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To: Melrose Instructional Staff, Specialists, Paraprofessionals, Administrators, and School Committee
From: Pat Muxie
Re: ***District-Wide*** MCAS Results for Spring 2007
October 15, 2007

Attached please find the *district-wide* MCAS results for the Spring 2007 testing period. I feel it is important to share the district-wide results with you each year, so that (in the case of the elementary staff) you can compare your specific school data to the performance of the district as a whole and (in the case of the Middle and High school staff) you can compare your performance to the state. You may notice similar strengths and weaknesses in your comparisons. You may also notice differences or gaps that set your school apart. Analyzing results in this way will enable us to make informed decisions that will influence instruction and student achievement.

As I reviewed final Adequate Yearly Progress (AYP) data, I was glad to see that as a district, we are classified in the eyes of the state as having a **Very High** Performance Rating in the area of English Language Arts. Our Improvement Rating for this content area is **On Target**. In Mathematics, we are classified as having a **High** Performance Rating and our Improvement Rating is **Above Target**. The performance of our subgroup populations, especially low-income and students with disabilities, is also improving. This is the result of your caring and competent efforts to make sure that all students are exposed to the same high expectations and benchmarks. It is also a testament to your interest in good instruction.

As always, I have included a summary page at the end of the analysis to highlight some of my thoughts as I synthesized the data for the district as a whole. I hope you will use the information contained not only in the summary but in the text of the document as well, at your grade-level and department meetings to generate good discussion leading to even greater student achievement.

Sincerely,

Pat Muxie

Cc Joseph F. Casey, Greg Zammuto, Dr. Dragonas, Patti White-Lambright, ETFs, Principals, Vice-Principals,
Department Chairs

**GRADE 3 MCAS ANALYSIS-SPRING 2007
READING and MATH**

Number of Students Assessed

Reading: Total: 265 (100%)
44 Students with Disabilities, 2 Alt. Assessments
7 Limited English Proficient
25 Low-Income

Math: Total: 265 (100%)
44 Students with Disabilities, 2 Alt. Assessments
7 Limited English Proficient
25 Low-Income

Performance Level Percents

Note: Numbers **in parentheses** indicate actual number of students. Proficient category includes Proficient and Above Proficient categories.

READING:

	Melrose						State					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Proficient	80%	76%	77%	70%	68%	67%	67%	63%	63%	62%	58%	59%
Needs Imp.	17%	22%	22%	28%	30%	29%	27%	30%	30%	30%	34%	32%
Warning	3%	2%	1%	2%	2%	4% (8)	6%	7%	6%	6%	8%	9%

MATH:

	Melrose		State	
	2006	2007	2006	2007
Proficient	58%	76%	52%	60%
Needs Imp.	32%	17%	32%	24%
Warning	10% (29)	8% (19)	16%	16%

Performance Level Notes

READING:

- 1) The number of students in the warning category slightly increased this year. Students who received a rating of warning should be considered for Reading Specialist services unless they are already receiving services through an individual education plan. Through our curriculum review cycle, we are in the process of examining our early literacy program. Recommendations should be made from this review in early Spring.
- 2) We were higher than the state in the proficient category and lower than the state in the needs improvement and warning categories in Reading.

MATH:

Note: Spring of 2006 was the first year that Grade 3 was assessed in the area of Math with actual scaled score results being reported.

- 1) We saw a double-digit increase (18%) in the percentage of students who scored proficient this year. We are in the 2nd year of implementation of a new Math program at the elementary level. It will be interesting to see if this pattern continues with the next MCAS administration, since students will be even more familiar with program terminology.
- 2) We were much higher than the state in the proficient category and much lower than the state in the warning category.

Performance Level Results for Selected Subgroups

READING

The percent of students with disabilities who scored at the Proficient range decreased this year, while the percentage of low-income students who received a rating of Proficient increased.

MATH

The percentage of students designated as having disabilities and receiving a rating of warning in Math decreased this year. The percentage of those same students scoring proficient also increased dramatically (from 42-60%). We see a similar pattern for our low-income students, with the percentage of low-income students scoring at the proficient level jumping dramatically. Again, it will be interesting to see if this could possibly be due to the new math program since it has a differentiation strand built into each lesson.

(continued)

Subject Area Subscores: (average % of points attained)

READING	District	State
Language	83%	81%
Literature	78%	73%
Item Type		
Multiple Choice	83%	79%
Open Response	63%	58%

MATH	District	2006	2007	State	2006	2007
Number Sense		76	75		75	71
Patterns, Relations and Algebra		83	87		84	81
Geometry		75	82		70	74
Measurement		70	80		71	77
Data Analysis, Statistics and Probability		84	87		81	81

In the area of reading, our item type and reporting category performance has, for the most part, remained relatively flat. Language performance went up slightly. In Math, performance in the strands of geometry and measurement was much improved from last year. This year, our weakest strand was number sense. This fact was mirrored at the statewide level. ***See Test Item Analysis below for specific questions that proved difficult for our Grade 3 students and for target actions to address them. (A quick test item analysis sheet can now be retrieved using our TestWiz program. See your building principal for the representative from your building who has a TestWiz account.)**

TEST ITEM ANALYSIS: GRADE 3 READING 2007

LITERATURE

Criteria: More than 25% of our students got these answers incorrect:

An asterisk indicates that our average item score was LOWER than the state average.

- #28 Identify the meaning of figurative language
- #24 Identify the purpose of an action in a piece of nonfiction
- #14 Identify the main idea
- #23 Find a fact in a nonfiction article

OPEN RESPONSE

Criteria: Fewer than half of our students got a 3 or 4.

- #21 Describe the eating habits of Pilgrims based on evidence in nonfiction
- #33 Contrast the life of a character on the street with life in his home

GRADE 3 MATH

- *#20 Determine which fraction names a point on a number line
- #14 Estimate total cost given unit cost
- #25 Calculate the quantity that is n times as many as a specified number
- *#5 Determine which set of shapes was used to create a new shape

OPEN RESPONSE

Criteria: Our average was less than 1.5 out of 2.

- #23 Determine clock times and elapsed times
- #35 Recognize and draw lines of symmetry
- *#7 Extend a symbolic pattern, then count the elements

(continued)

**TARGET ACTIONS BASED ON TEST ITEM ANALYSIS
GRADE 3**

READING:

- 1) Although students are improving in their understanding of nonfiction texts, continue to talk to your school's reading teacher and library media specialist about specific nonfiction texts you can incorporate into your curriculum to support different content areas and increase comprehension in this genre.
- 2) To improve students' understanding of figurative language, give them plenty of exposure to it, especially as it occurs in poetry.
- 3) Give students opportunities to compare and contrast characters and events within the stories they read. This is a difficult concept at this grade level. Practice will help.

MATH:

- 1) Give students practice plotting FRACTIONS on a number line.
- 2) Have students draw and/or extend pictorial representations of patterns, then count the total number of elements.
- 3) Use quick mental math opportunities (e.g., line-up and dismissal times, transition times) to reinforce concepts involving multiplication, elapsed time, and symmetry.

Areas Showing Strength and/or Improvement:

- 1) Students have improved in their understanding of the inferences and symbolism within poetry. Thank-you for your effort in this regard.
- 2) Students have a strong grasp of the characteristics of a **myth**.
- 3) Comprehension and vocabulary were strong overall. This could be the result of more focus on questions and activities requiring higher order thinking skills.
- 4) Students had a 97 percent correct rating on the Math question involving a tally chart. This was mentioned in last year's report with recommendations and suggestions for improvement. Your effort on this concept had a direct impact on this years' student achievement.
- 5) **Students showed increased performance on questions involving geometry and measurement.**

**GRADE 4 MCAS ANALYSIS- SPRING 2007
ENGLISH LANGUAGE ARTS AND MATH**

NUMBER OF STUDENTS ASSESSED

English Language Arts: 289 Total (100%), 73 students with disabilities, 9 limited English proficient, 23 low-income
Math: same as above

PERFORMANCE LEVEL PERCENTS

Note: Numbers in parentheses indicate actual number of students.

MELROSE	2002	2003	2004	2005	2006	2007	STATE	2002	2003	2004	2005	2006	2007
<u>ELA</u>													
Advanced	13	18	16	11	8	12		12	10	11	10	8	10
Proficient	60	53	52	47	45	53		46	45	45	40	42	46
Needs Imp.	24	26	28	38	42	32		37	34	35	40	39	34
Warning	3 (8)	3(8)	4 (10)	4 (10)	5 (13)	4 (10)		10	10	9	11	12	10

MATH	2001	2002	2003	2004	2005	2006	2007	2001	2002	2003	2004	2005	2006	2007
Advanced	14	12	12	17	14	13	21	10	12	12	14	14	15	19
Proficient	30	35	32	31	37	21	36	24	27	28	28	26	25	29
Needs Imp.	47	43	47	41	39	56	38	46	42	43	44	44	45	39
Warning	9	10 (29)	9(23)	10 (29)	10(24)	10 (27)	5 (13)	19	19	16	14	15	15	14

PERFORMANCE LEVEL NOTES

- 1) In English Language Arts, we see an increase in the proficient and advanced categories with a reflective decrease in the needs improvement and warning categories. This nicely overturns the declining pattern we have seen since 2004.
- 2) In Math, we see a 15% jump in students at the proficient level and an 8% jump in students at the advanced level. Increased focus on the area of math instruction and assessment due to new program implementation may be a part of this increase in achievement.

PERFORMANCE LEVEL RESULTS FOR SELECTED SUBGROUPS

English Language Arts: The highest percentage of scores for all subgroups, with the exception of the Hispanic, white, and female, fell into the needs improvement range. The highest percentage of scores for the latter three groups fell into the proficient range. **We did see a nice jump in the percentage of boys reaching the advanced and proficient range (44% to 56%). Since their performance is an area we have been trying to address, please continue your efforts to examine instructional strategies as well as the test item analysis reports of boys at this level to see if there is some commonality in items/areas/strands of difficulty for boys. We have been focusing remedial efforts on strategies for topic development.**

Math: The highest percentage of all major subgroups in Math this year, with the exception of males, fell into the needs improvement category. The majority of male scores fell into the proficient range. Although the percent of girls and boys in the proficient and advanced categories was even last year, boys outperformed girls this year. The overall percentage of girls reaching proficient or advanced DID increase over last year, however. **We saw a good decrease in the percentage of students with disabilities who were in the warning category in Math this year (30%-14%). This is good news both in terms of student achievement and in terms of meeting our AYP as a district.** Differentiating instruction while exposing students to the same high standards is essential if we want to see this trend continue. Thank-you for your efforts.

SUBJECT AREA SUBSCORES

We surpassed the state in all subject area subscores for both ELA and math.

In English Language Arts, proper use of English grammar and good sentence construction was again a strength. Percentages for topic development and open responses stayed flat.

In Math, data analysis/statistics/probability, as we saw last year, was our strongest area. All other areas were tie for second. **We saw a nice jump in the percentage of geometry and measurement questions being answered correctly this year. Keep up the good work of making sure these concepts are introduced and practiced prior to the test.**

ITEM TYPE

In English Language Arts, as we saw last year, multiple choice and writing prompt questions received higher scores than open response questions. This was mirrored at the statewide level as well. **We need to create a bank of open-response questions from previously released MCAS tests and give them to our students on a consistent basis, using the MCAS rubric. Knowing the state's expectations will improve our students' success rate.**

In Math, multiple choice and short answer questions received higher scores than the open response. Continue to help students: 1) identify what open response questions are asking them, 2) think about the content area information they need in order to answer the question, 3) organize the information, 4) add details, and 5) create the answer. (continued)

GRADE 4 TEST ITEM ANALYSIS MCAS SPRING 2007

ENGLISH LANGUAGE ARTS LITERATURE

Criteria: More than 25% of our students got these questions incorrect.

An asterisk indicates that our average item score was LOWER than the state's.

#6 Map-reading skills (e.g., knowing that blue on a map indicates water)

#27 Inference in a non-fiction selection

#40 Knowing the format of a play (drama)

Understanding that the actions of characters are often shown in parentheses

LANGUAGE

0

OPEN RESPONSE

Criteria: Fewer than 50% of our students got a 3 or 4.

*#17 Using evidence from the poem, describe the speaker's feelings

*#26 Using evidence from a fictional story explain why a character decides to do something

#8 In a nonfiction article, describe the problems before and after an event

#35 Using evidence from a nonfiction article, explain why something is important

TARGET ACTIONS BASED ON ELA TEST ITEM ANALYSIS

1) We want to continue the improvement we see in students' understanding of poetry. Continue to expose students with regularity to poetry containing figurative language (e.g., Shel Silverstein, John Ciardi, David McCord, AA Milne). Discuss the true meaning of figurative phrases. Give students practice paraphrasing stanzas.

2) Although we have seen improvement this year in our students' performance on open response questions in English Language Arts, teachers should continue to review open response questions from this year's and previous MCAS tests (available online at the DOE website or through the curriculum office), and, using direct instruction, have students create appropriate graphic organizers to help them craft their responses. As stated in the report for Grade 3, several staff members from each school now have access to TestWiz.net. If you are new to our district and do not yet know about this tool, teachers may use this to actually see the scoring rubric for each open response question. Here are the directions from the TestWiz folks: For Open Response items, when you click on the link to the item through the test item analysis report, you will see another link in blue: [Scoring Guide](#). Click on [Scoring Guide](#) and you will see the rubric used for scoring that item with the various point values available. Click on any one of the point values and you will see a student example of a response worthy of that point value. Students would enjoy and learn a lot from seeing the examples from other students and the differences in the complexity of responses as they move up in point value. *(Note: If you do not see the link to the scoring guide when you click on the test item, it is because Datametrics, which is the company that owns TestWiz, is still waiting for the Department of Education to get the information up on the DOE website.)* Your principals also have access to your students' actual compositions via the MCAS Service Center website. Choose one student who received a high score and one who received a low score, then create transparencies without names for the students to view and critique.

3) Give students opportunities to read then re-enact short dramas and plays. Make sure to point to the distinctive features that we typically see in the format of the drama text.

Areas Showing Strength and/or Improvement:

- 1) Students improved this year on answering questions that involved overall comprehension of text, including comprehension of myths and poetry. Poetry is an area that we have been focusing efforts on and it seems we are seeing improvement in this area. Please continue your efforts.
- 2) Performance on questions involving understanding of vocabulary in context was also strong.
- 3) Performance on open response questions in ELA improved slightly this year. This may have contributed to an increase in the number of proficient or advanced students.

(continued)

MATH

MULTIPLE CHOICE

Criteria: For multiple choice: More than 25% of our students got the following questions incorrect.

An asterisk indicates that our average item score was LOWER than the state's.

*#4 GE Count the faces of a figure that looks like a cube and pyramid combined

#33 GE Determine the shapes that result when you cut a quadrilateral

#9 NS Choose the expression that is closest to the product of 2 numbers

#22 NS Change a decimal to words

#34 D Analyze a data table

#15 ME Demonstrate an understanding of VOLUME

#26 ME Convert inches to feet

OPEN RESPONSE

Criteria: More than 50% of our students got less than a 3 or 4.

#27 NS Using a stated unit cost, figure out how many items one could purchase

SHORT ANSWER

Criteria: Close to or more than half of our students left it blank or received a score of 0.

#12 NS Divide a 3-digit number by a 1-digit number

#29 NS Perform double-digit multiplication accurately

TARGET ACTIONS BASED ON MATH TEST ITEM ANALYSIS

- 1) Double-digit multiplication was a weakness we noted last year that continued this year. Let's make sure we are introducing this in a timely fashion so that students will feel competent in this skill.
- 2) Although the majority of questions involving measurement (e.g., area, perimeter) showed improvement, make sure students understand the more difficult concept of volume prior to the test. The use of manipulatives will help students to understand not only this concept but the concepts listed for numbers 4 and 33 listed above.
- 3) Make sure students are exposed to triple-digit division prior to the test.

Areas Showing Math Strength and/or Improvement

- 1) Students' performance improved this year on questions involving finding equivalent fractions, retrieving data from tables, and identifying/working with angles. Last year's report discussed suggestions for increased exposure to data tables. Thank-you for your efforts.
- 2) Students continue to show strength in answering open response questions in the area of mathematics at this grade level. On 3 out of 4 questions, the majority of students received a score of 3 or 4. **Multi-step question performance has also improved greatly.**

GRADE 5 MCAS ANALYSIS- SPRING 2007

ENGLISH LANGUAGE ARTS, MATH, SCIENCE AND TECHNOLOGY/ENGINEERING

NUMBER OF STUDENTS ASSESSED

ELA: 280 Total, 59 students with disabilities, 10 English language learners, 18 low-income, 2 alt. assessments

Math: 279 Total, 58 students with disabilities, 10 English language learners, 18 low-income, 2 alt. assessments

SCI.: 277 Total, 56 students with disabilities, same as above

PERFORMANCE LEVEL PERCENTS

Note: Numbers in parentheses indicate actual number of students.

ENGLISH LANGUAGE ARTS: (second year tested)

	<u>Melrose</u>		<u>State</u>	
	2006	2007	2006	2007
Advanced	28	21	15	15
Proficient	43	57	44	48
Needs Improvement	24	18	31	28
Warning	5 (12)	4 (8)	9	9

MATH: (second year tested)

	<u>Melrose</u>		<u>State</u>	
	2006	2007	2006	2007
Advanced	25	11	17	19
Proficient	29	37	26	32
Needs Improvement	33	39	34	31
Warning	13 (33)	14 (36)	23	18

SCIENCE and TECHNOLOGY/ENGINEERING:

	<u>Melrose</u>					<u>State</u>				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Advanced	32	35	19	24	11	18	20	16	17	14
Proficient	40	37	46	35	45	33	35	35	33	37
Needs Improvement	23	25	29	35	39	34	33	38	39	37
Warning	5 (13)	4 (10)	5(13)	6 (15)	5 (13)	15	13	12	11	12

PERFORMANCE LEVEL NOTES

English language Arts

1) The percent of students scoring Proficient increased by 14% this year. While some of that number includes students moving from the advanced category, much of it is from students moving up from the Needs Improvement category. 78% of our Grade 5 students are scoring proficient or advanced in English Language Arts compared to 63% at the state level.

Math

1) We saw a large decline in the percent of students achieving Advanced in Grade 5 math this year. Only 48% scored proficient or advanced. *Twenty-two out of thirty-six students who received a rating of warning were within 4 points of the needs improvement designation.*

Science and Technology/Engineering

- As in Math, we saw a large decline in the percent of students receiving a rating of Advanced. In fact, in Science, we have seen a dramatic decline in the percent of students receiving a rating of advanced since 2004. The percent of students receiving a rating of proficient, on the other hand, has remained relatively steady since the onset of the test in 2003. The state has also seen a decline in the percent of students in the advanced category, however, the decline is not as dramatic as our own, so this cannot be seen as a test design issue. We will be examining the area of Science and Technology/Engineering with our Curriculum Review Council this year.
- The highest number of students (11 out of 13) who received a score of warning, fell in the 216-218 range.

PERFORMANCE LEVEL NOTES FOR SELECTED SUBGROUPS

ELA: We saw a big increase in the percentage of low-income students attaining proficient and advanced scores this year.

A good increase, though not as dramatic, was seen for our students with disabilities as well. **This is good news both in terms of student achievement and in terms of meeting our AYP as a district.** Differentiating instruction while exposing students to the same high standards is essential if we want to see this trend continue. Thank-you for your efforts.

Although girls continued to outperform boys in this area, the percent of boys reaching advanced and proficient increased by over 10% this year. (continued)

MATH: As in the English Language Arts area, we saw a big increase in the percentage of low-income students attaining proficient and advanced scores this year, with a corresponding decrease in the percentage of students receiving a rating of warning. The performance of our students with disabilities declined slightly from last year. Male vs. female performance was even in this subject area.

SCIENCE AND TECHNOLOGY/ENGINEERING: In this content area, we again saw a big increase over last year in the percentage of low-income students attaining proficient and advanced scores this year, with a corresponding decrease in the percentage of students receiving a rating of warning. The performance of students with disabilities declined slightly. Although a higher percentage of girls than boys received a rating of advanced, the composite performance index and the total percentage of both groups receiving either advanced or proficient was relatively even.

SUBJECT AREA SUBSCORES

- 1) The average percent correct for all subject area subscores exceeded the state in ELA and Science. In the area of Math at this grade level, however, this was not the case.
- 2) In ELA, students performed better, in terms of average percent correct, in the category of Language than in Reading and Literature.
- 3) In Math, measurement was our lowest area. Patterns, relations and algebra was our strongest area again this year.
- 4) In Science, the pattern of earth and space science being our weakest area and technology/engineering the strongest area continued for the fourth year. With the focus on mid and year-end assessments last year taking time at grade level meetings, we did not have a chance to discuss this pattern. We will do so this year.

ITEM TYPE

Students performed better on multiple choice than open response questions. ELA open response questions were the strongest of all three subject areas tested. Open response questions in the area of Math were the most difficult ones for our students at this grade level.

***See Test Item Analysis below for questions which proved difficult for our Grade 5 students, along with Target Actions to address them.**

TEST ITEM ANALYSIS **GRADE 5: MCAS SPRING 2007**

ELA:

Multiple Choice

Criteria: Over 25% of our students got the following answers incorrect.

An asterisk indicates our average item score was LOWER than the state's.

#2 LT Inference in nonfiction

#30 LT Inference about a character in nonfiction

#17 LA Vocabulary- Meaning of the word, "ravenous"

Open Response

Criteria: Over 50% of our students did not receive a 3 or 4.

#9 LT Using facts found within a piece of nonfiction, explain how animals are trained and treated

#36 LT Using details from a nonfiction selection, infer and explain how one character is important to another

ELA TARGET ACTION

- 1) Inferential questions cause students to, "...think about and go beyond the information given." (DePaul Center for Urban Education, 2002). They support and ensure strong comprehension of the material being read.

When you ask students to:

- Make comparisons
- Make predictions
- Draw conclusions
- Make connections between events, characters, and actions
- Identify motives and/or emotions and the reason behind them

you are asking inferential questions. Ask these types of questions throughout the day in all content areas, *and at times, model the thinking process for deciding an appropriate answer. This modeling can be a critical component in a student's ability to perform the process independently.* (continued)

MATH:

Multiple Choice:

Criteria: More than 25% of our students got the following questions incorrect.

- *#33NS Determine the number best represented by a position on a number line
- *#5ME Determine the measure of an angle
- *#38 GE Plot a figure on a grid and identify it
- *#20 P Interpret a graph to compute miles per gallon
- *#3GE Identify the figure that is a reflection of the other
- *#21ME Add pounds and ounces
- *#6P Identify the correct numerical expression for a word problem
- #25P Identify equivalent equations
- #15P Determine the value of a total task given a percent of it
- #36P Compute (add) double bar graph info
- #39NS Calculate the price of an item BEFORE a sale reduction
- #35NS Add 2 mixed numbers
- #22 NS Determine a decimal equivalent for a number in expanded notation
- #34NS Identify a prime number

Short Answer:

Criteria: Over half of our students left the answer blank or received a score of 0.

- #12GE Determine the number of vertices on a prism
- #29NS Determine the shaded percent of a circle

Open Response:

Criteria: Over 50% of our students did not receive a 3 or 4.

- #17ME Determine the number of cubes to fill a box
- #27GE Draw and interpret lines of symmetry

MATH TARGET ACTIONS

- 1) The Department of Education seems to be requiring students to analyze and interpret an increasing amount of visual displays of information. Increase students' exposure to number lines, grids, graphs, charts, and tables. I will be talking to Jorge Pazos, Technology Director, about the possible purchase of Graph Club district-wide. This program would support your efforts.
- 2) **Identifying** lines of symmetry was a skill expected on the Grade 3 MCAS test. At the Grade 5 level, students were expected to go a step further and **draw** the lines of symmetry. At both levels, our students had difficulty. I would suggest working with the art teacher to integrate this concept into a series of art lessons. This may help students make the connections necessary for a deeper understanding of this concept.
- 3) Understanding volume was on both the Grade 4 and Grade 5 tests. Again, at both levels, our students found this concept difficult. Make sure that in your sequence of instruction, volume is taught and reviewed several times before the test, preferably with the use of physical models.

SCIENCE and TECHNOLOGY/ENGINEERING

Multiple Choice:

Criteria: Over 25% of our students got the following answers incorrect.

An asterisk indicates our average item score was LOWER than the state's.

- *#20LS Identify light as the cause of a plant bending
- *#10LS Identify the part of a sunflower used for reproduction
- #13LS Use the picture and key to identify a tamarack (cluster of leaves)
- #27PS Know that the shortest string would produce the highest pitch
- #12PS Identify containers that have the same volume
- #32ES Identify the correct jet stream that would influence weather across a certain area
- *#11ES Identify the sedimentary rock
- #17ES Identify the soil particles that would hold the most water
- #6TE Identify the set of info that would best help you in choosing the correct answer
- #25TE Use pictures to help determine which machine would be best suited for a task
- #29TE Identify the shape in the picture that would fit the most milk in a crate (continued)

Open Response:

Criteria: Over half of our students did not receive a 3 or 4

*#19 TE Explain how to use given objects to fill well depth

#18ES Describe three natural processes that help shape the earth's surface

#38ES Use a weather table to answer questions

#37PS Identify properties to test when comparing wood and iron

SCIENCE TARGET ACTIONS

- 1) Make SURE students can identify sedimentary rocks in actual physical models, in pictures, and in diagrams. This question has consistently been on the MCAS test for the past several years, and our students consistently do not fare well on it.
- 2) Have students identify, draw, and label plant parts *not only stating the name of the part but the purpose of the part* as well. Make sure they know what part of the plant is designated for the purpose of reproduction.
- 3) Make sure students are exposed to hands-on activities that will lead to an understanding of the properties of rocks and minerals prior to the test (e.g., color, hardness, luster etc.). Allow them to test rocks and minerals for each of those properties if possible. This concept has consistently been on the Grade 5 test.
- 4) Have students create a science word bank or dictionary related to the different themes/strands that you study. This will allow them to build strong scientific vocabulary (e.g., tamarack=cluster of leaves) skills.
- 5) Practice reading and inferring information from weather maps.

AREAS OF STRENGTH/IMPROVEMENT

ELA: Students continue to exhibit strong comprehension in fiction, nonfiction, myths, drama, and poetry. Thank-you for your sustained efforts to interpret and analyze, using inferential questions, all these genres. A higher percentage of questions involving vocabulary in context were also answered correctly this year.

MATH: Students were confident in their ability to identify parallel lines, perform double-digit division, solve equations with given variables, understand place value to the hundred thousands, and analyze linear time and distance relationships.

SCIENCE AND TECHNOLOGY/ENGINEERING: Students did well again on questions involving simple machines. They also showed strong understanding of the properties of heat, light, and sound, animal adaptations, and electric circuits. They demonstrated better understanding this year than last year on the question relating to the purpose of the bark of a tree. This was indicated on last year's analysis.

Note! Students did not receive full History and Social Science results, however, school districts did receive test item analysis reports in this area. Our test item analysis reports at this grade level indicated stronger scores in the area of North American geography and weaker scores in the strand of American History, although certain concepts within that strand were high (e.g., understanding of the importance of the suffrage movement). We will need to review our benchmarks to make sure we are covering all topics listed for Grade 5.

**GRADE 6 MCAS ANALYSIS- SPRING 2007
ENGLISH LANGUAGE ARTS AND MATH**

NUMBER OF STUDENTS ASSESSED

ELA: 254 Total, 51 students with disabilities, and 6 English language learner, 22 low-income (100%)

MATH: 253 Total, 50 students with disabilities, 7 English language learners, 22 low-income (99%)

PERFORMANCE LEVEL PERCENTS

Note: Numbers in parentheses indicate actual number of students.

<u>MATH</u> <u>MELROSE</u>							STATE					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Advanced	15	16	21	20	27	23	13	16	17	17	17	20
Proficient	44	34	27	38	29	38	28	26	26	29	29	32
Needs Improvement	24	32	32	27	26	28	29	32	32	30	29	28
Warning	18	17(46)	19(56)	14 (36)	17(42)	11(28)	30	26	25	23	25	20

ENGLISH LANGUAGE ARTS

<u>MELROSE</u>	2006	2007	STATE	2006	2007
Advanced	17	8		10	9
Proficient	63	69		54	58
Needs Improvement	18	20		28	25
Warning	2 (3)	3 (8)		8	7

PERFORMANCE LEVEL NOTES

- 1) This is the second year English Language Arts was tested at this grade level. 77% of sixth grade students were advanced or proficient in this area. We see a 9% decline in the advanced category with students filtering into the other three levels. Five of the eight students who received a rating of warning were within 4 points of Needs Improvement.
- 2) In Mathematics, although our advanced percentages decreased slightly, we see a good decline in the percentage of students in the warning category with a corresponding increase of students in the proficient category.

PERFORMANCE LEVEL RESULTS FOR SELECTED SUBGROUPS

In English Language Arts, our students with disabilities did well in comparison to the state for the number of composite performance index points earned, however, they still accounted for the highest percentage of students failing. We need to continue our efforts of ensuring that ALL students are being exposed to benchmark concepts and that if an alternate assessment is given, the teacher is knowledgeable about what makes a successful portfolio.

Girls performed better than boys in ELA, whereas last year, performance was about even.

In Math, girls attained a greater percent of scores in the proficient and advanced categories for the first time in 3 years. Our low-income students, and students with disabilities, struggled with this year's Grade 6 math test and were well below the CPI for AYP.

SUBJECT AREA SUBSCORES

ELA:

While the percentage of total points attained was higher in the area of Language, we need to keep in mind that the majority of the test at this level fell into the category of Reading and Literature. On average, our students received a total of 74 out of a possible 105 points in this category versus 70.5 for the state.

MATH:

This year, patterns, relations, and algebra, was our strongest area, as it was last year. Data analysis came up as a weak area. Both patterns were reflected at the state level as well. We see nice improvement in scores in the strand of measurement this year. Thank-you for your efforts to improve student achievement in this strand.

ITEM TYPE

ELA and MATH: Out of the total number of points possible, students got a higher percentage of points answering the multiple choice questions than the open response questions. However, we did see an improvement in the performance of students on the open response questions in Mathematics.

Test item analysis and specific target actions are listed on the next two pages.

**TEST ITEM ANALYSIS
GRADE 6: MCAS SPRING 2007**

ENGLISH LANGUAGE ARTS

MULTIPLE CHOICE

Criteria: Over 25% of our students got the following questions incorrect.

An **asterisk** indicates that our average item score was LOWER than the state's average.

#17 LT Inference: In the poem, which word best describes the speaker's attitude toward the cat?

#16LT Interpretation of poetry

#23LT Inference: Infer the reason behind the character's emotion in a fiction selection

#38LT Inference and interpretation in a drama

#40LT Finding information and interpretation of events in a drama

#6LT Interpretation and analysis of symbolism in nonfiction

#31LT Understanding of vocabulary in context ("financial details"=money)

OPEN RESPONSE

Criteria: Over half of our students did not receive a 3 or 4.

#9LT Create an appropriate graphic organizer for a nonfiction article according to specifications listed in the question

#18LT Use evidence from a poem to contrast a character's behavior in the day vs. the night

#27LT Use evidence from a fiction selection to describe a character's traits

#36LT Use information from a nonfiction article to explain why specific aspects of planning a business (e.g., surveying) are important

ELA TARGET ACTIONS BASED ON TEST ITEM ANALYSIS: GRADE 6, 2007

- 1) A pattern we saw last year was that the highest percentage of our students received a 2 on the majority of our open response questions in ELA. This pattern was evident again in ALL of the open response questions. Let's try to move students up a notch by making sure they are competently reviewing the question and are able to paraphrase what they need to find in, or infer from, the text in order to answer the question appropriately. Scoring rubrics for open response questions are available using Testwiz.net. All principals and designated teachers at each building can obtain the scoring guide for any specific open response question to enable staff members and students to see what scorers were looking for. We should be examining these guides and sharing them with students so that they too can become more familiar with the criteria for assessment.
- 2) We see a larger number of inferential questions on the MCAS starting with Grade 5. As I stated in their test item analysis, inferential questions cause students to, "...think about and go beyond the information given." (DePaul Center for Urban Education, 2002). They support and ensure strong comprehension of the material being read.
When you ask students to:
 - Make comparisons
 - Make predictions
 - Draw conclusions
 - Make connections between events, characters, and actions
 - Identify motives and/or emotions and the reason behind themyou are asking inferential questions. Ask these types of questions throughout the day in all content areas, *and at times, model the thinking process for deciding an appropriate answer. This modeling can be a critical component in a student's ability to perform the process independently.*
- 3) Consider incorporating Reader's Theatre into your literacy block. This is a fun way to expose students to the interpretation and analysis of drama, while giving them a chance to role play and assume the traits of a character.
- 4) In an effort to be successful on questions similar to #9 above, rather than **give** students a graphic organizer already printed, give them a blank piece of paper, then orally give them directions for creating one that includes the specifications you want them to address (e.g., a column for: problem/solution, cause/effect, character traits/evidence).
(continued)

MATH

MULTIPLE CHOICE

Criteria: Over 25% of our students got the following questions incorrect.

An **asterisk** indicates that our average item score was LOWER than the state's average.

- *#37NS Determine which number represents a point on a # line
- *#6M Determine the sum of measures of interior angles for a pentagon
- *#24PR Determine which expression represents the data relationship in a table
- *#20PR Interpret a graph showing measures of distance to find values
- *#39D Find the median number in a number table
- #4NS Determine the percent of total value for one value in a table
- #16PR Identify the table that shows a constant rate of change
- #35GE Identify the figure that has both line and rotational symmetry
- #23NSDetermine which value represents the shaded percentage of a figure
- #32PR Find the graph that represents the relationship between two quantities
- #15NS Find the mixed number that is the total of 3 numbers
- #34PR Extend a pattern to find new values
- #21PR Determine the variable value that makes the equation true

SHORT ANSWER

Criteria: Over half of our students left the answer blank or received a score of 0.

- #11 NS Write a number as a product of prime numbers
- #12 GE Determine the distance between 2 points on a number line

OPEN RESPONSE

Criteria: More than half of our students did not receive a 3 or 4.

- #17D Plot a data set then identify the median and mode

MATH TARGET ACTIONS BASED ON TEST ITEM ANALYSIS

- 1) Points on a number line are still difficult for our students to understand. Continue to allow them to create their own number lines and plot fractions, integers, and decimals on the line to see and understand their relationship by recognizing a pattern. Have them find the distance between 2 points on a line using relevant problems that are meaningful in their lives.
- 2) Make sure you are giving students opportunities to **practice finding the mean, median, and mode of data displayed** in a graph or table prior to the test. These concepts have been consistently on the test at this grade level since its inception.
- 3) Continue efforts to make sure students are using the reference pages they are given which indicate formulas to use when solving problems. You may want to consider, at the outset of math class at the beginning of the year, having students create a small formula/procedure notebook for use in Math class throughout the year. As students learn new formulas/procedures, they can put a sample in their notebook to refer to as needed. This would obviously not be for use during the test, but would get them into the habit of using and referring to the resources that are available to them.
- 4) Use tangrams to let students demonstrate an understanding of symmetry.
- 5) Show students the relationship between interior and exterior angles. This will help them determine the correct measurement of a specific angle in a specific shape.

AREAS SHOWING STRENGTH AND/OR IMPROVEMENT

ENGLISH LANGUAGE ARTS

Students did well on the majority of questions involving vocabulary and comprehension of nonfiction texts.

MATH

Students did an excellent job this year in answering open response Math questions. On 3 out of 4 questions (two of which included geometry and measurement!), students scored either a 3 or 4. Thank-you for your continued efforts to have students practice solving multi-step problems, while creating visual displays of their work.

GRADE 7 MCAS ANALYSIS - SPRING 2007
ENGLISH LANGUAGE ARTS AND MATH

NUMBER OF STUDENTS ASSESSED

ELA: 269 Total, 53 students with disabilities, 2 limited English proficient, 12 low-income, 3 alt. assessments (99%)

MATH: 270 Total, 52 students with disabilities, 2 limited English proficient, 12 low-income, 3 alt. assessments (100%)

PERFORMANCE LEVEL PERCENTS

Note: Numbers **in parentheses** indicate actual number of students.

ENGLISH LANGUAGE ARTS

	MELROSE						STATE					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Advanced	11	9	8	10	15	14	9	8	9	10	10	9
Proficient	69	65	73	69	66	69	55	57	59	56	55	60
Needs Improvement	17	20	17	17	15	13	28	28	25	27	26	23
Warning	3	5 (14)	2 (5)	4 (11)	4(8)	4 (7)	9	7	7	8	9	8

MATH

	MELROSE		STATE	
	2006	2007	2006	2007
Advanced	12	24	12	15
Proficient	37	33	28	31
Needs Improvement	31	28	33	30
Warning	20 (48)	15(38)	28	24

PERFORMANCE LEVEL NOTES

ELA: 83% of our Grade 7 students are either proficient or advanced, compared to 69% at the state level.

MATH: This is the second year that Math has been tested at this grade level. The percentage of students scoring advanced **doubled** and the percentage of students in the warning category has decreased.

PERFORMANCE LEVEL RESULTS FOR SELECTED SUBGROUPS

ELA: Students with disabilities had the majority of their scores in the Needs Improvement category as they did last year. Our low-income subgroup had the highest percentage of their scores in the proficient range. Girls again had the highest percentage of students in the advanced range in this content area.

MATH: As we saw in Grade 6, the Math test was very difficult for our low-income students and students with disabilities. Their number of composite performance index points was well below what they needed to make AYP. I will be bringing this information to the middle school math team to develop a plan of action for improvement. A reference sheet, which has been approved by the DOE and which Mr. Joe Dillon (high school principal) has already shared with us, may be a resource that our students with disabilities could use during the test.. Out of all our subgroups, boys had the highest percentage of students in the advanced category in this subject area.

SUBJECT AREA SUBSCORES:

- 1) We surpassed the state in all subject area subscores.
- 2) In English Language Arts, our topic development statistics in the area of composition have remained flat and continue to be our lowest area. The actual compositions of your students are available to you through the mcasservicecenter website accessible to your building principal. Creating transparencies of compositions (with names deleted) and regularly reviewing them in light of the composition scoring rubric, will help students analyze and evaluate their own work.
- 3) In Math, while we saw good improvement in measurement scores at the Grades 3,4, and 6 level, it was still the weakest strand in Grade 7. **The strand of geometry however, showed good improvement.** Data analysis/statistics,/ probability was our strongest strand this year.

ITEM TYPE

In English Language Arts, although it is still our weakest item type, students improved for the second year in a row on the average number of points attained for open response questions. The majority of students received a 3 on a scale of 0-4, this year (vs. 2 last year). Thank-you for your efforts.

In Math, students were most successful in answering multiple choice questions. However, on four out of five open response questions, over half of our students attained a 3 or 4.

Note: Grade 7 students were given a preliminary test in History and Social Science this year. Students did not receive individual home reports. Schools, however, received test item analysis report summaries. World Geography 2 was a strong area for our students. The study of Ancient Greece and Rome needed improvement. (continued)

**TEST ITEM ANALYSIS
GRADE 7 MCAS SPRING 2007
ENGLISH LANGUAGE ARTS AND MATH**

ENGLISH LANGUAGE ARTS

LITERATURE

Criteria: Over 25% of our students got these answers incorrect.

An asterisk indicates an average item score LOWER than the state's.

#12 LT Identify the author's purpose in using a specific word in poetry

#15 LT Analyze text to explain a character's action

#13 LT Understand figurative language and symbolism in poetry

#37 LT Understand cause and effect in a myth

LANGUAGE

0

OPEN RESPONSE

Criteria: Fewer than half of our students got a 3 or a 4.

#36 LT Based on information from a nonfiction text, explain actions we can take to prevent something (contamination)

MATH

Criteria: Over 25% of our students got these answers incorrect.

An asterisk indicates an average item score LOWER than the state's.

MULTIPLE CHOICE

*#31 PR Create a symbolic expression representing a fractional relationship

*#3 NS Represent a large # using scientific notation

#33 NS Given a rate in MPH, determine distance traveled in minutes

#26 PR Determine from a graph how much Y changes as X changes

#10 NS Select the closest estimate of the percent of a total

#32 PR Compare 2 schedules to find something common about them

#38 PR Which proportion shows production time given a specific rate

#25 D Determine a value from percents shown in a circle graph

#17 NS Use the inverse relationship to determine an equivalent expression

#34 D Interpret a tree diagram to determine probability of an event

#14 NS Change a decimal into a fraction ($.375=3/8$)

#37 ME Calculate the area of a **trapezoid**

#5 ME Convert gallons per second into gallons per minute

#12 NS Using a given formula (population divided by land area = population density), choose the closest estimate of population density from area and population statistics

#36 PR Interpret a model to find the value of one symbolic variable

SHORT ANSWER

Criteria: Over half (or close to half) of our students left the answer blank or received a score of 0.

*# 8 PR Write an equation relating to 2 variables in a table

*#19 NS Calculate a discounted price using percent

OPEN RESPONSE

Criteria: Over half of our students did not get a 3 or 4.

#29 ME Work with a compound shape to calculate various measures

See the following page for target actions based on test item analysis.

(continued)

TARGET ACTIONS BASED ON TEST ITEM ANALYSIS: GRADE 7, MCAS 2007

ENGLISH LANGUAGE ARTS

- 1) Use past MCAS poetry selections or the poetry resource list in the back of the ELA frameworks to give students a quick practice exercise 2- 3 times a week in poetry analysis.
- 2) Continue to have character analysis as a standard part of most assignments. Have students identify, define, and explain the feelings, relationships, and changes of characters in the stories they read. They are improving in this area.
- 3) Make a direct connection with the staff members in your building who have access to TestWiz.net. They can give you a print-out of the scoring guide for each open response question. Study and compare these guides with your students. Make sure they are also familiar with the scoring rubric for the MCAS long composition (which is included in your curriculum binder) and have been exposed to many samples of high quality responses. Continue to focus specifically on topic development and rich word choice. Principals also have access to your students' actual compositions via the MCAS Service Center website.

MATH

Number Sense:

- 1) Make sure students understand and can express large numbers using scientific notation.
- 2) Let students practice changing fractions to decimals and vice-versa. Have them choose the decimal that is equivalent to the fraction and vice-versa.
- 3) Model for students examples of inverse relationships being used to determine equivalent expressions.

Patterns, Relations and Algebra

- 1) Using graph paper, have students create graphs that show value y changing as value x changes. Have them review the graphs of peers to determine how much value y is changing, based on the changes they see in value x.
- 2) In Mathematics, certain words can trigger an awareness of the correct response and help eliminate other responses (e.g., "total" triggers addition). The word, "of" when fractions are involved in the problem, often triggers multiplication. Teach students these trigger words to help them identify correct responses and eliminate other choices. (See question #31.)

Statistics and Probability

- 1) Our students need to be familiar with a **wide variety** of different ways to display and analyze data. *While students improved on stem and leaf plots, tree diagrams proved more difficult.* Make sure students know how to create and gather information from a tree diagram.

Measurement

- 1) Make sure students know how to find the area of *uncommon* shapes such as trapezoids.

Areas Showing Strength/Improvement

English Language Arts:

- 1) The majority of Grade 7 students received a score of 3 or 4 on 3 out of 4 open response questions. This was a noticeable improvement over last year, where the highest percentage of scores for ALL open response questions was only a 2. Continue to use previous open response questions, along with their accompanying scoring rubric, with students so that they will continue to show improvement in this area.
- 2) Students continue to do VERY well on answering questions that involved identifying and analyzing information from fiction, nonfiction, and myth genre selections. Thank-you for your consistent efforts to increase our students' exposure to nonfiction text.
- 3) On **ALL** of the questions involving vocabulary, over 80% of our students chose the correct response. Continue to systematically enrich the word bank students have to draw on and encourage them to use new vocabulary in their writing.

Math:

- 1) Students did a great job of answering the open response questions in Math this year. On 4 out of 5 questions, students received a score of 3 or 4. These questions involved working with decimals and percents to calculate prices, creating tables, working with linear relationships, calculating median values, and making stem and leaf plots.
- 2) There were several questions involving stem and leaf plots this year. Creating and analyzing stem and leaf plots was a weak skill noted last year. Students' performance on these questions improved greatly. Thank-you for your efforts.

- 3) Students performance on questions relating to: finding the absolute value, labeling and plotting points on a coordinate plane, and calculating the height of a rectangular prism was also much improved from last year.

GRADE 8 MCAS ANALYSIS- SPRING 2007

ENGLISH LANGUAGE ARTS, MATH, SCIENCE AND TECHNOLOGY/ENGINEERING

NUMBER OF STUDENTS ASSESSED

English Language Arts: 255 Total, 46 students with disabilities, 10 limited English proficient, 7 low-income, 1 alt. (100%)

Math: 256 Total, 46 students with disabilities, 10 limited English proficient students, 7 low-income, 1 alt. assessment (100%)

Science and Technology/Engineering: same as Math above

PERFORMANCE LEVEL PERCENTS Note: Numbers **in parentheses** indicate actual number of students.

MELROSE

	MELROSE						STATE					
<u>MATH</u>	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Advanced	11	11	10	19	14	17	11	12	13	13	12	17
Proficient	30	27	30	44	39	36	23	25	26	26	28	28
Needs Imp.	34	36	39	21	28	29	33	30	32	30	31	30
Warning	24	27(68)	21(57)	16(41)	19(51)	18(46)	33	35	29	31	29	25

SCIENCE AND TECH./ENGINEERING

	2003	2004	2005	2006	2007	STATE:					
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007	
Advanced	4	4	2	3	4	4	5	4	4	3	
Proficient	31	36	35	30	40	28	28	29	28	30	
Needs Improvement	45	37	46	56	42	37	36	41	43	44	
Warning	20(50)	23(63)	17(44)	12(32)	14(36)	31	31	26	25	24	

ENGLISH LANGUAGE ARTS

	MELROSE		STATE	
	2006	2007	2006	2007
Advanced	14	19	12	12
Proficient	72	69	62	63
Needs Improvement	12	11	19	18
Warning	1(3)	1(2)	7	6

PERFORMANCE LEVEL NOTES

Math

We see a slight increase in the percent of students reaching the advanced category. Needs improvement and warning remained flat. Thirty-three of the 46 students receiving warning fell in the highest end of the category.

Science and Technology/Engineering

This year, we saw the highest percentage of students reaching advanced or proficient in Science and Technology/Engineering since the test's inception in 2003. We would like to see this trend continue. Again the highest number of students in the warning category were within 4 points of Needs Improvement.

English Language Arts

This was the second year English Language Arts was tested at this grade level. The number of students achieving advanced increased slightly this year. Close to 90% (88%) of our students are proficient or advanced compared to 75% at the state level. Both students in the warning category were within 4 points of Needs Improvement.

PERFORMANCE LEVEL RESULTS FOR SELECTED SUBGROUPS

Math

64% of our students with disabilities (actual # is 30) received a rating of warning. The highest percentage of our limited English proficient students also received a rating of warning in math. Boys slightly outperformed girls.

Science and Technology/Engineering

The highest percentage of scores for students with disabilities in this content area was in the Needs Improvement category. This was an improvement over last year's performance. Students with limited English proficiency had the highest percentage of students in the warning category. Boys outperformed girls as they did last year.

English Language Arts

Out of all three subject areas tested, our students with disabilities, and limited English proficient students did very well in this content area, with over half of the students in each subgroup performing at the proficient level. Girls outperformed boys as they did last year.

SUBJECT AREA SUBSCORES

In Math at this grade level, Number Sense was our strongest area with Data Analysis/Statistics/ Probability and Patterns/Relations/Algebra tie for second. Geometry and measurement were our weakest strands as they were for students across the state for the second year.

In Science, Physical Science performance remained flat in comparison to last year's scores. It was still an area of difficulty, while Technology/Engineering was our strongest strand. This pattern can be seen at the state-wide level as well.

In English Language Arts, both Language and Reading/Literature were almost equally strong (79% correct vs. 78% correct).

(continued)

ITEM TYPE

In Math, we are maintaining improved performance on open response questions, with the majority of students receiving a 3 or 4 on 3 out of 5 open response questions in Math. Multiple-choice questions received the highest number of points.

In Science, open response question performance remained flat this year, with the Life Science questions posing the most difficulty. Multiple choice questions still had the highest percent of answers correct.

In all of the open response questions in ELA at this grade level, more than 50% of our students received a score of 3 or 4. Middle School English Department meetings should designate some time to sharing success strategies for open response questions across grade levels. Strategies could be shared with the Science Department as well. Although some content-specific format issues may be relevant, there may be some common ground worth discussing.

*** See Test Item Analysis below for specific questions that proved difficult for our Grade 8 students. Target actions to address them have also been listed.**

TEST ITEM ANALYSIS GRADE 8 MCAS SPRING 2007

ENGLISH LANGUAGE ARTS

Multiple Choice

Criteria: More than 25% of our students got the following incorrect.

An asterisk indicates our performance was LOWER than the state's.

#35 LA Vocabulary: meaning of, "vibrant lexicon" (lively vocabulary)

#25 LT Which phrase best describes a character in a fiction selection

#31 LT Comprehension and analysis of text in relation to the reason *why* something happened

Open Response

Criteria: Over half of our students did not get a 3 or 4

0

MATH

Multiple Choice

Criteria: More than 25% of our students got the following incorrect.

An asterisk indicates our total was LOWER than the state average.

*#10 PR Identify the graph that shows a given linear equation

#36 D Determine the probability of drawing 2 tiles in sequence

#4 NS Identify the correct scientific notation for a number

*#5 NS Evaluate an expression containing absolute values

#6 GE Estimate the diagonal length of a rectangle

*#27 PR Determine the slope of a line represented by an equation

*#17 PR Identify the graph that has a specified slope and intercept

#12 NS Identify equivalent expressions

*#3 ME Estimate average speed from a distance/time graph

#18 NS Evaluate a numerical expression having a square root

#30 D Determine quantities from a circle graph of percents

#13 D Interpret a histogram

#33 D Find the median of data in a box and whisker plot

#38 D Find the median of data in a chart

Open Response

Criteria: Over half of our students did not get a 3 or 4.

*#9 PR Identify the slope, and intercept of a linear equation

#29 ME Work with the area and circumference of circular shapes

Short Answer

Criteria: Over half of our students did not get a 1

#8 ME Convert yards to feet

#20 NS Compute a fraction of a fraction

(continued)

SCIENCE AND TECHNOLOGY/ENGINEERING

MULTIPLE CHOICE

Criteria: Over 25% of our students got the following questions incorrect.

An asterisk indicates that our average item test score was LOWER than the state's.

Physical Science

*#12 Identify sugar dissolving in water as a mixture

*#14 Identify zero degrees as freezing temperature for water

#22 Find the number of seconds it will take to go 10 miles at .5 m/sec

#34 Identify the positions of a pendulum that have the same potential energy

#10 Identify a physical (vs. chemical) change

#15 Recognize that air is made up of several elements

#29 Recognize that a new material can be formed during a chemical change

#31 Identify an atom as the smallest unit of an element with properties

Life Science

#26 Know that a human liver cell has 23 pairs of chromosomes

#27 Know that mushrooms are important decomposers in an ecosystem

#32 Understand the role of food in a symbiotic relationship

#8 Know that genetic variety is a primary advantage of sexual reproduction

#2 Know that producers convert CO₂ and H₂O into sugar and O₂

Earth and Space Science

#23 Know that metamorphic rock is formed underground

#11 Know that the inner core has the greatest density of all of earth's layers

#25 Correctly identify a picture of a lunar eclipse

#7 Know that glacial deposits are good indicators of climate change

#21 Recognize the sequence of solar system to galaxy to universe is small to large

#5 Know that convection is the process that transfers heat from the earth's mantle to the crust

Technology and Engineering

#33 Understand that a benefit of mass production is low cost

#35 Understand why companies irradiate fruits and vegetables before selling them

OPEN RESPONSE

Criteria: Over half of our students did not get a 3 or 4.

*#19 LS Put organisms into kingdoms and give a characteristic of each

#37 LS Identify the producer and consumer in a rosebush ecosystem

#38 PS Draw and describe particles as liquid and gas

#39 TE Draw and describe thrust, drag, and gravity on a moving car

GRADE 8 MCAS ANALYSIS: SPRING 2007 **TARGET ACTIONS BASED ON TEST ITEM ANALYSIS**

ENGLISH LANGUAGE ARTS

Continue to use higher level questioning during class that leads students to deeper comprehension by analyzing characters, motives, and events. (e.g., How would you describe this character and what in the text leads you to that conclusion? Why do you think this happened and what in the story is your answer based on?)

MATH

1) In the area of measurement:

- a) Give students practice converting units of measure (e.g., yards to feet). Link estimation to some of these activities so that students can connect the conversion skill to another skill (the skill of estimation), thereby strengthening both.
- b) Make sure students know and can use the formulas to find the area and circumference of a circle. (See math terminology notebook suggestion in 5 B below.)

2) In the area of number sense:

- a) Give students practice writing numbers using scientific notation. They should be able to identify the correct scientific notation (out of a list) for a number as well. (continued)

- b) After direct instruction, have students evaluate an expression containing absolute values. This is a difficult concept for our students. It might be helpful to have a student who got the answer incorrect, put his/her solution to the problem on the board so that you could analyze and pinpoint the exact place where his/her thinking was incorrect. Most likely many other students will have made the same error, and can correct their thinking for next time.
- 3) In the area of patterns, relations and algebra:
 - a) As a quick before-class activity, give students a linear equation or a specified intercept and slope and have them choose the one graph out of three on the board that correctly represents it. Have a student explain in his/her own words, why he/she chose the graph they did as the correct choice.
- 4) In the area of geometry:
 - a) As you teach formulas to find lengths of the sides of specific shapes, make sure you also show students how to estimate the **diagonal** length of a line within that shape.
- 5) In the area of statistics and probability:
 - a. Let students predict the probability of random selections using actual dice and tiles.
 - b. Students showed good understanding about how to find the mean and range of a number set. This year, they were asked to find the median of a number set. Make sure you give students opportunities to apply their knowledge of identifying and finding the median (as well as the mean and mode) of number sets just prior to the test. You may want to consider (if you have not already done so) having students start a math terminology notebook for definitions, formulas, and examples of concepts you will be studying throughout the school year.

SCIENCE AND TECHNOLOGY/ENGINEERING

- 1) **In the area of Life Science:**
 - a) Allow students an opportunity to create their own ecosystems and observe, identify, and explain the roles and relationships of elements within it. Decomposition and symbiotic relationships should be discussed in connection with this project.
 - b) Keep a large running visual display of kingdoms and phyla up in the classroom. As your year of study progresses, have students add organisms etc. to the organizational chart.
- 2) **In the area of Earth Science:**
 - a) Make sure students can correctly draw and label diagrams relating to the structure of the earth.
 - b) Show students graphic displays illustrating the difference between solar and lunar eclipses.
- 3) **In the area of Physical Science:**
 - a) Students need to perform a multitude of hands-on experiments that enable them to draw the right conclusions about mixtures, solutions, elements, liquids, and energy. Encourage students to keep a journal with their observations and conclusions from classroom experiments.
 - b) Students should be able to identify the atom as the smallest unit with element properties.
- 4) **In the area of Technology/Engineering:**
 - a) In your study of the advancements in technology, include a portion of your study which points to the precautions companies now use to protect our food supply, prevent disease, and promote good health (e.g., irradiation).

Areas Showing Strength/Improvement:

English Language Arts:

Students showed evidence of strong understanding of vocabulary in context. Their performance on questions requiring analysis of fiction, nonfiction, poetry, myths, and similes was also strong. Many of these questions involved having students infer implications and describe conflicts. *Keep up the good work of integrating higher-level questions that necessitate character and event analysis into your daily repertoire.*

Math:

Students' understanding of functional and proportional relationships seems to be deepening. They also showed evidence of improved understanding (in comparison to last year) of the following concepts: mean, range, negative integers, and square roots.

Science and Technology/Engineering

Students did very well on the open response question that required them to use a table (showing planet facts) to find and support their answers. They also improved their performance on questions relating to processes, tools, and equipment involved in the manufacture of products. This was a focal point for improvement in last year's report. Thank-you for your efforts.

**GRADE 10
MCAS ANALYSIS-SPRING 2007**

NUMBER OF STUDENTS ASSESSED WHO WERE INCLUDED IN PERFORMANCE LEVEL RESULTS

ELA: 228 Total, 31 students with disabilities, 9 limited English proficient, 26 low-income (99%)

Math: 222 Total, 29 students with disabilities, 7 limited English proficient, 22 low-income (97%)

PERFORMANCE LEVEL PERCENTS Note: Numbers in parentheses indicate actual number of students.

MELROSE								STATE						
ELA	2001	2002	2003	2004	2005	2006	2007	2001	2002	2003	2004	2005	2006	2007
Advanced	30	36	36	31	34	26	35	15	19	20	19	22	16	22
Proficient	37	37	43	46	40	55	50	35	40	41	44	42	53	49
Needs Imp.	20	21	15	19	19	15	12	31	27	28	27	25	24	24
Failure	13	6	7(17)	5(13)	6(12)	3(3)	4(9)	18	14	12	10	11	7	6
MATH														
Advanced	28	22	29	32	34	34	55	18	20	24	29	35	40	42
Proficient	28	26	36	31	31	39	30	27	24	27	28	27	27	27
Needs Imp.	27	36	22	27	25	19	11	30	31	28	28	24	21	22
Failure	7	16	13(31)	10(26)	10(20)	8(13)	4(9)	25	25	21	15	14	12	9

ADDITIONAL NOTE: Beginning with the class of 2010, high school students will be required to take and pass a test in one of the 4 major areas of Science and Technology/Engineering. Last year, trial Science tests were given but performance levels were not reported. This year, performance levels WERE reported and the Department of Education stated that since performance levels were being reported, students who took the 2007 test and passed could use their score to meet the 2010 requirement. In an effort to be proactive, we gave all eligible high school students the opportunity to take the most appropriate Science test based on their coursework.

On the trial test in 2006, we had 186 students take the Biology test, 82 students take the Chemistry test, and 113 students take the Introductory Physics test. No one took the Technology and Engineering test. Students had the highest average test item score in the area of Chemistry. Biology was second. Physics was last. In Physics, our average item test score was lower than the state's. THIS YEAR, high school administration staff members worked hard to ensure the most appropriate placement of students taking each specific test. We had 214 students take the Biology test, 85 students take the Chemistry test, and 129 students take the Introductory Physics test. No one took the Technology/Engineering test. 175 students passed the Biology test. 83 students passed the Chemistry test. 112 students passed the Introductory Physics test. This is great news for all those students who can now use their passing scores to meet their graduation requirement. Chemistry was again the strand that had the highest percentage of students pass the test. (Physics came in second this year and Biology came in last, although passing rates for BOTH areas were over 80%.) It is interesting to note that Chemistry is the only one of all three strands tested that included ONLY 10th grade students. Prerequisites for Chemistry include Bio 1 and a concurrent honors Math class. Thus, in addition to other factors, students taking the Chemistry exam may have had a broader and deeper understanding of scientific and mathematical concepts included on the test. We may want to consider the implications of this in relation to course offerings, course requirements, and student placement/scheduling as 2010 draws closer.

PERFORMANCE LEVEL NOTES

- 1) In English Language Arts, we see a nice increase in the percentage of students reaching advanced status. 97% of our students have passed the English portion of the MCAS.
- 2) In Math, we have again decreased the number of students in the failing category since 2002. We see a dramatic increase in the percentage of our students reaching the advanced category (from 34% to 54%)! Students in the Needs Improvement and Failure categories have also moved into the proficient category. 95% of our students have passed the Math portion of the MCAS at the Grade 10 level.
- 3) As we saw for the past 2 years, the highest number of students failing was in the 216-218 range.

PERFORMANCE LEVEL SCORE RESULTS FOR SELECTED SUBGROUPS

In English Language Arts, the highest percentage of scores for all subgroups, fell in the proficient category. Last year, the highest percentage of students with disabilities scored in the Needs Improvement range, so this movement upward, with a higher percentage reaching advanced and proficient, is good to see.

In Math, the performance of our students with disabilities and low-income students subgroups also improved, in regard to a higher percentage reaching proficient and advanced in comparison to last year. All other subgroups, with the exception of our African American subgroup, had the highest percentage of scores in the advanced and proficient categories combined. The highest percentage for our African American subgroup fell in the needs Improvement category. We do however, see a good decline in the percentage of failures for this subgroup. Girls performed better than boys in Math at this grade level as they did last year. (continued)

Please continue to make sure that our IEP teams are thinking carefully about which type of assessment our students with disabilities are taking. If they are taking the standard assessment, then we need to make sure their accommodations are implemented and specifically geared to their success. If they are taking the Alternate Assessment, we need to make sure that teachers who are responsible for putting together their portfolios are knowledgeable about the Department of Education's criteria and procedures for successful, passing portfolios. I noticed more teachers requesting to attend the DOE's informational sessions on this topic recently. It seems as if your efforts to do these things are making a difference.

SUBJECT AREA SUBSCORES

In English Language Arts, the use of good grammar and the use of standard English conventions in composition were our 2 strongest areas. Although we surpassed the state in all subscore areas, topic development was our weakest area. **Department chairpersons from all content areas need to work with department staff to make sure that we are including criteria relating to topic development in the rubrics we use for student projects and assessment. I will be either asking representatives from the HS English Department to attend other content area department meetings to assist with this effort, or asking departments to incorporate this concept into the core assignments you are creating for your principal.**

In Math, Number Sense (which has been high since 2001), was tie with Data Analysis and Measurement for our strongest area. Patterns, Relations and Algebra came up as our weakest strand this year. It was great to see a break in the pattern of Geometry and Measurement being our weakest areas. Last year, I asked teachers to, "... examine your instruction and make sure that concepts (and formulas) relating to geometry, measurement, are covered and reviewed completely PRIOR to test administration." I hope to see this trend continue. Thank-you for your efforts to do this, and to use manipulatives, counters, and dice, to make concepts clearer to students.

ITEM TYPE

ELA: This year, percentages for all types of items (multiple choice, open response, and the writing prompt) all stayed relatively flat from last year. Multiple choice still received the highest number of percentage points and open response received the least, although on 3 out of 4 open response questions, students received a score of 3 or 4.

MATH: Short answer questions, which involved actual student computation, received the highest score in terms of percent correct. Multiple choice came in second. Although open response came in last, it is worthwhile to note that on 5 of the 6 open response questions, more than half of our students scored a 3 or 4.

TEST ITEM ANALYSIS **GRADE 10: ENGLISH LANGUAGE ARTS AND MATH** **MCAS SPRING 2007**

LITERATURE

Criteria: Over 25% of our students got the following questions incorrect.

An asterisk indicates that our average item test score was LOWER than the state's.

#16 Understand a poet's craft regarding word choice

#33 Draw a conclusion from information in a nonfiction text

#20 Comprehend fiction text through the lens of a character's point of view

#11 Understand vocabulary in the context of a fiction story

#28 Understand the author's craft (to give the reader a sense of the motivation behind the research in the article)

#26 Analyze a character in a fiction selection

LANGUAGE

#40 Identify the correct synonym (serene for halcyon)

OPEN RESPONSE

Criteria: Over 50% of our students did not get a 3 or 4

#19 LT Explain the events before and after a shift in mood of the poet

MATHEMATICS

MULTIPLE CHOICE

Criteria: More than 25% of our students got the question incorrect.

An asterisk indicates that our average item score was LOWER than the state's.

#25 PR Find an average from linear data

*#39 PR Solve a linear inequality

#30 PR Solve a quadratic function

#37 PR Find the slope of a horizontal line on a coordinate plane

#13 PR Factor a polynomial expression (continued)

- #40D Find the probability of a single random event
- #26D Calculate the mean for data in a frequency table
- *#10D Match a scatterplot to the equation of a trend line
- #3D Determine the median in a stem and leaf plot

#28 ME Compare a change in volume from a visual display of 2 cylinders

#27 GE Find the height of an equilateral triangle

SHORT ANSWER

Criteria: More than half of our students either left this question blank or received a score of zero.

0

OPEN RESPONSE

Criteria: more than half of our students did not score a 3 or 4.

*#17 PR Plot a line graph and interpret its meaning

GRADE 10 TARGET ACTIONS BASED ON TEST ITEM ANALYSIS

ENGLISH LANGUAGE ARTS

Character analysis is a skill we always see on the MCAS tests. When we think about it, questions that require character analysis (e.g. How does this character feel? Why does he/she feel this way? How is the character seeing things from his/her point of view? What in the story leads you to that conclusion?) not only lead to a better understanding of the text, but also connect to an important life skill for our students. In our daily interactions, we often need to infer how others are feeling or how they are seeing things. We often need to infer and anticipate what they may or may not do based on their feelings and/or emotions. Being able to do this effectively will help our students become successful adults who have empathy and foresight. As you read a wide variety of literature and have students analyze the characters within the selections, make a conscious effort to occasionally take some additional time to allow students to make a connection to their own lives (e.g., Have you felt this way? What events led up to the feeling? What happened after?). It will deepen their understanding of the texts they read, improve their ability to be successful in the skill of character analysis, and at the same time, promote empathy.

MATH

- 1) In the area of Patterns, Relations, and Algebra:
 - a) Model the process for solving linear inequalities and quadratic functions. After modeling, put one example of either problem for students to solve on the board. Have students complete the solution one step at a time, with a new student responsible for each step. This may make common errors in students' thinking visible, and corrections to their thinking immediate.
 - b) Make sure students know and can apply the procedure for finding the slope of a line, and plotting a line graph.
 - c) Have students practice interpreting line graphs and data charts. **Plotting and interpreting a line graph was the skill in the open response question that proved the most difficult for our students this year. We saw this last year as well. Please focus some additional effort on this skill this year.**
 - d) Present students with many opportunities to factor polynomial expressions.
- 2) In the area of Geometry and Measurement:
 - a) Review the formula for finding the height of an equilateral triangle.
 - b) Using visual and/or physical displays of graduated cylinders or other containers, have students compare changes in volume.
- 3) In the area of Data Analysis, Statistics and Probability:
 - a) Make sure students can find the mean and median, of data in a frequency table or stem and leaf plot.
 - b) Have students draw matching scatter plots and equations of trend lines.
 - c) Using dice, tiles, or other objects, have students predict and then find the probability of a single random event. (continued)

Areas Showing Strength/Improvement:

ELA:

Students are getting much more comfortable answering: a) open response questions which require topic development and 2) questions which require them to infer and analyze information from texts. These skills only come from increased exposure and practice. Incorporating analysis skills on a consistent basis is working. Keep up the good work.

MATH:

Students improved their performance on questions involving the concepts of: square roots and cube roots, exponents, polynomials, circumference, finding the area of parallelograms and trapezoids, finding the volume of a sphere, finding measures of parallel and transversal lines as well as angles and pyramids, and interpreting and comparing statistical values from tables of data. Many of these things were mentioned on last year's report. Thank-you for your efforts.

SUMMARY OF THOUGHTS
SPRING 2007 MCAS

1) Our students are improving their performance on questions that require them to **infer** information. As I've stated in the analysis at specific grade levels, inferential questions cause students to, "...think about and go beyond the information given." (DePaul Center for Urban Education, 2002). They support and ensure strong comprehension of the material being read.

When you ask students to:

- 1) Make comparisons
- 2) Make predictions
- 3) Draw conclusions
- 4) Make connections between events, characters, and actions
- 5) Analyze characters in light of their actions and relationships
- 6) Identify motives and/or emotions and the reason behind them

you are asking inferential questions. Ask these types of questions throughout the day in all content areas, *and at times, model the thinking process for deciding an appropriate answer. This modeling can be a critical component in a student's ability to perform the process independently.*

2) District-wide, our students' ability to **develop a topic** in response to a writing prompt has remained relatively flat this year in comparison to last year. Students are averaging slightly less than 8 out of 12 possible points. Let's give them specific strategies for developing a topic (e.g., using a web or cluster diagram to generate ideas related to the topic, putting things in chronological order, using a sensory detail chart to help them describe the setting to the reader, using a Venn diagram to compare and contrast two subjects or characters etc.).

3) We see an increase in the achievement of boys in the area of English Language Arts in the majority of grade levels. This is something we have been working on. Thank-you for your efforts to bring them more frequently into the loop of communication and participation.

4) Continue to expose students to a wide variety of texts including **myths** (which was the DOE's genre of choice for many grade levels this year) non-fiction, poetry, and drama. Our students are improving in their analysis of these types of texts.

5) In the area of Mathematics, students' understanding of concepts within the strands of geometry and measurement has greatly improved at many grade levels. Thank-you for your efforts to give students hands-on experiences with manipulatives to make these concepts clear, and to sequence your instruction so that students can master the concepts prior to the test.

6) Overall as a district, our performance in Math has greatly improved. This is why our Improvement Rating at the state level is listed as Above Target. There were some concepts however, that appeared in multiple grade levels, with increasing levels of difficulty of course, that proved challenging. These concepts include:

- Volume for Grades 4&5
- Symmetry for Grades 3,5, and 6
- Scientific Notation for Grades 7&8
- Mean, median, and mode for Grades 6-8.

Cross grade-level dialogue about the above concepts should occur to ensure the appropriate depth of student understanding for successful test performance.

7) The achievement of students in the specific subgroups of low-income and students with disabilities has increased at many grade levels. Continue your efforts to expose the students in these subgroups to the same high expectations and grade-level benchmarks as their peers. This is working.

8) In Math, use graph paper, number lines, and manipulatives as often as possible in class to strengthen our students' understanding of plotting points on a number line. If we start with whole numbers in the primary grades, and move gradually to fractions and decimals in the intermediate grades, then to integers and linear equations at the secondary level, our students should have a strong sense of how to accurately plot points on a number line. (continued)

I would like to reiterate these suggestions from last year.....

10) Ask the colleagues in your building who have access to TestWiz to print out specific question scoring guides for the open response questions on your grade's MCAS test. Sample work from each point value is good for students to see on a regular basis. It helps them internalize the quality and complexity expectations of work that receives a high number of points.

11) New principals should have the school secretary print out a copy of the common test items for teachers to access (or call Denise Jones at ext. 2109 for a set). Bridge volunteers could then make copies for each classroom so that they are handy and convenient to use. (Principals who have been here prior to this year already do this.)

13) We had 9 students district-wide submit an alternate assessment in ELA, 8 in Math, and 3 in Science. Although the majority of those students received 100 CPI (Composite Performance Index) points for their submission, as they did last year, they did not receive a passing score of Needs Improvement. It is important that both regular and special education staff members know how to compile and submit a successful alternate assessment portfolio of work if/when the need arises. The Department of Education offers training annually on this topic. I have noticed that more staff members this year took advantage of the training. I highly recommend it to those who have not as yet done so. Title IIA funds are available for substitute coverage for this purpose.

14) Remember that the Department of Education now has a bank of over 3,000 test questions available online for teachers and parents to access. These questions can be sorted by grade level, content area, AND strand. So if a Grade 5 or Grade 10 teacher wanted to focus on questions relating specifically to geometry, measurement, or physics he/she would be able to do so. In order to access this resource, go to: www.doe.mass.edu. Click on the assessment and accountability link listed near the top of the page. Then click on MCAS. When you go to that page, you will see a small box near the bottom of the page that says, "Search MCAS Questions." Click this, then scroll down to the bottom of the page. Enter the grade level, subject area, and strand of questions you are most interested in viewing. Click on the search button and print out as many of the questions as you wish. When you are printing questions out, you may want to print out 2 different sets: one set that shows the answers and one set that does not show the answers. The DOE has a small button on the screen that will allow you to do this easily. Again, Bridge or parent volunteers could do this easily for you at your request.

You made it to the end of this report☺
Kudos!