Lincoln Public Schools

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To: School Committee
From: Mary Sterling
Re: MCAS 2010: Results and Interpretation
Date: October 26, 2010

On September 30, an initial MCAS 2010 report was presented to School Committee. In that report, the Adequate Yearly Progress (AYP) was explained, information was provided about the Student Growth Percentile (SGP), and district and school results of English Language Arts (ELA), Mathematics, and Science/Engineering tests were displayed. This report builds on the information from the first report and provides some interpretation in four sections:

I. **District Results by Subject Area: English Language Arts, Mathematics, Science/Engineering**

These sections comment on student results based on a review of the performance levels, the major strands and topics of content knowledge, the question type, and some item analysis. Each section ends by indicating the work we will continue to do in the subject area to increase student performance.

II. **Cohort Trace: Lincoln School**

This section describes the change in performance levels of four groups of students over several years at the Lincoln School. A study of the percentage of students at each performance level reveals an encouraging trend of growth in both English Language Arts and Mathematics.

III. **Hanscom Results: A Two Year Picture of Growth in ELA and Mathematics**

This section provides some data about grade level performance and growth percentiles over a two year period (2009 and 2010 MCAS results). The growth in both subjects contributed to the fact that the school met its AYP target this year. However, this section also points out the significant percentage of students still in the Needs Improvement and Warning levels of performance.

IV. **The Principals' Perspectives**

This section is in three parts, one for each school, written by the principals. The principals' discussion focuses on achievement gaps in groups and on students who are not achieving at proficient levels. They describe the efforts underway at each school to meet these students' needs. On January 6, 2011, more specific information about achievement gaps and strategies to address them will be presented to School Committee.

This report reflects the efforts of several teachers and administrators who contributed their time and expertise. Terry Green and Fred Lipton analyzed the Science results, the analysis in Math was done by Ellen Metzger, and Judy Merra worked on English Language Arts results.

At each grade level, the focus is on the individual student. For each student who scored at the Needs Improvement or Warning levels in English Language Arts and/or Mathematics, teachers are cross-referencing MCAS results with information from local assessments and observations in the classroom. They use those multiple data points to formulate a student learning plan with focused intervention in the classroom and in specific groups with literacy and math specialists. Specific information about and examples of student learning plans will be presented in the report to School Committee on December 2, 2011.

I. District Results by Subject Area

English Language Arts

The levels of performance for students in the district show that at the younger grades, a lower percentage of students tend to score in the Advanced and Proficient range than is true of students in the older grades. 62% of fourth graders earned scores at Proficient and Advanced levels whereas 93% of eighth graders scored at the Proficient and Advanced levels. This trend of an increase in percentage of students at a higher level of performance by eighth grade is also reflected at the state level (53% for grade four; 78% for grade eight). Most importantly for Lincoln, the difference is seen in an increase in Advanced level scores (11% in grade four; 31% in grade 8) and a significant drop in scores at the Needs Improvement level (44% in grade 4; 5% in grade eight). This pattern is not new to the district – over several years, the same trend has been evident. Furthermore, a historical look shows an increase in the percentage of students scoring at the Advanced level in grade eight since 2007 (20% in 2007 compared to 31% in 2010). We interpret this positive pattern to indicate a cumulative effect of strong instruction through the grades in English Language Arts.

A closer look at our students' performance in the strands of Language, Literature, Reading, and Composition, provides a few clues about strengths and areas for more focused instruction. Overall, there is very little evidence that our students' performance in one strand is stronger or weaker than in another. Within the strands of Reading, Literature, and Language, strengths and weaknesses in each topic vary by grade but not in discernable patterns. Sometimes, it may seem that low performance in a single topic might yield some information for instruction. For example, in the grade four test, students appeared to have difficulty with the topic, "genre." But further analysis shows there were only a few questions for that topic and our students scored low on only one question. Item Analysis – an examination of each question – provides the most useful information but unfortunately, more than fifty percent of the questions are not released. Nonetheless, a careful look at

percentage correct of some released questions reveals some strength and difficulty with the type of question. For example, the data show that fourth graders scored at high levels (above 90%) on many Multiple Choice questions when they had to read a piece of literature and select a response to a question. This is a clear indicator of strong comprehension. However, lower scores for grade four are evident in Open Response questions when students must read a piece of literature and write a brief statement with supporting details from the text. For example, in question # 11 of the 2010 MCAS for grade four, students were asked to read a brief article then respond to the prompt:

> **#11** Based on the article, describe how roller coasters have changed over time. Support your answer with important details from the article.

Over 50% of fourth graders scored "1" or "2," which means a below-Proficient response. This pattern of a large percentage of below-Proficient scores was true in all four of the Open Response questions (the other three questions were not released). Clearly, our younger students need more instruction and practice in putting their understanding of a text into a concise written statement with evidence from the reading. The level of proficiency with this type of Open Response question is higher in the scores of the older students.

Examination of the Long Composition results in grades four and seven indicates that our students' scores are almost identical to scores across the state. The overall percent correct for this type of question was 67% among fourth graders and 70% among seventh graders. The scores can be divided in two parts: "Standard English Conventions" and "Writing," which means the content and craft of the piece. In close parallel to the state scores, our students score much higher in conventions (83% in grade four; 85% in grade seven) than in content and craft (57% in grade four; 59% in grade seven). It is true that conventions are relatively easy to teach, to learn, and to apply in writing compared to the content work of idea development, word choice, and sentence complexity. Our decision to make writing our district goal this year supports our commitment to develop the capacity of our students to write well in terms of both content and conventions. Teachers of writing have analyzed results on the September Common Assessments in writing and have developed goals and plans for instruction to respond to areas of concern in the content aspect of writing.

Mathematics

The proficiency levels of our students on the MCAS mathematics assessment range from a low of 54% of fourth graders at Advanced and Proficient levels to a high of 71% of scores at Advanced and Proficient levels for eighth graders. As discussed in sections below about the Lincoln School cohorts and the Hanscom results, the math results differ by campus and reflect some encouraging patterns of growth in each location. Nonetheless, concerns about the overall district percentage of students below Proficient levels lead us to investigate the data further to determine some direction for instruction.

The strands in the mathematics test, which align with the state standards and our Learning Expectations, are: Data Analysis, Statistics, & Probability; Geometry; Measurement; Number Sense & Operations; and Patterns, Relations, & Algebra. An examination of overall performance across grade levels shows no significant patterns of relative strength or weakness among strands. However, a closer look by grade level at the topics and questions within strands provides a little more information. For example, within the Number Sense strand, third graders scored well on questions about the commutative property of mathematics and place value. Whereas, these students had more difficulty in the Geometry strand on questions about symmetry. Seventh graders showed relative strength in Geometry on questions about locations and spatial relationships, but they demonstrated relative weakness on questions about linear relationships in the Patterns, Relations, and Algebra strand. For each grade, we analyze the topics and questions to determine relative strengths and weakness and use that analysis to fine tune instructional emphasis at grades 3-8 in each school.

An analysis of the types of questions on the mathematics tests shows that our students, like those across the state, do better on Multiple Choice questions than on open-ended questions. There are actually three types of questions on each math test. Out of 42 questions per grade level, 32 are Multiple Choice, 6 are Short Answer, and 4 are Open Response. Multiple Choice requires students to select a response after examining a problem, such as in question # 3 for sixth graders in Patterns, Relations and Algebra. 97% of our students answered this question correctly.

3 Kate wrote the number pattern shown below.

5, 20, 80, 320, . . .

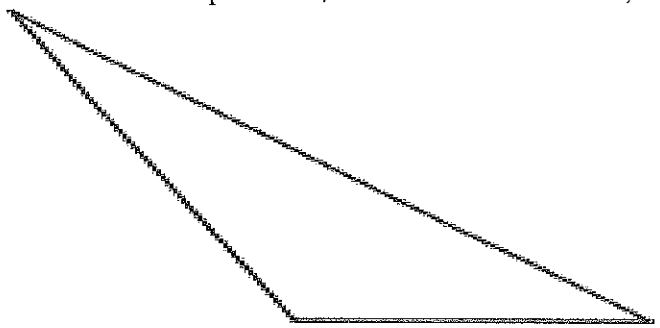
Which of the following could be the rule for finding the next number in Kate's number pattern?

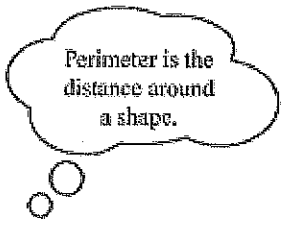
	A.	add 5 to the previous number
	B.	add 15 to the previous number
✓	C.	multiply the previous number by 4
	D.	multiply the previous number by 5

Short Answer questions require students to come up with an answer based on the problem presented, such as question #7 for fourth graders in Measurement. 80% of students answered correctly.

7 Use your MCAS ruler to answer question 7.

What is the perimeter, to the nearest centimeter, of the triangle below?

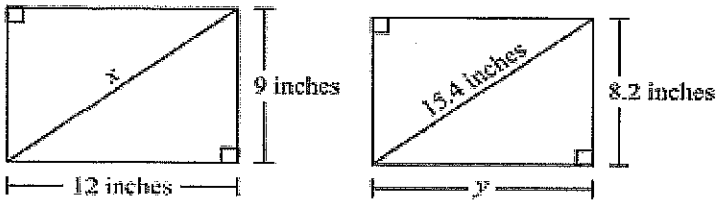




✓ Answer: 15 centimeters

Open Response questions require students to formulate a response to a problem, such as in the Geometry question #21 on the eighth grade test. 69% of our students earned scores of 3 or 4, which means Proficient or better.

#21 Danielle measured two of the computer screens in her school's computer lab. The two screens and some of their dimensions are shown below.



Screen 1 **Screen 2**

1. What is the area, in square inches, of Screen 1? Show or explain how you got your answer.
2. What is x, the diagonal length in inches of Screen 1? Show or explain how you got your answer.
3. Which computer screen, Screen 1 or Screen 2, has the greater area? Show your work or explain how you got your answer.

Certainly, it is easier to select a response than to formulate an answer and explain reasoning so it is no surprise that our students find the Open Response questions most difficult. In the *Everyday Math* program at grade 1-5, students have regular practice on Open Response questions and teacher are emphasizing the kinds of skills required for this type of thinking and explanation. In *Impact Mathematics* at grades 6-8, students are also asked to formulate responses and explain reasoning. Middle school teachers are focusing on having students examine questions carefully, generate possible solutions, and communicate their responses clearly.

Science and Engineering: Grades Five and Eight

The 2010 district results in student performance at grade five indicate a modest increase in scores at Proficient and Advanced levels over the last four years. In 2007, prior to our reorganization of the elementary science curriculum, 60% of fifth graders scored at Proficient or Advanced levels while 40% scored below the Proficient level. The 2010 results show an 8 percentage point gain in scores at Proficient/Advanced levels: 68% with 6 percentage points showing movement into the Advanced level. A decline from 2007 to 2010 occurred in below-Proficient scores, especially at the Warning level (3%). A closer look at the difference in results between the two schools reveals a much stronger performance by Hanscom students than in the past. While these results are in the right direction, there are still too many students who are not able to demonstrate proficient understanding of some key science concepts on this state assessment.

An analysis of the strands of science (Life Science, Physical Science, Earth & Space Science, Engineering) and the released test items can reveal areas of relative strength and weakness in fifth grade performance. The analysis does not highlight a particular strand as an area of weakness or strength. Rather, the performance of our students varies within the strand depending on the specific question asked. For example, students scored high on questions in the Life Science strand about Adaptations – our unit of instruction on that topic is very strong. On the other hand in Life Science, questions about classifying plants and recognizing plant behaviors resulted in relatively weak scores. Therefore, we need to re-examine the topics within the standards to which these questions relate and ensure that we are giving students an opportunity to learn the information. This analysis will be the basis of refocusing instruction not only at the fifth grade level but also in the earlier grades to ensure that students are learning the key concepts in the state standards at every grade level.

At the eighth grade level, an overall improvement in results is evident when scores in 2010 are compared to those in 2007. Scores at the Proficient and Advanced levels for the district in 2007 were 45%, prior to our restructuring of the middle school science program. The scores in 2010 show a 16 percentage point increase in students at Proficient and Advanced levels for a total of 61%, which includes an 8 percentage point gain in scores at the Advanced level over 2007. While these are promising gains, it does not represent longitudinal cohort

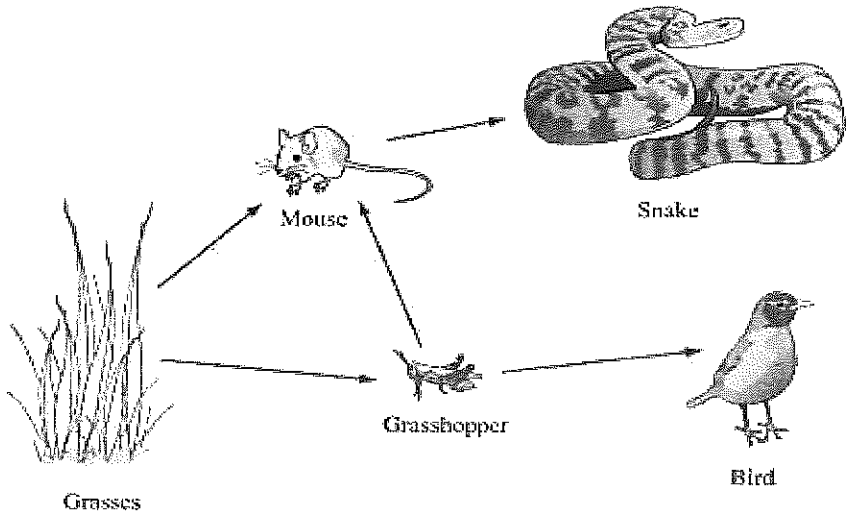
growth, simply a difference in grade level scores. An increase in scores at the Proficient level may be an encouraging sign but we are concerned that too many students are not yet proficient in responding to questions aligned with the state standards on this assessment.

A more detailed analysis of student performance in each strand and each topic brings to light some areas of weakness and strength, and underscores the worth of our decision to restructure grades 6-8 science. As with grade five, student performance in grade eight did not reveal clear strength or weakness on any one of the four strands. However, a closer look at topics and questions within strands shows some concepts that are relative strengths and others that are relative weaknesses. Not surprisingly, we found strengths where our curriculum units are well articulated and clearly aligned with the topic standards in the Life Science strand, such as *Systems of Living Things* and *Structure and Functions of Cells*. The relative weaknesses appeared in topics that are new to our science curriculum. They were not taught to last year's eighth graders who were only in the first year of our three –year implementation of the new science curriculum. For example, low scores occurred in questions about the topic *Energy and Living Things,* and this topic is new to seventh grade this year. The middle school science teachers will use the analysis of topic strength and weakness to re-examine each of the science curriculum units to ensure that they are aligned to the topic standards of the state.

An examination of question type adds information to our understanding of these results. As with performance in English Language Arts and Mathematics, our students score at a higher level on Multiple Choice than they do on Open Response questions. Out of 42 questions on each Science/Engineering test, four are Open Response, one in each strand. The following is an Open Response example from grade 8 Life Science. 71% of Eighth graders earned Proficient scores.

 # 20

The partial food web below shows five different organisms that are found in a prairie ecosystem.



1. Identify each organism in this food web as a producer, a primary consumer, or a secondary consumer.
2. Using only the organisms from this food web, describe one change in this prairie ecosystem that would result in a decrease in the grasshopper population. Explain the reasoning for your answer.

In the 2010 testing, fifth graders scored 77% correct on Multiple Choice and 63% Proficient on Open Response questions. Eighth graders scored 76% correct on Multiple Choice questions and 60% Proficient on Open Response. Although these percentages are not as high as we would hope, they may represent some growth since 2007 when the Open Response Proficient scores in 2007 were 50% at grade five and 54% at grade eight. Even though there is modest growth, our students still need to build strength in comprehending and responding to this type of question in all subject areas. Science teachers are incorporating more Open Response questions into weekly work throughout the year with an emphasis on clear statements and supportive details that articulate reasoning.

II. Cohort Trace: Lincoln School

We trace the cohort growth at Lincoln School to analyze the data on how student performance progresses over several years. New this year, we also look at the median Student Growth Percentile (SGP) for each cohort. This information gives us a window on the growth of groups of students and allows us to monitor the success of our program. We do not conduct a cohort trace with Hanscom students because the turnover is very significant and the sample size is small.

English Language Arts

When we examine the progression of ELA performance scores and growth percentiles over several years for four cohorts of students at the Lincoln School, we see a steady increase of performance; the SGP median percentile scores indicate moderate to high growth (51-66). Specific information about the cohorts below show movement from Proficient to Advanced levels and from Needs Improvement to Proficient levels. Overall, the combined Advanced and Proficient performance of students in each cohort increased every year.

Current sixth graders: combined Proficient and Advanced performance: 77%
Student Growth Percentile Median: 61

- Scores at the Advanced level in 2009 were at 15%, when these students were in grade four. When fifth graders took the ELA 2010 MCAS last spring, 35% of them scored at the Advanced level, a 20 percentage point increase.
- Scores at the Proficient level dropped slightly from 48% in grade four to 42% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced.
- Scores at the Needs Improvement level dropped from 36% in 2009 to 20% in 2010, which means many students moved into the Proficient range.
- Warning Scores went from 1% in 2009 to 2% in 2010.

Current seventh graders: combined Proficient and Advanced performance: 91%
Student Growth Percentile Median: 57.5

- Scores at the Advanced level increased by 30 percentage points since 2008, when these students were in grade four. When seventh graders took the ELA 2010 MCAS last spring, 38% of them scored at the Advanced level.
- Scores at the Proficient level dropped slightly since grade four to 53% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced.
- Scores at the Needs Improvement level dropped from 27% in 2008 to 5% in 2010, which means many students moved into the Proficient range.
- Warning Scores dropped from 6% in 2008 to 4% in 2010.

Current eighth graders: combined Proficient and Advanced performance: 82%
Student Growth Percentile Median: 51

- Scores at the Advanced level increased slightly since 2007, when these students were in grade four. When seventh graders took the ELA 2010 MCAS last spring, 19% of them scored at the Advanced level.
- Scores at the Proficient level increased from 55% in grade four to 62% in 2010. We interpret this to mean that students who were below Proficient increased their performance.
- Scores at the Needs Improvement level dropped from 24% in 2007 to 10% in 2010, which means many students moved into the Proficient range.
- Warning Scores moved from 6% in 2007 to 9% in 2010.

Current ninth graders: combined Proficient and Advanced performance: 97%
Student Growth Percentile Median: 66

- Scores at the Advanced level increased by 9 percentage points since 2007, when these students were in grade five. When eighth graders took the ELA 2010 MCAS last spring, 34% of them scored at the Advanced level.
- Scores at the Proficient level dropped slightly since grade five to 63% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced.
- Scores at the Needs Improvement level dropped from 11% in 2007 to 3% in 2010, which means many students moved into the Proficient range.
- Warning Scores dropped from 4% in 2007 to 0% in 2010.

Mathematics

When we examine the progression of math performance scores and growth percentiles over several years for four cohorts of students at the Lincoln School, we see a steady increase in performance. The growth percentile medians range from the current grade seven growth, which has been moderate (median 42.5) to the current eighth graders who show high growth (median 74.5). Specific information about the cohorts below indicate movement from Proficient to Advanced levels and from Needs Improvement to Proficient levels. Overall, the combined Advanced and Proficient performance of students in each cohort increased significantly every year.

Current sixth graders: combined Proficient and Advanced performance: 68%
Student Growth Percentile Median: 66

- Scores at the Advanced level in 2009 were at 20%, when these students were in grade four. When fifth graders took the Math 2010 MCAS last spring, 41% of them scored at the Advanced level, a 21 percentage point increase.
- Scores at the Proficient level dropped slightly from 36% in grade four to 27% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced, since percentages dropped in both the Needs Improvement and Warning levels.
- Scores at the Needs Improvement level dropped from 39% in 2009 to 27% in 2010, which means many students moved into the Proficient range.
- Warning Scores decreased from 6% in 2009 to 5% in 2010.

Current seventh graders: combined Proficient and Advanced performance: 78%
Student Growth Percentile Median: 42.5

- Scores at the Advanced level increased by 22 percentage points since 2008, when these students were in grade four. When seventh graders took the Math 2010 MCAS last spring, 51% of them scored at the Advanced level.
- Scores at the Proficient level dropped from 48% in grade four to 27% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced.
- Scores at the Needs Improvement level dropped slightly from 20% in 2008 to 18% in 2010.
- Warning Scores dropped from 8% in 2007 to 4% in 2010.

Current eighth graders: combined Proficient and Advanced performance: 72%
Student Growth Percentile Median: 74.5

- Scores at the Advanced level increased by 13 percentage points since 2007, when these students were in grade four. When seventh graders took the ELA 2010 MCAS last spring, 28% of them scored at the Advanced level.
- Scores at the Proficient level stayed steady from 43% in grade four to 44% in 2010. We interpret this to mean that some students who were Proficient raised their performance to Advanced and other students who were below Proficient increased their performance.
- Scores at the Needs Improvement level dropped from 30% in 2007 to 15% in 2010, which means many students moved into the Proficient range.
- Warning Scores moved from 11% in 2007 to 12% in 2010.

Current ninth graders: combined Proficient and Advanced performance: 79%
Student Growth Percentile Median: 64

- Scores at the Advanced level increased by 19 percentage points since 2007 when these students were in grade five. When eighth graders took the Math 2010 MCAS last spring, 51% of them scored at the Advanced level.
- Scores at the Proficient level dropped from 36% in grade five to 28% in 2010. We interpret this to mean that students who were Proficient increased their performance to Advanced.
- Scores at the Needs Improvement level dropped from 23% in 2007 to 15% in 2010, which indicates that some students moved into the Proficient range.
- Warning Scores dropped from 8% in 2007 to 6% in 2010.

III. Hanscom Results: A Two-Year Picture of Growth in ELA and Mathematics

The size of each grade level group at Hanscom is small and the turnover rate is significant so it is difficult to draw conclusions from a longitudinal examination of a cohort of students. Nonetheless, a shorter time frame -- two years of data from MCAS testing in 2009 and 2010 -- reveal some important gains and some areas for continued attention in both ELA and Mathematics, even with some turnover of student population. Hanscom Middle School met AYP in both Mathematics and English Language Arts because of the gains in performance. Also, the Student Growth Percentile median scores indicate some clear progress at each grade.

English Language Arts

In each grade, the combined Advanced and Proficient performance of students increased over their performance in the previous year:

- Current 6th graders increased in Proficient and Advanced performance from 33% in 2009 to 68% in 2010. The median growth percentile, based on 27 students, was moderate: 51

- Current 7th graders increased in Proficient and Advanced performance from 63% in 2009 to 75% in 2010. The median growth percentile, based on 26 students, was moderate: 51

- Current 8th graders increased in Proficient and Advanced performance from 71% in 2009 to 84% in 2010. The median growth percentile, based on 30 students, was high: 68.5

- Current 9th graders increased in Proficient and Advanced performance from 81% in 2009 to 91% in 2010. The median growth percentile, based on 23 students, was moderate: 60

These gains are important to note and to build on. Meanwhile, there are some are group results in English Language Arts that deserve further analysis and attention. For example, 49% of the current fifth graders scored at the Needs Improvement or Warning levels. Among the current sixth graders, 31% of the scores were at the Needs Improvement or Warning levels. These are large percentages and individual learning plans are being developed for students scoring at these levels. English Language Arts teachers are examining the patterns of performance on question type and on topics within strands to determine needs for focused instruction.

Mathematics

In grades 6, 7 and 8, the combined Advanced and Proficient performance of current students increased over their performance in the previous year:

- Current 6th graders increased in Proficient and Advanced performance from 32% in 2009 to 63% in 2010. The median growth percentile, based on 28 students, was high: 63.

- Current 7th graders increased in Proficient and Advanced performance from 42% in 2009 to 46% in 2010. The median growth percentile, based on 25 students, was moderate: 42.

- Current 8th graders increased in Proficient and Advanced performance from 37% in 2009 to 49% in 2010. The median growth percentile, based on 28 students, was high:

73. The high growth rate is due to a 14 percentage point increase in scores at the Advanced level.

- Current 9th graders decreased in Proficient and Advanced performance from 69% in 2009 to 56% in 2010. The median growth percentile, based on 23 students, was moderate: 44.

The gains in mathematics performance are important to note, especially in current sixth graders who were at Hanscom for two years of *Everyday Mathematics*. However, there areas of concerns that deserve further investigation and work. Most importantly at every grade, a high percentage of students scored at the Needs Improvement and Warning levels. Each of the students currently at Hanscom Middle School who scored below the Proficient level has an individual student learning plan. The mathematics teachers are examining the released test items and the patterns of performance in each strand of mathematics to discern any deficits that need focused instruction.

IV. The Principals' Perspectives

Lincoln School: Sharon Hobbs and Steve McKenna

While Lincoln School students have made progress for several years in mathematics and English Language Arts, as described in the Cohort Trace above, we are concerned about persistent achievement gaps at our school. The Adequate Yearly Progress (AYP) information shows that the subgroup of African-American/Black students did not meet 2010 state-determined AYP targets in either math or English Language Arts. In addition, the Low Income subgroup did not make AYP in math.

In looking further at the data for grades 4, 5, and 7, we found that a significant number of our students of color and our low income students scored in the low growth and low performance categories for ELA (students of color) and for math (students of color and low income). Growth model results (SGP) measure individual student progress on state assessments by tracking scores from one year to the next. Whereas the performance report reflects overall student achievement (Advanced, Proficient, Needs Improvement, Warning) on a particular assessment.

Our analysis began at the school level. We looked at the Composite Performance Index, (CPI) which is the number assigned to each level of proficiency. Students receive 100 points for an Advanced score, 75 for Proficient, 50 for high Needs Improvement and 25 for low Needs Improvement. Looking at the CPI for students who are white or non-white gives us another piece of information. In English Language Arts, the average CPI for white students in grades 3-8, in 2010, was 95 and for non-white students, 92. In Mathematics, the average CPI white students in grades 3-8 was 92 and for non-white students, 82. The 10 point gap in mathematics gave us a piece of information that again made us concerned about our students of color.

Additionally, the students in the low income versus non-low income group show similar gaps in their performance to the gap between white and non-white students. Significantly more low income students show low growth and score at the Needs Improvement or Warning level.

In September, teachers received detailed item analysis reports for all of their students in the Needs Improvement or Warning levels. They used these to look at a child's performance on Multiple Choice and Open Response or short answer type questions. In some cases, an adult sat with a child and did an error analysis using the released MCAS questions and the student's item analysis report. In one case, a child was able to see that test taking skills, not content knowledge, had contributed to the score at the Needs Improvement level in mathematics.

Looking closely at student performance, with the background understanding of the achievement gap in our school, has led us to several interventions. Last year all teachers focused on giving students opportunities to work on Open Response type questions. The teachers worked to create consistent guidelines about teaching a format, coaching students in how to discern the important information, helping students to answer the questions with appropriate detail, and to generalize how to answer an Open Response type question. This year we continue to refine this instruction to target more specifically the individual needs of students related to how they answer Open Response type questions. At grades 6-8, team members will be sharing and analyzing student writing in the content areas and making adjustment in instruction based on determination of need.

A district focus this year is on the development of teacher skills in teaching writing and the individual day-to-day work with students on the development of writing skills. This began, this past summer, with a two day writing institute that included all K-6 teachers. Writing instruction time in the younger grades has increased. Following up on a two-day conference the K-4 team leaders attended in December 2009, we continue to develop professional learning communities. These professional learning communities focus on learning rather than teaching. This fall, student writing was analyzed and SMART (Specific, Measurable, Attainable, Realistic and Timely) goals were developed to target areas of weakness. Teachers are working collaboratively and are holding themselves accountable for results. Last year, in the upper grades, department meetings in the area of English Language Arts focused on explicit writing instruction for non-fiction writing, as well as well-constructed responses to literature. The seventh grade team worked in an action research project about the importance of vocabulary across the curriculum, which they are continuing this year. Based on the growth they saw, they are continuing the vocabulary interventions with a focused group of students.

This year we are also offering an extra reading class and an extra math class to a group of middle school students whose performance levels and growth percentiles indicated the need for more learning time. The classes are taught with small groups of students (from 5 to 12) so that students can have focused interventions in their areas of weakness.

The consistency of the *Everyday Math* program in grades K-5 and the adoption of the *Impact Mathematics* program in grades 6-8 provide a comprehensive program that flows from

Kindergarten through grade 8. As we become more familiar with the components of the program, we have a better sense of how to meet the needs of struggling students in a language-rich program. Teachers are using what they know about student learning and math content to differentiate instruction. This has allowed teachers to pull small groups of students for additional practice and instruction during the school day.

With the creation of a student learning plan template that allows teachers to monitor progress toward the goals of the specific student, we expect that a team's ability to monitor student progress at a more finely tuned level will allow students to grow and to narrow our achievement gaps.

Hansom Primary School: Randy Davis

To gain perspective on our grade three 2010 MCAS results we have focused on examining results over a three-year period. Because third grade is the first MCAS testing for Primary School students, the new growth model analysis is not a part of the analysis. Our ultimate goal continues to be to increase the number of students scoring Proficient or above in both math and English Language Arts.

Our analysis shows that in the two years of implementation of *Everyday Mathematics* our third grade scores have climbed. In 2008, 50% of our students scored Proficient. After the first year of implementation that figure climbed to 60%, and this year it rose again to 64%. In ELA, 63% of our students scored Proficient or above in 2008, followed by a dip in 2009 with 55%, and an increase in 2010 with the number of students scoring Proficient or better at 68%. Given our implementation of Reader's Workshop several years ago, we are encouraged to see an overall increase in Proficient scores from 2008 to 2010. Last year for the first time, many of our students received after-school Title 1 intervention prior to the testing cycle. In looking at the MCAS results, and knowing the students' needs, third grade teachers felt that the intervention was helpful and we will plan to repeat this opportunity for extra instruction and learning.

Because our grade three students move on to either Hanscom Middle School or elsewhere, our analysis at the team and school level focuses on looking at curriculum and instruction and what lessons we might take from the MCAS results. On the whole our subgroups are too small for in depth analysis. Our analysis of results highlights a need to improve student skill on Open Response questions. Furthermore, we will be looking at increasing non-fiction reading and writing, an important focus on MCAS, in the new common core standards, as well as for real life reading and writing. As always, we see ourselves as a good school getting better. We will continue our work in curriculum, instruction, and assessment, as outlined in our district and school goals, to work towards proficiency for all of our students.

Hanscom Middle School: Erich Ledebuhr

An analysis of Hanscom Middle School's MCAS results indicates that as a school we are moving in the right direction by meeting Adequate Yearly Progress (AYP) for the 2010 testing period. Our performance rating for English Language Arts was *High* and our performance rating for Mathematics was *Moderate*. Due to the size of our school we do not have enough students to warrant sub-group scores yet our past history of our aggregate groups not meeting AYP, along with the moderate rating in mathematics, tells us that we do have an achievement gap.

As a result, we made some significant changes to close this achievement gap. We started with a schedule change to better meet the needs of all of our students. Our new schedule for grades 6-8 allows for longer academic periods and a flexible block of time that we call Academic Extension. This Academic Extension period allows us to provide interventions on an individual basis to our students based on their need. For example, students who have scored in either the Needs Improvement or Warning category on MCAS have two additional math and/or two additional English Language Arts classes during this period. Determinations for intervention also come from local data we collect such as pre and post math tests and literacy assessments. We will do a mid year assessment using unit post tests in math and both the QRI and Fountas and Pinnell assessments in English Language Arts.

Although we made AYP in mathematics this past year, we did not meet our targets in the previous two years. Review of local data from our *Impact Mathematics* program at the end of the year identified a number of students in both the 7th and 8th grade that had significant gaps in their achievement. In an effort to close this gap we are currently piloting a new section of math at both 7th and 8th grade utilizing the *Triumphs* mathematics materials. *Triumphs* is published by the same company as the *Impact Mathematics* program and has the benefit of regular assessments to track achievement built into the program. The goal of being ready for Algebra 1 by 9th grade is still in place for those students who are learning with *Triumphs* materials. Initial data already shows that some students are making good progress and may be ready to re-enter the *Impact* program. We will continue to closely monitor the progress of this cohort. It is our hope that the addition of this program will help close the achievement gap and by the end of next year the program will no longer be needed.

At the end of the first term we will start an after school homework/MCAS intervention program. This program will run at least two days a week after school. Students will be invited to the program based on both their MCAS scores and local data results. The goal of this program will be to provide additional individualized supports and strategies to our students. Again, student growth will be measured with locally developed assessments.

In grades 4 and 5 we continue to look at our students' individualized needs. We are moving to a more inclusive Professional Learning Community model by having our teachers

collaborate more often and study our students' progress. We have also modified how we schedule our regular education resources such as our math and literacy specialists to help insure that students who need interventions are receiving services from these specialists in addition to their regularly scheduled math and English classes instead of as a replacement.

We have also re-structured our staff to create a Transition/Intervention specialist position. The goal of this position is to assess new students as they enter Hanscom Middle School to identify any potential gaps these students may have so that we can appropriately schedule and plan for their success. This staff member also provides some of the interventions when necessary.

Our school council also kept the achievement gap in mind while writing the goals for our school improvement plan. One of the goals is a school wide writing goal connected to the district's writing goal. This has put an emphasis on writing throughout the school and each grade level has both short and long term SMART goals to help realize this goal. Another goal of our school improvement plan is to effectively implement the Instructional Support Team (IST) process to meet the individual needs of students who struggle to access the curriculum.

We are committed to the interventions and strategies that we have put into place for this school year and anticipate that as a school we are on the road to closing the achievement gap.