

***TRITON REGIONAL SCHOOL DISTRICT***



***DISTRICT REPORT  
OF THE  
2008 MCAS RESULTS  
FOR  
GRADES 3-8 AND 10***

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## 2008 MCAS RESULTS OVERVIEW

The Massachusetts Comprehensive Assessment System (MCAS) tests were established under the 1993 Massachusetts Education Reform Act and have been administered since 1998. The tests also fulfill the requirement to assess students in both English Language Arts and Mathematics in grades 3-8 and grade 10 as stated under the federal *No Child Left Behind Act* (NCLB) of 2002.

### 2008 Tests Administered

The table details the 2008 tests and question tryouts administered at each grade level. No school, district, or state results are reported for pilot tests.

GRADE	TEST
3	<ul style="list-style-type: none"><li>• Reading</li><li>• Mathematics</li></ul>
4	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li></ul>
5	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li><li>• Science and Technology/Engineering</li><li>• U.S. History Pilot Test</li></ul>
6	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li></ul>
7	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li><li>• U. S. History Pilot Test</li></ul>
8	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li><li>• Science and Technology/Engineering</li></ul>
10	<ul style="list-style-type: none"><li>• English Language Arts</li><li>• Mathematics</li></ul>
9/10	<ul style="list-style-type: none"><li>• Science and Technology/Engineering</li></ul>
10/11	<ul style="list-style-type: none"><li>• U. S. History Pilot Test</li></ul>

**Performance Level Definitions**

Results for students in grades 4 through 10 are reported according to four performance levels. Each performance level is linked to a scaled score from 200 to 280 as follows:

Advanced (A)	Students at this level demonstrate a comprehensive and in-depth understanding of challenging subject matter and provide sophisticated solutions to complex problems.	260-280
Proficient (P)	Students at this level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems.	240-258
Needs Improvement (NI)	Students at this level demonstrate a partial understanding of subject matter and solve some simple problems.	220-238
Warning/Failing (W)	Students at this level demonstrate a minimal understanding of subject matter and do not solve simple problems.	200-218

Grade 3 student results are also reported using four performance levels. Instead of advanced, the highest level is:

Above Proficient (P+)	Students at this level demonstrate mastery of challenging subject matter and construct solutions to challenging problems.
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**Composite Performance Index**

Under *No Child Left Behind*, all students are expected to reach the level of **Proficient** by 2014. The **Composite Performance Index (CPI)** is a 100 point index that assigns points to each student participating in MCAS and MCAS-Alt tests based on their performance. A group CPI is calculated for each subject and student group at each grade level. This information helps schools and districts determine how a group is progressing toward proficiency each year.

MCAS Performance Level	Scaled Score	CPI Points
Advanced	260-280	100
Proficient	240-258	100
Needs Improvement (High)	230-238	75
Needs Improvement (Low)	220-238	50
Warning/Failure (High)	210-218	25
Warning/Failure (Low)	200-208	0

**Composite Performance Index, continued**

MCAS-Alt Performance Level	CPI Points	Corresponding MCAS Performance Level
Advanced	100	Advanced
Proficient	100	Proficient
Needs Improvement	100	Needs Improvement
Progressing	100	Warning
Emerging	75	Warning
Awareness	50	Warning
Incomplete	25	Warning

**Performance Ratings**

Performance ratings are based on aggregate student performance for both the English Language Arts and Mathematics tests. These ratings are descriptive terms used to track progress toward meeting the NCLB goal of all students achieving proficiency in these subjects by 2014. The performance ratings correspond to a school's or district's aggregate CPI each year.

Rating	Aggregate CPI
Very High	90-100
High	80-89.9
Moderate	70-79.9
Low	60-69.9
Very Low	40-59.9
Critically Low	0-39.9

**Adequate Yearly Progress (AYP) Standings**

AYP determinations are made annually for both English Language Arts and Mathematics. For each subject there are multiple AYP determinations, for students as a whole and for student subgroups. AYP determinations are calculated for student subgroups if the group consists of 40 students or more and the number of subgroup members is at least 5% of the students included in the school's assessment results. The subgroups reported out for the Triton District are students with disabilities, economically disadvantaged students, and white students. Students are counted in each student group to which they belong; as such, one student can be represented in multiple groups.

*(School Leaders' Guide to 2008 AYP Reports, MA DOE)*

The summary of 2008 AYP Data for the Triton District and individual schools is as follows:

School/District	Subject	NCLB Accountability Status	Performance Rating	Improvement Rating
Triton District	English Language Arts	No Status	<b>Very High</b>	On Target
	Mathematics	No Status	High	On Target
Triton High School	English Language Arts	No Status	Very High	On Target
	Mathematics	No Status	Very High	On Target
Triton Middle School	English Language Arts	No Status	Very High	On Target
	Mathematics	<b>No Status</b>	Moderate	On Target
Newbury Elementary School	English Language Arts	No Status	<b>Very High</b>	<b>On Target</b>
	Mathematics	No Status	High	<b>Above Target</b>
Pine Grove School	English Language Arts	No Status	Very High	No Change
	Mathematics	No Status	High	On Target
Salisbury Elementary School	English Language Arts	Improvement Year 1: Subgroup	High	On Target
	Mathematics	No Status	<b>High</b>	On Target

**(Bold indicates a change from 2007 to 2008.)**

## GRADE 10 MCAS ANALYSIS—SPRING 2008

### English Language Arts, Mathematics, and Science and Technology/Engineering

Students in the class of 2010 are required to earn a competency determination as well as meet local graduation requirements in order to earn a high school diploma. This competency determination requires that students earn a 240 score or better on MCAS tests in the areas of English Language Arts, Mathematics, and a 220 score or higher in Science and Technology/Engineering. The class of 2010 is the first class expected to meet the Science requirement as well as the English Language Arts and Mathematics.

In addition, if a student scores between 220 and 238 on either the English Language Arts or Mathematics MCAS test, the student “passes” the test but the school is required to develop an Education Proficiency Plan (EPP) for that student. The purpose of this plan is to increase the likelihood that students graduating from high school will have the requisite skills needed for success in college and a career. The EPP must identify the student’s strengths and weaknesses, coursework, grades, and teacher, student, and counselor input. It must also include the English Language Arts and/or Mathematics courses the student will be required to take in grades 11 and 12. Students will also be required to take additional assessments to determine if they are making progress toward proficiency.

#### Five-Year Comparison of Grade 10 MCAS Results

Grade 10 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
<b>2008</b>	27	23	56	51	16	21	2	4	230	93.5
<b>2007</b>	19	22	57	49	22	24	2	6	204	90.9
<b>2006</b>	18	16	53	53	22	24	6	7	233	87.0
<b>2005</b>	24	23	48	42	25	25	3	10	242	90.1
<b>2004</b>	20	19	49	43	26	27	5	11	242	89.3

Grade 10 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	53	43	25	29	16	19	5	9	232	90.7
2007	46	42	30	27	22	22	2	9	204	90.6
2006	43	40	30	27	20	21	7	12	226	87.4
2005	38	35	36	27	19	24	7	15	243	88.7
2004	37	29	32	28	23	28	8	15	243	85.3

Grade 10 Science and Technology/Engineering										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	18	14	50	43	23	31	9	12	222	85.5

**General Performance Level Analysis**

**English Language Arts:**

- Over the last five years there has been an increase of 13% of the students scoring in proficient or advanced resulting in 83% of students proficient or higher in 2008.
- The same percent of students (2%) scored at the warning level in 2007 and 2008.
- The CPI has steadily increased over the last three years.

**Mathematics:**

- Over one-half of the students (53%) scored at the advanced level.
- The percent of students scoring in the proficient and advanced levels continues to increase and is at the highest point in 2008 at 81%.
- The percent of students who scored at the failure level increased in 2008 (5%) as compared to 2007 (2%).
- The CPI remained unchanged from 2007 to 2008.

**Science and Technology/Engineering**

- This is the first year that students are required to earn a 220 (NI) or higher to earn a competency determination.
- Sixty-eight percent of Triton students scored in proficient and advanced as compared to 57% at the state level.
- Fewer Triton students (9%) scored at the failure level as compared to the state (12%).

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**District Improvement Plan Targets**

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**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	83	78	32	16	41	35	77	79	88	79
2008 State	74	72	35	33	53	51	70	72	79	71
2008 Target	72	73	27	28	55	50	63	64	81	83

**English Language Arts:**

- Exceeded 2008 improvement targets in the aggregate, students with disabilities, gender male, and gender female.
- Scored above the 2008 state average in the aggregate, gender male, and gender female.
- Scored below the 2008 target in the low income subgroup for the second year in a row.
- Scored below the 2008 state average in students with disabilities and low income subgroups.

**Mathematics:**

- Exceeded 2008 improvement targets in the aggregate and gender male.
- Scored above the 2008 state average in the aggregate, gender male and gender female.
- Scored below the 2008 target in students with disabilities, low income, and gender female subgroups.
- Scored below the 2008 state average in the subgroups of students with disabilities and low income.

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**Test Item Analysis**

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**Item Type:**

**English Language Arts:** The three types of items and their point values include multiple-choice (1), open-response (4), and the writing prompt (topic development (12) plus conventions (8) = 20). Students obtained the highest percent of points (80%) on multiple-choice and the least on open-response (64%). The composition score totaled 73% of possible points. When we examine this score further, students attained 90% of possible points on the conventions portion of the test as compared to 61% of the points in topic development. Student performance exceeded the state average for all points attained on all item types in English Language Arts.

**Mathematics:** The three types of items and their point values include multiple-choice (1), short-answer (1), and open-response (4). Student performance on short answer items (76%) exceeded the state by 16 points and reflects a 13 point gain from 2007 to 2008. The percent of points for multiple choice (64%) exceeds the state by 5 points. Similarly, the open-response percentage (59%) exceeds the state by 4 points. Triton exceeded the state average for all points attained on all item types in mathematics. Student performance on English language arts open-response (64%) is higher than Math (59%).

### **Areas of Strength:**

#### **English Language Arts:**

- Similar to last year, student performance was stronger on the language as compared to the literature strand.
- Students demonstrated proficiency on Standard 4: Vocabulary by correctly identifying idioms and word meanings, and on Standard 6: Formal and Informal English.
- Students also demonstrated proficiency on Standard 8: Understanding a Text where students identify basic facts and main ideas in a text and used them as the basis for interpretation.
- Student performance on the writing prompt exceeded the state average for both topic development and standard English conventions.

#### **Mathematics:**

- Student performance on five out of six open-response items exceeded the state average and fell into the proficient category.
- Students continue to increase possible points attained on the open response items. The highest percent of student responses scored either a three or a four out of four possible points on five out of six open-response items.
- Students demonstrated proficiency on all four of the short answer items, scoring sixteen points higher than the state average of all possible points.
- Overall, student performance was strongest on the geometry multiple choice questions followed by number sense and then data, statistics, and probability.

#### **Science and Technology/Engineering**

- Student performance on four out of the five open-response items exceeded the state average and three out of the five fell into the proficient category.
- Students demonstrated a high level of proficiency on test items focused on the ecology strand. Topics included analysis of food chains, consumers and producers, carbon cycle/deforestation, and population growth.
- Students also demonstrated proficiency on the strands evolution and biodiversity as well as genetics.

**Areas of Improvement**

- An asterisk (\*) denotes lower than state average.
- Over 25% of our students responded incorrectly to the following multiple choice test items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
10	10.14	Poetry. Blowin'. Effect of writing the poem in question form
12	10.14	Poetry. Blowin'. Why speaker singles out "senators,... "mothers"
17	10.15	Sty/Lang. Black Boy. Why does author begin with "Negro Folk Song"
23	10.12	Fiction. Frankenstein. Select main turning point of excerpt
26	10.4	Vocabulary. Frankenstein. Word meaning: irresolute - indecisive
29	10.13	Nonfiction. Farewell. What is striking about Washington's letter
36	10.17	Drama. Bus Stop. What main contract is established in lines 1-12

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
4	10.N.2	Find the equivalent to an expression involving an exponent
6	10.P.3	Add and simplify polynomial expressions
8	10.P.5	Find the roots of a factored quadratic equation
10	10.N.2	Simplify a polynomial expression involving exponents
12*	10.P.2	Find equation of a line that is drawn on a coordinate grid
18	10.D.1	Find numerical difference of median and mode for data
24	10.P.2	Find the graph representing a line with slope = 0
27	10.M.1	Compute the area of an isosceles trapezoid
28	10.D.1	Interpret box-and-whisker plot to locate data values
30	10.M.1	Compute diameter given the circumference of a circle
32	10.M.3	Express dimensions of a rectangular prism in terms of another
34	10.M.3	Determine ratio of areas of two proportional rectangles

35	10.P.7	Evaluate a formula involving a rational exponent
37	10.G.6	Compute the height of an equilateral triangle

<b>High School Biology</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
2	GE 3.4	Which type of inheritance produces checkered feather pattern
3	BC 1.2	Choose the description of molecular structure of ovalbumin
4	EV 5.2	To which group must birds in same order belong
6	BC 2.8	Choose how tobacco mosaic virus reproduced in given example
8	BC 1.2	What categories of molecules are produced in lactose digestion
9	AP 4.2	In what functions of human body does iron serve a primary role
10	BC 2.4	Which type of milk, soy or dairy, yields more ATP and why
11*	GE 3.2	Which does not occur for genes involved in lactose intolerance
13	BC 1.1	Which element is found at indicated point of an organic molecule
14*	AP 4.2	Which organ removes excess water from blood
17	GE 3.3	For what enzyme is there a mutation in gene coding in the example
21	EC 6.2	What factor has lead to increase in coral disease in Caribbean
25*	BC 2.7	Describe number of chromosomes in each cell during meiosis
27*	AP 4.7	Pituitary gland/kidney communication is via what type substance
31	AP 4.3	In what order does air travel through human respiratory system
33	BC 2.3	Which organism is eukaryotic, multicellular, and autotrophic
35	BC 1.3	What is effect of low temperature on a high temperature enzyme
36*	EV 5.3	What was result of beak structure adaptation in Galapagos finches
37*	AP 4.6	Which is the source of genetic material in sexual reproduction
38	GE 3.6	Which could be the genotypes in the given example
39	GE 3.2	Which process that occurs in cells is depicted
41*	BC 2.2	Identify the two types of cells depicted
42	GE 3.5	Which explains why seed shape and color are not inherited together

## Target Actions Based on Analysis

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### English Language Arts:

- Student performance on all four open-response items was below proficient and below the state average. The highest percent of student responses was either a two or three out of four possible points. In order for students to develop an understanding of high level responses, they should continue to use the released MCAS test items, scoring rubrics, and exemplars of student work at each point value as a learning tool.
- Over the last four years student performance on the writing prompt has mirrored the state whereby the points attained have decreased annually for both topic development and conventions. The identification and use of common writing instruction in grades 7-12 will assist with the development of common expectations for student performance.
- Students should continue to focus on the comprehension strategies of making inferences and drawing conclusions.
- Focus areas for Standard 12: Fiction include analyzing elements such as author's point of view, foreshadowing, and irony and providing evidence from the text to support their understanding.
- Focus areas for Standard 13: Non-fiction include analyzing main ideas, supporting ideas, and supporting details leading to author's purpose in an informational text.

### Mathematics:

- Students should continue the use of open-response test items to practice communicating their thinking and reasoning associated with problem solving.
- In the area of geometry, continue to work on finding linear equations that represent lines either perpendicular or parallel to a given line and through a point. Student performance on this open-response item was spread over each of the four point values with the highest percent of student scoring zero points.
- In the area of measurement, practice relating the change in the measurement of one attribute of an object to the changes in other attributes.

### Science and Technology/Engineering (*Biology*)

- Students scored below the state average on four out of the six anatomy and physiology test items. Analysis of these test items should include where instruction takes place in the curriculum scope and sequence and recommendations for strengthening content.
- On the biochemistry and cell biology strand questions, students struggled with knowledge of basic molecular structures, the process of meiosis, and relating cell parts (cell membrane) to their functions.
- On the evolution and biodiversity strand questions, students struggled with understanding species as reproductively distinct groups of organisms.
- On the genetics strand questions, students need additional work on DNA and genetic code as well as the use of Punnett Square to determine probability for genotypes.
- On the anatomy and physiology strand, students struggled with questions focused on the circulatory system, the digestive system, and communication among cells.
- A high percent of students scored -0- on the open-response items. Students should be encouraged to attempt to answer any part of the multiple steps rather than leave it blank.

## GRADE 8 MCAS ANALYSIS—SPRING 2008

### English Language Arts, Mathematics, and Science and Technology/Engineering

All students were tested in three content areas. Mathematics and Science and Technology/Engineering tests have been administered over the five-year comparison range. The English Language Arts test was added in 2006 so there is now three years of data for review.

#### **Five-Year Comparison of Grade 8 Mathematics and Science Technology/Engineering MCAS Results**

<b>Grade 8 Mathematics</b>										
<b>Year</b>	<b>Percent of Students</b>								<b>Number of Triton Students</b>	<b>Triton CPI</b>
	<b>Advanced</b>		<b>Proficient</b>		<b>Needs Improvement</b>		<b>Warning/Failure</b>			
	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>		
<b>2008</b>	23	19	33	30	27	27	18	24	260	76.4
<b>2007</b>	18	17	32	28	35	30	15	25	237	75.5
<b>2006</b>	16	12	29	28	35	31	20	29	287	71.3
<b>2005</b>	12	13	33	26	32	30	23	31	269	69.8
<b>2004</b>	13	13	32	26	35	32	21	29	269	68.9

<b>Grade 8 Science and Technology/Engineering</b>										
<b>Year</b>	<b>Percent of Students</b>								<b>Number of Triton Students</b>	<b>Triton CPI</b>
	<b>Advanced</b>		<b>Proficient</b>		<b>Needs Improvement</b>		<b>Warning/Failure</b>			
	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>		
<b>2008</b>	3	3	43	36	39	39	15	22	261	75.6
<b>2007</b>	2	3	34	30	49	44	15	24	237	70.6
<b>2006</b>	5	4	41	28	39	43	16	25	287	74.3
<b>2005</b>	2	4	29	29	49	41	20	26	269	65.9
<b>2004</b>	9	5	37	28	35	35	19	31	268	71.7

**Three-Year Comparison of Grade 8 English Language Arts MCAS Results**

Grade 8 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	13	12	72	63	13	18	2	7	260	94.3
2007	4	12	76	63	18	18	2	6	237	92.6
2006	8	12	71	62	17	19	4	7	287	90.0

**General Performance Level Analysis**

**English Language Arts:**

- Now that there is three years of data, we can begin to conduct trend analysis on student results.
- The percent of students scoring in the proficient and advanced categories (85%) in 2008 represents the strongest performance from 2006 to 2008.
- The percent of students that scored in the advanced category (13%) exceeds the state average for the first time in three years.
- The same percent of students (2%) scored at the warning level in 2007 and 2008. The percent of students scoring at the warning level is lower than the state average for three years.
- The CPI has steadily increased over the last three years from 90.0 in 2006 to 94.3 in 2008.

**Mathematics:**

- From 2004 to 2006, 45% of students scored proficient or advanced each year. In 2007, that percent rose five points to 50%. In 2008, the percent of students scoring proficient and advanced rose another six points resulting in 56% of our students in those levels. From 2006 to 2008, the percent of students scoring at these levels has increased by eleven points.
- The percent of students in the warning category rose from 15% in 2007 to 18% in 2008.
- The CPI again rose in 2008 to 76.4. Each year for the past five years the CPI has increased for a total point increase of 7.5 from 2004 to 2008.

**Science and Technology/Engineering**

- The percent of students scoring at proficient or advanced in 2008 (46%) represents a ten point increase over 2007. This performance continues to follow the up and down pattern from 2004 to 2008. Performance in 2007 represented a ten point decrease from 2006 in these upper categories.
- The percent of students scoring in the warning category (15%) in 2008 is the same as 2007. The state average decreased by two points at this level.
- As expected, the CPI rose in 2008 to 75.6 reflecting an increase of five points from 2007 to 2008.

### District Improvement Plan Targets

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#### Percent of Students Scoring in Proficient and Advanced by Student Subgroups

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	85	56	33	13	68	37	80	54	90	57
2008 State	75	49	36	12	54	25	71	49	80	49
2008 Target	82	53	37	17	56	34	77	52	86	55

#### English Language Arts:

- Exceeded 2008 improvement targets in the aggregate, low income, gender male, and gender female.
- Scored above the 2008 state average in the aggregate, low income, gender male, and gender female.
- Scored below both the 2008 improvement target and the state average in students with disabilities.

#### Mathematics:

- Exceeded 2008 improvement targets in the aggregate, low income, gender male and gender female.
- Scored above the 2008 state average in the aggregate, low income, gender male, and gender female.
- Scored below the 2008 improvement target and the state average in student disabilities.

### Test Item Analysis

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#### Item Type:

**English Language Arts:** The two types of items and their point values include multiple-choice (1) and open-response (4). Students scored 83% of the possible points for multiple-choice items and exceeded the state by 6 points. On the open-response items, students scored 61% of possible points exceeding the state by 2 points. Student performance on open-response items reflects a 9 point gain from 2007 to 2008.

**Mathematics:** The three types of items and their point values include multiple-choice (1), short-answer (1), and open-response (4). Students performed the highest on multiple-choice (69%) and the lowest on short answer items (56%). State performance on short answer (58%) is higher than Triton. Triton's score represents an 11 point decrease from 2007 to 2008. The percent of points attained from open-response items (58%) exceeds the state by 2 points. Student performance on ELA open-response items (61%) is higher than math (58%).

**Areas of Strength:**

**English Language Arts:**

- Language test items focused on Standard 4: Vocabulary and Standard 5: English Structure. Students demonstrated a high level of proficiency on these strands.
- Literature test items focused primarily on students’ knowledge of non-fiction, fiction, understanding a text, and drama. Students were able to identify basic facts and main ideas in a text, read and comprehend fiction selections, identify, analyze and apply their knowledge of informational material, and understand the themes, structures, and elements of drama.
- All responses on the English Language Arts MCAS test exceeded the state average and, for the first time, all open-response results were included in that category.

**Mathematics:**

- Students demonstrated a high level of proficiency on the data analysis, statistics, and probability strand scoring at the proficient level on six out of seven multiple choice items as well as on the open-response question and the short answer question. Most of the questions focused on interpreting graphs and diagrams (Venn, histogram, bar, circle) and calculating data values.

**Science and Technology/Engineering**

- Student performance was the strongest on the Life Science strand where results on eight out of the ten multiple choice questions as well as the open-response question scored at the proficient level.
- All open-response item results met or exceeded the state average.

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**Areas of Improvement**

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- An asterisk (\*) denotes lower than the state average
- Over 25 % of our students responded incorrectly to the following multiple choice test items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
13	8.11	Theme. Dust Tracks. What does incident w/moon symbolize
22	8.15	Style/Lang. Kidnapped. Sentences contribute to development of m...
23	8.15	Style/Lang. Kidnapped. What is effect of repetition in lines
24	8.12	Fiction. Kidnapped. Which sentence indicates narrator survives
27	8.4	Vocabulary. Kidnapped. Word meaning: giddiness – dizzy
33	8.13	Nonfiction. Cinderella. Why did Perrault change published stories
34	8.8	Underst. Text. Cinderella. Least influential in Grimm’s’ popularity
40	8.16	Myth. Iliad. What conclusion can be drawn about Achilles

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
3	8.D.4	Calculate the probability of making same selection two times
5*	8.N.1	Select list that shows four percentages in ascending order
6	8.N.9	Select the expression that has a given value
8	8.N.12	Subtract a negative integer from a positive integer
11	8.N.12	Select the percent that a portion is of a whole
12	8.M.5	Given linear graph of time/distance, determine rate
14	8.P.4	Select expression that models a graphed linear relationship
15	8.N.8	Given an expression, choose the equivalent expression
16	8.N.7	Evaluate an expression with a square root
18	8.N.6	Choose the statement involving absolute value that is true
19	8.G.4	Given inscribed rectangle dimensions, find diameter
20	8.P.7	Solve an inequality
25	8.M.3	Calculate area of square with given portions removed
27	8.P.8	Choose the true statement about circles with different areas
31	8.N.5	Choose the greatest common divisor of a given number
32	8.P.3	Given an expression, choose the equivalent expression
34	8.M.2	Choose value in kilometers that is closest to value in miles
35	8.D.2	Interpret histogram to calculate requested percent
38	8.D.2	Given circle graph and data value, calculate total

<b>Science and Technology/Engineering</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
6*	TE 2.5	Choose the element of a universal systems model
9	ES 11	Why does tilt of Earth cause seasonal warmth and cold
10	LS 9	In which reproduction form do offspring/parent differ most
11*	ES 9	Which picture shows moon during solar eclipse
13	ES 7	Why Massachusetts bedrock often appears scraped, polished
14*	PS 1	Choose common property of given earth and moon objects
15	PS 4	What is mass of given beaker with ice after ice melts
16	TE 2.1	What is next step in a bridge building project
17	LS 15	Greatest effect of removing decomposers from ecosystem
21	PS 3	Choose appropriate units for measuring given lengths
22*	ES 10	What is one way Moon is different from the Earth
23	TE 4.4	Name process of checking manufactured goods for correct...
26	PS 11	Find average speed from time/distance between markers
28	PS 7	What physical classification is exemplified by sugar
29	PS 16	What happens when heated metal is immersed in cool water
30	ES 7	Which is evidence that glaciers once covered an area
31	LS 7	Which describes purpose of chromosomes in cell nucleus
33*	ES 2	Name the layer containing Earth's crust and upper mantle
35*	ES 4	Which energy source drives all weather events

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### **Target Actions Based on Analysis**

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#### **English Language Arts:**

- The focus on developing the students' ability to communicate their thinking on a constructed response text item was evident in their improved performance. Continue to focus on locating evidence from the story to support the reader's response when answering this type of question.
- Develop student understanding of theme in a literary work with a focus on symbolism, narrator's point of view, and figurative language.
- Continue to work on the comprehension strategies of making inferences and drawing conclusions.

**Mathematics:**

- Continue to provide opportunities for students to communicate their thinking and reasoning when solving math problems.
- In the area of number sense, continue practice with fraction/decimal conversion, operations between negative and positive integers, equivalent expressions, distributive property, and absolute values.
- In the area of patterns, relations, and algebra, provide additional practice on interpreting linear equations, solving inequalities, and comparing the areas of similar shapes.
- In the area of measurement focus on calculating rate, area, and volume.
- In the area of geometry practice the application of the Pythagorean Theory.
- Continue to encourage students to attempt to answer all open-response and short answer questions rather than leave the question blank.

**Science and Technology/Engineering**

- The structure of the grades 6-8 course of study is domain specific by grade. Life Science is taught in grade 8. Therefore, students demonstrated a high level of proficiency on this domain.
- Students struggled to answer the eleven earth and science questions and only scored in the proficient range on three. This domain is taught in grade 7.
- Student performance on chemistry and physics questions was slightly better, scoring proficient on five out of ten items.
- Students only receive instruction in technology/engineering for one quarter of grade 7 and one quarter of grade 8. Students only scored proficient on three out of seven questions.
- The District Science CRC, the middle and high school principals, and the K-8 math/science coordinator will review all findings and make a recommendation for program revision by March 2009.

## GRADE 7 MCAS ANALYSIS—SPRING 2008

### English Language Arts and Mathematics

All students were tested in two content areas. The English Language Arts test has been administered over the five-year comparison range. The mathematics test was added in 2006 so there is now three years of data for review. In 2008 students also participated in a question tryout for the History and Social Science test but there are no school, district, or state results available for review.

#### Five-Year Comparison of Grade 7 English Language Arts MCAS Results

Grade 7 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	10	12	69	57	16	23	5	8	210	93.8
2007	7	9	69	60	20	23	4	8	255	90.4
2006	1	10	63	55	30	26	6	9	253	85.4
2005	11	10	65	56	20	27	4	7	301	89.7
2004	6	9	64	59	24	25	5	7	274	87.0

#### Three-Year Comparison of Grade 7 Mathematics MCAS Results

Grade 7 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	10	15	43	32	33	29	13	24	212	80.9
2007	19	15	33	31	32	30	16	24	254	76.9
2006	13	12	36	28	31	33	19	28	254	73.3

**General Performance Level Analysis**

**English Language Arts:**

- The percent of students scoring in proficient and advanced has steadily increased over the last five years, with the exception of 2006, resulting in 79% of students scoring proficient or higher in 2008.
- The CPI increased 3.4 points from 2007 to 2008 reaching 93.8.
- The percent of students scoring at the advanced level continues to be below the state average.
- The percent of students scoring at the warning level increased slightly from 4% in 2007 to 5% in 2008.

**Mathematics:**

- Now that there is three years of data in mathematics, we can begin to conduct trend analysis on student results.
- The percent of students scoring in the proficient and advanced levels has steadily increased over the last three years by four points, from 49% in 2006 to 53% in 2008.
- The percent of students scoring in the warning category has declined by six points over the last three years, from 19% in 2006 to 13% in 2008.
- The CPI has continued to increase each year resulting in a 7.6 point gain from 2006 (73.3) to 2008 (80.9).
- In 2008, the percent of students who scored at the advanced level (10%) is below the state average (15%) for 2008.

**District Improvement Plan Targets**

**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	79	53	42	11	78	51	68	51	93	57
2008 State	69	47	27	12	46	23	62	47	77	48
2008 Target	69	55	37	28	62	43	61	52	79	59

**English Language Arts:**

- Exceeded 2008 improvement targets in all subgroups.
- Scored above the 2008 state average in all subgroups.
- Scores in low income and students with disabilities show a significant improvement over the 2007 results.

**Mathematics:**

- Exceeded 2008 improvement target in low income only.
- Scored below 2008 improvement targets in the aggregate, students with disabilities, gender male, and gender female.
- Scored below the 2008 state average in students with disabilities.
- Note: There is a significant achievement gap between students with disabilities and all other student subgroups.

## Test Item Analysis

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### Item Type:

**English Language Arts:** The three types of items and their point values include multiple-choice (1), open-response (4), and the writing prompt (topic development (12) plus conventions (8) = 20). Students obtained the highest percentage points on multiple-choice (86%) and the least on open-response (59%). Both of these percents exceeded the state average. The writing prompt score (71%) matched the state. Within the composition score there is a 25 point difference between conventions (86%) and topic development (59%). This difference increased from 2007 by four points with topic development showing no improvement.

**Mathematics:** The three types of items and their point values include multiple choice (1), short-answer (1), and open-response (4). Student performance on short-answer items is the highest at 81% of possible points exceeding the state by 10 points. Student performance also exceeded the state on multiple choice items (Triton = 75%, State = 69%) and open-response items (Triton = 68%, State = 60%). The percent of points for the open-response items is higher in mathematics (68%) as compared to English language arts (59%) and exceeded the state average by 8 points. Student performance exceeded the state average for all points attained on all item types in mathematics.

### Areas of Strength:

#### **English Language Arts:**

- Students demonstrated a high level of proficiency on the following standards:

#### Language

Standard 4: Vocabulary. Students were able to derive word meaning from context clues.

Standard 5: English Structure. Students demonstrated their understanding of parts of speech and quotation marks.

#### Literature

Standard 14: Poetry. Students analyzed the theme, structure, and elements of the poem, "Valentine."

Standard 15: Style and Language. Students demonstrated an understanding of the use of figurative language.

Standard 16: Myth, Traditional Narrative, and Classical Literature. Students analyzed the myth, *Wooden Bowl*, and interpreted the theme and structure of this genre.

- Students continue to improve their ability to construct a multi-step reader's response to a selection on open-response type items.
- On the writing sample, student performance exceeded the state level on Standard English Conventions.

**Mathematics:**

- Students scored above the state average on all five short answer type questions.
- The highest percent of student responses on the open-response items scored a three or a four out of four points on all five questions. This continues to be an area of strength.
- Overall, student performance was the strongest on data analysis, statistics, and probability. Students demonstrated proficiency on reading and interpreting information on charts and graphs, predicting probability, and determining range and measures of central tendency.
- The highest number of test items (12) focused on patterns, relations, and algebra. Students were able to analyze a graph, evaluate simple algebraic expressions for given variables, and analyze proportional relationships.

**Areas of Improvement**

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- An asterisk (\*) denotes lower than state average.
- Over 25% of our students responded incorrectly to the following multiple choice items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
4	7.13	Nonfiction. Rico. What does paragraph 7 suggest about Rico
28*	7.8	Understanding Text. Elizabeth. What is main point of paragraph 1

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
3*	7.P.4	Choose correct method for solving linear equation
4	7.N.3	Given an integer, select equivalent scientific notation
7	7.G.3	Identify two congruent angles in a diagram
11	7.M.1	Select the written description that could be a squared measure
14	7.N.6	Select the expression to find a given fraction of a number
16*	7.D.1	Interpret a Venn diagram to determine data values
17*	7.N.4	Calculate the equivalent of an expression with absolute value
18	7.N.7	Given context, estimate percent
25	7.N.1	Given a table of decimal numbers, select the lowest decimal
26	7.D.3	Interpret organized list to predict probability of an outcome

30	7.D.1	Interpret a table to determine fraction that matches context
32	7.P.3	Choose the expression that represents given context
33*	7.P.5	Select the graph that represents a positive rate of change
36	7.N.2	Given amount in oz. and total cost, calculate unit price/lb.
37*	7.G.7	Given description of faces, select name of 3-D figure
38	7.P.1	Select the graph representing total cost

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### Target Actions Based on Analysis

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#### English Language Arts:

- Students need to continue to work on going back to the reading selection to find information that supports their answers.
- Over the last five years, with the exception of 2005, student performance on the topic development portion of the writing prompt has been lower than the state average. Students need more direct instruction on the writing process, with a focus on developing topic sentences and/or thesis statements with supporting details. Previously released MCAS writing prompts, scoring rubrics, and exemplars of student work at the various score points should be used and analyzed by the students to gain a higher level of understanding of and familiarity with topic development expectations.
- On three out of the four open-response items, the highest percent of student responses scored a two out of a possible four points. Again, the use of previously released MCAS open-response items, scoring rubrics, and exemplars of student work will deepen student understanding of what constitutes a well-developed response.

#### Mathematics:

- In the area of number sense, continue to work on fractions, percents, absolute value, and proportional reasoning.
- In the area of patterns, relations, and algebra, students should practice solving linear equations, create and use symbolic expressions for linear equations, and analyze linear relationships between two variables.
- In the area of measurement, continue work on square units/area and conversion of measurements to problem solve.
- In the area of geometry, continue practice with transformation/reflections of figures, congruent angles, and identification of three dimensional figures.

## GRADE 6 MCAS ANALYSIS—SPRING 2008

### English Language Arts and Mathematics:

All students were tested in two content areas. The Mathematics test has been administered over the five-year comparison range. The English Language Arts test was added in 2006 so there is now three years of data for review.

#### Five-Year Comparison of Grade 6 Mathematics MCAS Results

Grade 6 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	29	23	42	33	25	26	5	18	231	88.6
2007	17	20	45	32	27	28	11	20	221	84.0
2006	16	17	39	29	31	29	15	25	275	78.7
2005	28	17	42	29	24	30	6	23	272	87.3
2004	30	17	30	25	28	32	12	25	302	81.8

#### Three-Year Comparison of Grade 6 English Language Arts MCAS Results

Grade 6 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	32	15	55	52	11	24	2	8	231	95.6
2007	11	9	65	58	21	25	3	7	221	92.5
2006	13	10	66	54	17	28	3	8	274	92.4

**General Performance Level Analysis**

**English Language Arts:**

- Three years of data allow for trend analysis of student performance.
- In 2008, 87% of the students scored either proficient or advanced. Reflecting an increase of eight points from 2006 to 2008.
- Thirty-two percent of the students scored at the advanced level representing a twenty-one point increase from 2007 to 2008.
- Slightly fewer students scored in the warning category (2%) as compared to 2006 and 2007 (3%).
- The CPI had remained virtually the same from 2006 to 2007 (92.5) and then jumped 3.1 points to 95.6 in 2008.

**Mathematics:**

- In 2008, 71% of students scored proficient or advanced. This percent represents a steady increase from 2006 (55%) to 2008.
- The percent of students scoring in the warning category significantly decreased from 15% in 2006 to 5% in 2008, well below the state level by thirteen points.
- The CPI is at the highest point in the last five years and has steadily increased over the last three years.

**District Improvement Plan Targets**

**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	87	71	60	20	65	37	83	66	90	76
2008 State	67	56	28	18	44	33	62	55	73	57
2008 Target	82	61	50	29	61	48	80	62	85	61

**English Language Arts:**

- Exceeded 2008 improvement targets in all subgroups.
- Scored above the 2008 state average in all subgroups.
- Score for students with disabilities showed a significant improvement over the 2007 results.

**Mathematics:**

- Exceeded 2008 improvement targets in the aggregate, gender male, and gender female.
- Scored above the 2008 state average in all subgroups.
- Scored below 2008 improvement targets in students with disabilities and low income.

## Test Item Analysis

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### Item Type:

**English Language Arts:** The two types of items and their point values include multiple-choice (1) and open-response (4). Students scored 82% of the possible points for multiple-choice items and exceeded the state by 6 points. Students scored 66% of possible points on the open-response items and exceeded the state average by 10 points. There is a 16 point difference between student performance on these two item types. This represents a 10 point narrowing of the gap between these test items reflective of improved student performance on constructed answers.

**Mathematics:** The three types of items and their point values include multiple-choice (1), short-answer (1), and open-response (4). Student performance on all item types exceeded the state with the greatest difference of 10 points in favor of Triton open-response items. Students performed the highest on multiple-choice (85%) and the lowest on open-response (74%). Students scored 78% for the short answer items compared to 72% for this item type at the state level. The percent of points for the open-response items is higher in Math (74%) as compared to English language arts (66%).

### Areas of Strength:

#### **English Language Arts:**

- Student performance exceeded the state average on all but one multiple choice test item and on all four open-response test items.
- All Language Strand items focused on Standard 4: Vocabulary and all students across the district demonstrated a high level of proficiency in this area.
- Overall, students were able to identify basic facts and main ideas in a text and use them for interpretation. These skills are associated with Standard 8: Understanding a Text.
- The highest number of test items focused on Standard 12: Fiction. Students were able to demonstrate their knowledge of the structure and elements of fiction on the multiple choice items.
- Students also performed well on Standard 10: Genre; Standard 11: Theme; Standard 14: Poetry; and Standard 17: Drama.

#### **Mathematics:**

- Overall, student performance was the strongest on the number sense and operations strand and the patterns, relations, and algebra strand. On both strands, students scored ten points higher than the state average of all possible points attained.
- Students exceeded the state average performance on all five short answer problems and all five open-response problems.
- The highest percent of student responses on the open-response items scored a three or a four out of four possible points on all five questions.

**Areas of Improvement**

- An asterisk (\*) denotes lower than state average.
- Over 25% of our students responded incorrectly to the following multiple choice items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
19	6.15	Style/Lang. River. Reason “Full” and “All wrong” repeated
30*	6.8	Understanding Text. Pattern. Which quilt is based on orig. design
32	6.13	Nonfiction. Pattern. Where did slaves get ideas from quilt patterns

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
8	6.P.3	Choose the equation that corresponds to a given equation
9	6.G.6	Choose the description of a transformation shown on a graph
30	6.N.5	Given ratio in context, determine percent
36	6.P.4	Choose the expression that represents the total items
38	6.D.4	Calculate probability of given situation

**Target Actions Based on Analysis**

**English Language Arts:**

- On two out of the four open-response items, the highest percent of student responses scored a two out of a possible four points. The use of previously released MCAS open-response items, scoring rubrics, and exemplars of student work will help students develop a deeper understanding of a well-developed response.
- Continue to work on poetry analysis.
- Continue to develop student’s ability to identify author’s intent and perspective.
- Continue to teach the structure and elements of a story (fiction) and why each is important.
- Stress the importance of re-reading a selection to identify important information in the text.
- Create English Language Arts curriculum maps, common assessments, and “looking-at-student-work” protocol.

**Mathematics:**

- In the area of patterns, relations, and algebra, practice solving/forming expressions.
- In the area of geometry, predict, describe, and perform transformations on two-dimensional shapes.
- In the area of measurement, find the volume and surface areas of rectangular prisms.
- In the area of data, statistics, and probability, predict and calculate the probability of outcomes of simple experiments.

## GRADE 5 MCAS ANALYSIS—SPRING 2008

### English Language Arts, Mathematics, Science and Technology/Engineering

All students were tested in three content areas. The fifth grade science test has been administered since 2003. Both the English Language Arts and the Mathematics tests were added in 2006 so there are three years of data for review.

#### Three-Year Comparison of Grade 5 English Language Arts and Mathematics MCAS Results

Grade 5 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
<b>2008</b>	14	13	54	48	26	30	7	8	257	87.8
<b>2007</b>	15	15	59	48	24	28	3	9	231	91.0
<b>2006</b>	23	15	49	44	23	31	5	9	244	90.6

Grade 5 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
<b>2008</b>	20	22	39	30	30	30	11	17	256	83.2
<b>2007</b>	20	19	41	32	31	31	8	18	232	83.0
<b>2006</b>	18	17	34	26	33	34	14	23	243	79.0

**Five-Year Comparison of Grade 5 Science and Technology/Engineering MCAS Results**

<b>Grade 5 Science and Technology/Engineering</b>										
<b>Year</b>	<b>Percent of Students</b>								<b>Number of Triton Students</b>	<b>Triton CPI</b>
	<b>Advanced</b>		<b>Proficient</b>		<b>Needs Improvement</b>		<b>Warning/Failure</b>			
	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>	<b>School</b>	<b>State</b>		
<b>2008</b>	25	17	36	33	32	38	7	12	257	86.3
<b>2007</b>	19	14	44	37	31	37	6	12	232	86.3
<b>2006</b>	19	17	38	33	37	39	6	11	240	84.1
<b>2005</b>	13	16	40	35	44	38	4	12	278	82.2
<b>2004</b>	26	20	42	35	29	33	4	13	282	87.3

**General Performance Level Analysis**

**English Language Arts:**

- Trend analysis can now be conducted on three years of data.
- The percent of students scoring proficient or advanced decreased by six points in 2008 (68%) as compared to 2007 (74%).
- The percent of students scoring in the warning category is at the highest level in three years at 7% but is below the state average of 8%.
- The CPI increased from 2006 to 2007 but declined in 2008 to the lowest level in three years at 87.8.

**Mathematics:**

- Trend analysis can now be conducted on three years of data.
- The percent of students scoring proficient or advanced decreased by 2 points in 2008 (59%) as compared to 2007 (61%).
- The percent of students scoring in the warning category increased from 2007 (8%) to 2008 (11%) but is below the state average of 17%.
- The CPI in 2008 is higher than the previous two years.

**Science and Technology/Engineering**

- The percent of students scoring proficient or advanced decreased by two points in 2008 (61%) as compared to 2007 (63%).
- The percent of students scoring in the warning category has increased from 4% in 2004 to 7% in 2008.
- The CPI remained unchanged from 2007 to 2008.

**District Improvement Plan Targets**

**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	68	59	29	29	43	31	64	55	71	61
2008 State	61	52	23	18	37	30	57	53	65	52
2008 Target	76	59	41	22	59	48	69	58	83	61

**English Language Arts:**

- No 2008 improvement targets were met in all student subgroups.
- Scored above 2008 state average in all student subgroups.

**Mathematics:**

- Met or exceeded 2008 improvement targets in the aggregate, student with disabilities, and gender female.
- Scored higher than the 2008 state average in all student subgroups.
- Scored below 2008 improvement targets in low income and gender male.

**Test Item Analysis**

**Item Type:**

**English Language Arts:** The two types of items and their point values include multiple-choice (1) and open-response (4). Students scored 81% of the possible points for multiple-choice items and exceeded the state by 4 points. Students scored 54% of possible points on the open-response items and exceeded the state average of 52%. There is a 27 point difference between student performance on these two item types.

**Mathematics:** The three types of items and their point values include multiple-choice (1), short-answer (1), and open-response (4). Students performed the highest on multiple-choice items (75%) and exceeded the state by 2 points. Student scored 72% of points on short-answer items and 63% of points on open-response. The percent of points for the open-response item is higher in math (63%) as compared to English language arts (54%). Student performance on all item types exceeded the state.

**Science and Technology/Engineering:** The two types of items and their point values include multiple-choice (1) and open-response (4). Students scored 78% of the possible points for multiple-choice items and exceeded the state by 4 points. Students scored 61% of possible points on the open-response items and exceeded the state by 7 points. There is a 17 point difference between student performance on these two item types.

**Areas of Strength:**

**English Language Arts:**

- Student performance on all four of the open-response items exceeded the state average.
- Students demonstrated a high level of proficiency on Standard 15: Style and Language where they analyzed how an author’s choice of words creates imagery and sets tone.
- Students also did well on Standard 16: Myth, Traditional Narrative, and Classical Literature where they analyzed the themes, structure, and elements of a folktale about New Year’s.
- Language strand questions focused on Standard 4: Vocabulary and Concept Development. Students demonstrated strong performance on six out of seven questions where they were required to use context clues to develop word meaning.
- The highest number of questions (8) focused on Standard 13: Non-fiction. Students performed well on the multiple choice items where they demonstrated their understanding of this genre’s structure and elements.

**Mathematics:**

- Overall, student performance was the strongest on the number sense and operations strand and the measurement strand. On both strands, students scored seven points higher than the state average of all possible points attained.

**Science and Technology/Engineering**

- Student performance was the strongest on the physical science domain where students attained 76% of possible points and scored five points higher than the state. Performance on the life science domain closely followed with students attaining 75% of possible points and scoring six points higher than the state. Questions were pretty evenly distributed between Life Science, Physical Science, and Earth and Space Science. There were five fewer common and matrix questions on Technology/Engineering.
- Students scored in the proficient range on two out of the five open-response items. All open response results exceeded the state average.

**Areas of Improvement**

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- An asterisk (\*) denotes lower than the state average.
- Over 25 % of our students responded incorrectly to the following multiple choice test items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
6*	5.4	Vocabulary. Paper House. Word meaning: tradition – custom
9	5.14	Poetry. Eraser. What speaker suggests about teacher in lines 12-14
15	5.8	Understanding Text. Tubman. Why must Jim leave immediately

16	5.17	Drama. Tubman. Which is best clue Araminta will assist slaves
21	5.12	Fiction. Black Pearl. What is reason old man doesn't answer boy
22	5.12	Fiction. Black Pearl. How is "Sink stone" most likely used
33	5.4	Vocabulary. Hypothermia. Work meaning: collapse - breakdown

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
4*	5.N.10	Evaluate an expression containing parentheses
8	5.N.7	Given fractions with different denominators, find the greatest
15	5.P.5	Given savings and ratio of savings/earnings, compute earnings
21	5.N.4	Choose the figure whose shading matches a given fraction
22*	5.G.3	Select the pair of perpendicular line segments
23*	5.D.3	Determine probability of rolling less than a 5 w/number cube
25	5.P.5	Use proportional relationships to solve a problem
30	5.M.5	Given two angle measures of a triangle, compute third
32	5.G.5	Choose the figure that shows a 90 degree rotation
33*	5.N.1	Express a power of ten in words
34*	5.P.1	Given a pattern's rule and 4 <sup>th</sup> number, determine 1 <sup>st</sup> number
35	5.M.1	Given a rectangle's area and width, determine its length
36	5.N.9	Multiply a fraction by a whole number
39	5.N.5	Identify the value of equivalent to a given percent

<b>Science and Technology/Engineering</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
5	ES 11	Why does Boston have a high amount of moisture in the air
9	ES 13	Which drawing best represents the motion of planet and moon
10*	PS 12	What is best explanation for object creating a shadow
12*	LS 7	What change would cause decrease in marsh willow population

13	TE 1.3	Which object does not have a wedge
15	LS 5	How many plants will inherit a chewed leaf pattern
23	LS 9	What is best explanation for bird migration in New England
25	ES 7	What type of precipitation is formed as illustrated

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### Target Actions Based on Analysis

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#### English Language Arts:

- Student performance on all four open-response items was below the proficient level. The highest percent of students scored two out of four points on all of the open-response questions. Students should use the released MCAS questions, scoring rubrics, and student work exemplars to develop a deeper understanding of performance expectations.
- Continue to develop student understanding of text (Standard 8) by focusing on the comprehension strategies of making inferences and drawing conclusions.
- Develop the strategy of identifying the “best” answer when responding to text.
- Continue to identify, analyze, and apply knowledge of the structure and elements of fiction (Standard 12) and non-fiction (Standard 13).

#### Mathematics:

- Student performance on four out of the five open response items was below the proficient level. Practice on the released MCAS items, scoring rubrics, and student exemplars will improve students’ ability to communicate their mathematical thinking and reasoning.
- In the area of number sense, provide additional practice on equivalent fractions, multiplication and division of fractions, and expressing a power of ten in words.
- In the area of patterns, relations, and algebra, practice problems involving proportional relationships, and analyze and determine the rules for extending patterns and progressions.
- In the area of data analysis, statistics, and probability, continue focus on finding median and mean given a table of data and predicting the probability of outcomes of simple experiments.
- In the area of geometry, focus on understanding the relationship of perpendicular line segments and the identification of transformations on two-dimensional shapes.
- In the area of measurement, continue to practice finding the volumes and surface areas of rectangular prisms.

#### Science and Technology/Engineering

- Student performance on three out of the five open-response items was below the proficient level. Two of these items were focused on earth science and the other focused on technology/engineering.
- In the area of physical science, review the explanation for an object creating a shadow.

- In the area of life science (biology), review inherited characteristics of plants and how changes in the environment cause plants to die.
- In the area of technology/engineering, revisit simple machines such as the wedge and practice different ways in which a problem can be represented.
- Students experienced the most difficulty with answering questions on the earth science domain. Students need additional instruction on the following:
  - Identify properties of minerals and how to test for them.
  - Distinguish among the forms of precipitation.
  - Describe how water on Earth moves in different forms.
  - Represent the motion of planet and moon.
  - Explain the motion of stars in the night sky.
  - Show correct sequence of moon phases.

## GRADE 4 MCAS ANALYSIS—SPRING 2008

### English Language Arts and Mathematics:

All students were tested in two content areas. English Language Arts and Mathematics tests have been administered over the five-year comparison range.

#### Five-Year Comparison of Grade 4 English Language Arts and Mathematics MCAS Results

Grade 4 English Language Arts										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
<b>2008</b>	9	8	48	41	35	39	8	13	240	83.0
<b>2007</b>	11	10	50	46	30	34	9	10	257	84.6
<b>2006</b>	6	8	48	42	38	39	8	12	240	82.7
<b>2005</b>	14	10	44	40	37	40	5	10	246	84.0
<b>2004</b>	14	11	52	45	29	35	5	9	281	86.3

Grade 4 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Advanced		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
<b>2008</b>	20	20	33	29	38	38	9	13	242	80.8
<b>2007</b>	11	19	34	29	43	39	12	13	259	77.6
<b>2006</b>	18	15	27	25	47	45	8	15	241	78.6
<b>2005</b>	14	14	38	27	38	44	10	15	246	81.6
<b>2004</b>	16	14	36	28	40	44	8	14	281	80.2

**General Performance Level Analysis**

**English Language Arts:**

- The percent of students scoring in the proficient or advanced categories decreased by three points in 2008 (57%) as compared to 2007 (60%). Performance over the last five years has been inconsistent.
- The percent of students scoring in these categories has exceeded the state average for the last two year.
- The percent of students who scored at the warning level decreased slightly from 2007 (9%) to 2008 (8%) but remains three points higher than 2004 (5%).
- The CPI decreased to 83.0 in 2008 from 84.6 in 2007. This pattern of up and down CPI points is evident from 2005 to 2008.

**Mathematics:**

- The percent of students scoring at the advanced level is at the highest level in the last five years (20%) and is equal to the state average.
- The percent of students scoring at proficient or advanced increased by eight points from 2007 (45%) to 2008 (53%).
- The percent of students scoring in the warning category decreased from 2007 (12%) to 2008 (9%)
- The CPI has increased to 80.8, an increase of 3.2 points over 2007.

**District Improvement Plan Targets**

**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	57	53	19	29	38	27	57	54	57	53
2008 State	49	49	14	18	26	29	42	48	55	51
2008 Target	61	53	24	24	47	40	53	54	69	51

**English Language Arts:**

- Exceeded 2008 improvement targets in gender male.
- Scored above the 2008 state average in all student subgroups.
- Scored lower than the 2008 improvement targets in the aggregate, students with disabilities, low income, and gender female.

**Mathematics:**

- Met or exceeded 2008 improvement targets in the aggregate, students with disabilities, gender male, and gender female.
- Scored above the 2008 state average in the aggregate, students with disabilities, gender male, and gender female.
- Scored lower than the 2008 improvement target and state average in the low income subgroup.

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## Test Item Analysis

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### **Item Type:**

**English Language Arts:** The three types of items and their point values include multiple-choice (1), open-response (4), and the writing prompt (topic development (12) plus conventions (8) = 20). Students obtained the highest percent of possible points on multiple-choice (83%) and the least (51%) on open-response items. The composition score totaled 74% and exceeds the state average of 71%. Within the composition score there is a 27 point difference between conventions (90%) and topic development (63%). This point difference increased by six points from 2007 to 2008 and was due to a higher percent in conventions and a lower percent in topic development. Student performance exceeded the state on all test items.

**Mathematics:** The three item types and their point values include multiple-choice (1), short-answer (1), and open-response (4). Student performance was either the same as or higher than the state on these test items. Students scored the highest percent of points (79%) on the multiple-choice items, 5 points higher than the state average. Students scored the same as the state (60%) on the open-response items and on short answer items (62%). Student response on open-response items in math (60%) is higher than English language arts (57%).

### **Areas of Strength:**

#### **English Language Arts:**

- Students demonstrated a high level of proficiency on the following standards:
  - Standard 4: Vocabulary. Students were able to derive word meaning from context clues, meaning of figurative phrases, and identify synonyms.
  - Standard 8: Understanding Text. Students identified basic facts and main idea in a text.
  - Standard 10: Genre. Students identified the elements of auto biography.
  - Standard 14: Poetry. Students analyzed poetry selection for theme, structure, and elements.
  - Standard 12: Fiction: Students analyzed selections for the structure and elements of fiction.
  - Standard 15: Style and Language. Students analyzed how author's choice of words appeals to the senses, creates imagery, and suggests mood.
- Student performance on open-response items met or exceeded the state average.
- Over the last five years, student performance on the writing prompt exceeded the state average for both topic development and conventions (spelling, grammar, and mechanics).

#### **Mathematics:**

- Student performance exceeded the state average on four out of the five open-response items.
- Overall, student performance was the strongest on the number sense and operations strand and the patterns, relations, and algebra strand. Areas of strength include place value, number sentences, three and four digit addition, multiplication and division, rounding, number patterns, ratio, and value of variables.

**Areas of Improvement**

- An asterisk (\*) denotes lower than state average.
- Over 25% of our students responded incorrectly to the following multiple choice or short answer (math) items:

<b>English Language Arts</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
2*	4.13	Nonfiction. Fenway. Why scoreboard is different from others
12*	4.5	English Structure. Johnny. Which word in line is an adjective
16*	4.11	Theme. Seed. What lesson does Chun learn from emperor

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
7	4.G.6	Determine least number of blocks to travel between two points
12*	4.N.5	Write the decimal equivalent of a given fraction
16	4.D.6	Select the spinner most likely to land on section indicated
22	4.N.4	Select the true fractional relationship using two rectangles
23*	4.M.5	Measure a line segment and add two inches
28*	4.D.4	Compute probability of picking black marble from bag
30*	4.N.3	Write the fraction representing point on number line
35	4.D.3	Use earnings graph and hourly pay rate to calculate hours

**Target Actions Based on Analysis**

**English Language Arts:**

- Student performance on all four open response items was below the proficient level. The highest percent of student responses score a two out of four points in all open-response items. Students need to go back to the story to identify evidence to include in their responses. The use of released MCAS items, scoring rubrics, and student exemplars for each point value will assist students in learning how to construct high quality reader’s response to a selection.
- Students should continue to focus on learning the structure and elements of non-fiction or informational material and provide evidence from the text to support their understanding.
- Students need more practice learning parts of speech (adjectives).

**Mathematics:**

- Student performance on all four of the open-response items was below the proficient level and one was below the state average.
- Student performance on three out of the five short answer items was below the state level.
- Practice on the released MCAS items for both of these types of questions and use of the scoring rubrics and student work exemplars will improve student understanding of proficient.
- In the area of number sense, provide additional practice on fraction-decimal equivalents, estimation, and representing a point on a number line.
- In the area of patterns, relations, and algebra, provide opportunities for students to demonstrate their understanding of input—output tables and rules.
- In the area of geometry, develop student understanding of ‘congruent’ and naming shapes.
- In the area of data analysis, statistics and probability, provide additional practice on probability (most likely) and constructing and analyzing representations of data sets (graphs, line plots).
- Students experienced the most difficulty with the measurement strand, particularly with calculating area and perimeter and measuring a line segment then adding two inches

## GRADE 3 MCAS ANALYSIS—SPRING 2008

### English Language Arts and Mathematics:

All students were tested in two content areas. The reading tests have been administered over the five year comparison range. The mathematics test was added in 2006 so there is now three years of data for review.

#### Five-Year Comparison of Grade 3 Reading MCAS Results

Grade 3 Reading										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Above Proficient		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	18	15	46	41	31	33	4	11	241	87.8
2007	13	14	51	45	27	32	9	9	241	85.3
2006	17	18	42	40	35	34	7	8	260	86.3
2005	NA	NA	70	62	26	31	4	7	241	89.5
2004	NA	NA	73	63	24	30	3	7	244	90.8

#### Three-Year Comparison of Grade 3 Mathematics MCAS Results

Grade 3 Mathematics										
Year	Percent of Students								Number of Triton Students	Triton CPI
	Above Proficient		Proficient		Needs Improvement		Warning/Failure			
	School	State	School	State	School	State	School	State		
2008	27	25	46	36	18	25	9	14	242	88.4
2007	15	19	45	41	25	24	15	16	239	81.9
2006	3	4	48	48	34	32	15	16	260	80.5

**General Performance Level Analysis**

**Reading:**

- The same percent of students (64%) scored at and above proficient in 2008 as did in 2007.
- For the first time in three years the percent of students scoring above proficient (18%) exceeded the state average (15%).
- The percent of students scoring at the warning level dropped five points from 2007 (9%) to 2008 (4%).
- The CPI increased in 2008 and is at the highest level over the last three years.

**Mathematics:**

- Now that there are three years of data a trend analysis of student performance can be conducted.
- The percent of students scoring at or above proficient in 2008 (73%) represents a thirteen point increase over 2007 (60%), and a twenty-two point increase from 2006 to 2008.
- The percent of students scoring at the warning level dropped six points from 2007 (15%) to 2008 (9%).
- The CPI has steadily increased over the last three years from 80.5 in 2006 to 88.4 in 2008 representing a gain of eight points.

**District Improvement Plan Targets**

**Percent of Students Scoring in Proficient and Advanced by Student Subgroups**

Subject	Aggregate		Students with Disabilities		Low Income		Male		Female	
	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math
2008 District	64	73	21	38	50	49	64	75	66	71
2008 State	56	61	23	29	32	41	52	60	60	62
2008 Target	65	58	21	21	36	28	58	57	62	60

**English Language Arts:**

- Met or exceeded 2008 improvement targets in students with disabilities, low income, gender male, and gender female.
- Scored higher than the 2008 state average in the aggregate, low income, gender male, and gender female.
- Scored lower than the 2008 improvement target in the aggregate.
- Scored below the 2008 state average in students with disabilities.

**Mathematics:**

- Exceeded 2008 improvement targets in all student subgroups.
- Exceeded 2008 state average in all student subgroups.

## Test Item Analysis

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### Item Type:

**English Language Arts:** The two types of items and their point values include multiple-choice (1) and open-response (4). Students scored 82% of the possible points for multiple-choice items and exceeded the state by 4 points. Students scored 51% of possible points on the open-response items and close to the state average of 50%. There is a thirty-two point difference between student performance on these two item types representing a ten point increase from 2007 to 2008. Both the district and the state percent attained for open-response items decreased by 8 points from 2007 to 2008.

**Mathematics:** The three item types and their point values include multiple-choice (1), short-answer (1), and open-response (2). Students performed the highest (84%) on multiple-choice items and exceeded the state average (80%). The lowest percent of points scored (73%) was on open-response items but exceeded the state (68%) by 5 points. Student performance on the short answer items (77%) exceeded the state (72%) by 5 points. This year district performance on all three item types exceeded the state average as compared to 2007 where student performance was the same as (short answer) or lower (multiple choice) than the state. Overall, student performance on open-response items in math (73%) is higher than English language arts (51%) by 22 points.

### Areas of Strength:

#### **English Language Arts:**

- Student performance on all multiple choice and open-response test items exceeded the state average. For the first time in three years, student performance on both open-response items was higher than the state. Student performance was stronger on the language strand as compared to the reading and literature strand.
- Overall, students scored at the proficient level on Standard 4: Vocabulary; Standard 5: Structure and Origin of Modern English; Standard 17: Dramatic Literature; and Standard 8: Understanding Text.

#### **Mathematics:**

- Student performance exceeded the state average on four out of the five open-response items and on all five of the short answer items.
- Open-response items are worth 0, 1, or 2 points on the grade 3 math MCAS tests. On four out of the five open response items, a high percent of students scored two points.
- Student performance on four out of the five short answer items scored at the proficient level.
- Student performance on the patterns, relations, and algebra strand items was in the proficient range and included knowledge of number sentences, determining the value of variable in number sentences, symbols ( $<$ ,  $>$ , or  $=$ ), and extending patterns by following a governing rule.
- Students also performed well on the data analysis, statistics, and probability strand for the second year in a row.

**Areas of Improvement**

- An asterisk (\*) denotes lower than state average.
- Over 25% of our students responded incorrectly to the following multiple choice items:

<b>Reading</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
1	3.12	Fiction. Zamani. What is Zamani’s job on first trip to market
11	3.10	Genre. Doris. What makes the selection nonfiction
16	3.13	Nonfiction. Cole. Why does Cole ask herself the question
22	3.15	Style/Language. Star. Reason poet repeats word “stare”
39	3.8	Understanding Text. Soil. Which creatures build tunnels
40	3.8	Understand Text. Soil. What is main idea of the selection

<b>Mathematics</b>		
<b>Item Number</b>	<b>Standard</b>	<b>Description</b>
2*	3.G.3	Identify the angle that is greater than a right angle
12*	3.N.12	Estimate the total value of three two-digit numbers
19	3.N.11	Round a number to the nearest hundred
28	3.D.3	Interpret line plot: count data points less that given value
34	3.N.1	Given digits and numeric clues, write request number

**Target Actions Based on Analysis**

**English Language Arts:**

- Student performance on the two open-response items was below the proficient level. The highest percent of student responses scored two out of four points on both open-responses questions. Use of the released MCAS questions, scoring rubrics, and student exemplars to demonstrate proficiency will deepen student understanding of how to more fully develop reader’s response to story selections.
- Students continue to struggle with the structure and elements of non-fiction or informational text.

- Students need additional practice with the development of comprehension strategies with a focus on drawing conclusions and making inferences. Particular attention on these strategies could be provided during read aloud.
- Continue to provide support to students with locating the main idea of a reading selection, figurative language, and using evidence from the text to support their answers.

**Mathematics:**

- Students scored below the proficient level on four out of the five open response items.
- A high percent of students (11-30%) did not attempt to answer the open-response items.
- Almost one-third of the students left a number-sense open-response item blank (#30). This question required students to use cut-out shapes to represent a fraction as a part of a unit whole. Students then were asked to communicate their mathematical reasoning behind their answer. Students need additional practice on this type of problem.
- In the area of number sense and operations, continue to work on estimation, rounding, place value, fractions (numerator/denominator), and developing student understanding of the value of the digits in the base ten number system.
- In the area of data analysis, statistics, and probability, students need additional practice on interpreting line plots and bar graphs.
- In the area of geometry, students need practice identifying the characteristics of parallel and perpendicular lines.
- In the area of measurement, students need to demonstrate an understanding of the attributes of area, calculating area (length x width), and units of measurement.

## **2008 MCAS RESULTS SUMMARY**

### **General:**

Similar to last year, it is important to continue to include direct instruction on how to answer an open-response type item. In grades 3 through 7, our students perform better on mathematics open-response questions as compared to English language arts. As noted last year, in mathematics students were given or had to create a graphic organizer to answer the question and then explain their thinking. In English language arts, students are required to go back to the text to locate evidence that supports their thinking. The English Language Arts Curriculum Review Committee should create a graphic organizer for students to use when answering an English language arts open-response item and include a space to record text evidence. Students need to remember to use key words from the questions in their answers that make explicit connections between their thinking, the evidence, and what they are being asked.

### **English Language Arts:**

1. The percent of students scoring in proficient or advanced continued to increase in grades 3, 6, 7, 8, and 10. As a result, the composite performance index (CPI) increased in those grades.
2. District improvement targets were met or exceeded in grades 6, 7, 8, and 10 for all students (aggregate), and genders (male and female). Students with disabilities subgroup targets were met or exceeded in grades 3, 6, 7, and 10. Low Income subgroup targets were met in grades 3, 6, 7, and 8. No subgroup improvement targets were met in grades 4 and 5 in English language arts.
3. Students in grades 4, 7, and 10 are required to respond to a writing prompt. Scoring for the prompt is broken down into two areas; Topic Development and Standard English Conventions (grammar, usage, and mechanics). Students scored 27-29 points higher on conventions as compared to topic development. The district should reinstitute the district-wide writing prompt assessment in grades 1-6 and bring teacher representatives from all three schools together to conduct the holistic scoring of the student compositions. In addition, the district English Language Arts CRC should make a recommendation for the adoption of common writing expectations for students in grades 7-12.
4. Student performance is stronger on the Language Strand as compared to the Reading and Literature Strand at all grades.
5. We need to continue our work on teaching comprehension strategies at all grades with an increased focus on making inferences and drawing conclusions. This recommendation is not only the responsibility of English language arts teachers but should be explicitly reinforced by teachers in all content areas. Students are typically stronger identifying and analyzing the structure and elements of fiction. They are exposed to this genre at a very young age. Proficiency with the elements and structure of non-fiction or informational text comes with practice in those content areas where the text is predominantly informational. The district English Language Arts CRC should create support materials for each grade level that identifies comprehension strategies easily reinforced outside of English language arts instruction by all teachers.
6. Now that grade level benchmarks have been identified, we need to create consensus curriculum maps for each grade level K-8 and each course in grades 9-12. The “alignment map” is then used by each teacher as a diary map to record actual teaching and learning activities on the consensus map. This way, the curriculum map becomes a dynamic document that provides the basis for professional collaboration around content, pedagogy, and student achievement.

7. In order to know that students have mastered what we want them to learn, a common benchmark assessment process and product should be identified and implemented in the 2009-2010 school year. Reading specialists and the district English Language Arts CRC will play a key role with facilitating this next step.

### **Mathematics:**

1. The percent of students scoring proficient or advanced continued to increase in all grades with the exception of grade 5. The composite performance index (CPI) increased in all grades 3-8 and remained unchanged in grade 10.
2. District improvement targets were met or exceeded in grades 3, 4, 5, 6, 8, and 10 for all students (aggregate). Low income subgroup targets were met in grades 3, 7, and 8. The only subgroup target met in grade 7 was low income. The students with disabilities subgroup target was met in grades 3-5 only. K-8 math specialists, the K-8 math/science coordinator, and the high school math program coordinator should come together with the grades 6-10 special education teachers to develop strategies for improving math achievement in this subgroup. In addition, the performance of the low income subgroup in grades 4-6 needs to be analyzed and discussed by teachers at these grade levels.
3. Student performance on the math open-response items is stronger than English language arts in grades 3-7 and then drops off in grades 8 and 10. Students demonstrated a high level of proficiency on the short answer items in grades 3, 5, 6, 7, and 10. We should continue to emphasize computational fluency at all grades. This year the elementary schools are implementing a district-wide math facts program (Otter Creek) that is intended to improve computational fluency as the foundation for developing more complex problem solving strategies.
4. In the area of number sense and operations, we need to examine ways to strengthen our students' understanding of fractions, decimals, and percents in grades 3-8, absolute value in grades 7 and 8, and estimation in grades 3 and 4.
5. Grade 10 again showed strong proficiency on the geometry strand items. Instruction in grades 3-8 should emphasize concepts and skills associated with 2-D and 3-D figures. The concepts of congruent, perpendicular, and parallel should also be reinforced.
6. Grades 3-8 instruction on measurement should emphasize the concepts associated with perimeter and area.
7. Overall, student performance on the data analysis, statistics and probability strand was stronger at the middle and high school. Additional focus at the elementary level should include the representation and interpretation of data sets, mean and median, and the probability of outcomes.
8. Performance on the patterns, relations, and algebra strand was strongest at the elementary level. Upper grade instruction should increase focus on symbolic expressions and linear equations.

### **Science and Technology/Engineering:**

1. At the high school level, discussions are underway to create a grade 9 honors biology course that will allow qualified students to take more high level science courses over the four years.
2. Examination of the current grades 9/10 biology curriculum should focus on content and instruction associated with the anatomy and physiology learning standards.

3. Based on 2008 MCAS results, a review of the current curriculum sequence leading up to the grades 5 and 8 test should focus on the learning standards associated with the Earth and Space Science domain to identify gaps and solutions.
4. Discussion of the current course of study in grades 6-8 will result in a recommendation for improvement this school year.

The Massachusetts Department of Education website is a wonderful resource for parents and educators. They have assembled over 3,887 released test items from 2003-2008. These questions can be sorted by year, grade, subject area/question category, and question type. Samples of open-response and writing prompt items also include the scoring rubric as well as sample student work that responds to each point value.

To access this resource go to [www.doe.mass.edu](http://www.doe.mass.edu). At the top of the home page, click on Assessment/Accountability. On that page, click on MCAS. Scroll to the bottom of the MCAS page and click on "Search MCAS Questions." Follow the instructions on this webpage to construct your request. You can print two versions: one version includes the answers and the other version doesn't. You just need to press the button to do either. Remember to click 'Print View' in the bottom right corner to only print the test text.