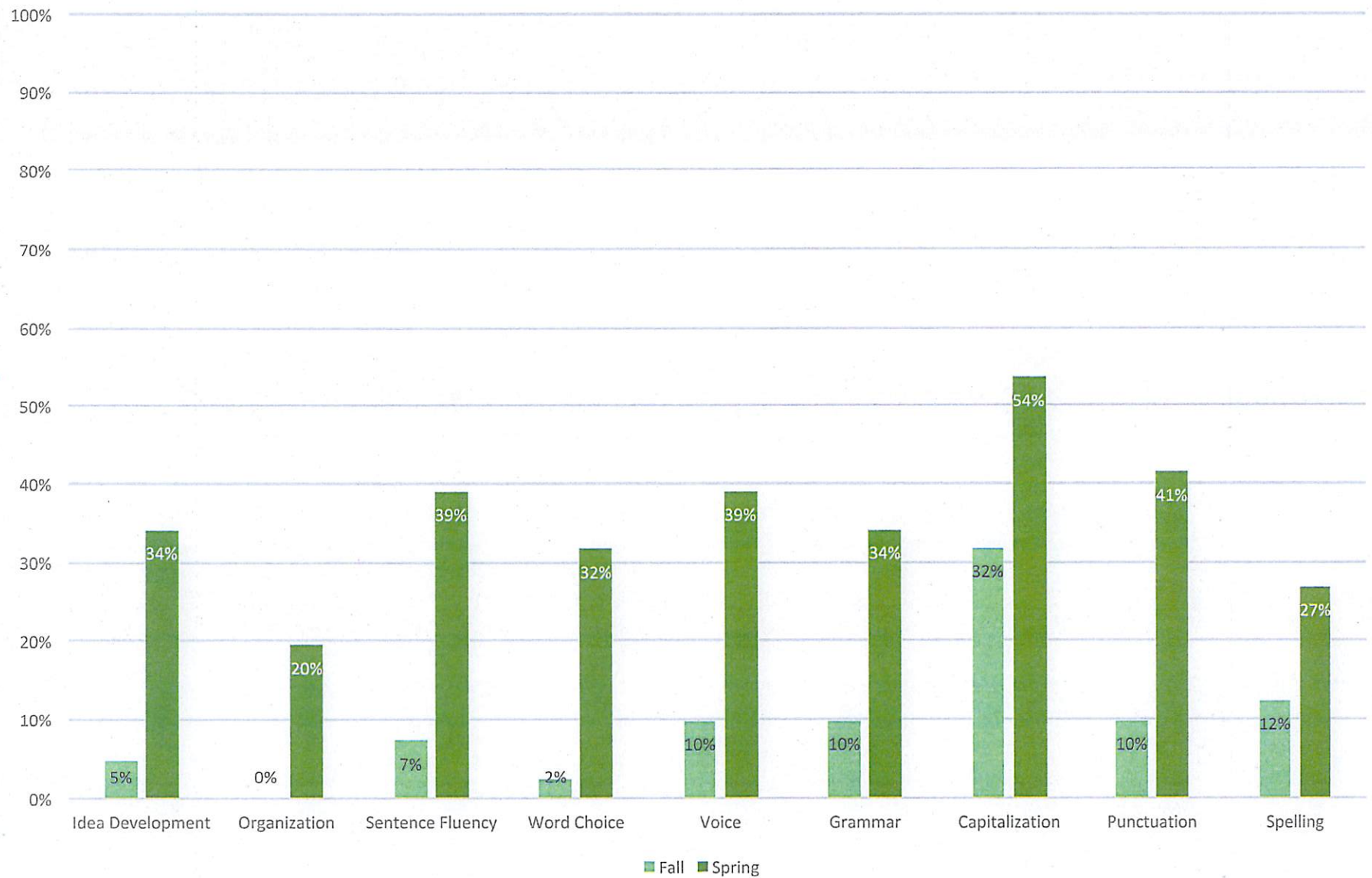
2015-2016 Hanscom Grade 2 Writing Assessment
% of Assessed Students Meeting Benchmark



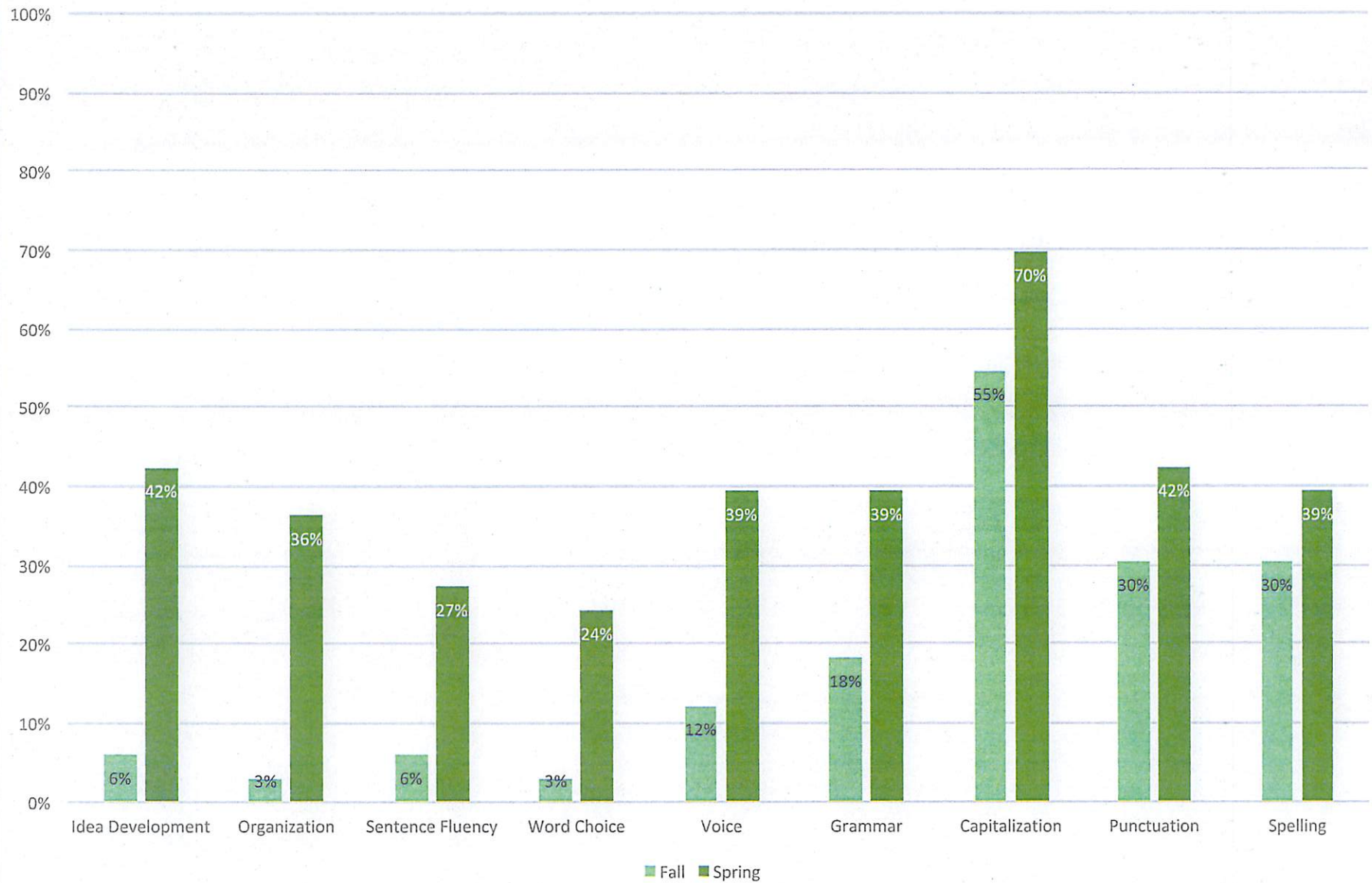
2015-2016 Hanscom Grade 3 Writing Assessment
% of Assessed Students Meeting Benchmark



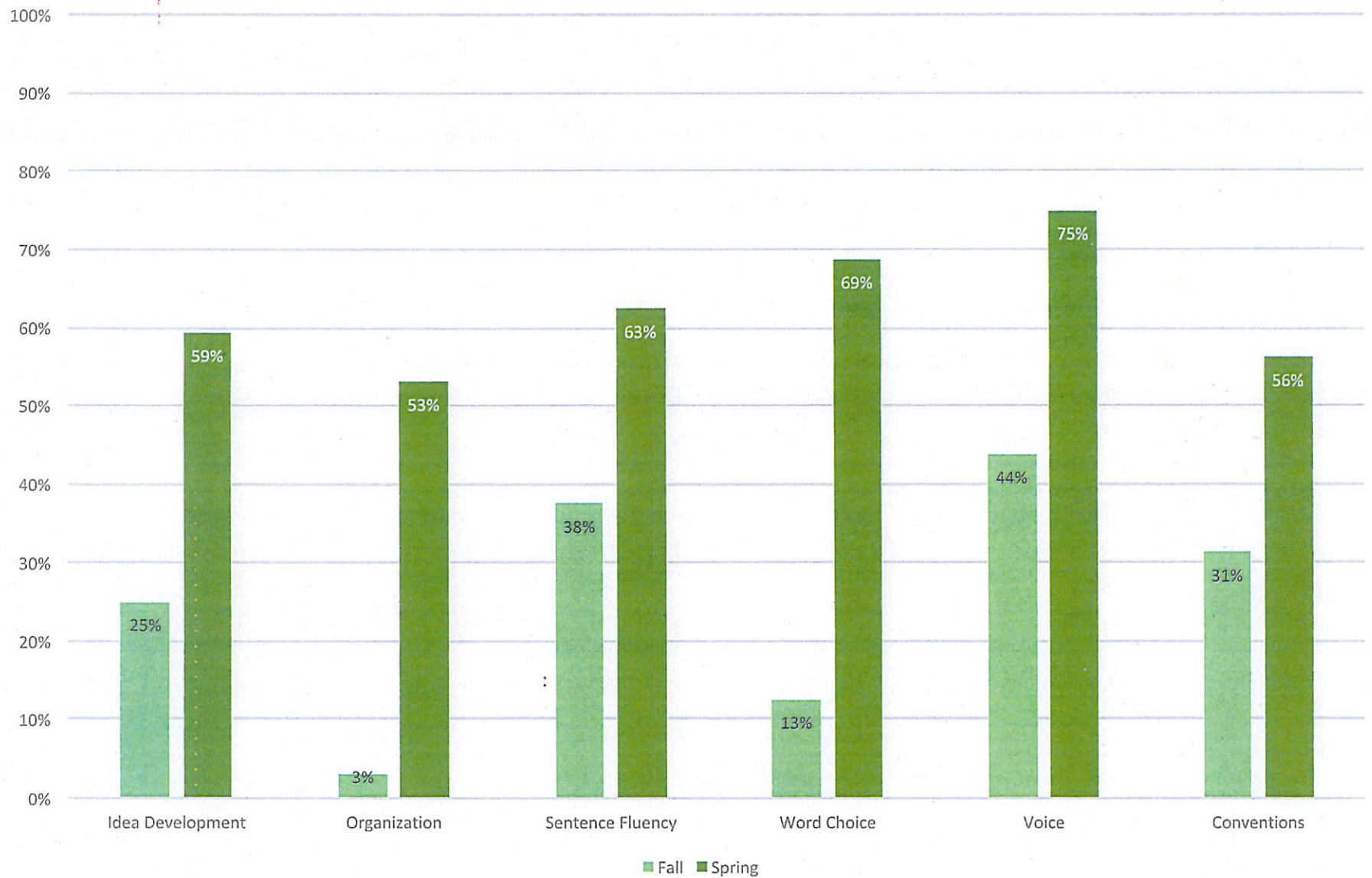
2015-2016 Hanscom Grade 4 Writing Assessment
% of Assessed Students Meeting Benchmark



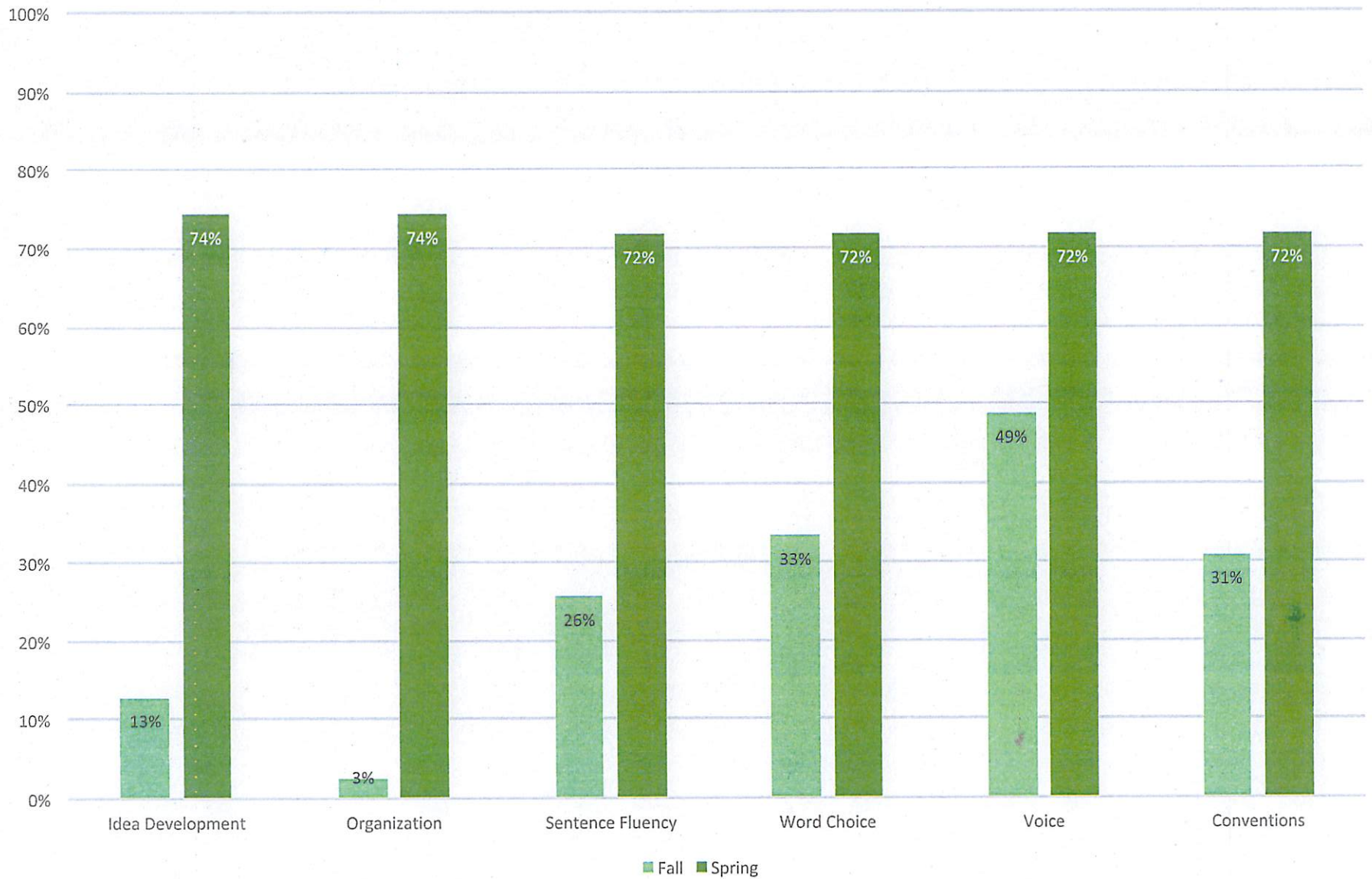
2015-2016 Hanscom Grade 5 Writing Assessment
% of Assessed Students Meeting Benchmark



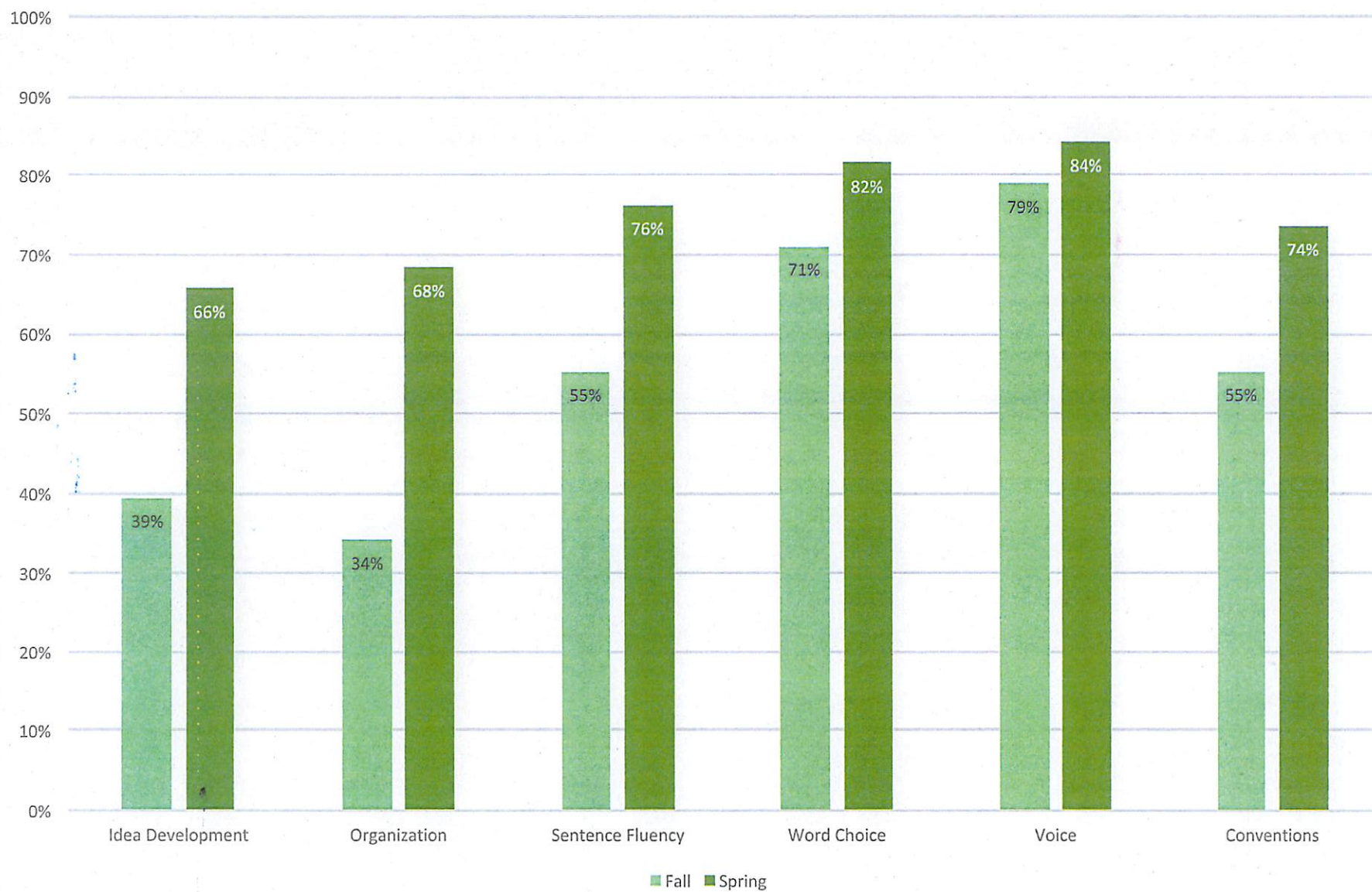
2015-2016 Hanscom Grade 6 Writing Assessment
% of Assessed Students Meeting Benchmark



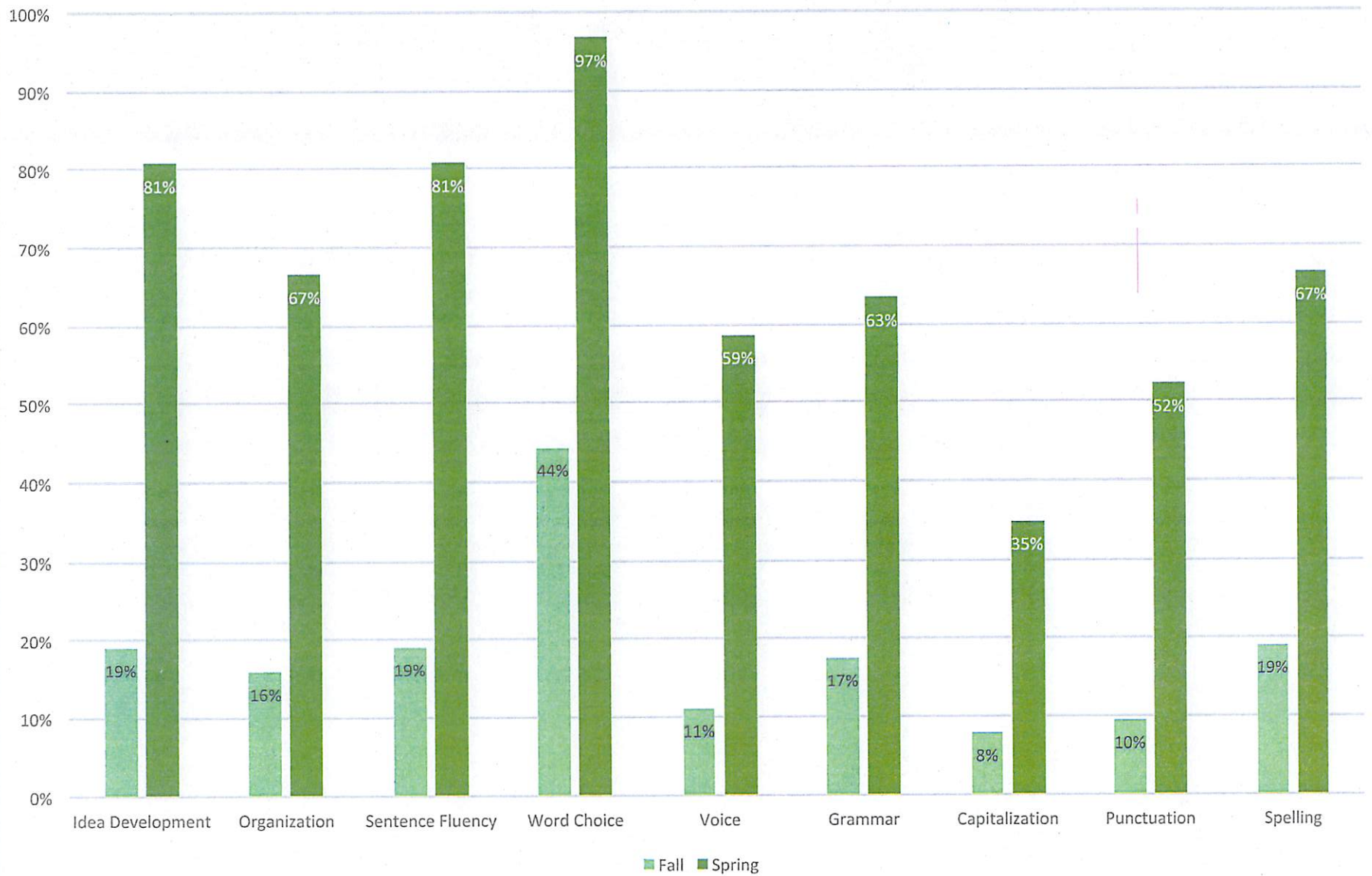
2015-2016 Hanscom Grade 7 Writing Assessment
% of Assessed Students Meeting Benchmark



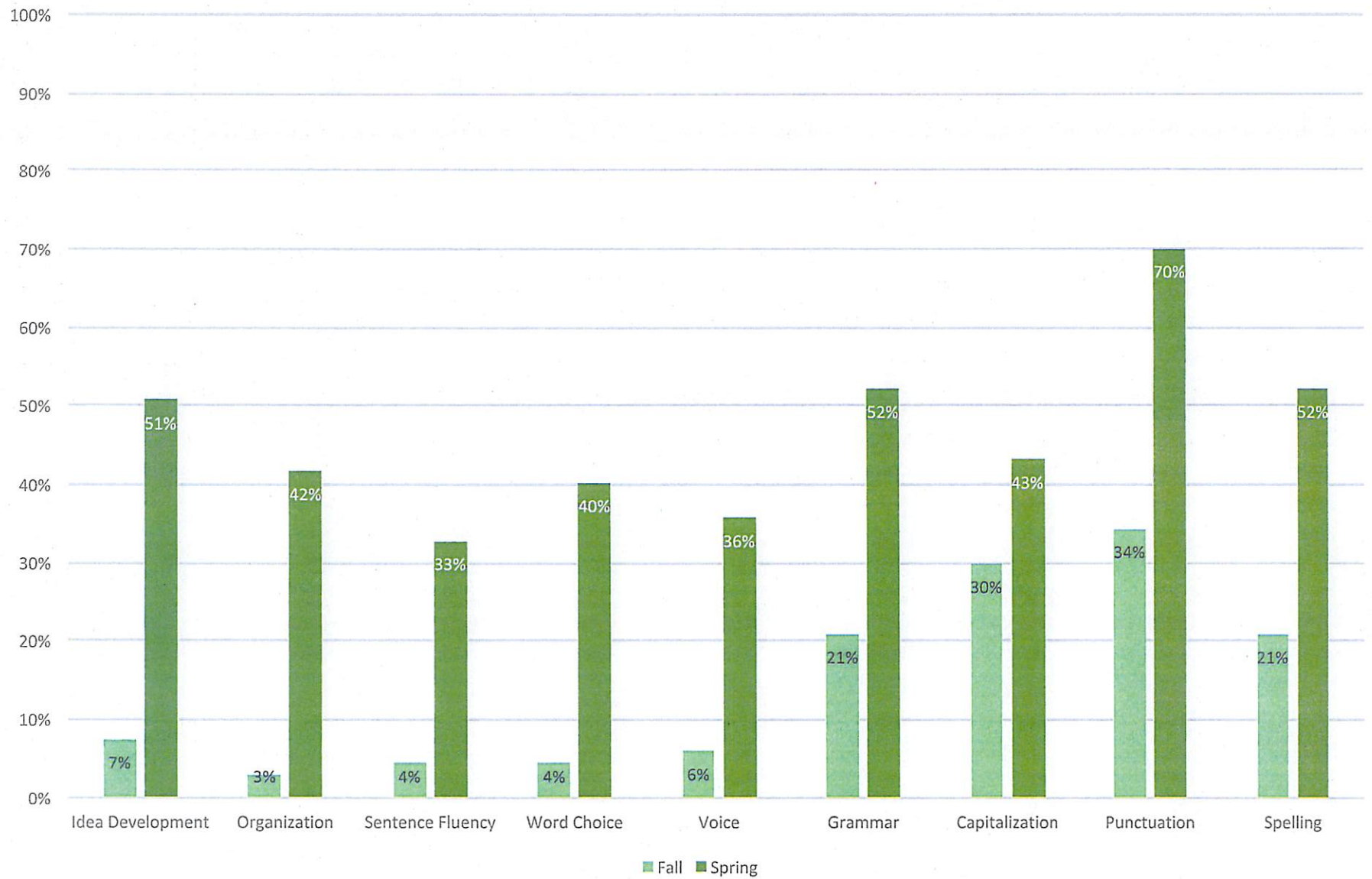
2015-2016 Hanscom Grade 8 Writing Assessment
% of Assessed Students Meeting Benchmark



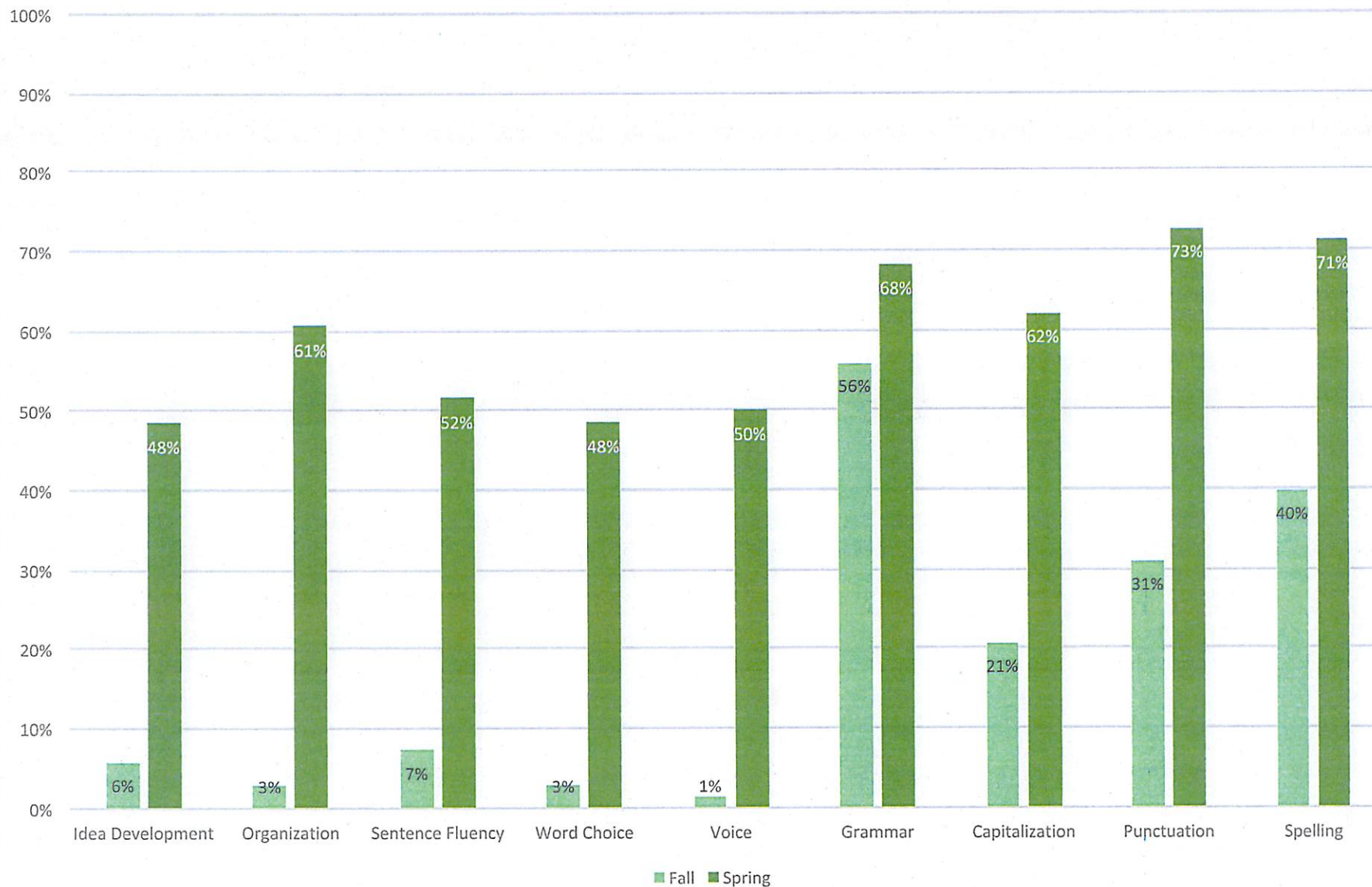
2015-2016 Lincoln Grade 1 Writing Assessment
% of Assessed Students Meeting Benchmark



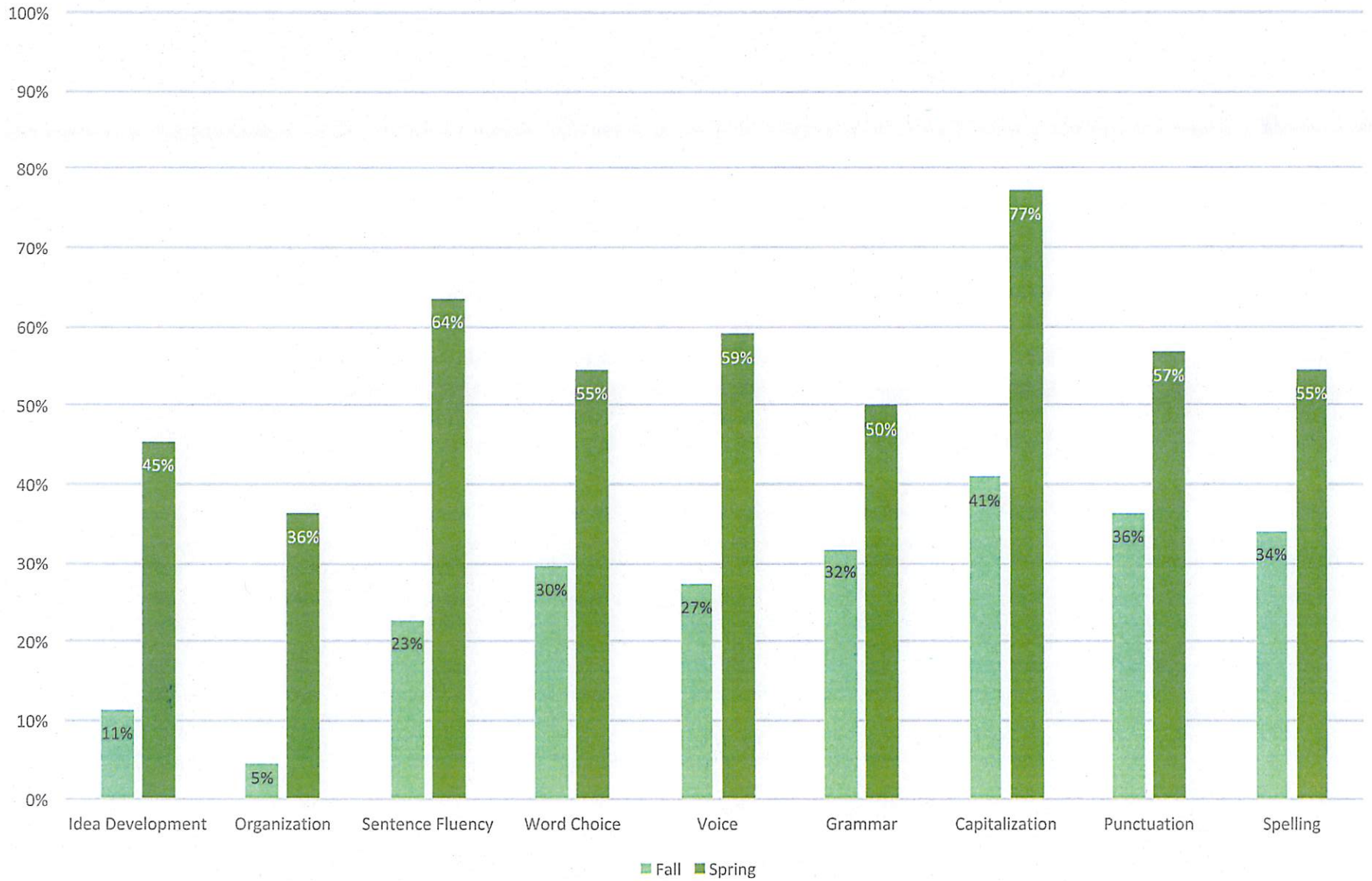
2015-2016 Lincoln Grade 2 Writing Assessment
% of Assessed Students Meeting Benchmark



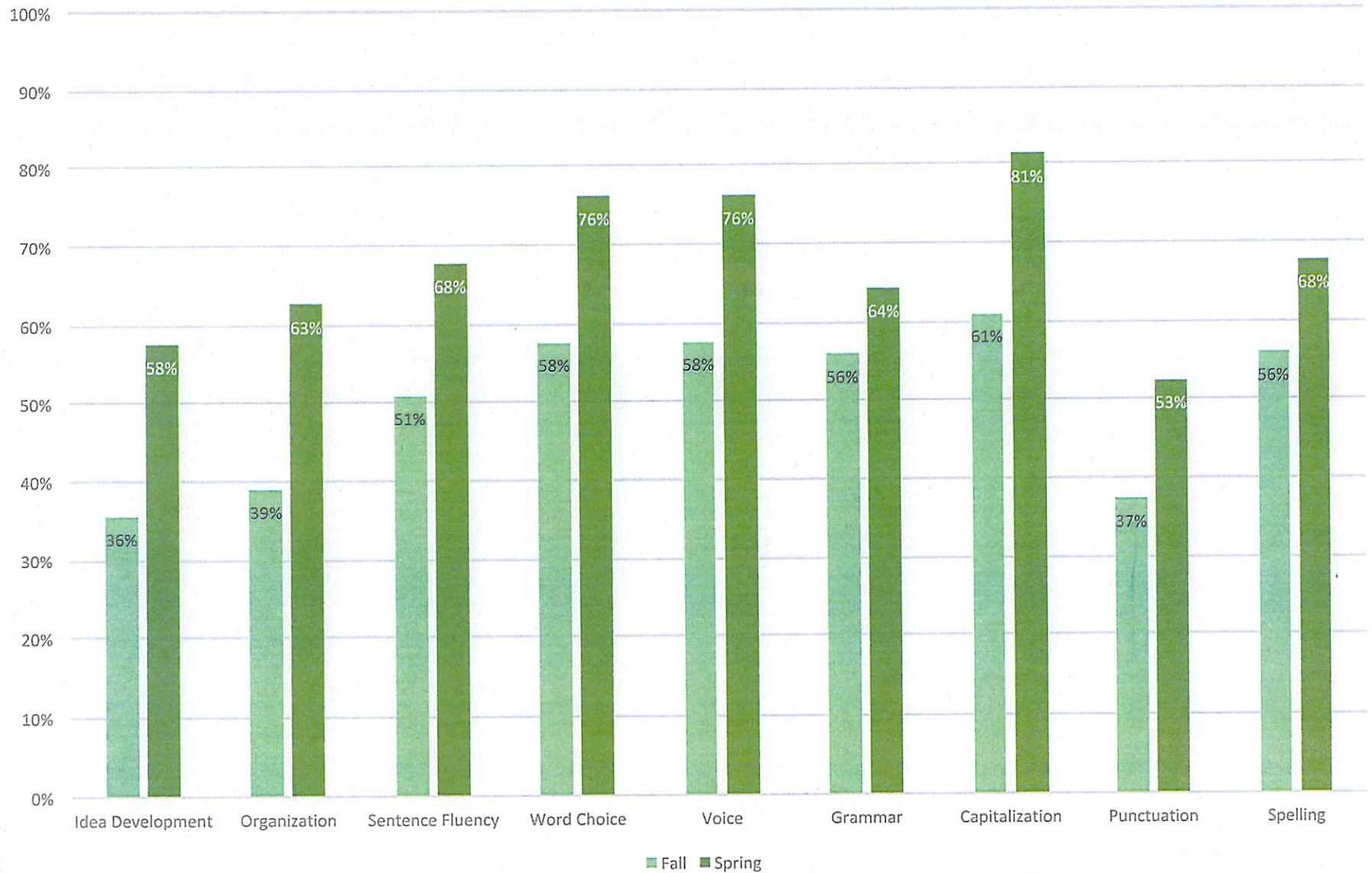
2015-2016 Lincoln Grade 3 Writing Assessment
% of Assessed Students Meeting Benchmark



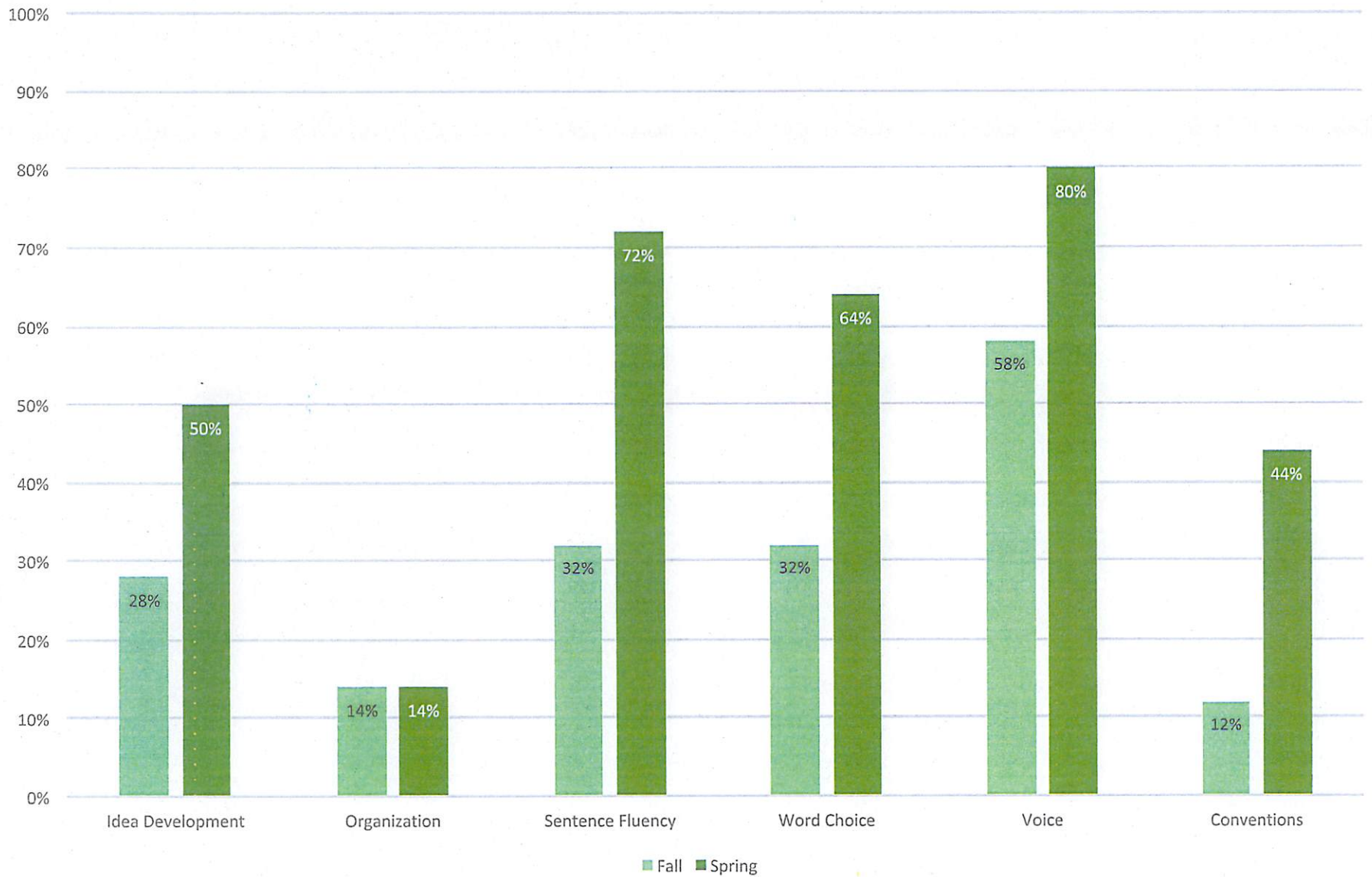
2015-2016 Lincoln Grade 4 Writing Assessment
% of Assessed Students Meeting Benchmark



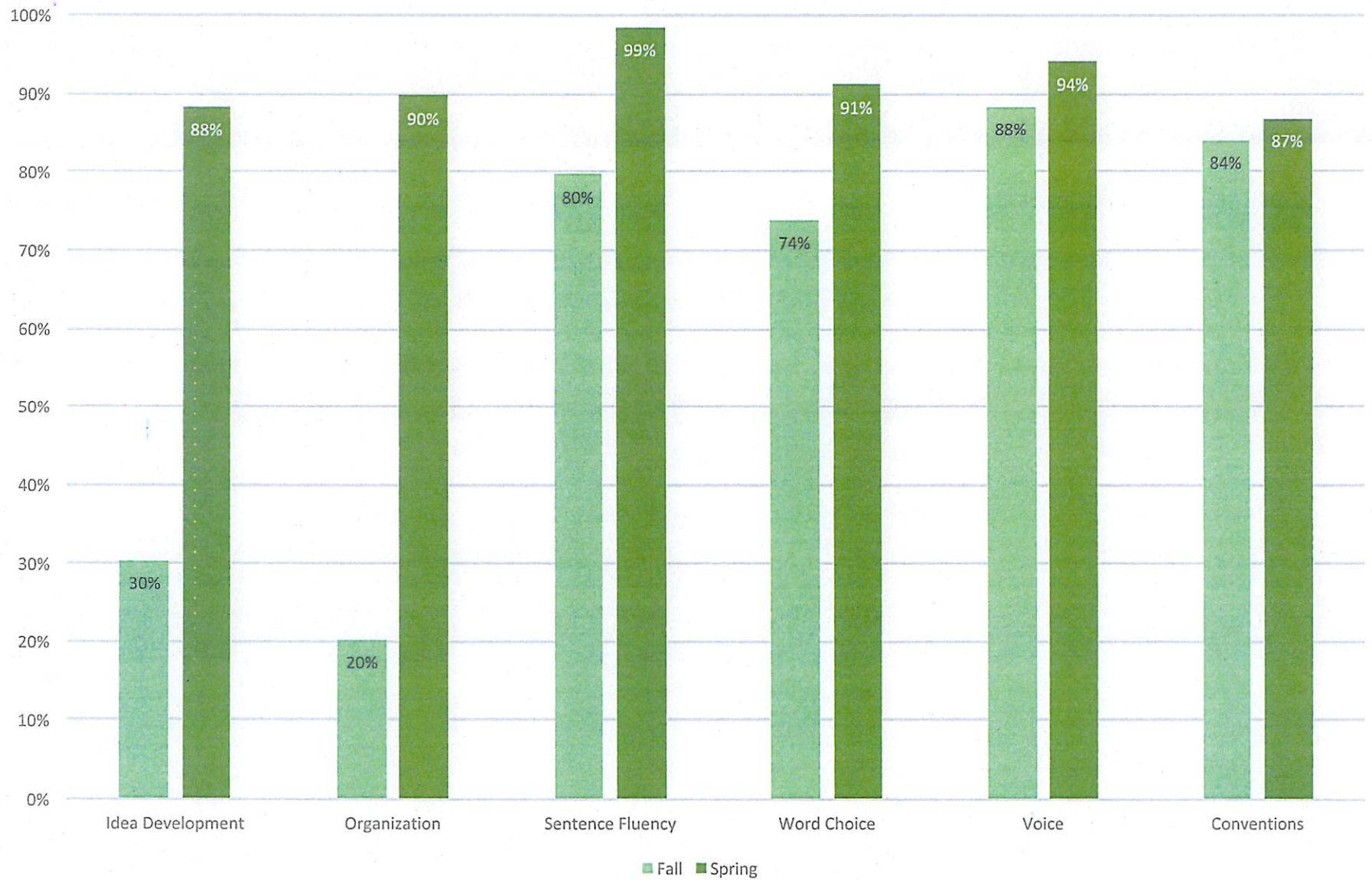
2015-2016 Lincoln Grade 5 Writing Assessment
% of Assessed Students Meeting Benchmark



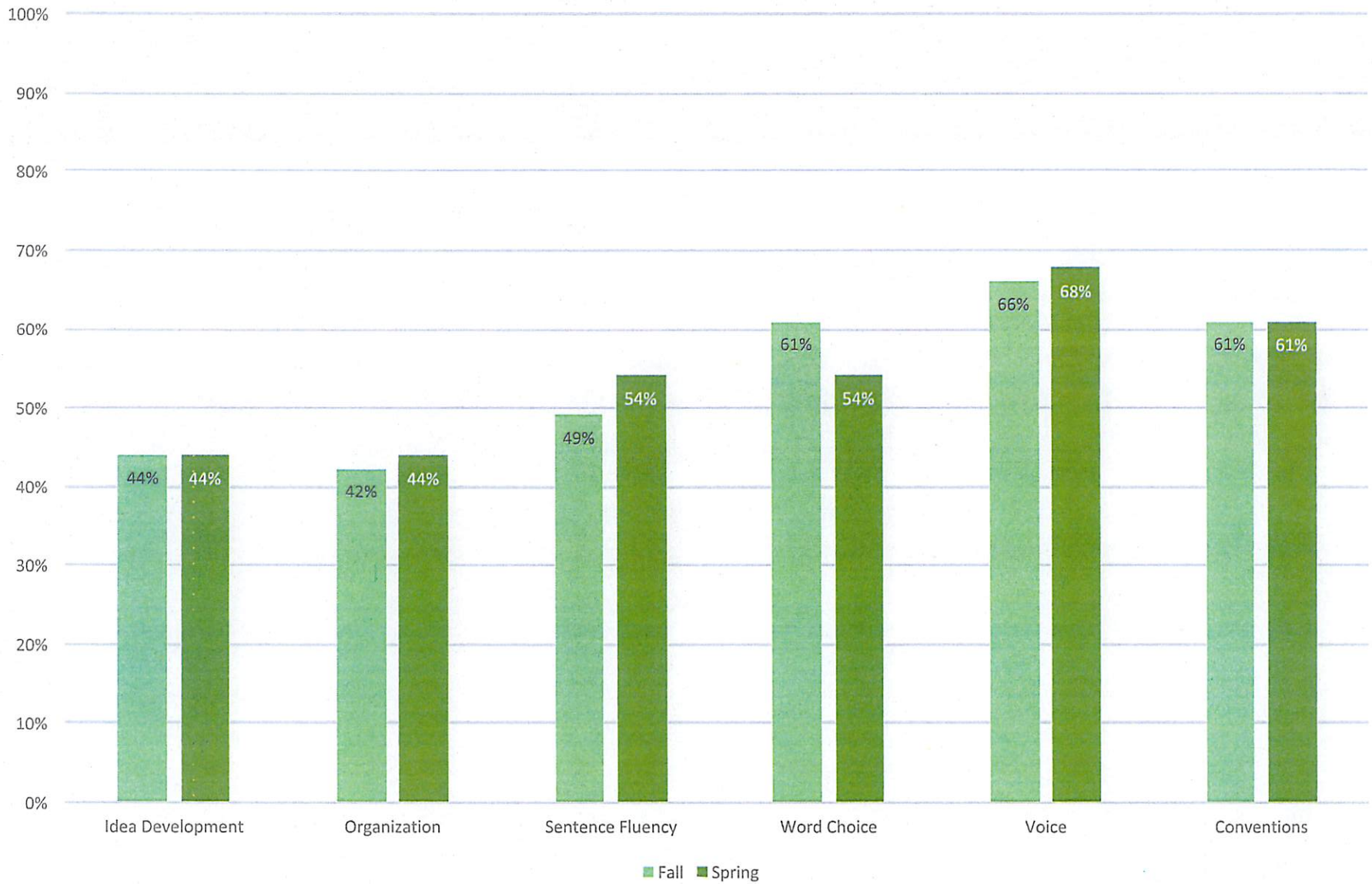
2015-2016 Lincoln Grade 6 Writing Assessment
% of Assessed Students Meeting Benchmark



2015-2016 Lincoln Grade 7 Writing Assessment
% of Assessed Students Meeting Benchmark



2015-2016 Lincoln Grade 8 Writing Assessment
% of Assessed Students Meeting Benchmark

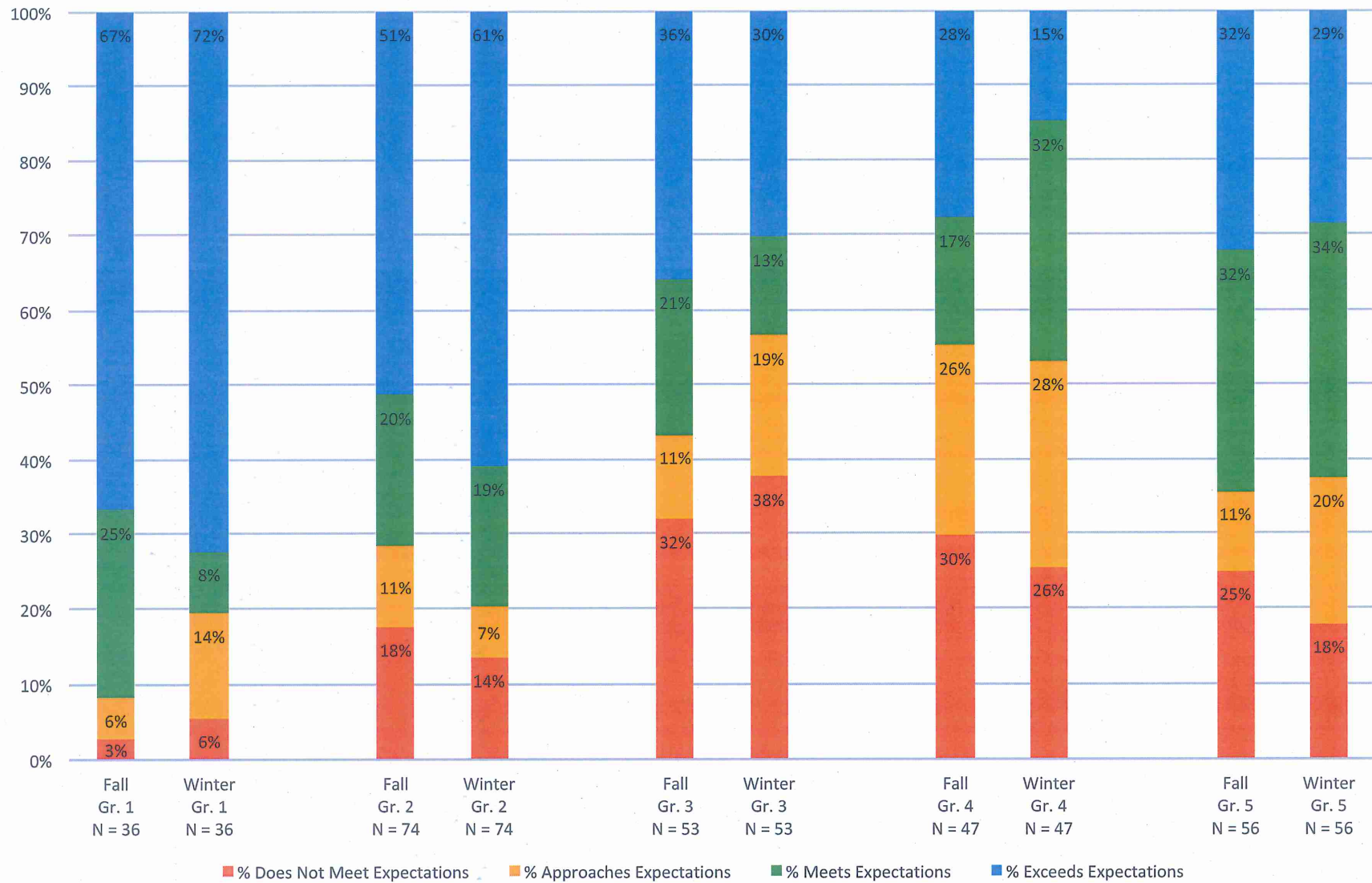


Appendix G

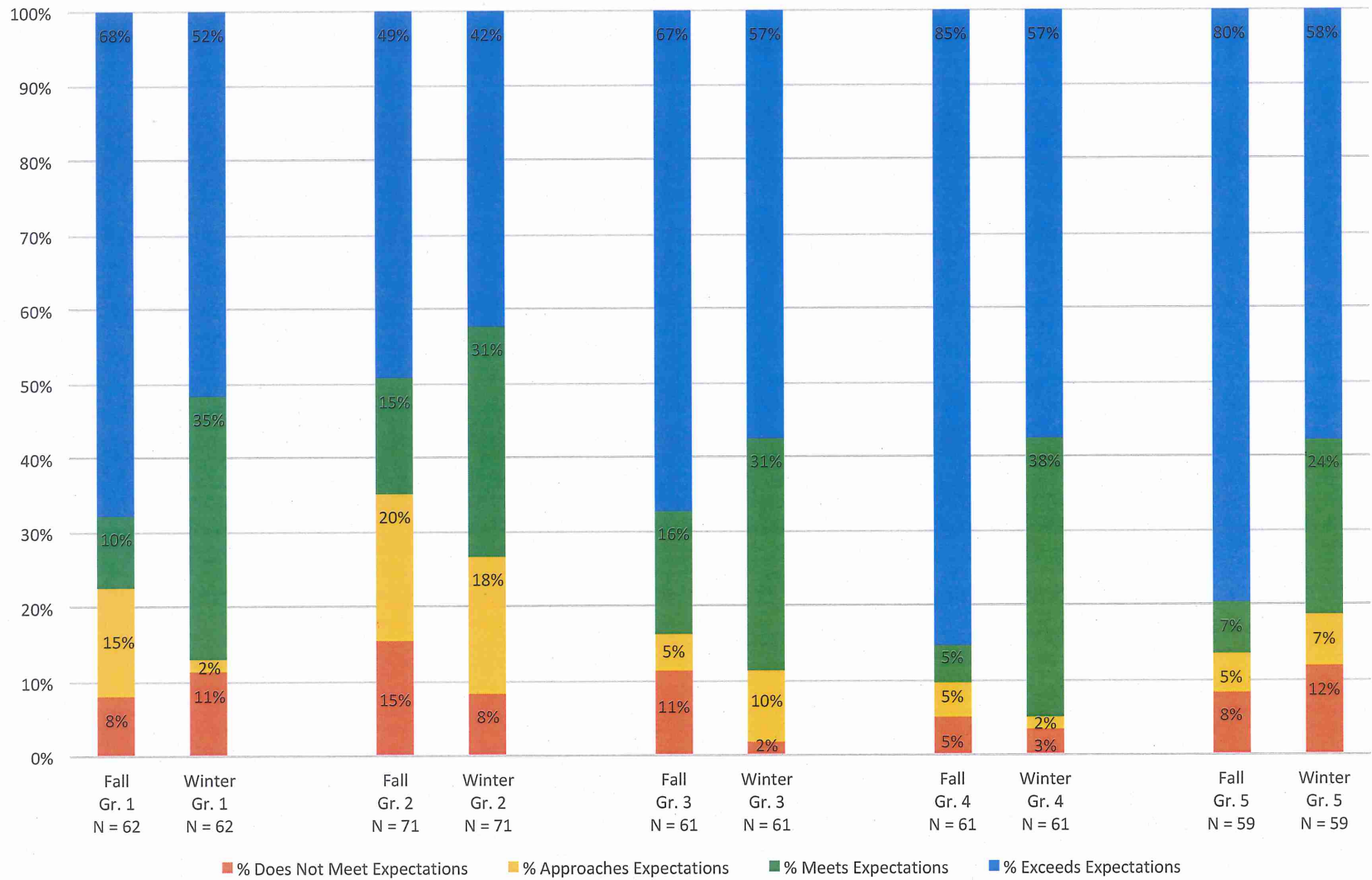
Fountas & Pinnell Reading Assessment

2015-16 Grades 1-8 by school;
depicted as percentage of students exceeding, meeting,
approaching, and not meeting expectations
for time-dependent benchmarks

School Year 15-16 Fountas and Pinnell Hanscom Primary and Middle Schools Grades 1-5



School Year 15-16 Fountas and Pinnell Lincoln School Grades 1-5



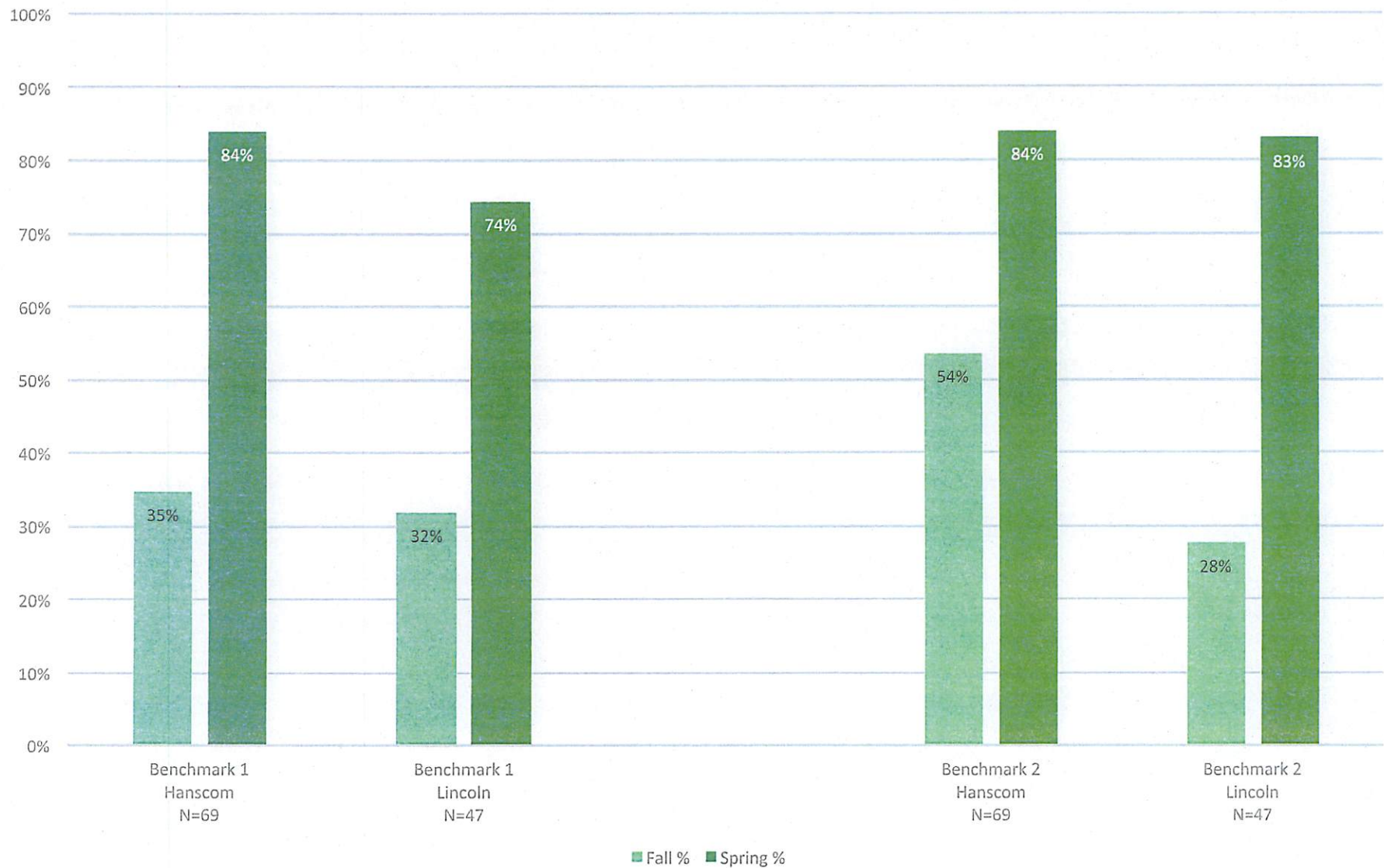
Appendix H

Student Interview Model, Math

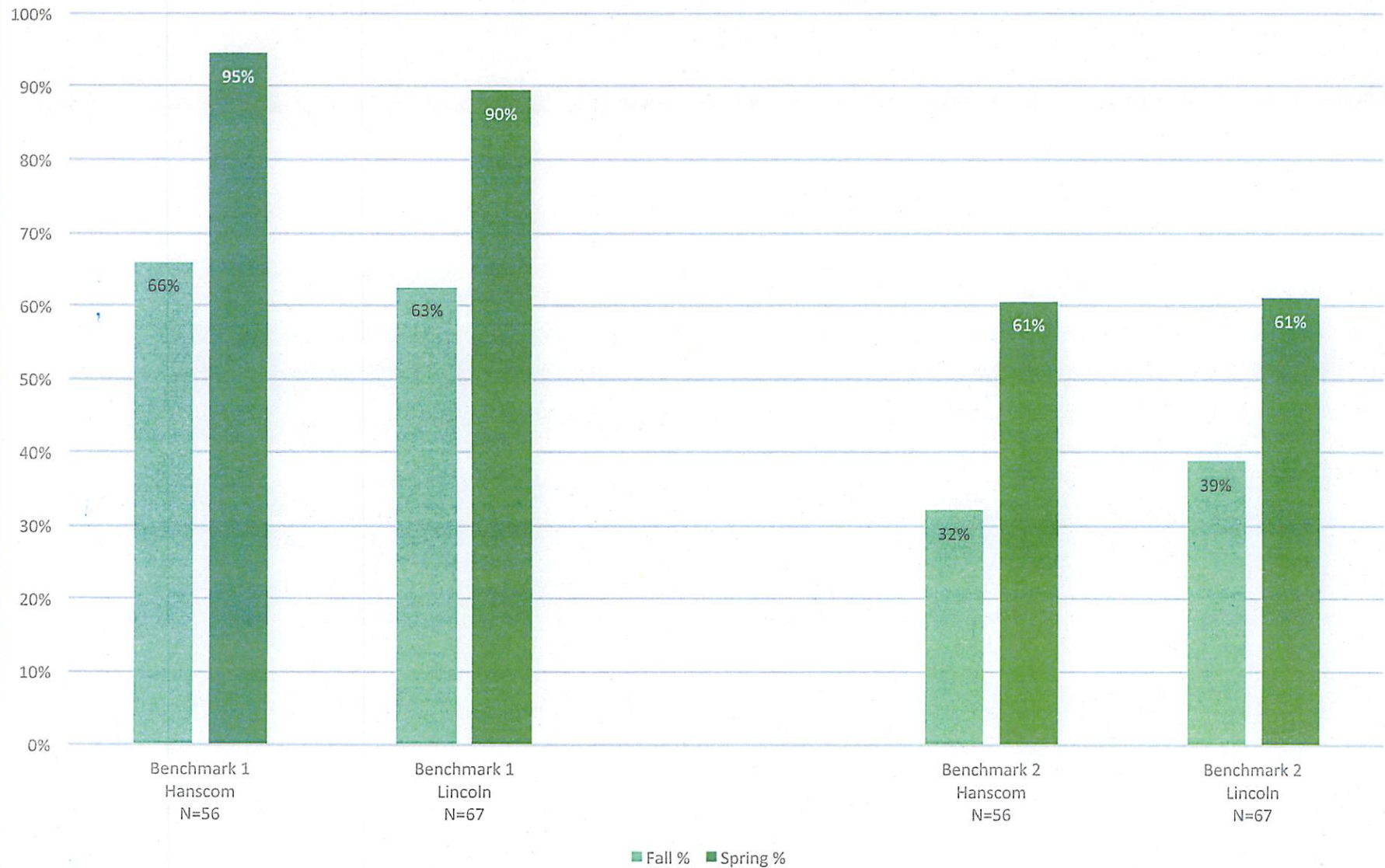
2015-16 Grades K-3 by school;

depicted as percentage of students meeting end-of-year benchmarks

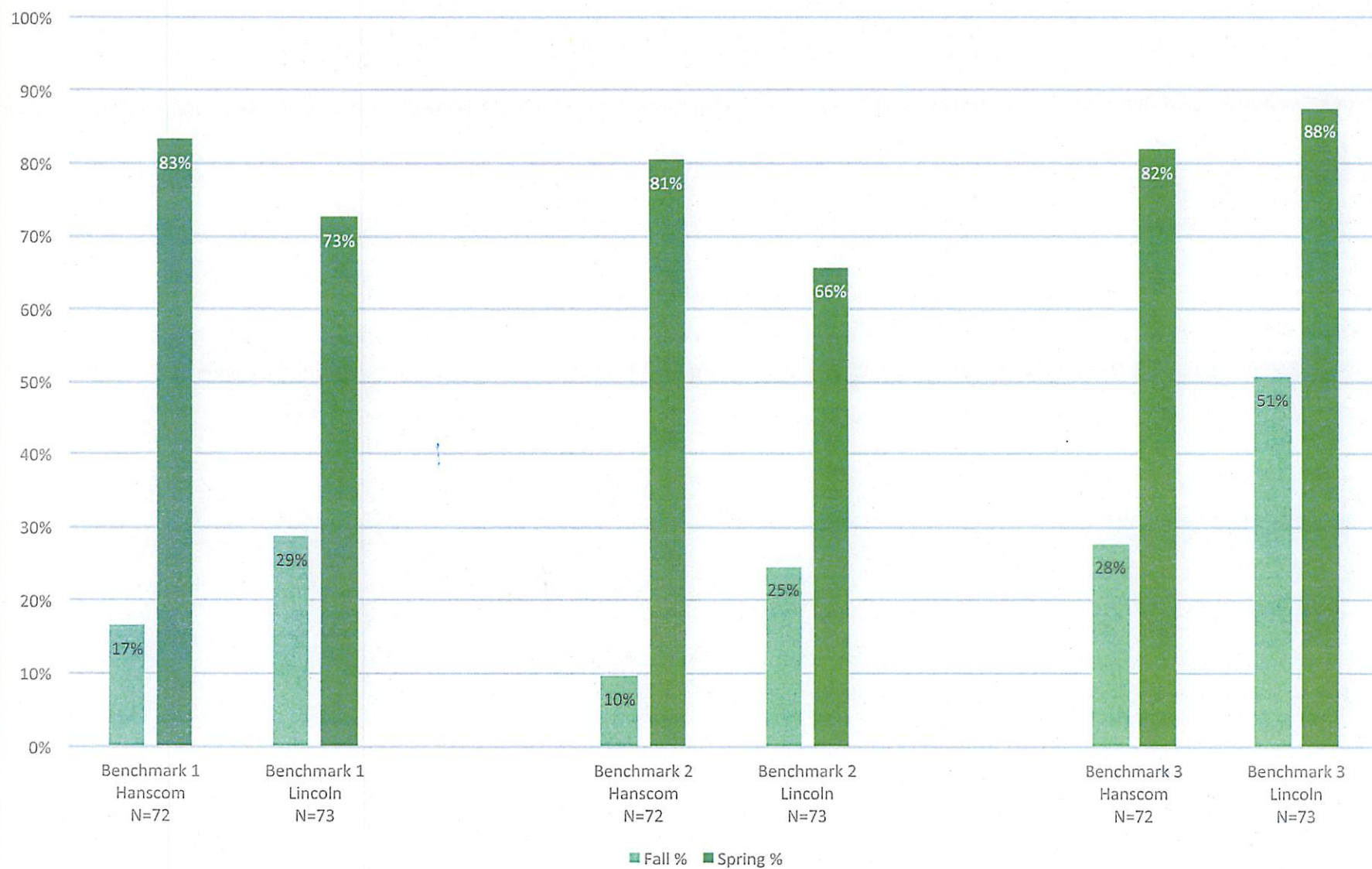
Gr. K Math Interview Assessment, 2015-16
% of Assessed Students Reaching Benchmark



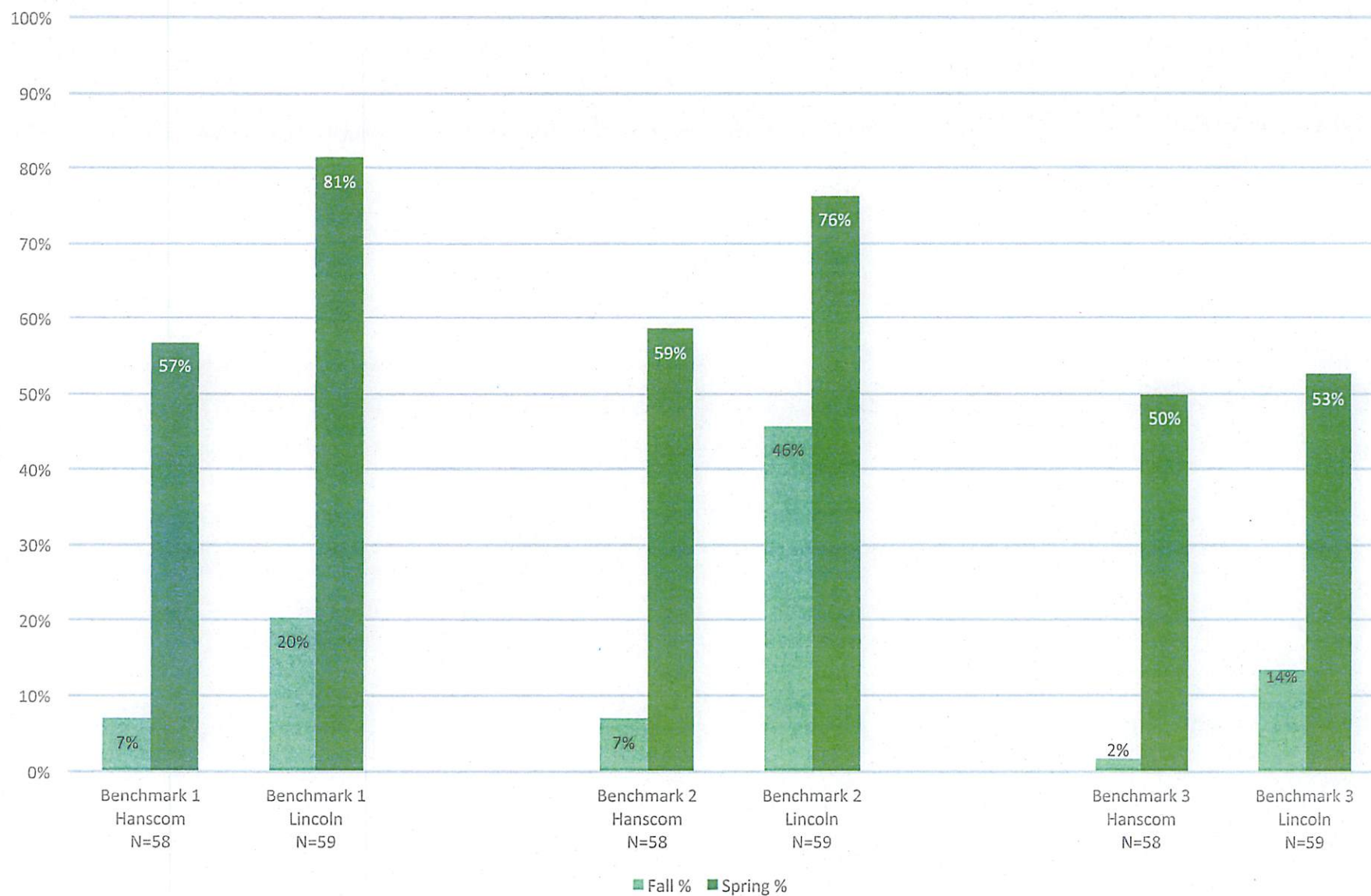
Gr. 1 Math Interview Assessment, 2015-16
% of Assessed Students Reaching Benchmark



Gr. 2 Math Interview Assessment, 2015-16
% of Assessed Students Reaching Benchmark



Gr. 3 Math Interview Assessment, 2015-16
% of Assessed Students Reaching Benchmark



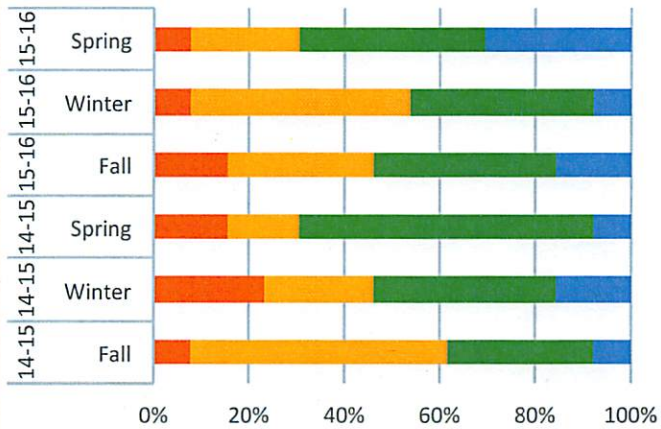
Appendix I

STAR Math

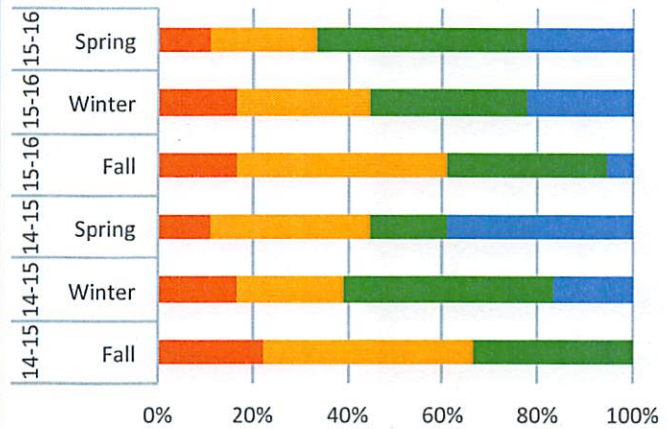
Longitudinal Student Performance, PARCC-Aligned Benchmarks,
by Campus and Year of Graduation, 2014-15 and 2015-16

Longitudinal Student Performance, STAR Math MCAS-Aligned Benchmarks

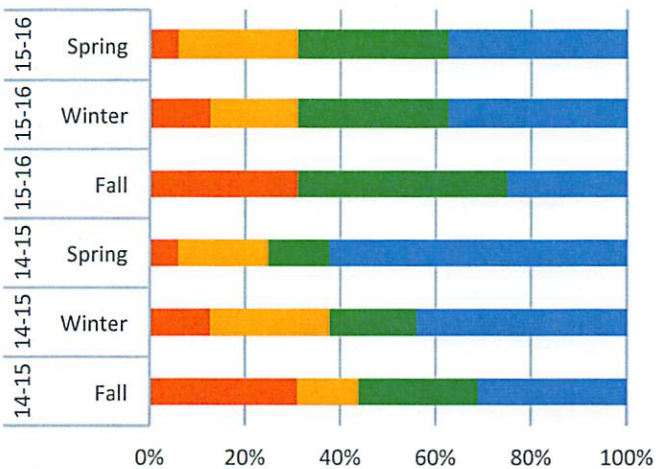
Hanscom Schools YOG 2016 (N=13)



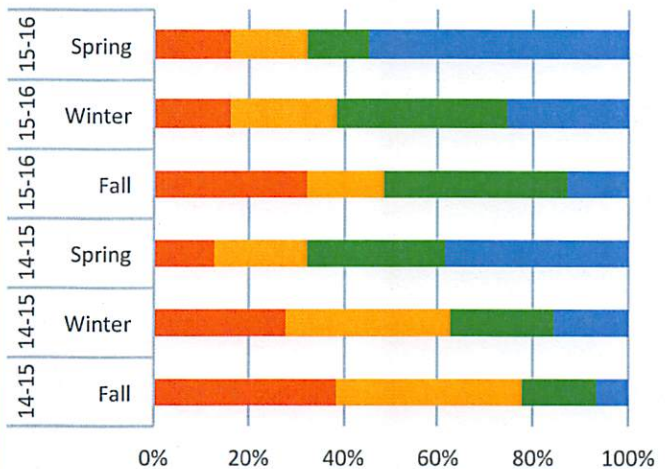
Hanscom Schools YOG 2017 (N=18)



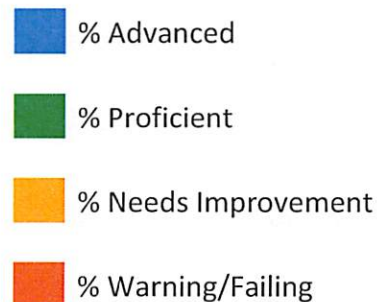
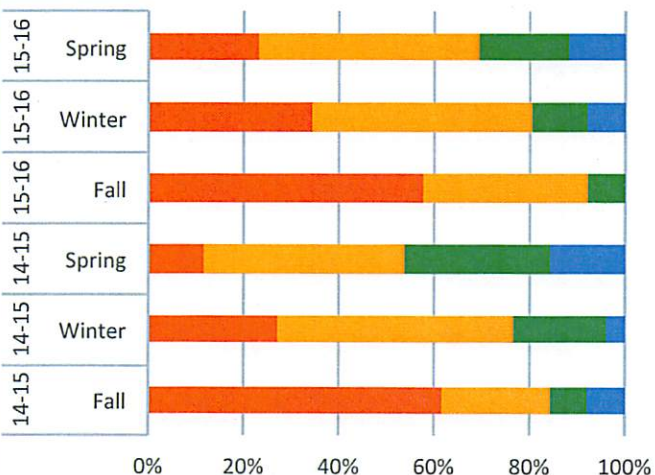
Hanscom Schools YOG 2018 (N=16)



Hanscom Schools YOG 2019 (N=31)



Hanscom Schools YOG 2020 (N=26)



Longitudinal Student Performance, STAR Math MCAS-Aligned Benchmarks

