Needham Public Schools
2005 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, the MCAS were administered for the eighth time since they were introduced in 1998. Grade 3 students were tested in Reading; students in grades 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 took MCAS tests in Science and Technology/Engineering. The School System recently received results for the 2005 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:

Advanced	Students at this level demonstrate a comprehensive understanding of challenging subject matter and provide sophisticated solutions to complex problems.
Proficient	Students at this level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems.
Needs Improvement	Students at this level demonstrate a partial understanding of subject matter and solve simple problems.
Warning/Failing	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 using only 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:

Advanced	260-280
Proficient	240-258
Needs Improvement	220-238
Warning/Failing	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)	210-218	25
Warning/Failing (Low)	200-208	0

The **No Child Left Behind** law has a goal that all students be ***Proficient*** by 2014. Massachusetts is currently at the halfway point in this goal. 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 (ELA) and Mathematics tests by earning a score of *Needs Improvement* or above. Ninety-eight percent of all Needham students achieved "competency determination" on this first attempt. Two percent, or 8 students, failed to pass one or more tests. All five students who failed English scored 218, which is the highest possible score to make without passing. Three of the four English failures scored 218.

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 should be noted that all current Needham High School seniors have achieved "competency determination" by passing both tests, except for six students who moved to Needham as seniors and have not yet taken the test.

	Needham				State
	2002	**2003**	**2004**	**2005**	**2005**
% Passed both tests	94	97	98	98	82
% Passed only English Language Arts	3	2	1	1	7
% Passed only Math	1	0	0	1	3
% Not passed either test	2	1	1	>1	8

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

Four-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
2005 English Language Arts	47	43	8	1	96.3
2002 Mathematics	44	36	17	3	91.7
2003 Mathematics	48	34	17	2	92.5
2004 Mathematics	57	30	12	1	95.4
2005 Mathematics	67	24	7	1	96.5

More of our 10th graders scored in the Advanced range on the ELA test than in any of the previous assessments. There were also noteworthy gains in the Mathematics scores. More students achieved Proficient or above (91%) than the previous year (87%), and the Performance Index rose 1.1 points to 96.5. In Massachusetts, 10th graders improved, with the percentage of students scoring Advanced or Proficient in both ELA (from 62% to 64%) and Mathematics (from 57% to 61%) increasing.

8th Grade

All 8th grade students were tested in two areas (Mathematics and Science and Technology/Engineering). In Massachusetts, the scores for 8th grade did not change significantly on either of these tests. In Needham, scores on both tests declined.

Four-Year Comparison of Grade 8 Mathematics 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
2005 Mathematics	31	35	22	12	83.0

After increasing for three straight years, the Performance Index for grade 8 Mathematics declined for the first time, falling 1.7 points. The primary reason for this change was the increase in students receiving a Warning. Twelve percent or 37 students failed to achieve a passing mark. It will be important to analyze these results carefully in order to respond to the particular needs of these students.

Three-Year Comparison of Grade 8 Science and Technology/Engineering Results
(% 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
2005 Science	11	50	27	12	81.6

The Science test was introduced in 2003, so we only have three years of data available. There was a significant drop (3.6 points) in the Performance Index. Examining the performance levels, we see a decline in the percentage of students scoring Advanced as well as an increase in the students in the Needs Improvement and Warning categories.

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 four years:

Four-Year Comparison of Grade 7 Performance Levels in ELA
(% 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
2005 English Language Arts	25	64	7	3	96.9

These scores are very high. Almost nine out of every ten students is either Advanced or Proficient, and the percentage of students in the Advanced category grew by nine points. The Performance Index improved accordingly by 1.4 points. While our students improved, their 7th grade peers in Massachusetts had an overall decline. The percentage of students in the state scoring Advanced or Proficient declined from 68% to 66%.

6th Grade

Sixth graders took a Mathematics assessment. Below is a comparison with the 2002- 2004 performance levels:

Four-Year Comparison of Grade 6 Mathematics 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
2005 Mathematics	44	33	17	6	89.8

While there are some minor fluctuations – both up and down – these scores are relatively unchanged from previous scores. It is interesting to note that the Performance Index has not varied more than a few tenths of a point since the test was introduced in 2002. In Massachusetts, the percentage of students in the Advanced or Proficient range grew from 43% to 46%.

5th Grade

The only test given to fifth graders was Science and Technology/Engineering. The test was introduced in 2003, so we only have three years of data:

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
2005 Science	24	42	30	4	88.4

The Performance Index declined by 1.5 points. The percentage of students scoring Advanced or Proficient declined from 74% to 66%, while the Needs Improvement and Warning scores increased from 26% to 34%.

4th Grade

Fourth graders are tested in both ELA and Mathematics:

Four-Year Comparisons of Grade 4 ELA 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
2005 English Language Arts	22	48	27	3	89.5

There was a significant drop in the Performance Index in the 4th grade ELA. The percentage of students in Advanced and Proficient declined by 8 points from 78% to 70%, while the percentage of Needs Improvement or Warning students grew from 22% to 30%. Needham's change mirrors a significant drop in the Commonwealth. Statewide, the percentage of 4th grade students scoring Advanced or Proficient declined from 56% to 50%. Such a fluctuation across the state raises some questions about test reliability.

Four-Year Comparisons of Grade 4 Mathematics Performance Level Results
(% of students)

Grade 4	Advanced	Proficient	Needs Improvement	Warning	P.I.
2002 Mathematics	25	41	27	7	NA
2003 Mathematics	19	41	36	4	85.4
2004 Mathematics	32	36	29	3	88.5
2005 Mathematics	25	38	34	3	87.4

The Mathematics scores also declined for this 4th grade class in Needham. The percentage of students performing at the Advanced and Proficient levels declined by 5 points. In Massachusetts, the 4th grade also declined, but only by two percentage points.

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
2005 Reading	80	19	1	93.9

There was improvement in Needham Reading scores. The Performance Index improved by 2.2 points. Two percent more students were Proficient, and less than one percent of the students fell into the Warning category. On this particular measure, only two students in Needham failed to reach basic reading proficiency. This news is very encouraging.

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 as well as 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 the data are not considered statistically significant.

AYP determinations for districts, schools, and student subgroups are based on answering "Yes" to three of four questions:

A. Are at least 95% of students taking part in MCAS?
In Needham over 99% of our students participate.

B. Has the district met the state's target Composite Performance Index for the current review period?
This year, the state's target CPI is 80.5 in English Language Arts and 68.7 in Mathematics. (See the charts below.)

C. Is the rate of improvement on target to reach 100% proficiency by 2014?
(See the charts below.)

D. Does the attendance meet the state's 92% attendance rate?
The attendance rate in Needham is 96.4%.

The Composite Performance Index (CPI) is the same as the Performance Index which was described earlier.

ENGLISH LANGUAGE ARTS						
	Performance			Improvement		
Student Group	N	CPI	Met Target	CPI Change	Met Target	AYP 2004
Aggregate	1465	94.0	Yes	- 0.1	No	Yes
Lim. English Prof.	23	80.0	-	-	-	-
Special Education	170	77.2	No	- 1.7	No	No
Free Lunch	56	81.9	-	-	-	-
Afr. Amer./Black	45	84.1	-	-	-	-
Asian or Pacif. Isl.	89	93.3	Yes	- 2.4	No	Yes
Hispanic	36	82.1	-	-	-	-
Native American	1	-	-	-	-	-
White	1294	94.7	Yes	0.0	Yes	Yes

In English Language Arts, three of the four reported groups failed to meet their improvement targets. These included the aggregate district score, Special Education, and African-American. However, only Special Education failed to make AYP. The other groups exceeded the state Composite target of 80.5.

There are still significant achievement gaps among the various racial, ethnic, and economic groups. Black (84.1), Hispanic (82.1), Special Education (77.2). Free Lunch (81.9) and Limited English Proficient (80.0) all lag behind White (94.7) and Asian (93.3) students.

MATHEMATICS						
	Performance			Improvement		
Student Group	N	CPI	Met Target	CPI Change	Met Target	AYP 2004
Aggregate	1405	89.2	Yes	0.8	Yes	Yes
Lim. English Prof.	23	78.6	-	-	-	-
Special Education	169	65.7	No	- 2.3	No	Yes
Free Lunch	52	68.5	-	-	-	-
Afr. Amer./Black	45	61.1	-	-	-	-
Asian or Pacif. Isl.	70	96.3	-	-	-	-
Hispanic	37	65.3	-	-	-	-
Native American	1	-	-	-	-	-
White	1251	90.4	Yes	0.8	Yes	Yes

In Mathematics, the District and White students met their targets. Special Education students failed to meet their target and did not achieve the 68.7 state target. Under the regular determination system, Needham Special

Education students would not achieve AYP; however, in May 2005, the U.S. Department of Education (USED) granted states additional flexibility in their treatment of special education students for accountability purposes. USED has not yet released long-term policy guidance around this issue. Until more formal procedures are issued, the DOE responded by removing the lowest 2% of special education scores from the CPI calculations, assuming that these students had the greatest needs. This secondary analysis changed the score such that it met or surpassed our AYP target. While the DOE continues to display our original CPI score without the recalculation, it has changed the AYP determination to "Yes."

As with ELA, a comparison of CPI data between the various subgroups indicates significant gaps in achievement. Asian students exceed the White population by 5.9 points, but other groups lag behind:
Limited English Proficient by 11.8 points, Special Education by 24.7 points, Free Lunch by 21.9 points, Black students by 29.3 points, and Hispanics by 25.1 points.

In 2004, all Needham schools met their AYP targets. This year, in addition to failing to achieve AYP in ELA for District Special Education students, the Pollard Middle School failed to achieve AYP for Special Education in Mathematics. All other schools achieved AYP for all subgroups in all subjects. Schools and districts that do not make their AYP targets for two years in a row are "identified for improvement." The consequences for this failure vary depending upon the circumstances. The range of consequences may include everything from requiring a corrective action plan or professional development plan to restructuring the school, or allowing public school choice, or taking the school/district into receivership.

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 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 2005 scores remained very similar to previous years. There were some fluctuations, both up and down. The failure to achieve AYP for Special Education students is an issue that warrants further examination. The continuing achievement gaps between subgroups are also cause for concern.

Any comparisons with prior years should be done 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. The ongoing process of ensuring consistency and comparability was further complicated this year by the DOE's change in testing contractor. As a result of the competitive bid process, Measured Progress took over the test design and evaluation responsibilities from Harcourt Assessment. 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.

Curricular leaders and classroom teachers at all levels will now begin analyzing the results for all students to identify anyone who may need additional help as well as to look for changes which we may need to make in our curriculum or instruction. Individual Remediation Plans are developed for all students who fail, as well as for many students who do not work up to expectations.

During the coming weeks, curricular leaders will examine item analysis reports in an attempt to gain a better understanding of what these results mean. These reports allow us to determine how our students perform with different types of questions (multiple choice, short answer, open response) as well as how they do on questions assessing a particular skill or fact.

George Johnson
September 2005