

Needham Public Schools
2004 MCAS Results - An Overview

The Massachusetts Comprehensive Assessment System (MCAS) tests are part of the Commonwealth's Education Reform initiative to improve school performance. These tests are based on state curriculum frameworks which set high standards for what students are expected to know and be able to do. Last spring, students in grades 3, 4, 7, and 10 were tested in English Language Arts; and students in grades 4, 6, 8, and 10 were tested in Mathematics. Students in grades 5 and 8 also took MCAS tests in Science and Technology/Engineering. The school system recently received results for the 2004 MCAS tests, and this report provides a general overview.

How are the results reported?

At grades 4 through 10, MCAS results are reported according to four performance levels:

<i>Advanced</i>	Students at this level demonstrate a comprehensive understanding of challenging subject matter and provide sophisticated solutions to complex problems.
<i>Proficient</i>	Students at this level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems.
<i>Needs Improvement</i>	Students at this level demonstrate a partial understanding of subject matter and solve simple problems.
<i>Warning/Failing</i>	Students at this level demonstrate a minimal understanding of subject matter and do not solve simple problems.

More specific definitions to each content area can be found at the Department of Education's website at www.doe.mass.edu/mcas/mcaspld.html.

Results of grade 3 Reading are reported in terms of three performance levels: *Proficient, Needs Improvement, and Warning*. This test is solely multiple-choice, and there is not sufficient opportunity for students to demonstrate knowledge and skills to distinguish between *Advanced* and *Proficient* performance.

Individual student scores are reported as scale scores ranging from 200-280 using the following ranges:

<i>Advanced</i>	260-280
<i>Proficient</i>	240-258
<i>Needs Improvement</i>	220-238
<i>Warning/Failing</i>	200-218

The Department of Education no longer reports scaled score averages for schools or districts; rather, they now provide schools with comparative data using average *Proficiency Index Results*. Proficiency points are awarded to a school or district for each student in the MCAS test group using the following scale:

MCAS Performance Level	Scale Score	Proficient Index Points Per Student
Proficient or Advanced	240-280	100
Needs Improvement (High)	230-238	75
Needs Improvement (Low)	220-228	50
Warning/Failing (High)	210-208	25
Warning/Failing (Low)	200-208	0

The *No Child Left Behind (NCLB) Act* has a goal that all students be *Proficient* by 2014. The **Proficiency Index (PI)** average is designed to give schools a means to measure their progress. A score of 100 would

indicate that all students had scored Advanced or Proficient. The average PI scores are used to rate schools using the following scale:

Performance Ratings

Rating	Proficiency Index Average
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

How did Needham students perform?

10th Grade

Students in the Class of 2005 are required to earn a "competency determination" as well as meet local graduation requirements in order to earn a diploma from Needham High School. To earn a competency determination a student must pass both the grade 10 MCAS English Language Arts and Mathematics tests by earning a score of *Needs Improvement* or above. Ninety-eight percent of all students achieved "competency determination" on this first attempt. Two percent, or seven students, failed to pass one or more tests. Of this seven, three failed to pass because they missed the test for medical reasons.

	Needham			State
	2002	2003	2004	2004
% Passed both tests	94	97	98	80
% Passed only English Language Arts	13	2	1	7
% Passed only Math	1	0	0	3
% Not passed either test	2	1	1	11

Students who failed the test will be given a retest in November. All of these students were identified during the summer based on raw score data and have already been offered individualized tutoring to prepare them for the retest.

It is possible to compare results of this test with those of previous years. We are only using the last three years for comparison because the test was rescaled in 2002.

Three-Year Comparison of High School Performance Level Results (% of students)

Grade 10	Advanced	Proficient	Needs Improvement	Failing	P.I.
2002 English Language Arts	43	48	8	1	95.0
2003 English Language Arts	43	47	9	1	96.0
2004 English Language Arts	40	49	10	0	96.7
2002 Mathematics	44	36	17	3	91.7
2003 Mathematics	48	34	17	2	92.5
2004 Mathematics	57	30	12	1	95.4

There is a general trend upward in both English Language Arts (ELA) as well as Mathematics. The Performance Index increase indicates a steady improvement; ELA has improved by 1.7 points in three years while Mathematics is 3.7 points higher. Schools with a Proficiency Index above 90 are given a performance rating of Very High, the top category.

8th Grade

All 8th grade students were tested in two areas (Mathematics and Science and Technology/Engineering).

Three-Year Comparison of 8th Grade Performance Level Results (% of students)

Grade 8	Advanced	Proficient	Needs Improvement	Warning	P.I.
2002 Mathematics	22	37	30	12	81.6
2003 Mathematics	25	38	28	9	83.4
2004 Mathematics	29	39	24	8	84.7

The PI for 8th grade Mathematics has increased for each of the past three years, and there has been a significant increase of 3.1 points. Increases of 2.5 or more are considered significant. There has been a decrease in students falling into the Warning category, while Advanced and Proficient numbers have shown a steady gain. The PI in 8th grade Mathematics falls in the High range.

Two-Year Comparison of 8th Grade Science and Technology/Engineering Levels (% of students)

Grade 8	Advanced	Proficient	Needs Improvement	Warning	P.I.
2003 Science	10	51	30	9	82.5
2004 Science	18	48	25	9	85.2

This is only the second year for the Science and Technology/Engineering test, and the PI has increased significantly over last year's results. Issues of alignment of Needham's curriculum with state standards often arise as we analyze science results because of the reliance on specific content. Curricular leaders at the Middle School will need to analyze this test further to determine its meaning.

7th Grade

The only seventh grade test given last spring was in English Language Arts. Below is a comparison of performance levels with the past two years:

Three-Year Comparison of Grade 7 Performance Levels (% of students)

Grade 7	Advanced	Proficient	Needs Improvement	Warning	P.I.
2002 English Language Arts	16	69	13	1	95.7
2003 English Language Arts	16	72	11	1	96.1
2004 English Language Arts	16	72	11	1	95.5

While the percentages are exactly the same as last year, the PI declined slightly. The lower PI scores mean that more students in the Needs Improvement category scored nearer the Failing mark than to the Proficient cut-off. The PI scores remain in the Very High range.

6th Grade

Sixth graders took a Mathematics assessment. Below is a comparison with the 2002 and 2003 performance levels:

Three-Year Comparison of Grade 6 Performance Levels (% of students)

Grade 6	Advanced	Proficient	Needs Improvement	Warning	P.I.
2002 Mathematics	47	30	16	7	89.6
2003 Mathematics	43	35	15	7	89.4
2004 Mathematics	47	29	19	5	89.5

Despite some slight movement among the performance level percentages, the PI for 6th grade Mathematics has remained almost exactly the same for the past three years.

5th Grade

The only test given to fifth graders is Science and Technology/Engineering. The test was introduced last year so we only have two years of data:

Two-Year Comparison of Grade 5 Science and Technology/Engineering Performance Levels (% of students)

Grade 5	Advanced	Proficient	Needs Improvement	Warning	P.I.
2003 Science	31	41	24	5	89.4
2004 Science	29	45	24	2	89.9

There was an increase of .5 in the PI, primarily as a result of fewer failing students.

4th Grade

Fourth graders are tested in both ELA and Mathematics:

Three-Year Comparisons of Elementary Performance Level Results (% of students)

Grade 4	Advanced	Proficient	Needs Improvement	Warning	P.I.
2002 English Language Arts	14	60	22	3	NA
2003 English Language Arts	24	57	18	1	93.5
2004 English Language Arts	24	54	21	1	92.8
2002 Mathematics	25	41	27	7	NA
2003 Mathematics	19	41	36	4	85.4
2004 Mathematics	32	36	29	3	88.5

The ELA Performance Index declined slightly, but the 0.7 is not considered statistically significant. The score falls in the Very High range. The Mathematics scores increased over last year with a significant 3.1 point gain.

3rd Grade

In response to the need for early literacy for all children, the Department of Education established a 3rd grade Reading test to determine the extent to which schools have succeeded in teaching students to become proficient readers by the end of third grade. There are only three Performance Levels for this test (*Proficient*, *Needs Improvement*, and *Warning*).

Comparison of 3rd Grade Reading Performance Levels (% of students)

Grade 3	Proficient	Needs Improvement	Warning	P.I.
2002 Reading	78	20	2	NA
2003 Reading	73	23	4	90.7
2004 Reading	78	19	3	91.7

There was a slight improvement in Reading scores. Of course, it is still concerning when 3%, or nine students, do not reach a level of basic reading competency. Each of these students had previously been identified by school staff as needing assistance and was receiving assistance prior to these results.

Adequate Yearly Progress (AYP)

The *No Child Left Behind Act (NCLB)* has set a requirement that all students attain proficiency on the MCAS by 2014. Each year the Department of Education issues AYP Determinations for each school and district. AYP determinations are made separately for English Language Arts (ELA) and Mathematics. For each subject, there are multiple AYP determinations for students in the aggregate and for student subgroups. Student groups for whom AYP determinations are made include special education students, students with Limited English Proficiency, economically disadvantaged students (eligible for free or reduced school lunch), and African American, Hispanic, Asian, White, and Native American students. Students are counted in *each* group to which they belong. Subgroups which do not make up at least 5% of the overall population are reported, but Performance Targets are not listed because of the small numbers.

One of the requirements of NCLB is that all schools issue an annual report card which includes the AYP results, and each school in Needham will issue reports of its AYP results later in the school year. The District AYP results are below.

ENGLISH LANGUAGE ARTS						
Student Group	Performance			Improvement		AYP 2004
	N	CPI	Met Target	CPI Change	Met Target	
Aggregate	2830	94.1	Yes	0.8	Yes	Yes
Lim. English Prof.	37	79.7	-	75.2	-	-
Spec. Ed.	318	78.9	Yes	0.4	No	Yes
Free Lunch	78	77.6	-	-3.6	-	-
Afr. Amer./Black	100	79.8	-	1.1	-	-
Asian or Pacif. Isl.	127	95.7	-	7.0	-	-
Hispanic	60	86.3	-	11.3	-	-
Native American	-	-	-	-	-	-
White	2541	94.7	Yes	0.0	Yes	Yes

The ELA chart indicates that the District has met all of its AYP targets. Indeed, there was a rise in each Composite Performance Index except for Free Lunch which declined by 3.6 points. Special Education students did not meet their improvement target although they did show a slight increase.

There are still significant achievement gaps among various racial and ethnic groups. Black students lag behind White students by 14.9 points; and Hispanics, by 8.4 points. The largest gap, however, is between the Aggregate and Free Lunch – 16.5 points.

MATHEMATICS						
Student Group	Performance			Improvement		AYP 2004
	N	CPI	Met Target	CPI Change	Met Target	
Aggregate	2859	88.4	Yes	2.7	Yes	Yes
Lim. English Prof.	33	81.1	-	-	-	-
Spec. Ed.	348	68.0	Yes	7.9	Yes	Yes
Free Lunch	70	69.3	-	14.4	-	-
Afr. Amer./Black	100	60.3	-	2.4	-	-
Asian or Pacif. Isl.	144	94.4	Yes	6.8	Yes	Yes
Hispanic	59	70.3	-	12.8	-	-
Native American	-	-	-	-	-	-
White	2554	89.6	Yes	2.0	Yes	Yes

In Mathematics, the District met all of its targets, as did each subgroup. However, the gap between certain groups is even greater in Mathematics. There is a gap between Black and White students of 29.3 points, and between Whites and Hispanics of 19.3. Free lunch students are 20.4 points below the Aggregate, and Asian students exceed the Aggregate by 6 points. It is important to note, however, that both Hispanic and Free Lunch students made significant CPI gains over the last cycle.

What do these results tell us?

In most instances, the performance of Needham students is very good. They score significantly better than their peers around the state; and, the scores are among the best in the state. A very high percentage of our High School students continue to achieve on their first attempt the Competency Determination which is necessary for them to be awarded a diploma. To date, no Needham High School student has failed to graduate due to the MCAS requirement.

The 2004 scores improved in almost every area except one. There was a slight decline in 7th grade English. However, there were significant increases in 10th grade Mathematics, 8th grade Science, 5th grade Science, and 4th grade Mathematics.

Any comparisons with prior years should be made with caution. Different students took the tests, and our experience tells us that different classes can vary greatly in ability and achievement. In addition, these tests change yearly, and there are questions about the reliability of the results from year to year. Until we have the opportunity to analyze the results more closely, generalizations about trends or meaning must be made with caution.

What are we doing with the results?

We have been studying item analysis results for 10th grade since the summer. For those students who failed a test, we have developed individual remediation plans and have already begun services. It is possible to take a retest this November, and it is our goal to provide help for at-risk students as soon as possible. In addition, an individual remediation plan is being developed for all students in the district who failed any of the tests.

Curricular leaders and classroom teachers at all levels will also now begin analyzing the results to look for changes which we may need to make in our curriculum or instruction.

George Johnson
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