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ABSTRACT

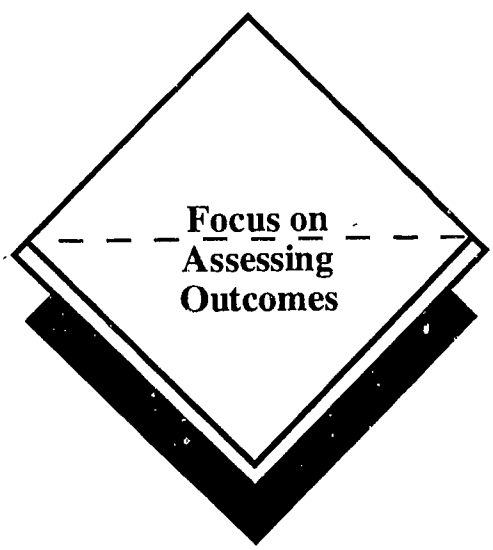
In their effort to provide quality programing for their diverse student body, the Des Moines Public Schools continually evaluate their teaching and student outcomes. This report presents results about student performance on the following tests: (1) Iowa Tests of Basic Skills (ITBS); (2) Iowa Tests of Educational Development (ITED); (3) American College Tests (ACT); (4) Scholastic Aptitude Test (SAT); (5) Advanced Placement Tests; (6) performance-based assessment; and (7) curriculum-aligned assessments of the school district given in grades 3 through 12 (the district's criterion-referenced assessment). The majority of the 31,524 students in Des Moines are achieving at or above grade level, and many students are exceeding normal expectations. Growth is occurring in most areas. Teachers appear to be teaching the curriculum and students appear to be learning it. Ten tables and 11 figures (largely graphs) present test results. Six appendixes contain a list of definitions and 19 tables of summary results and statistics. (SLD)

93-230
AGENDA

DES MOINES INDEPENDENT COMMUNITY SCHOOL DISTRICT
1800 Grand Avenue
Des Moines, Iowa 50309

ASSESSMENT PROGRAM RESULTS
1992 - 1993

OCTOBER, 1993



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The Des Moines Public Schools
District Assessment Program
October, 1993

The Des Moines Public Schools continue to focus organizational energy on the academic growth and development of our diverse urban student body. The primary goal of the academic assessment program is to improve teaching and increase learning. Toward this end, three purposes of the academic assessment program have been delineated. These are: 1) to assess student learning, 2) to diagnose instructional need, and 3) to provide information for program evaluation. Within the context of diversity, illustrated by wide variability in factors such as socioeconomic background, ethnicity, and student mobility rates, specific objectives have been developed to monitor and report the educational development of our 31,524 students. The specific objectives are:

1. To allow the teacher to monitor individual and composite student learning progress in basic skill and higher level thinking areas.

2. To provide information to students, parents, and school personnel for the purpose of making more personalized instructional decisions.

3. To provide student achievement data for the purpose of conducting program evaluations and curriculum revisions.

4. To provide selected student achievement data as one component of student progress reporting to the public.

5. To provide requested student performance information to meet and comply with state and federal guidelines.

6. To ensure that student performance outcomes resulting from the academic programs provided by the Des Moines Public Schools compare very favorably with those of other similar districts in the nation.

Assessment results are demonstrations of student achievement regarding both knowledge and performance outcomes, and is an indication that a district is indeed achieving its mission. Any form of assessment, used in isolation, provides only partial information about a child's academic development or a school district's overall curriculum. By obtaining results from multiple methods of assessment, decision-makers have more information to refine the teaching-for-learning process.

Results available at the student, classroom, building, and district levels are used for different purposes. To personalize instructional decisions, continuous monitoring of student progress provides information for planning activities that will address the needs of each learner. Internally, test scores are not used to prove the superiority of one student over another. The evaluation of student achievement information at the classroom, building, or district level allows identification of strengths as well as academic areas in need of improvement. In order to maintain an appropriate breadth

of focus of the curriculum, student achievement trends in districts with similar characteristics can be monitored. In addition, disaggregating student achievement information provides an audit system to monitor equity, to make sure all students have an opportunity to grow and to achieve success.

The Des Moines Public Schools, in its efforts to provide quality programming for its diverse student body, continually evaluates the process of teaching for learning. To identify areas for study and analysis, various methods of student outcome assessment are used. The purpose of this report is to provide information to the Board of Directors and to the public about the achievement of our students on the following:

- **Iowa Tests of Basic Skills (ITBS)**, a series of norm-referenced tests, given to students in third, fourth, sixth, and seventh grades.

- **Iowa Tests of Educational Development (ITED)**, a series of norm-referenced tests, given to a sample of students in tenth grade.

- The **American College Tests** and the **Scholastic Aptitude Test**, a series of norm-referenced tests, usually given to high school juniors and seniors for the purpose of determining probable success in higher education.

- **Advanced Placement Tests**, a series of criterion-referenced tests given to high school students seeking college credit prior to enrolling in college.

- **Performance Based Assessment**, a type of assessment in which the *test* is the learning activity itself.

- **Curriculum Aligned Assessments**, a series of objectives-based tests, given in grades two through twelve and covering most subject matter areas in the Des Moines curriculum.

Disaggregation of assessment information is an integral component of planning for district growth. Suggested groups for disaggregating data include gender, ethnicity (minority or non-minority status), and a socioeconomic variable. In our urban school district, disaggregation of data is primarily used to evaluate the growth and achievement of minority and non-minority students. Disaggregation of data serves as an equity indicator in attempting to determine whether all students are learning and to what degree.

Utility of Standardized Assessment Information

The primary use of norm-referenced (or standardized) assessment (ITBS, ITED) is to provide general information regarding how our district as a whole compares with other urban districts with similar characteristics across the state and nation. With our current mobile society, it is important that a district not be so focused on its own curriculum objectives that it ignores what is being taught in other districts across the country. Standardized assessment helps to prevent this tunnel vision from developing by

selecting items that test a broad range of objectives from each subject area. These standardized tests are not intended to perfectly match any district's curriculum. However, keeping in mind that the ITBS is an assessment of *basic* skills, it is an excellent measure of student achievement in the various areas.

The Des Moines Public Schools use national school ITBS and ITED norms as the standard of comparison, since our district's urban demographic characteristics are more reflective of a national standard than a composite state standard. As an illustration, the eight largest school districts in the state (Urban Education Network members) represent approximately 25 percent of Iowa's student population. Urban Network districts comprise less than two percent of all school districts in Iowa. With regard to individual scores, a student scoring at the 50th percentile is on grade level, and should be able to enter most schools across the nation and begin achieving success.

The ITBS and ITED are timed tests. This means that a specific amount of time is given to complete the items in a given section. As such, timed tests may penalize students who take their time and answer only a small number of items correctly. For this reason, the ITBS may not be a perfect match for evaluating the performance of students in buildings where the philosophy is to teach students to take one's time and do a good job.

The Iowa Tests of Basic Skills

The Iowa Tests of Basic Skills is a norm-referenced test battery developed by the Iowa Testing Programs in Iowa City, Iowa. It is administered at midyear in Grades 3, 4, 6, and 7 in the Des Moines Public Schools, and measures basic skills in vocabulary, reading, language, work study, and mathematics. Scores are reported in percentiles, grade equivalents, and normal curve equivalents. The ITBS tests are designed so that approximately 1/3 of the material is below grade level, approximately 1/3 is on grade level and approximately 1/3 is above grade level. Considering the basic design of the ITBS (or any norm-referenced test), students performing at the 50th percentile are at the expected test and grade level average. For example, fourth grade students scoring at the 50th percentile in February also have a grade equivalent of approximately 4.5.

On tests administered at the same time of year on subsequent years, a student scoring at the 50th percentile in both years has experienced a year's growth. A student scoring at the 50th percentile in 6th grade and at the 60th percentile in 7th grade might be said to have experienced accelerated achievement growth, over and above that which might be normally expected during that period of time. Since the ITBS was administered in the Des Moines Public Schools in the fall of 1991 and again in February of 1993, a student scoring at the 50th percentile in third grade (1991-92) and again in the fourth grade (1992-93) would have experienced an achievement growth of approximately one and one-half years.

Elementary School ITBS

The Board of Directors approved a revised assessment program in June of 1991. A change was made in the grade levels assessed by the ITBS. The ITBS is currently administered in Grades 3 and 4, instead of Grades 2 and 4 as in the past years. This change allows data in this report to be used in examining student achievement and growth from Grade 2 in 1990-91 to Grade 3 in 1991-92 to Grade 4 in 1992-93.

Grade 3 (1991-92) to Grade 4 (1992-93). The Des Moines Public Schools are proud of the growth recorded by students at Grade 3 (in October 1991) and a similar group of students at Grade 4 (in February 1993). Given a fourth-grade student mobility rate ranging from 2 percent to 32 percent in the district's elementary schools and a socioeconomic variable ranging in one school where 12.5 percent of the students received free or reduced meals to 94 percent in another, the district continued to record student growth in achievement. For this group of students, assessed in the third grade in 1991 and in the fourth grade in 1993, the district's national composite score on the ITBS increased from the 55th percentile to the 66th percentile.

Of the district's 39 elementary centers, 33 (85%) recorded an increase in composite scores varying from 1 to 32 percentile points. Seven of these elementary centers improved by at least 20 percentile points, and eleven others improved by at least 10 percentile points. Two elementary centers' scores remained unchanged, with both scoring above the 50th percentile. Scores at four elementary centers (10%) dropped between 3 and 18 percentile points. However, all these elementary centers remained above the 50th percentile (Appendix B). An analysis of the ITBS subtests for the 1992-93 fourth graders compared to their 1991 third grade scores indicates improvement on all five subtests (Appendix D). Gains ranged from three percentile ranks on the vocabulary subtest to 20 on the mathematics subtest.

Both the percentage of students receiving free or reduced price meals and a building's mobility rate were significant and negatively related to building scores. As either of these indices increased, scores tended to decrease. Correlations were -.43 and -.77, respectively.

Grade 2 (1990-91) to Grade 4 (1992-93). Comparison of the achievement levels of Grade 2 students in 1990 (October) was made with the achievement levels of Grade 4 students in 1993 (February). For this similar group of students, tested in the second grade in 1990 and in the fourth grade in 1993, the district's composite score on the ITBS increased from the 47th percentile to the 66th percentile.

Of the district's 39 elementary centers, 31 (79%) recorded an increase in composite scores varying from 9 to 60 percentile points over the two-year period. Ten of these elementary centers improved by at least 20 percentile points, and 19 centers improved by at least 10 percentile points. One elementary center's score remained unchanged and above the 50th percentile. Scores at seven elementary centers (18%) experienced a score decrease between 2 and 14 percentile points. However, six of these elementary centers remained above the 50th percentile.

Middle School ITBS

Continuing the focus on basic skills improvement in the Des Moines Public Schools, the results of middle school students in Grade 6 (1991-92) and Grade 7 (1992-93) were analyzed. Against a background of seventh-grade student mobility rates ranging from 8 percent to 23 percent and a socioeconomic index measured by the percent of students eligible for free or reduced meals in one middle school of 23 percent to another extreme of 56 percent, the district recorded a minimal decline in achievement scores. For this group of students, tested in the sixth grade in October 1991 and in the seventh grade in February 1993, the district's composite score on the ITBS decreased from the 65th percentile to the 63rd percentile.

Of the district's ten middle schools, one (10%) recorded an increase in composite score of 1 percentile point. The score at two middle schools remained the same, both above the 50th percentile. The scores at seven middle schools decreased between 1 and 7 percentile points. Eight of the ten middle schools' scores at the seventh grade remained at or above the 50th percentile (Appendix C). An analysis of the subtests indicates improvement on the reading and language subtests. The average gain was two percentile ranks. Declines were recorded on the vocabulary, mathematics, and work-study subtests. It should be noted that scores on all five subtests remained above the 50th percentile (Appendix D).

Both the percentage of students receiving free or reduced price meals and mobility rate were found to be significant and negatively related to building scores at Grade 7. As either of these indices increased, scores tended to decrease. Correlations were -.68 to -.83, respectively.

Disaggregated ITBS Scores

Disaggregated ITBS data compared minority and non-minority growth rates by using median percentile scores. For the students in second grade in 1990-91 and in fourth grade in 1992-93, minority student achievement increased from the 31st (2nd grade) to the 41st (4th grade) percentile, while non-minority student achievement increased from the 55th (2nd grade) to the 63rd (4th grade) percentile. The results indicate that both groups are achieving. More importantly, it indicates that the achievement *gap* between minority and non-minority students is closing and not widening in district elementary and middle schools. Table 1 shows the minority-non-minority composite differences for all students tested on the ITBS in February of 1993 (1992-1993 school year) and in prior years.

Table 1. Disaggregated 1993 ITBS Scores for Minority and Non-Minority Students Using Median Percentile Scores

Grade Level & Year	Minority	Difference	Non-Minority
Gr. 2 - 1990-91	31	(24)	55
Gr. 3 - 1991-92	35	(24)	59
Gr. 4 - 1992-93	**41**	**(22)**	**63**
Net Change	+10		+8
Gr. 2 - 1988-89	31	(25)	56
Gr. 4 - 1990-91	41	(23)	64
Gr. 6 - 1992-93	**40**	**(22)**	**62**
Net Change	+9		+6
Gr. 4 - 1989-90	52	(15)	67
Gr. 6 - 1991-92	44	(22)	66
Gr. 7 - 1992-93	**44**	**(20)**	**64**
Net Change	-8		-3

Another way to evaluate disaggregated assessment information is to examine the percent of students in a particular grade scoring at or above a specified standard. With the ITBS, differences between disaggregated groups regarding the number or percent of students scoring at or above grade level can be examined. Table 2 shows the percent of students scoring on grade level (50th percentile) or higher on the February 1993 administration of the ITBS. Overall, greater than 60% of the students scored at or above grade level on the ITBS. Gender differences in achievement are minimal. There are substantial differences between non-minority and minority students, and between students receiving subsidized meals and those not receiving subsidized meals.

Table 2. February 1993 ITBS: Percent of Students Scoring On Grade Level (50th Percentile) or Higher

Grade	All Students	Males	Females	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Grade 3	61.0	60.3	61.8	65.0	44.1	43.5	72.5
Grade 4	61.0	60.0	62.1	65.9	40.4	43.5	72.0
Grade 6	60.7	60.4	61.0	65.2	40.7	39.6	71.8
Grade 7	61.7	59.5	63.8	66.3	42.1	41.6	70.7

The Iowa Tests of Educational Development

The Iowa Tests of Educational Development is a norm-referenced test battery developed by the Iowa Testing Programs in Iowa City, Iowa. This year, the ITED was administered to Grade 10 students using a matrix sampling procedure. The purpose of using matrix sampling was to reduce the test-taking time and increase the instructional time by three to four hours per student. The sample of students taking the ITED subtests was based on the number of tenth grade students across the district. Since the matrix sampling technique creates a lack of representativeness at the building level, it is not statistically possible to determine a building composite. Composite scores of district 10th grade students who took the subtests are shown in Table 3.

TABLE 3. ITED Mean Percentile Scores by Subtest

Subtest	91-92	92-93
Correctness of Expression	70	51
Quantitative Thinking	91	92
Social Studies	62	62
Natural Sciences	52	40
Literary Materials	61	41
General Vocabulary	75	45
Sources of Information	82	83
Composite	69	60
Reading Total	NA	58

It should be noted that the scores for the Quantitative subscale may be inflated, since the sample taking this subtest included gifted and talented students attending Central Academy. For the same reason, the scores on the other subtests may underrepresent average student achievement.

In order to provide an opportunity for students who wished to take the entire ITED battery, a special session is held on a Saturday during the year. On November 9, 1991, fourteen students took the ITED at Lincoln High School. Interested students included five from the 9th grade, four from the 10th grade, and five from the 11th grade. Twelve of the fourteen students scored above the 50th percentile, ten of whom scored above the 80th percentile. On February 13, 1993, at 1800 Grand, five students took the ITED. Three of the five students scored above the 80th percentile.

ITED data were disaggregated to examine achievement differences between minority and non-minority students. Subtest scores are in Table 4.

Table 4. Disaggregated 1993 ITED Scores for Tenth Grade Minority & Non-Minority Students Using Mean Percentile Scores

Subtest	Minority	Non-Minority	Difference
Correctness of Expression	40	51	11
Quantitative Thinking	60	74	14
Social Studies	37	60	23
Natural Sciences	27	49	22
Literary Materials	36	48	12
General Vocabulary	40	44	4
Sources of Information	48	67	19
Composite	47	56	9
Reading Total	37	53	16

American College Tests (ACT)

The district's college-bound students maintained comparable scores in their mean performance on the ACT. Eight hundred fifteen students (51%) of the Class of 1993 took the ACT. The mean score for this group was 20.8 (out of 36), compared to 21.1 in 1992 and 20.9 in 1991. The national mean for this class was 20.7 and the Iowa mean was 21.8. Table 5 shows disaggregated ACT scores:

Table 5. ACT Composite Score Comparisons (Means) Disaggregated by Ethnic Group

	All Students		African-American		American Indian		White		Hispanic		Asian	
Year	1992	1993	1992	1993	1992	1993	1992	1993	1992	1993	1992	1993
Number of Students	769	815	69	59	4	3	592	629	16	10	52	60
Des Moines	21.1	20.8	17.6	17.2	20.3	21.0	21.8	21.5	19.6	19.0	19.3	17.1
Iowa	21.6	21.8	17.9	18.4	19.2	19.1	21.8	21.9	20.2	20.1	21.1	21.3
National	20.6	20.7	17.0	17.1	18.1	18.4	21.3	21.4	18.7	18.8	21.6	21.7

Scholastic Aptitude Test (SAT)

Typically, only those Des Moines students who are seeking entry into the most prestigious universities and colleges in the country take the SAT. The district's college-bound students continued to score well above the national average in their mean performance on the SAT. In 1991-92, the SAT was taken by 128 students. In 1992-93, the SAT was taken by 145 students. For all students, the SAT-Verbal mean score was 503 out of 800, and the SAT-Math mean score was 577 out of 800. The Verbal mean score for males was 518 and for females was 486; the Math mean score for males was 613 and for females was 537. Table 6 compares Des Moines students' scores with national averages:

Table 6. SAT Composite Score Comparisons (Means) Disaggregated by Gender

	Des Moines		National	
Year	1992	1993	1992	1993
SAT-Verbal				
All students	480	503	423	424
Males	489	518	428	428
Females	472	486	419	420
SAT-Math				
All students	555	577	476	478
Males	587	613	499	502
Females	526	537	456	457

Advanced Placement Tests

Advanced Placement (AP) tests are criterion-referenced tests given to high school students for college credit. The College Board recommends that a score of three or higher (out of five) be achieved in order to receive college credit for a specific course.

In 1992, 53 Des Moines high school students were recognized by The College Board as Advanced Placement Scholars. This number represents 37% of the 144 Iowa students recognized. Twenty-one of 29 Iowa students receiving the highest level of this award were district students, and 28 of 33 underclass winners were district students (1993 results are not yet available).

- **A.P. Scholars**, with a minimum of three AP courses with test scores of 3 or higher, included 13 underclass students and nine graduated seniors.

- **A.P. Scholars with Honor**, with a minimum of four AP courses with test scores of 3 or higher and a 3.25 average, included seven underclass students and three graduated seniors.

- **A.P. Scholars with Distinction**, with a minimum of five AP courses with test scores of 3 or higher and an average of 3.50, included eight underclass students and 13 graduated seniors.

During 1991-92, 136 students took 325 examinations. Of the gifted and talented students attending Central Academy, 118 students took 297 examinations, with 78% of the examinations receiving a score of three or higher. During 1992-93, 153 Central Academy students took 353 examinations, with 80% of the examinations receiving a score of three or higher. Table 7 is a list of examinations taken by students enrolled in Des Moines' high schools (provided by Gifted & Talented Program):

Table 7. Advanced Placement Examinations Taken by District Students

	Number of Exams	
Year	1992*	1993**
English Literature & Composition	48	45
English Language & Composition	38	43
U. S. History	24	29
European History	25	33
U. S. Government & Politics	16	17
Comparative Government & Politics	16	22
Economics	53	43
Calculus (AB)	26	32
Calculus (BC)	15	10
Biology	26	33
Chemistry	13	38
Physics	23	8
Computer Science	2	0

* Includes students in home high schools as well as Central Academy
** Central Academy, as of May 1993

During the past four years, the Des Moines Public Schools has shown a dramatic increase in the number of students taking AP examinations. In 1989, Des Moines students took 69 examinations, representing 6.1% of the number taken by Iowa students. In 1991, Des Moines students took 281 examinations, representing 13.9% of the Iowa total. In 1993, Des Moines students took 353 examinations (Iowa totals are not yet available).

Performance-Based Assessment

Performance-based assessments provide information regarding what a student can *do*, given a specific task. The district's performance-based assessment is a composition assessment. Students in Grades 3, 5, 8, and 11 select one of three topics and then compose an essay on the selected topic. Essays are read by trained readers and scored holistically and on a number of dimensions that have been determined to be important components of writing skill. Since the assessment is aligned with the district's objectives for language arts, the student compositions are evaluated against established standards for each objective area. As such, the composition assessment might be viewed as objectives-based.

Conversely, scores on this assessment might be considered to be more normative, such that a purely average paper (on a percent scale) should receive a raw score equivalent to a 50%, similar to a 50th percentile ranking on a standardized assessment. Since the process of judging and scoring compositions is fine-tuned (or re-calibrated) each year through ongoing training of readers, scores from year to year are not expected to significantly change. Table 8 shows the fall composite score mean percentages for all grades:

Table 8. District Composition Assessment Composite Score Mean Percentages

Grade Level	Comp. Score % Fall, 1989	Comp. Score % Fall, 1990	Comp. Score % Fall, 1991	Comp. Score % Fall, 1992
3	60.7	61.9	62.3	60.3
5	69.6	69.1	68.9	67.3
8	64.5	64.2	65.1	66.2
11	68.3	68.8	69.0	70.4

The scoring process for the composition assessment in grades 3, 5, and 8 are calibrated such that a 50% score is an average paper. Therefore, a 50% level was used as a benchmark for judging average ability in writing. The composition assessment for grade 11 is calibrated in the same manner; however, district language arts professionals have determined that a raw score of 80 (out of 138 possible points) is an acceptable level of writing proficiency in 11th grade. This figure translates to an equivalent percent score of 58. Table 9 shows the percent of all students and of the disaggregated groups achieving the competency standard.

Table 9. District Composition Assessment: Percent of Students Writing an Average Paper or Better

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Composition Grade 3 1991-1992	85.1*	87.7	82.7	86.6	78.5	77.9	90.1
	2336**	1125	1211	1899	437	945	1388
Composition Grade 3 1992-1993	82.3	85.3	79.4	84.8	72.3	74.2	88.5
	2302	1149	1153	1844	458	995	1307
Composition Grade 5 1991-1992	97.1	97.1	97	97.7	94.4	94.5	98.7
	2147	1078	1069	1756	391	802	1344
Composition Grade 5 1992-1993	95.3	96.7	93.8	96.2	91.5	91.8	97.6
	2199	1107	1092	1754	445	874	1325
Composition Grade 8 1991-1992	95.2	96.9	93.6	95.9	91.8	93.4	96
	1866	934	932	1548	318	528	1337
Composition Grade 8 1992-1993	95.8	98.1	93.5	96.8	91.4	93.3	96.9
	1830	939	891	1505	325	526	1304
Composition Grade 11 1991-1992	86.9	88.5	85.3	88.8	77.3	79.1	88
	1434	715	719	1192	242	182	1252
Composition Grade 11 1992-1993	87.5	92.6	82.6	89.5	78.5	78.3	89.2
	1438	704	734	1173	265	226	1212

* Percent of students achieving the competency standard

** Number of students in the assessment group

For grades 3, 5, and 8, the percentages of students achieving the 50% average standard are significantly high. Differences between the disaggregated groups are generally slight. There is some discrepancy at grade 3, where a greater percentage of non-minority students than minority students are achieving the standard, and a greater percentage of students not participating in the subsidized meal program than participants in the subsidized meal program are achieving the standard. This gap narrows at grades 5 and 8. Based on these results, district staff are currently developing higher standards for different levels of writing proficiency.

For Grade 11, the percentage of students achieving the standard is significantly high. Gender differences are minimal for 1991-92, but the achievement gap widens for 1992-93. The minority/non-minority difference on this assessment is noticeable. A greater percentage of non-minority students than minority students are achieving at the proficiency standard. The difference in mastery percentages based on participation in the subsidized meal program is also noticeable. A greater percentage of students not on free or reduced price meals than students receiving free or reduced price meals are achieving the proficiency standard.

Curriculum-Aligned Objectives-based Assessments

The objectives-based (criterion-referenced) assessment program of the Des Moines Public Schools covers a wide array of subject matter across curriculum areas and grade levels. The primary intent of these instruments is to determine the extent to which the curriculum being taught is learned. District objectives-based tests are not timed, thereby allowing students reasonable time to complete all items. Each test contains a specified number of strands (groups of items measuring the same concept), and is designed to evaluate student mastery of the objectives of a given subject matter. They are also designed to diagnose student learning or identify deficiencies in a student's reasoning process. Because the objectives-based tests are aligned with the adopted district curriculum, scores are more reflective of a student's achievements in a specific curricular area. Therefore, the district's objectives-based tests provide a more accurate picture of what is taught and learned than norm-referenced (standardized) tests.

The primary purposes of the objectives-based assessment program are to evaluate the curriculum and to assist in instructional planning. At the elementary school level, data from these assessments are also used to: 1) supplement the student achievement data gathered through the use of the computerized Instructional Management System (IMSplus), and 2) monitor student achievement in curriculum areas not utilizing the instructional management system. At the middle and high school level, data are also used for individual student evaluation (as a part of assigning course grades to students).

In the past, objectives-based assessment results were reported as district average scores, to reflect how well an average student performed on a specific test (i.e., .how well the average student mastered critical objectives or concepts in a subject). The superintendent, in the 1992 State of the Schools Report, indicated an interest in establishing a standard of 70 percent as baseline criteria to judge mastery of subject matter. This *mastery metric* (70 percent standard) is intended to provide evidence of the number of students achieving a success rate of 70% or better in the subject matter in a given curriculum area. Thus, the 1991-92 objectives-based assessment data were used as a baseline for evaluating future growth. Combined with the disaggregation of data, the district can address three issues: 1) the extent to which all students are learning, 2) the extent to which disaggregated groups are achieving at the same rate, and 3) the extent to which disaggregated groups are achieving at the same rate across subjects.

The disaggregated mastery data can be evaluated in two ways. First, data can be analyzed to see how similar groups of students perform on a test of the same curriculum area in subsequent years (i.e., evaluating cohort data). For example, results of student assessment in Grade 3 mathematics in one year can be generally compared to results of student assessment in Grade 4 mathematics the next year, Grade 5 mathematics the next year, etc. Second, data on a particular test can be evaluated over a period of time, to examine if gaps (detected by disaggregation) on one administration of a test tend to close with future administrations of the same test. For example, results of student assessment on a Grade 10 English test can be compared and evaluated for achievement trends for students over a three year period.

The results of this type of analysis (i.e., evaluating historical data) should be interpreted with caution, since the groups of students taking the same test each year are different.

Cohort analysis is used to examine the growth of similar groups of students over time. Figures 1 through 11 are examples of the results of cohort growth analyses for selected subject areas, using the 1991-92 data as the baseline year. The data are analyzed for all students assessed and are disaggregated by gender, ethnicity, and a socioeconomic indicator. The table accompanying each figure shows the percent of students in a particular group scoring at or above the 70% standard, as well as the number of students assessed in each group.

Cohort data are most available at the elementary level, since groups of students tend to matriculate through the grades together. This type of data is less representative of all students at the middle school level (i.e., Grade 8, when students begin to specialize in certain areas such as mathematics), and is not available at the high school level, since there is little continuity among discrete courses. Because of this, the examination of historical data for long-term trends in student achievement can provide information for program evaluation.

Since the examination of cohort or group data is more meaningful for evaluating growth, only a summary of the historical data are presented in Table 10. Appendix F contains the results of the historical data analyses for all objectives-based tests administered during 1992-93.

Conclusions

The majority of Des Moines' 31,524 students are achieving at or above grade level. Evidence for this statement comes from the variety of tests administered and resulting test scores. Based on standardized assessment information (one measure of student growth and achievement), many students are exceeding normal expectations. Most of our elementary school students are scoring at a higher percentile rank on the ITBS when compared to the results of the ITBS given to similar groups in prior years. Most students at the middle school level are maintaining appropriate growth in achievement. The number of students achieving AP recognition reflects the extent to which the district's efforts to individualize instruction and to challenge a student's potential are being achieved.

Based on objectives-based assessments, there are certainly issues of opportunity and equity that need to be addressed. However, one must consider that these tests assess only a sample of a subject area's objectives, those that are conducive to multiple-choice, paper-and-pencil-type tests. There are certainly many curricular objectives that address a student's ability to *perform* complex tasks involving higher-order, complex reasoning skills.

The indication from an overall view of our assessment instruments is that Des Moines students are achieving academically in basic and higher level skill development. Growth is occurring in schools where student mobility rates and socioeconomic factors could have a significant negative effect on test results. Overall, teachers are teaching the curriculum and students are learning. Test information provided to the subject-area supervisors and to the building staffs is useful for planning for improved student performance and achievement.

District staff and students continue to pursue educational excellence and equity issues in the teaching for learning processes that take place each day in our schools. Through our cooperative efforts, we will continue to achieve student growth in achievement for all Des Moines students.

Table 10. District Objectives-based Assessment: Comparisons of Disaggregated Groups

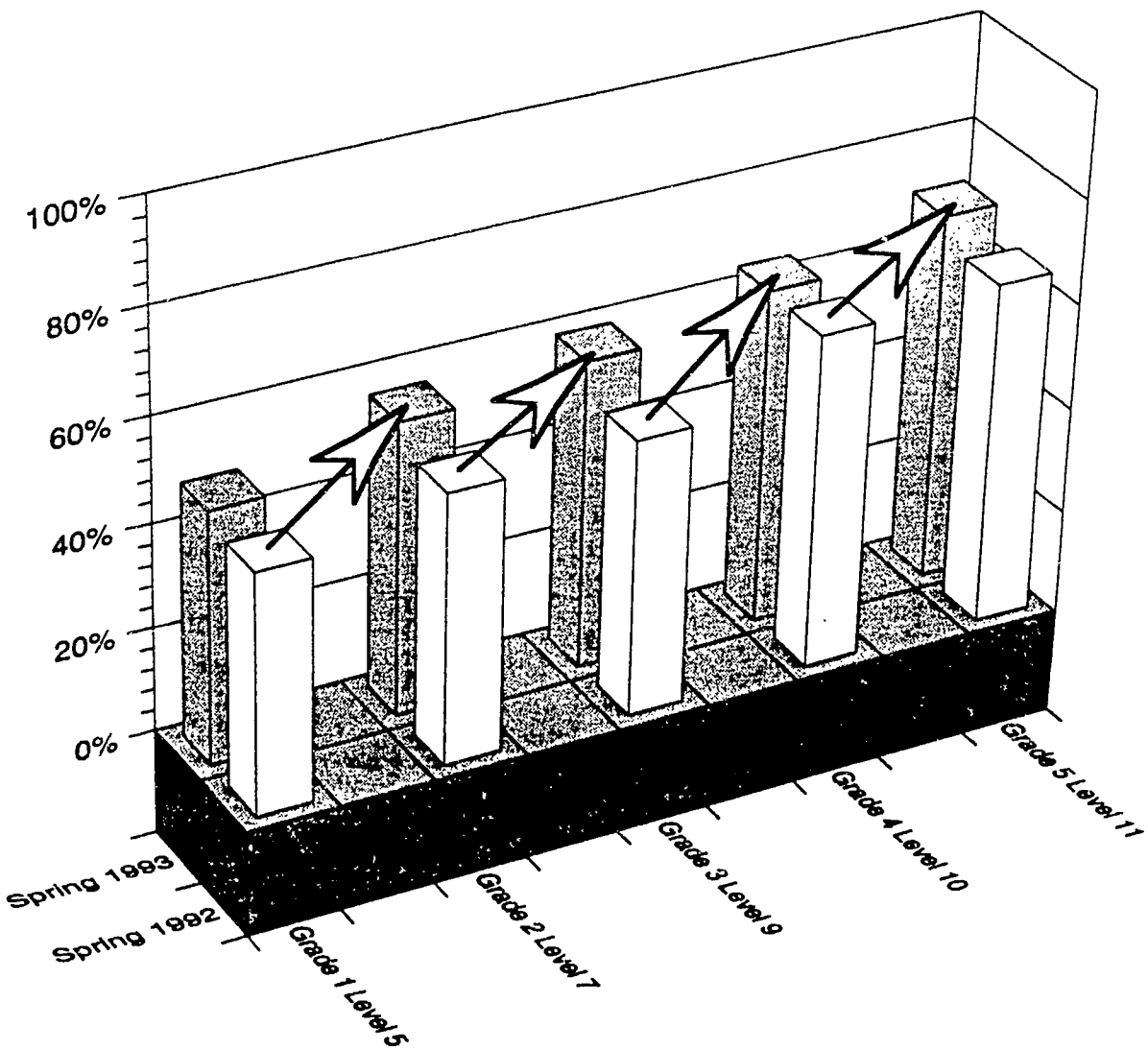
1991-1992	1992-1993
78 tests administered	75 tests administered

Gender Differences	Gender Differences
Less than 5% difference on 46 tests	Less than 5% difference on 49 tests
Less than 10% difference on 65 tests	Less than 10% difference on 61 tests
10% or greater difference on 13 tests	10% or greater difference on 14 tests
20% or greater difference on 2 tests	20% or greater difference on 3 tests
A greater percentage of females than males achieved the 70% standard on 39 tests	A greater percentage of females than males achieved the 70% standard on 40 tests
A greater percentage of males than females achieved the 70% standard on 36 tests	A greater percentage of males than females achieved the 70% standard on 34 tests
Percentages of males and females achieving the 70% standard were equal on 3 tests	Percentage of males and females achieving the 70% standard was equal on 1 test

Ethnic Differences	Ethnic Differences
Less than 5% difference on 12 tests	Less than 5% difference on 9 tests
Less than 10% difference on 26 tests	Less than 10% difference on 25 tests
10% or greater difference on 52 tests	10% or greater difference on 50 tests
20% or greater difference on 17 tests	20% or greater difference on 13 tests
25% or greater difference on 6 tests	25% or greater difference on 1 test
A greater percentage of non-minorities than minorities achieved the 70% standard on 73 tests	A greater percentage of non-minorities than minorities achieved the 70% standard on 68 tests
A greater percentage of minorities than non-minorities achieved the 70% standard on 5 tests	A greater percentage of minorities than non-minorities achieved the 70% standard on 7 tests

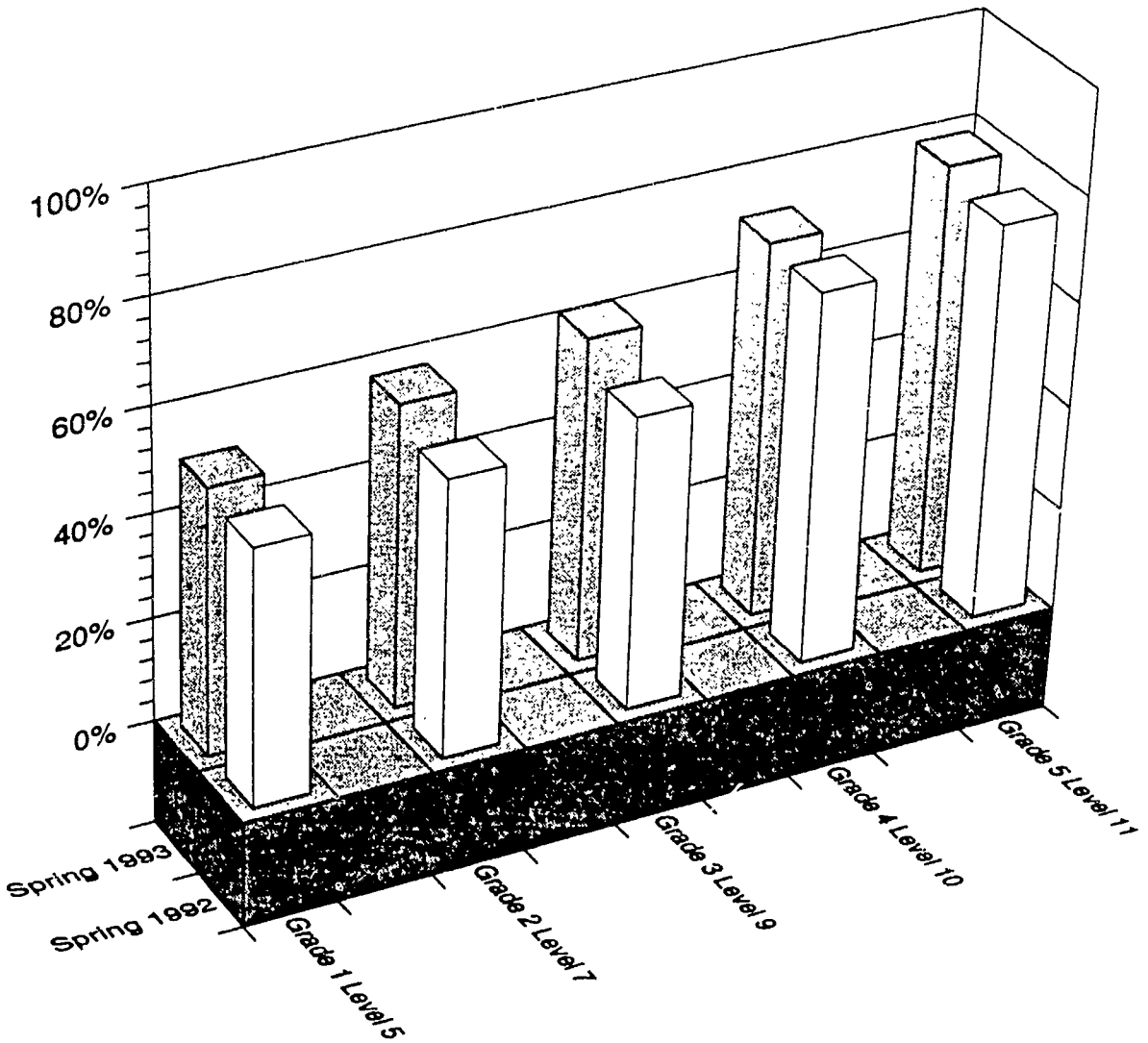
Socioeconomic Differences	Socioeconomic Differences
Less than 5% difference on 8 tests	Less than 5% difference on 8 tests
Less than 10% difference on 23 tests	Less than 10% difference on 24 tests
10% or greater difference on 55 tests	10% or greater difference on 51 tests
20% or greater difference on 26 tests	20% or greater difference on 23 tests
25% or greater difference on 12 tests	25% or greater difference on 5 tests
A greater percentage of students not in the subsidized meal program than students in the subsidized meal program achieved the 70% standard on 75 tests	A greater percentage of students not in the subsidized meal program than students in the subsidized meal program achieved the 70% standard on 69 tests
A greater percentage of students in the subsidized meal program than students not in the subsidized meal program achieved the 70% standard on 3 tests	A greater percentage of students in the subsidized meal program than students not in the subsidized meal program achieved the 70% standard on 6 tests

Figure 11. Elementary Reading Cohort Growth: Grade 1 to Grade 5.



Year	Grade 1 Level 5	Grade 2 Level 7	Grade 3 Level 9	Grade 4 Level 10	Grade 5 Level 11	
Spring 1992	1038	1269	1306	1445	1496	Num. Assessed
	46.2	51.8	52.8	63.7	65.3	Pct. Mastery
Spring 1993	1146	1354	1336	1541	1617	Num. Assessed
	48.4	56.1	58.9	63.8	70.4	Pct. Mastery

Figure 10. Elementary Reading Students Assessed: Grade 1 to Grade 5.



Year	Grade 1 Level 5	Grade 2 Level 7	Grade 3 Level 9	Grade 4 Level 10	Grade 5 Level 11	
Spring 1992	1038	1269	1306	1445	1496	Num. Students
	49%	53%	56%	71%	76%	Pct. of Students
Spring 1993	1146	1354	1336	1541	1617	Num. Students
	51%	58%	62%	72%	79%	Pct. of Students

Special Illustration: Elementary Reading Cohort Growth

The Silver-Burdett-Ginn developmental reading curriculum was adopted by the district for the elementary and middle school reading program. It consists of three levels of basal texts at Grade 1, two levels at Grades 2 and 3, and one level each for Grades 4 through 8. Because students in each grade tend to progress at very different rates, they may be reading at a developmental level that is below their actual grade level text. Because of the potential inclusion of upper grade students in *off-level* reading groups, the analysis of both historical and cohort data becomes more difficult.

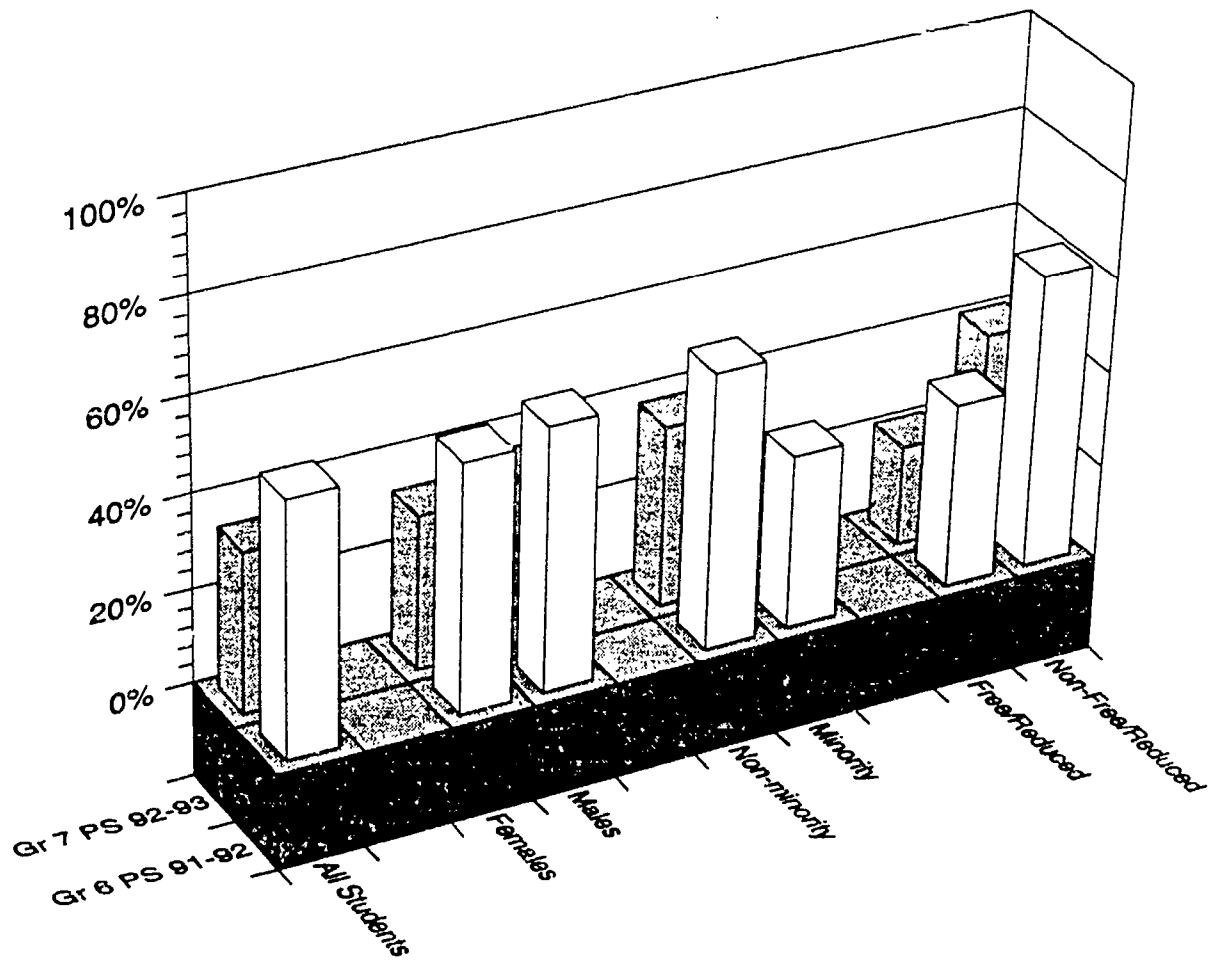
In order to appropriately evaluate student growth, two issues must be addressed. First, the number of students who are reading (and are thus assessed) at the appropriate end-of-level text for their grade must be examined. Second, the percent of students mastering the end-of-level assessment for their grade must be examined.

Figure 10 shows the number and percent of students at each elementary grade who were assessed with the appropriate end-of-level test for that grade. Examining the data historically (i.e., comparing Grade 1 in 1992 with Grade 1 in 1993, etc.), both the number and percent of students in a grade taking the appropriate end-of-level test increased for all grades. Examining cohorts of students (i.e., Comparing Grade 1 in 1992 with Grade 2 in 1993, etc.), both the numbers and percentages of students taking the appropriate end-of-level test increased for all cohorts (Grade 1 to 2, Grade 2 to 3, Grade 3 to 4, Grade 4 to 5). Thus more students are reading (and completing, since they are being assessed) at their appropriate end-of-level text in 1993 than in 1992.

Figure 11 shows the percent of students at each elementary grade who achieved the 70% mastery standard on the appropriate end-of-level test for that grade. Examining the data historically (i.e., comparing Grade 1 in 1992 with Grade 1 in 1993, etc.), the percent of students in a grade demonstrating mastery of the appropriate end-of-level test increased for all grades. Examining cohorts of students (i.e., Comparing Grade 1 in 1992 with Grade 2 in 1993, etc.), both the percentages of students demonstrating mastery of the appropriate end-of-level test increased for all cohorts (Grade 1 to 2, Grade 2 to 3, Grade 3 to 4, Grade 4 to 5).

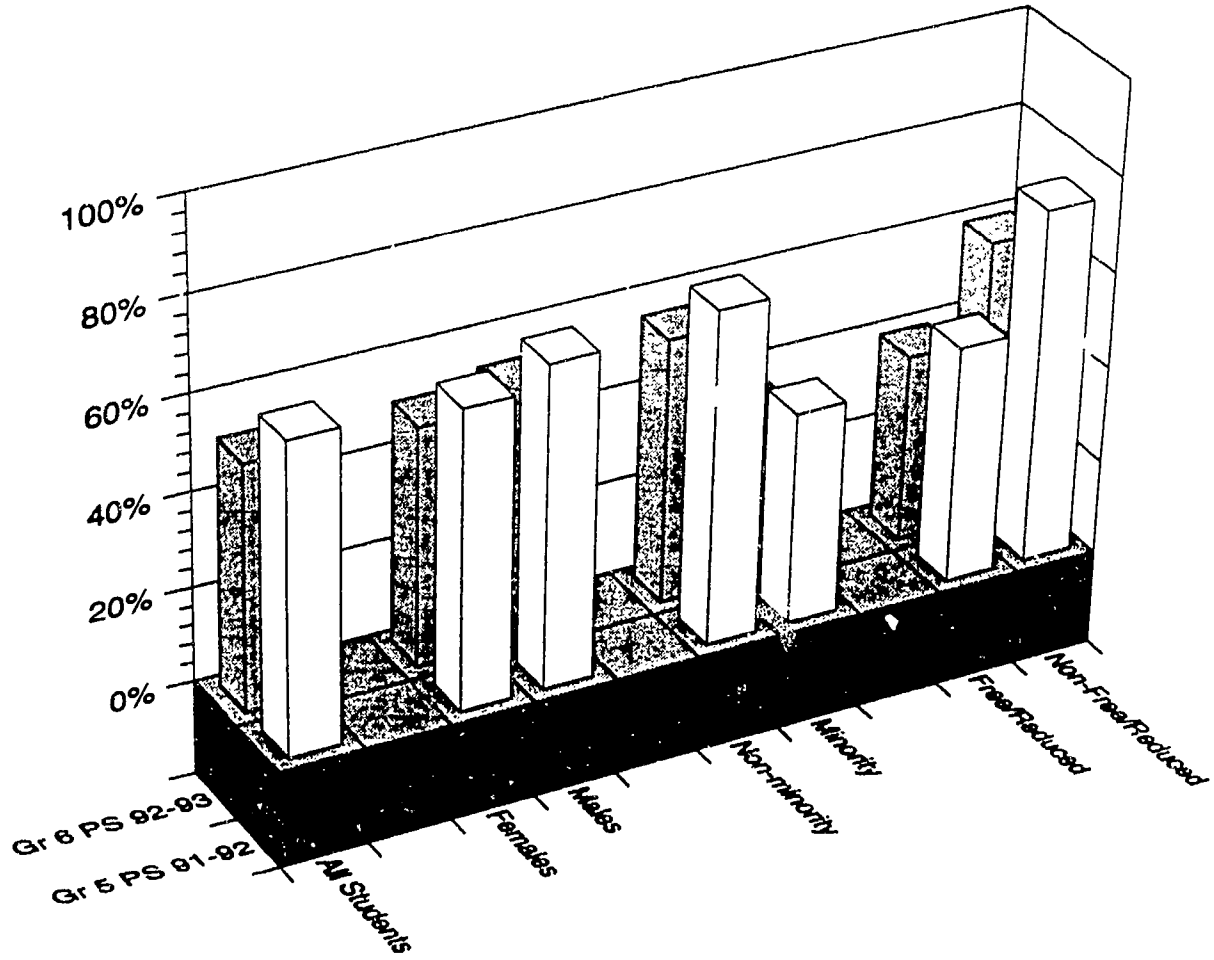
The arrows in Figure 11 represent *cohort* growth. Evidence for effectiveness of the developmental reading program at the elementary level is reflected in: 1) the increasing number and percent of students completing their appropriate end-of-level text, and 2) the increasing percent of students mastering their appropriate end-of-level test.

Figure 9. Elementary Math Problem Solving: Grade 6 to Grade 7 Growth.



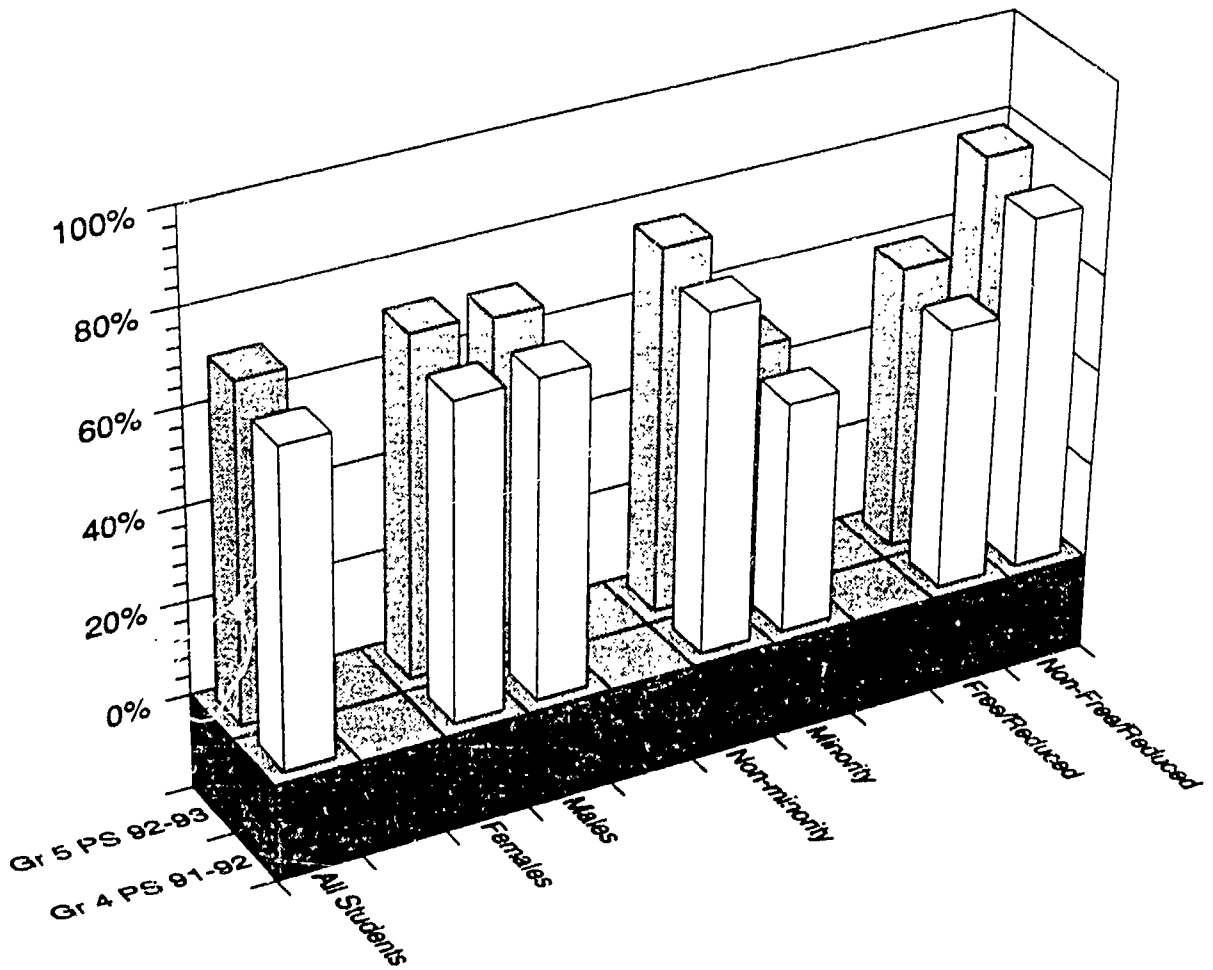
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 6 Problem Solving 1991-1992	53.9 2010	52.5 1044	55.5 966	57.9 1636	36.4 374	38.7 683	61.8 1326
Math 7 Problem Solving 1992-1993	33.9 1707	32.5 898	35.5 809	38.1 1354	17.8 353	21.1 602	40.9 1105

Figure 8. Elementary Math Problem Solving: Grade 5 to Grade 6 Growth.



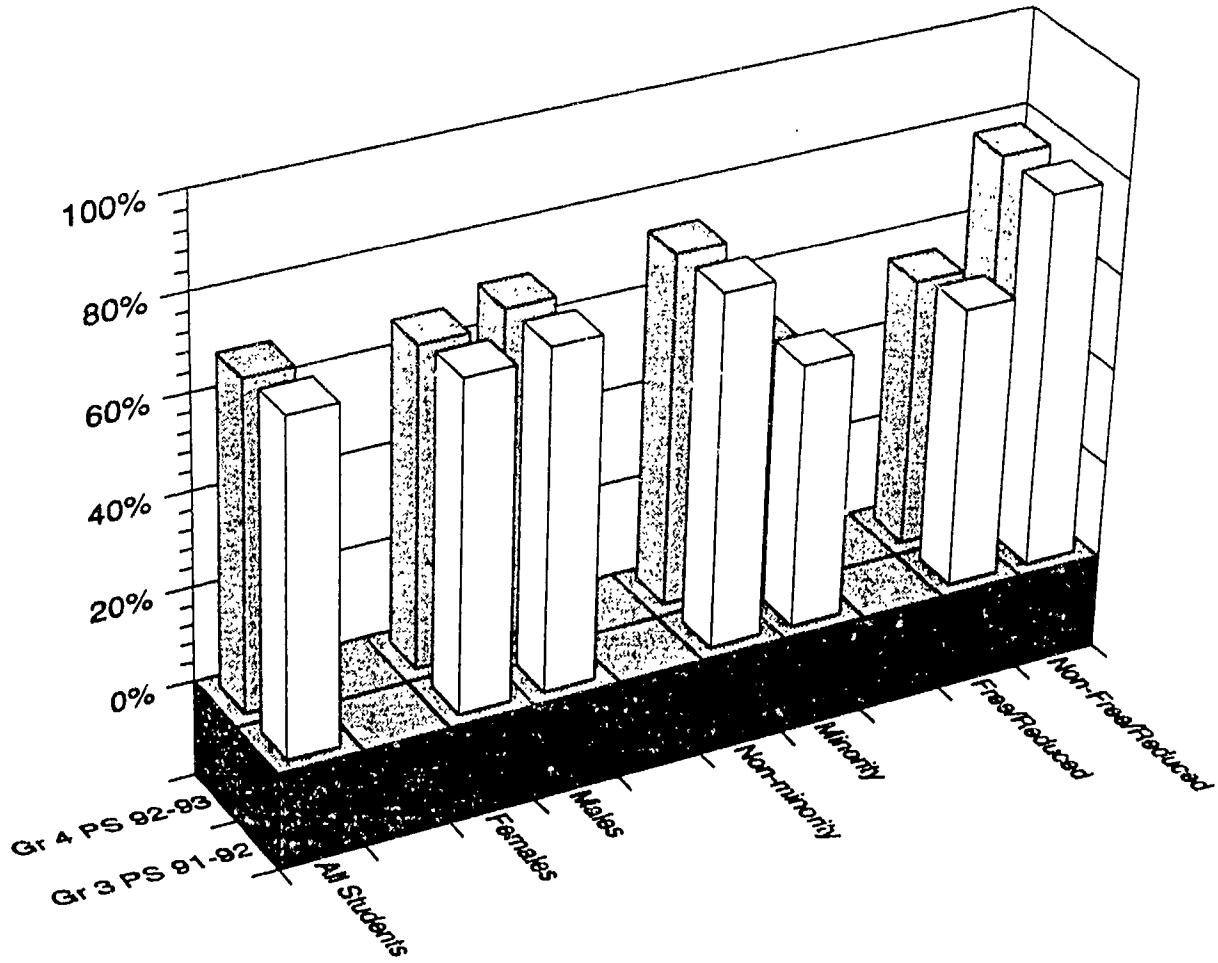
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 5 Problem Solving 1991-1992	65.2 2171	62.8 1090	67.5 1081	70 1764	44.5 407	49.7 819	74.6 1352
Math 6 Problem Solving 1992-1993	51.8 1938	50.4 975	53.2 963	55.6 1567	35.3 371	39.3 743	59.5 1195

Figure 7. Elementary Math Problem Solving: Grade 4 to Grade 5 Growth.



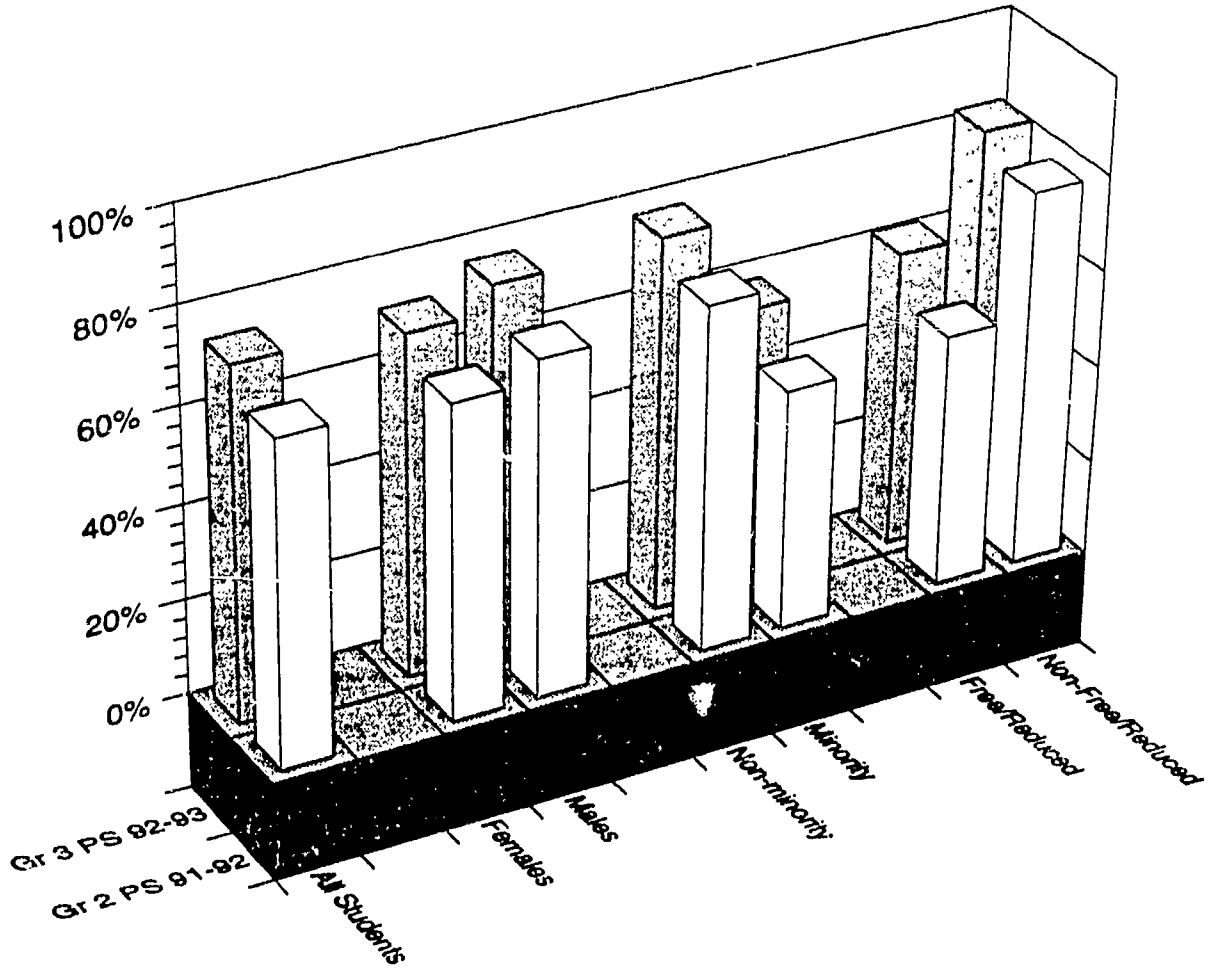
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 4 Problem Solving 1991-1992	66.6 2223	66.6 1093	66.6 1130	71.2 1789	47.9 434	54.6 826	73.7 1396
Math 5 Problem Solving 1992-1993	70.9 2196	71.5 1102	70.2 1094	76.1 1744	50.7 452	59.2 875	78.6 1321

Figure 6. Elementary Math Problem Solving: Grade 3 to Grade 4 Growth.



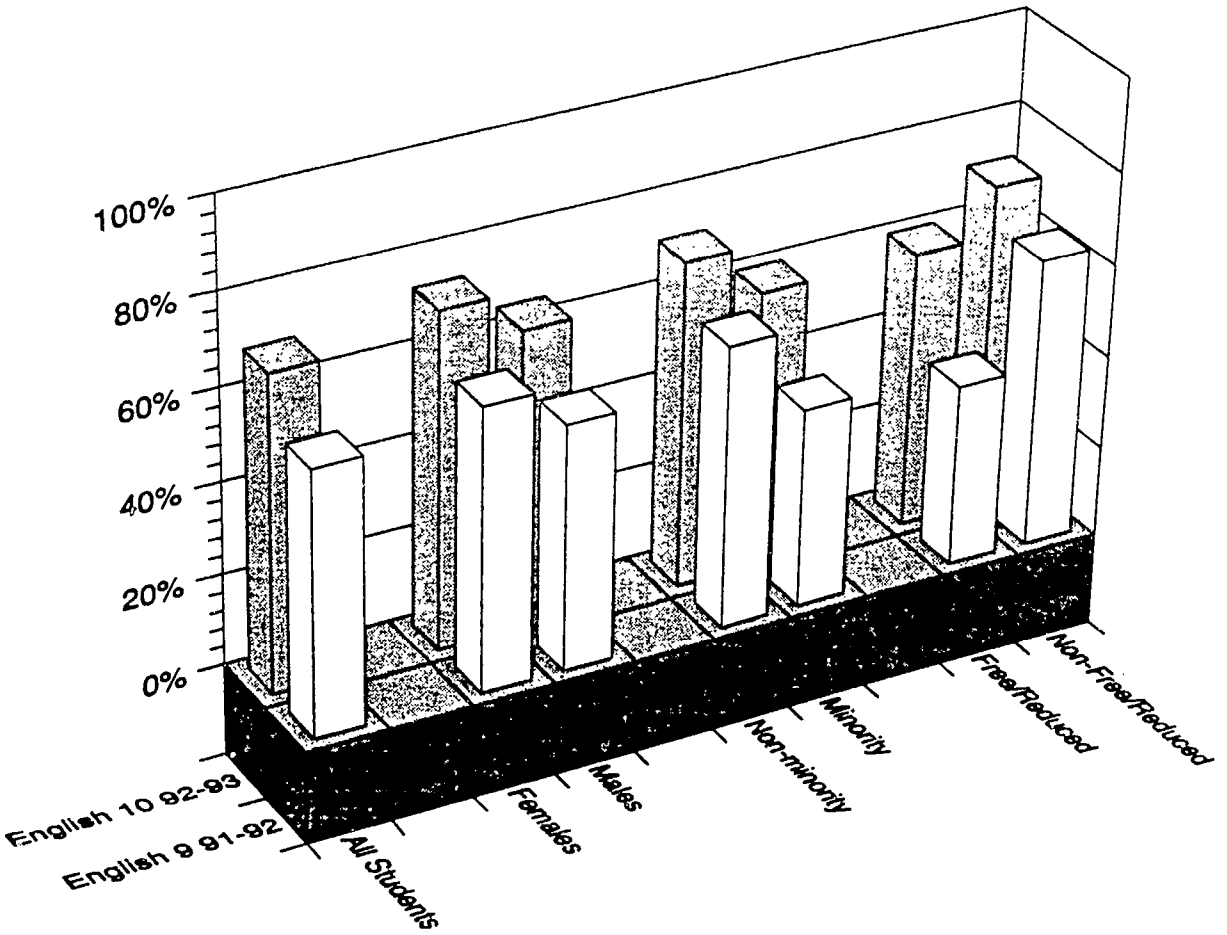
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 3 Problem Solving 1991-1992	70.1 2358	69.1 1136	71.1 1222	73.7 1918	54.8 440	58.2 952	78.3 1404
Math 4 Problem Solving 1992-1993	68.7 2243	67.1 1077	70.2 1166	73.3 1812	49.2 431	55.7 949	78.2 1294

Figure 5. Elementary Math Problem Solving: Grade 2 to Grade 3 Growth.



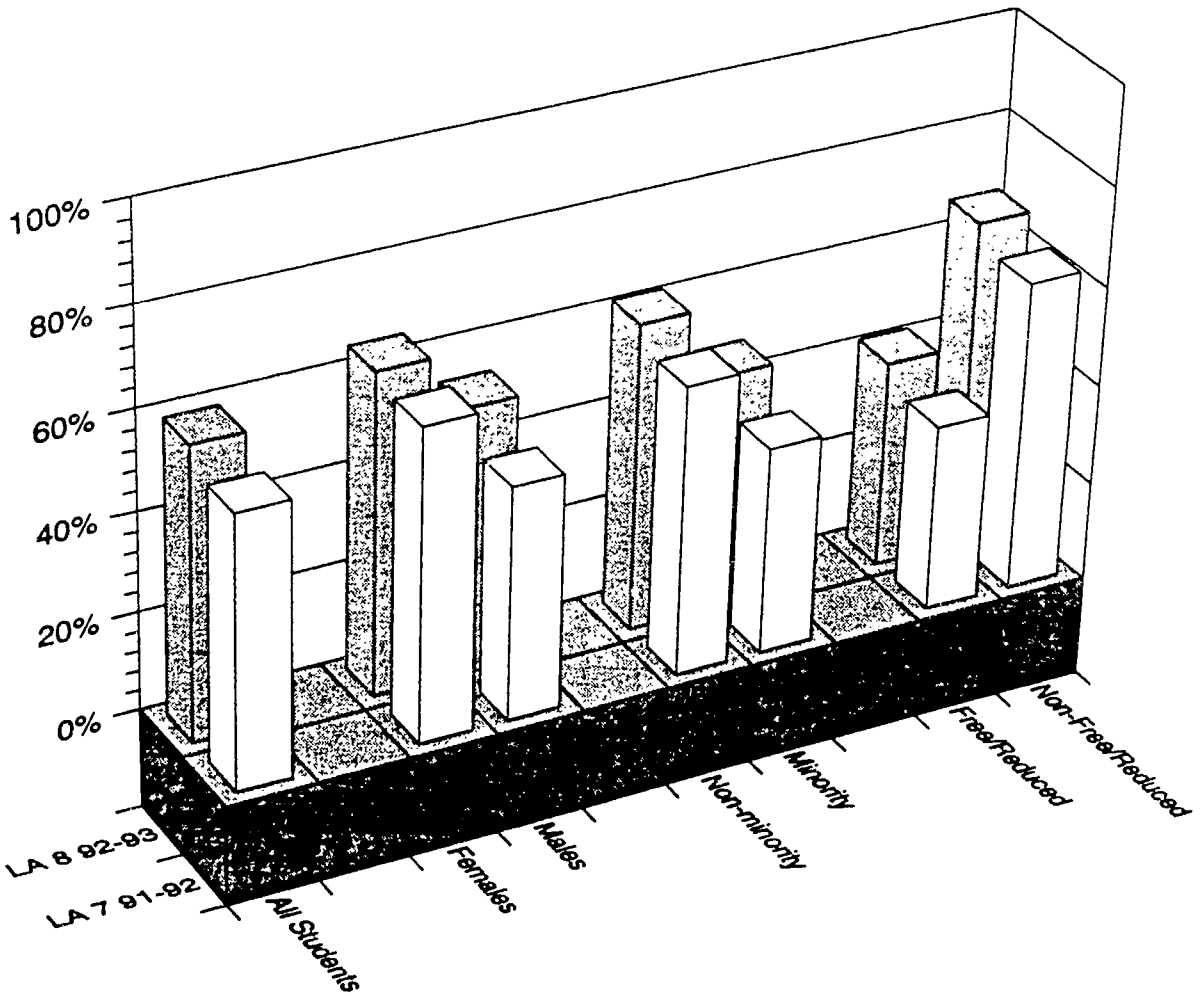
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Problem Solving 1991-1992	67.8 2377	65.6 1179	69.9 1198	71.8 1941	50 436	52.4 954	78.1 1422
Math 3 Problem Solving 1992-1993	73.7 2316	71.1 1147	76.4 1169	77.6 1856	58.0 460	61.7 1005	83.0 1311

Figure 4. High School English Cohort: Grade 9 to Grade 10 Growth.



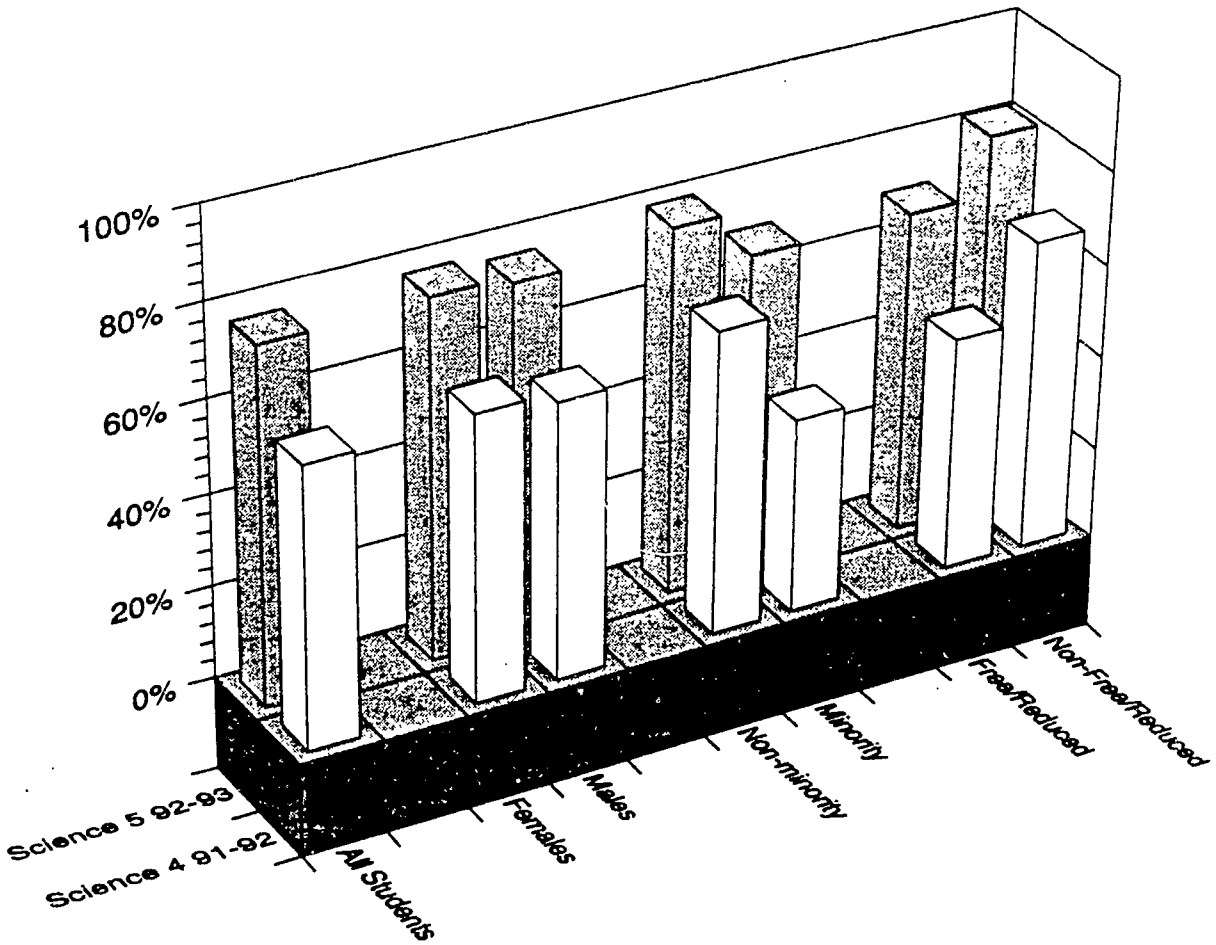
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
English 9 1991-1992	57.6 1634	61.6 857	53.2 777	60.9 1330	43.1 304	39.4 353	62.6 1281
English 10 1992-1993	68.7 1350	72.8 688	64.4 662	70.5 1121	59.8 229	59.9 247	70.6 1103

Figure 3. Middle School Language Arts Cohort: Grade 7 to Grade 8 Growth.



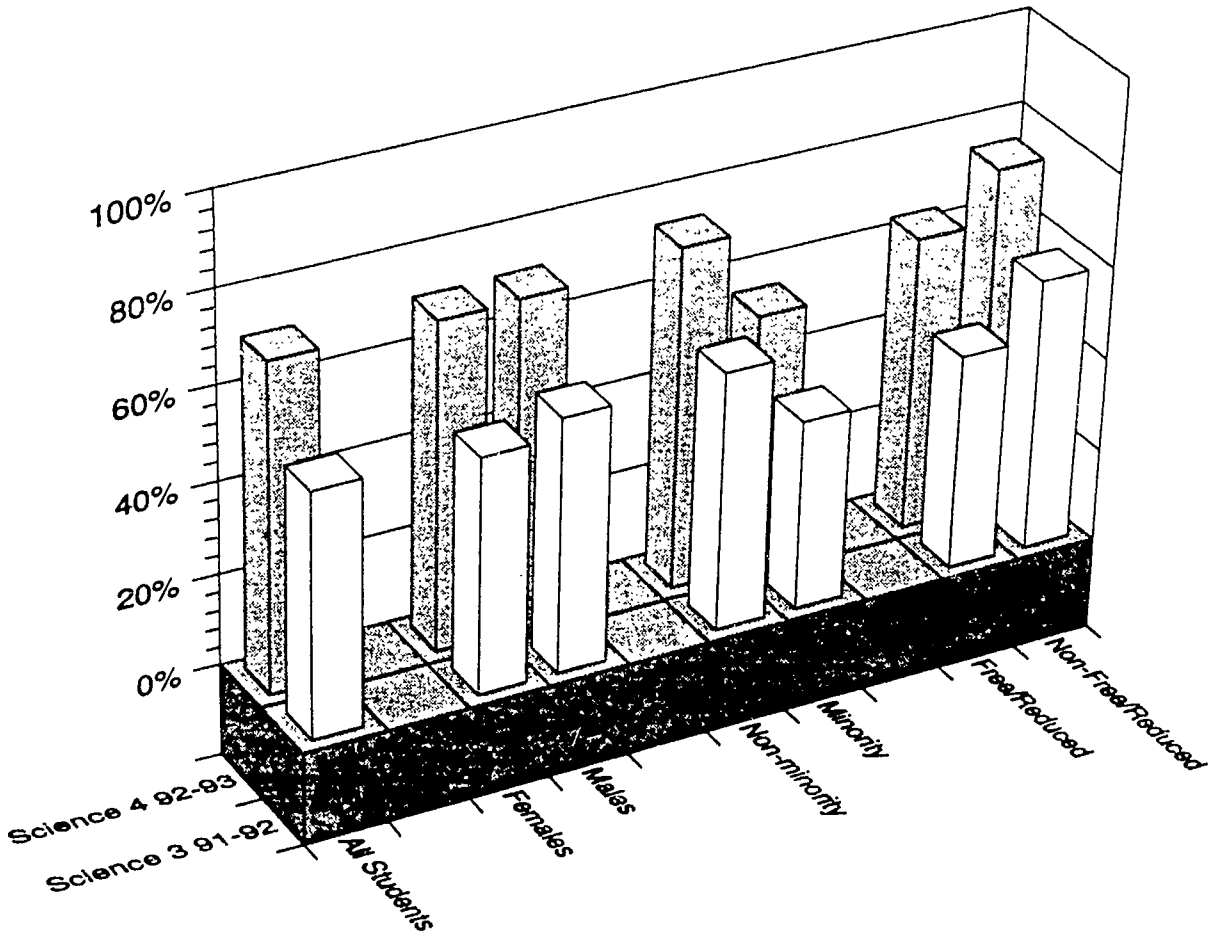
Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 7 1991-1992	54.9 1825	62.7 932	46.8 893	57.8 1508	41.3 317	37.2 540	62.3 1285
Language Arts Grade 8 1992-1993	59.1 1815	64.6 922	53.3 893	61.6 1499	47.2 316	41.5 525	66.2 1290

Figure 2. Elementary Science Cohort: Grade 4 to Grade 5 Growth.



Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 4 1991-1992	60.6 1139	61.7 541	59.5 598	65.2 914	41.8 225	50 420	66.7 718
Science 5 1992-1993	76.6 950	77.4 468	75.9 482	78.8 742	68.8 208	69.1 379	81.6 571

Figure 1. Elementary Science Cohort: Grade 3 to Grade 4 Growth.



Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 3 1991-1992	52.9*	50.9	54.8	55.5	40.9	46.2	58.6
	1212**	586	626	997	215	545	664
Science 4 1992-1993	70.8	70.6	71.0	73.6	54.9	63.4	74.5
	969	479	490	825	144	322	647

* Percent of students achieving the 70% standard or higher.
** Number of students in the assessment group

DEFINITIONS

Criterion-Referenced Test - an objectives-based test that has been assigned a criterion score or percent that is in the definition of mastery or success.

Grade Equivalent - the grade level for which a score is the real or estimated average. For example, 4.2 represents the fourth year, second month.

Iowa Tests of Basic Skills (ITBS) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grades 3, 4, 6, and 7 in the Des Moines Public Schools. The test consists of the following parts:

> Grades 3, 4, 6, & 7: Vocabulary, reading spelling, capitalization, punctuation, usage, visual material, references, math concepts, math problems, and math computation.

ITBS scores are reported in percentiles, grade equivalents, and normal curve equivalents.

Iowa Tests of Educational Development (ITED) - a norm-referenced test published by the Iowa Testing Programs in Iowa City, Iowa. It is administered in Grade 10 in the Des Moines Public Schools. The test consists of the following parts:

> Correctness of Expression, Quantitative Expression, Social Studies, Natural Sciences, Literary Materials, Vocabulary, and Sources of Information.

ITED scores are reported in percentiles.

Mastery Metric - a pre-specified standard that students must achieve in order to demonstrate competence of the subject matter. This mastery standard does not compare students with each other, but with an external standard defined by the objectives of a course and the requirements for demonstrating competence. Thus, all students have an opportunity to demonstrate mastery of subject matter.

Normal Curve Equivalent - an interval scale equivalent of the bell-shaped curve. The conversion process to arrive at an NCE distribution transforms the shape of the bell-shaped curve into a rectangular shape, such that the scores are distributed equally across each point in the distribution.

Norm-Referenced Test - a test that interprets individual performance by comparing a student's score to a previously established norm group, not to a performance criterion. The test is designed for one-half of the students to be above the 50th percentile and one-half below.

Objectives-Based Test - a test designed to measure one or more instructional objectives, usually the critical skills being taught by an educational program.

Percent - the proportion of a total. In testing, it is the number of questions answered correctly divided by the total number of items on the test.

Percentile - a point in the distribution below which a certain percent of the scores fall. For example, the 80th percentile is the point below which 80 percent of the scores lie. The shape of the distribution of percentiles is a bell-shaped curve.

Significance - an association between two variables or among a group of variables is said to be statistically significant when (in terms of quantitative measurement theory and practice) the association fulfills specific predetermined criteria. While statistical significance is largely a function of sample size, it must be weighed against a "meaningfulness" criterion. In addition to or in the absence of statistical significance, results judged as having educational or practical meaning may play an important role in the evaluation of outcomes, and in some cases, may be more valid than statistical significance.

Note on Mobility Rate and Free/Reduced price meals:
Data on student mobility and qualification for free or reduced price meals (used for analysis of ITBS data) were taken from the student data files at Mid-Iowa Computer Center as of Friday, January 29, 1993 (the Friday before testing began). Since this information is available for each student, these indices were computed for each grade level within each building.

Mobility rate for each grade within each building was determined by the following formula:

$$\frac{\text{(Number of entries + Number of exits)}}{\text{Average daily membership}} \times 100$$

Average daily membership was computed by taking the official student enrollment "as of" the official count date (the third Friday in September), adding all of the entries after the official count date, and subtracting all of the exits after the official count date. Number of entries and exits were counted after the official count date.

Percent of students on free or reduced price meals was determined by combining the number of students on free and on reduced, and dividing by the average daily membership for that grade.

Appendix B

ITBS ELEMENTARY SCHOOL SUMMARY SHEET

SCHOOL	GR 2 1990-91	GR 3 1991-92	GR 4 1992-93	GR 3-GR 4 CHANGE	GR 2-GR 4 CHANGE	Grade 4 % MOBILITY	Grade 4 % FR/RED.
Adams	38	73	73	0	+35	7.46	41.79
Brooks	15	19	33	+14	+18	16.95	67.80
Cattell	48	85	73	-12	+25	27.59	44.83
Douglas	58	57	70	+13	+12	10.11	26.97
Edmunds	33	29	47	+18	+14	20.69	67.24
Findley	25	15	23	+8	-2	22.41	67.24
Garton	73	67	70	+3	-3	15.52	48.28
Granger	26	49	64	+15	+38	17.14	34.29
Greenwood	75	86	91	+5	+16	10.67	20.00
Hanawalt	83	88	92	+4	+9	2.99	16.42
Hillis	50	62	64	+2	+14	15.79	44.74
Howe	27	52	72	+20	+45	12.96	31.48
Hubbell	75	75	84	+9	+9	9.84	24.59
Jackson	31	32	46	+14	+15	17.11	40.79
Jefferson	94	94	94	0	0	2.50	12.50
Longfellow	17	14	45	+31	+28	31.71	85.37
Lovejoy	77	77	63	-14	-14	22.64	37.74
Lucas	6	16	23	+7	+17	30.30	62.12
Madison	43	60	62	+2	+19	12.50	45.31
Mann	26	39	44	+5	+18	19.23	40.38
McKee	38	39	53	+14	+15	18.97	34.48
McKinley	14	14	24	+10	+10	8.11	83.78
Mitchell	24	43	69	+26	+45	21.43	50.00
Monroe/Rice	74	65	72	+7	-2	21.74	54.35
Moore	73	54	63	+9	-10	7.58	33.33
Moulton	15	30	41	+11	+26	28.30	94.34
Oak Park	26	48	70	+22	+44	17.31	46.15
Park Avenue	53	63	67	+4	+14	22.22	35.56
Perkins/King	18	53	78	+25	+60	16.09	54.02
Phillips	46	74	56	-18	+10	1.72	32.76
Pleasant Hill	76	85	86	+1	+10	20.00	14.55
Stowe	62	45	54	+9	-8	5.56	59.72
Studebaker	36	41	54	+13	+18	3.95	26.32
Wallace	31	24	41	+17	+10	22.81	70.18
Watrous	39	41	64	+23	+25	13.56	40.68
Willard	17	27	36	+9	+19	28.38	66.22
Windsor	30	80	90	+10	+10	7.58	22.73
Woodlawn	68	67	64	-3	-4	5.68	26.14
Wright	69	50	82	+32	+13	17.74	27.42
DISTRICT	47	55	66	+11	+19	15.76	44.43

Appendix C

ITBS MIDDLE SCHOOL SUMMARY SHEET

Grade 7 SCHOOL	Grade 6 1990	Grade 7 1991	CHANGE	Grade 7 % MOBILITY	Grade 7 FREE/RED.
Brody	76	70	-6	7.89	23.25
Callanan	78	79	+1	14.09	35.00
Goodrell	63	59	-4	10.89	35.08
Harding	42	41	-1	22.53	55.73
Hiatt	41	36	-5	20.65	45.11
Hoyt	52	50	-2	11.31	42.99
McCombs	66	64	-2	10.33	28.10
Meredith	73	73	0	12.85	29.72
Merrill	82	82	0	11.16	25.12
Weeks	69	62	-7	12.40	36.78
DISTRICT	**65**	**63**	**-2**	**13.41**	**35.69**

Appendix D

GROUP TRENDS ON STANDARDIZED TESTS

Class Entering Grade 4 in 1992

SUBTEST	G 2 - 1990	G 3 - 1991	G 4 - 1992	NET CHANGE
VOCABULARY	33	49	52	+19
READING	33	48	58	+25
LANGUAGE	66	63	72	+9
WORK-STUDY	56	57	67	+11
MATHEMATICS	56	56	76	+20
COMPOSITE	47	55	66	+19

Class Entering Grade 6 in 1992

SUBTEST	G 2 - 1988	G 4 - 1990	G 6 - 1992	NET CHANGE
VOCABULARY	44	59	53	+9
READING	44	57	56	+12
LANGUAGE	58	70	55	-3
WORK-STUDY	53	66	60	+7
MATHEMATICS	56	71	74	+18
COMPOSITE	53	66	60	+7

Class Entering Grade 7 in 1992

SUBTEST	G 2 - 1987	G 4 - 1989	G 6 - 1991	G 7 - 1992	NET CHANGE
VOCABULARY	54	61	65	53	-1
READING	53	67	56	58	+5
LANGUAGE	65	81	65	67	+2
WORK-STUDY	62	75	67	65	+3
MATHEMATICS	56	79	73	70	+14
COMPOSITE	62	75	65	63	+1

Appendix E

STUDENTS TAKING ITBS

SCHOOL	N 3rd	% 3rd	N 4th	% 4th
Adams	56	85	52	78
Brooks	37	66	47	80
Cattell	54	82	46	79
Douglas	76	88	82	92
Edmunds	64	91	51	88
Findley	47	94	45	78
Garton	62	93	46	79
Granger	48	80	57	81
Greenwood	76	95	73	97
Hanawalt	50	93	53	79
Hillis	51	86	69	91
Howe	46	98	50	93
Hubbell	61	100	62	100
Jackson	65	89	69	91
Jefferson	75	97	78	98
Longfellow	38	83	39	95
Lovejoy	39	68	39	74
Lucas	50	82	47	71
Madison	48	77	50	78
Mann	43	83	45	87
McKee	41	84	51	88
McKinley	35	88	29	78
Mitchell	42	81	32	76
Monroe	92	88	75	82
Moore	62	85	58	88
Moulton	56	75	37	70
Oak Park	51	86	48	92
Park Avenue	70	84	75	83
Perkins	90	85	74	85
Phillips	49	96	56	97
Pleasant Hill	49	96	48	87
Stowe	56	85	59	82
Studebaker	66	93	69	91
Wallace	32	82	45	79
Watrous	33	79	43	73
Willard	60	72	49	66
Windsor	66	92	57	86
Woodlawn	66	92	81	92
Wright	55	85	47	76
DISTRICT	2157	86	2133	84

SCHOOL	N 6th	% 6th	N 7th	% 7th
Brody	226	88	208	91
Callanan	197	85	178	81
Goodrell	197	86	212	85
Harding	202	70	195	77
Hiatt	137	77	144	78
Hoyt	200	79	184	83
McCombs	168	84	209	86
Meredith	231	87	225	90
Merrill	178	86	187	87
Weeks	196	80	194	80
DISTRICT	1932	82	1936	84

NOTES: N refers to the number of students who took the entire test.
% refers to the percent of the students enrolled in that grade/building who took the entire test.
Enrollment counts for comparison were taken from the average daily membership.
Low percentages may result from building totals (from enrollment counts) that include special education and ESL students who should not and do not take the ITBS/ITED unless requested by parents.

DISTRICT OBJECTIVES-BASED TESTS
HISTORICAL DISAGGREGATED DATA

The attached tables indicate:

1) The percent of students in a category that scored at or above the district criterion of 70% on the end-of-course test, and
2) The total number of students in a category that took the test.

Example: Elementary Mathematics: Math 2 Total:

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Total	83.8	83.5	84.2	87.1	69.5	73.4	90.9
1991-1992	2377	1179	1198	1941	436	954	1422

83.8% of all 2nd grade students tested achieved a 70% or better on this test (sum of the Core items and the Problem Solving items)
83.5% of the 2nd grade females achieved a 70% or better on this test.
84.2% of the 2nd grade males achieved a 70% or better on this test.
87.1% of the 2nd grade non-minority students achieved a 70% or better on this test.
69.5% of the 2nd grade minority students achieved a 70% or better on this test
73.4% of the 2nd grade students receiving free or reduced price lunches achieved a 70% or better on this test.
90.9% of the 2nd grade students not receiving free or reduced price lunches achieved a 70% or better on this test.

The following tests were given at the end of each semester:

All Home Economics tests
World History (S1 and S2; different tests)
Economics (S1 and S2; different forms)
Science 3, 4, and 5 (same test for S1 and S2; administered at the end of the semester in which the course was completed)
English 10 (S1 and S2; results were combined for annual analysis, since this test is the same test given at the end of each semester.)

All reading tests for elementary students were given at the time that a student completed a particular book in the series. Results represent a each student's final end-of-book test for the year (unduplicated count). All reading tests for middle school were administered at the end of the school year. If students progress at an appropriate pace, they should be able to complete Levels 3, 4, and 5 during Grade 1, Levels 6 and 7 during Grade 2, Levels 8 and 9 during Grade 3, and Levels 10 through fourteen in Grades 4 through 8 (one level each year).

The composition assessment was administered in the fall of 1991.

The remaining tests were administered at the end of the school year:

Middle School & High School Science
All Mathematics (elementary and middle school mathematics tests consist of two parts: a section on Core Concepts and Computation, and a section on Problem Solving. The Math Total score is computed by adding the scores of both sections.
Middle School Reading
Middle School Social Science (Grade 6 & 8)
All Language Arts (except Grade 10)
All French & Spanish

Table F1. Elementary Reading

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Morning Bells Level 3 1991-1992	91.1	94.2	89	92.9	86.2	88.7	95.3
	570	226	344	411	159	355	214
Morning Bells Level 3 1992-1993	84.6	87.3	82.8	86.6	79.3	79.5	93.4
	540	220	320	395	145	342	198
Make A Wish Level 4 1991-1992	82.2	83.5	81	84.4	76	81.5	82.8
	757	352	405	557	200	379	378
Make A Wish Level 4 1992-1993	87.4	90.8	84.6	89.9	79.0	83.3	91.9
	784	349	435	603	181	414	370
A New Day Level 5 1991-1992	89.7	89.9	89.3	90.1	87.4	84.8	92.3
	1537	805	732	298	239	545	991
A New Day Level 5 1992-1993	91.9	93.3	90.4	93.0	86.6	87.6	94.6
	1524	751	773	1256	268	596	928
Garden Gates Level 6 1991-1992	76.5	78.8	74.4	76.2	77.1	68.9	82.9
	620	288	332	463	157	286	334
Garden Gates Level 6 1992-1993	79.5	78.7	80.1	81.0	75.3	76.8	83.1
	614	287	327	452	162	354	260
Going Places Level 7 1991-1992	93.4	94.2	92.5	94.7	87.3	89.1	95.8
	1634	829	805	1350	284	599	1033
Going Places Level 7 1992-1993	95.4	95.5	95.2	96.2	91.3	93.3	96.7
	1667	873	794	1391	276	639	1028
Castles of Sand Level 8 1991-1992	75.1	77.7	72.9	78.3	65.4	70.8	78.7
	714	327	387	535	179	332	381
Castles of Sand Level 8 1992-1993	75.7	77.0	74.7	75.1	77.4	73.5	78.2
	559	243	316	426	133	302	257
On the Horizon Level 9 1991-1992	90.3	91.2	89.4	91.7	83.4	85.3	93.2
	1761	885	876	1466	295	631	1127
On the Horizon Level 9 1992-1993	89.9	91.5	88.2	91.4	82.6	84.3	93.2
	1765	875	890	1454	311	662	1103

Table F1. Elementary Reading (cont.)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Silver Secrets Level 10 1991-1992	84 1765	84.5 894	83.6 871	85.1 1468	78.8 297	75.4 629	88.9 1131
Silver Secrets Level 10 1992-1993	84.1 1858	85.1 920	83.2 938	87.0 1506	71.9 352	73.9 708	90.4 1150
Dream Chasers Level 11 1991-1992	85.5 1507	87.3 774	83.5 733	87.4 1274	75.1 233	79 482	88.6 1023
Dream Chasers Level 11 1992-1993	88.7 1618	90.5 853	86.7 765	90.6 1340	79.5 278	83.2 570	91.7 1048

Table F2. Elementary Language Arts

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 4 1991-1992	48.5 2175	55.2 1074	42.0 1101	52.5 1752	31.9 423	34.3 796	56.7 1378
Language Arts Grade 4 1992-1993	47.4 2211	53.7 1058	41.7 1153	51.9 1775	29.4 436	30.5 939	60.0 1272

Table F3. Elementary Composition (Using a 70% mastery metric standard)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Composition Grade 3 1991-1992	30.7 2336	35.0 1125	26.8 1211	33.2 1899	19.9 437	20.0 945	38.1 1388
Composition Grade 3 1992-1993	24.1 2302	28.3 1149	19.9 1153	26.2 1844	15.3 458	13.6 995	32.1 1307
Composition Grade 5 1991-1992	47.4 2147	52.8 1078	41.9 1069	50.6 1756	33.0 391	34.3 802	55.2 1344
Composition Grade 5 1992-1993	42.3 2199	47.9 1107	36.7 1092	46.2 1754	27.0 445	29.5 874	50.8 1325

Table F4. Elementary Mathematics

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 2 Total 1991-1992	83.8 2377	83.5 1179	84.2 1198	87.1 1941	69.5 436	73.4 954	90.9 1422
Math 2 Total 1992-1993	85.2 2513	85.0 1217	85.3 1296	88.9 1989	70.8 524	76.6 1130	92.1 1383
Math 2 Core 1991-1992	91.2 2377	90.9 1179	91.5 1198	92.7 1941	84.6 436	84.7 954	95.6 1422
Math 2 Core 1992-1993	91.6 2514	91.8 1218	91.4 1296	93.2 1990	85.5 524	86.5 1131	95.8 1383
Math 2 Problem Solving 1991-1992	67.8 2377	65.6 1179	69.9 1198	71.8 1941	50 436	52.4 954	78.1 1422
Math 2 Problem Solving 1992-1993	70.3 2513	70.3 1217	70.4 1296	75.0 1989	52.7 524	57.4 1130	80.8 1383
Math 3 Total 1991-1992	74.9 2360	75.4 1138	74.5 1222	78 1919	61.7 441	62.6 953	83.3 1405
Math 3 Total 1992-1993	78.5 2316	78.6 1147	78.3 1169	81.4 1856	66.5 460	68.1 1005	86.4 1311
Math 3 Core 1991-1992	75.3 2381	75.7 1152	74.9 1229	77.4 1932	66.1 449	64.2 971	83 1408
Math 3 Core 1992-1993	77.3 2326	78.4 1149	76.1 1177	80.0 1864	66.2 462	66.1 1011	85.9 1315
Math 3 Problem Solving 1991-1992	70.1 2358	69.1 1136	71.1 1222	73.7 1918	54.8 440	58.2 952	78.3 1404
Math 3 Problem Solving 1992-1993	73.7 2316	71.1 1147	76.4 1169	77.6 1856	58.0 460	61.7 1005	83.0 1311

Table F4. Elementary Mathematics (cont.)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 4 Total 1991-1992	59.6 2223	59.6 1093	59.6 1130	64.2 1789	40.6 434	45 826	68.2 1396
Math 4 Total 1992-1993	63.3 2241	62.1 1076	64.4 1165	68.0 1810	43.4 431	48.6 947	74.0 1294
Math 4 Core 1991-1992	52 2223	52.2 1093	51.7 1130	55.8 1789	35.9 434	37.4 826	60.5 1396
Math 4 Core 1992-1993	57.2 2295	56.9 1105	57.4 1190	61.1 1850	40.7 445	44.5 970	66.4 1325
Math 4 Problem Solving 1991-1992	66.6 2223	66.6 1093	66.6 1130	71.2 1789	47.9 434	54.6 826	73.7 1396
Math 4 Problem Solving 1992-1993	68.7 2243	67.1 1077	70.2 1166	73.3 1812	49.2 431	55.7 949	78.2 1294
Math 5 Total 1991-1992	55 2126	53.5 1070	56.6 1056	59 1734	37.5 392	39 803	64.8 1323
Math 5 Total 1992-1993	62.0 2196	62.0 1102	62.0 1094	66.6 1744	44.0 452	48.2 875	71.1 1321
Math 5 Core 1991-1992	50.8 2128	49.7 1071	51.9 1057	54.1 1735	36.4 393	36.1 804	59.7 1324
Math 5 Core 1992-1993	57.6 2198	56.7 1103	58.6 1095	61.4 1746	43.1 452	44.1 877	66.6 1321
Math 5 Problem Solving 1991-1992	65.2 2171	62.8 1090	67.5 1081	70 1764	44.5 407	49.7 819	74.6 1352
Math 5 Problem Solving 1992-1993	70.9 2196	71.5 1102	70.2 1094	76.1 1744	50.7 452	59.2 875	78.6 1321

Table F5. Elementary Science

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 3 1991-1992	52.9	50.9	54.8	55.5	40.9	46.2	58.6
	1212	586	626	997	215	545	664
Science 3 1992-1993	56.8	54.8	58.7	59.3	41.5	46.8	63.7
	911	456	455	781	130	376	535
Science 4 1991-1992	60.6	61.7	59.5	65.2	41.8	50	66.7
	1139	541	598	914	225	420	718
Science 4 1992-1993	70.8	70.6	71.0	73.6	54.9	63.4	74.5
	969	479	490	825	144	322	647
Science 5 1991-1992	71.5	68.9	74.1	74.9	54	58.5	78
	1060	534	526	886	174	352	708
Science 5 1992-1993	76.6	77.4	75.9	78.8	68.8	69.1	81.6
	950	468	482	742	208	379	571

Table F6. Middle School Reading

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Wind by the Sea Level 12 1991-1992	66.1 1642	70.1 850	61.7 792	71.5 1328	43.3 314	48.4 519	74.3 1123
Wind by the Sea Level 12 1992-1993	75.6 1952	76.7 983	74.5 969	78.9 1590	61.0 362	61.2 720	84.0 1232
Star Walk Level 13 1991-1992	59.3 1435	63.4 718	55.2 717	63.2 1180	41.2 255	40.5 407	66.7 1028
Star Walk Level 13 1992-1993	74.4 2029	77.7 1051	70.9 978	77.3 1630	62.7 399	59.2 679	82.1 1350
Worlds Beyond Level 14 1991-1992	50.7 647	56.5 317	45.2 330	52.8 506	43.3 141	40.3 186	54.9 461
Worlds Beyond Level 14 1992-1993	52.0 1006	57.9 534	45.3 472	54.8 810	40.3 196	37.4 334	59.2 672

Table F7. Middle School Language Arts

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Language Arts Grade 6 1991-1992	62.8 2025	66.4 1061	58.8 964	66.9 1657	44.3 368	45.0 685	71.9 1340
Language Arts Grade 6 1992-1993	66.9 2006	69.2 1016	64.6 990	69.7 1662	53.8 344	51.1 724	75.9 1282
Language Arts Grade 7 1991-1992	54.9 1825	62.7 932	46.8 893	57.8 1508	41.3 317	37.2 540	62.3 1285
Language Arts Grade 7 1992-1993	56.1 1941	60.9 1004	51.0 937	59.9 1570	39.9 371	38.5 636	64.7 1305
Language Arts Grade 8 1991-1992	56.4 1846	63.1 915	49.8 931	59.0 1529	43.8 317	41.7 516	62.1 1330
Language Arts Grade 8 1992-1993	59.1 1815	64.6 922	53.3 893	61.6 1499	47.2 316	41.5 525	66.2 1290

Table F8. Middle School Composition

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Composition Grade 8 1991-1992	29.1 1866	33.0 934	25.2 932	31.1 1548	19.5 318	15.7 528	34.4 1337
Composition Grade 8 1992-1993	32.2 1830	38.3 939	25.7 891	35.4 1505	17.2 325	17.7 526	38.0 1304

Table F9. Middle School Foreign Language

Test Name	All Students	Females	Males	Non-Minority Students	Minority Students	Free & Reduced	Non Free & Reduced
MS French 1991-1992	36.8 228	41.5 142	29.1 86	36.8 193	37.1 35	21.3 47	40.9 181
MS French PILOT 1992-1993	57.5 181	63.6 107	48.6 74	59.5 148	48.5 33	40.0 35	61.6 146
MS Spanish 1991-1992	42.6 357	48.2 197	35.6 160	42.2 303	44.4 54	22.7 66	47.1 291
MS Spanish PILOT 1992-1993	37.8 296	42.0 176	31.7 120	35.1 248	52.1 48	41.7 72	36.6 224

Table F10. Middle School Mathematics

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 6 Total 1991-1992	46.6 2042	46.1 1055	47.2 987	50.1 1648	32 394	29.5 704	55.6 1337
Math 6 Total 1992-1993	46.7 1937	46.3 975	47.2 962	49.9 1566	33.2 371	32.1 742	55.8 1195
Math 6 Core 1991-1992	44.2 2041	44 1054	44.5 987	47.3 1647	31.5 394	27.7 704	53 1336
Math 6 Core 1992-1993	42.7 1954	43.6 985	41.9 969	45.4 1582	31.2 372	28.5 751	51.6 1203
Math 6 Problem Solving 1991-1992	53.9 2010	52.5 1044	55.5 966	57.9 1636	36.4 374	38.7 683	61.8 1326
Math 6 Problem Solving 1992-1993	51.8 1938	50.4 975	53.2 963	55.6 1567	35.3 371	39.3 743	59.5 1195
Math 7 Total 1991-1992	39.4 1537	40.6 793	38 744	42.8 1238	25.1 299	26.1 487	45.5 1050
Math 7 Total 1992-1993	32.8 1703	31.9 896	33.8 807	35.9 1351	21.0 352	20.0 599	39.8 1104
Math 7 Core 1991-1992	39 1692	39.9 884	38 808	41.6 1379	27.8 313	27 533	44.5 1159
Math 7 Core 1992-1993	33.0 1749	32.7 914	33.3 835	35.9 1386	21.8 363	20.9 627	39.8 1122
Math 7 Problem Solving 1991-1992	39.4 1526	38.4 786	40.4 740	43.4 1227	22.7 299	26.3 482	45.4 1044
Math 7 Problem Solving 1992-1993	33.9 1707	32.5 898	35.5 809	38.1 1354	17.8 353	21.1 602	40.9 1105

Table F10. Middle School Mathematics (cont.)

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Math 8 Total	31.5	31.4	31.5	34.2	21	20.2	36.5
1991-1992	1545	776	769	1226	319	475	1069
Math 8 Total	9.4	9.2	9.5	10.7	4.8	7.6	10.6
1992-1993	939	467	472	729	210	380	559
Math 8 Core	30.1	30.4	29.8	32.1	22.3	20.2	34.6
1991-1992	1677	826	851	1340	337	520	1156
Math 8 Core	9.0	8.3	9.8	10.4	4.2	8.0	9.7
1992-1993	952	470	482	737	215	386	566
Math 8 Problem Solving	35.5	34.2	37	38.9	22.7	23.5	40.9
1991-1992	1522	767	755	1209	313	464	1057
Math 8 Problem Solving	14.2	14.3	14.0	16.6	5.7	10.0	17.0
1992-1993	939	467	472	729	210	380	559
Pre-Algebra PILOT	30.0	29.3	30.8	31.3	21.8	15.7	32.4
1992-1993	743	396	347	642	101	108	635
Middle School Algebra I	75.8	74.4	77	76	74.1	79.2	75.5
1991-1992	269	121	148	242	27	24	245
Middle School Algebra I	64.2	66.7	62.1	63.1	72.7	55.6	65.5
1992-1993	285	132	153	252	33	36	249

Table F11. Middle School Science

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Science 6 Pilot 1991-1992	16.6 1940	12.8 1023	20.9 917	18.6 1578	8.3 362	8.8 651	20.6 1289
Science 6 1992-1993	29.1 1964	25.3 961	32.7 1003	32.6 1603	13.3 361	16.5 714	36.2 1250
Science 7 Pilot 1991-1992	37.1 1785	35.4 916	39 869	40.2 1441	24.4 344	24.8 533	42.4 1252
Science 7 1992-1993	41.4 1905	38.2 995	44.8 910	44.4 1522	29.2 383	25.3 616	49.0 1289
Science 8 1991-1992	33.5 1718	29.7 865	37.4 853	36.5 1404	20.4 314	19 506	39.6 1212
Science 8 1992-1993	35.1 1665	31.3 855	39.0 810	38.0 1367	21.8 298	19.5 481	41.4 1184

Table F12. Middle School Social Science

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
World Geog./ West. Hem. Gr. 6 1991-1992	36 1894	33.8 1002	38.3 892	38.7 1535	24.2 359	19.6 634	44.2 1260
World Geog./ West. Hem. Gr. 6 1992-1993	40.3 1889	39.3 943	41.2 946	43.7 1557	24.4 332	23.8 672	49.4 1217
American Civics Grade 8 1991-1992	28.1 1752	28.8 864	27.5 888	30 1435	19.9 317	16.3 497	32.8 1255
American Civics Grade 8 1992-1993	28.4 1697	28.2 873	28.6 824	30.8 1391	17.6 306	15.0 501	34.0 1196

Table F13. High School Language Arts

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
English 9 1991-1992	57.6 1634	61.6 857	53.2 777	60.9 1330	43.1 304	39.4 353	62.6 1281
English 9 PILOT 1992-1993	73.2 1555	75.0 789	71.3 766	77.1 1284	54.6 271	58.9 326	77.0 1229
English 10 1991-1992	65.4 1516	68.3 738	62.6 778	67.7 1243	54.9 273	56.4 259	67.2 1257
English 10 1992-1993	68.7 1350	72.8 688	64.4 662	70.5 1121	59.8 229	59.9 247	70.6 1103

Table F14. High School Composition

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Composition Grade 11 1991-1992	45.3 1434	49.7 715	40.9 719	48.7 1192	28.1 242	29.1 182	47.6 1252
Composition Grade 11 1992-1993	51.3 1438	56.8 704	45.9 734	54.8 1173	35.5 265	34.5 226	54.4 1212

Table F15. High School Foreign Language

Test Name	All Students	Females	Males	Non-Minority Students	Minority Students	Free & Reduced	Non Free & Reduced
HS French 1991-1992	47.2 216	47.3 131	47.1 85	50.6 174	33.3 42	35.1 37	49.7 179
HS French PILOT 1992-1993	49.8 213	56.9 123	40.0 90	49.4 164	51.0 49	38.8 49	53.0 164
HS Spanish 1991-1992	25.2 675	27.9 330	22.6 345	26.3 533	21.1 142	19.8 101	26.1 574
HS Spanish PILOT 1992-1993	35.0 640	37.3 346	32.3 294	34.1 522	39.0 118	41.9 129	33.3 511

Table F16. High School Home Economics

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Food & Nutrition 1991-1992	24.1 328	24.1 212	24.1 116	25.1 247	21 81	19.4 108	26.4 220
Food & Nutrition 1992-1993	14.4 327	18.4 207	7.5 120	16.9 243	7.1 84	8.6 105	17.1 222
Child Development Pilot 1991-1992	59.1 171	60.5 152	47.4 19	61.3 137	50 34	46.8 47	63.7 124
Child Development 1992-1993	63.2 495	64.9 439	50.0 56	67.9 377	48.3 116	52.5 141	67.5 354
Textiles & Clothing 1991-1992	24.4 90	22.7 88	100 2	31 58	12.5 32	12.5 32	31 58
Textiles & Clothing 1992-1993	21.6 88	22.1 86	0.0 2	29.1 55	9.1 33	9.4 32	28.6 56
Personal Development 1991-1992	46.4 112	44.9 89	52.2 23	48.8 86	38.5 26	33.3 24	50 88
Personal Development PILOT 1992-1993	32.3 62	40.0 45	11.8 17	33.3 42	30.0 20	36.8 19	30.2 43
Parenting Pilot 1991-1992	57.5 73	60.3 63	40 10	66.1 56	29.4 17	16.7 12	65.6 61
Parenting 1992-1993	61.8 102	65.2 92	30.0 10	63.1 84	55.6 18	52.6 19	100.0 53

Table F17. High School Mathematics

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Introductory Mathematics 1991-1992	17.2 338	11 164	23 174	20.3 266	5.6 72	20.6 97	15.8 241
Introductory Math PILOT 1992-1993	6.6 377	8.3 156	5.4 221	6.8 292	5.9 85	7.1 127	6.4 250
Introductory Algebra 1991-1992	37 611	34.3 315	39.9 296	36.8 478	37.6 133	39.9 138	36.2 473
Introductory Algebra 1992-1993	37.6 548	37.1 272	38.0 276	39.4 429	31.1 119	34.1 170	39.2 378
Algebra I 1991-1992	34.1 988	34.3 525	33.9 463	35.8 777	28 211	30.5 200	35 788
Algebra I 1992-1993	40.2 1047	40.9 555	39.4 492	42.2 812	33.2 235	41.1 214	40.0 833
Geometry 1991-1992	57.6 929	55.3 468	59.9 461	58.9 789	50 140	51.9 106	58.3 823
Geometry 1992-1993	54.9 854	52.8 426	57.0 428	57.1 700	44.8 154	45.7 116	56.4 738
Algebra II 1991-1992	36.9 474	37.9 224	36 250	40.5 383	22 91	23.9 46	38.3 428
Algebra II 1992-1993	33.2 736	31.0 378	35.5 358	32.6 614	36.1 122	41.6 89	32.0 647

Table F18. High School Science

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
Earth Science 1991-1992	11.9 1048	7.4 527	16.5 521	13.3 860	5.9 188	6.9 216	13.2 832
Earth Science 1992-1993	10.9 1096	6.8 555	15.0 541	12.3 878	5.0 218	7.7 233	11.7 863
Biology 1991-1992	29.1 1134	26.5 589	31.9 545	32.1 922	16 212	17.7 141	30.7 993
Biology 1992-1993	26.4 1105	23.7 596	29.7 509	29.8 890	12.6 215	17.8 191	28.2 914
Chemistry 1991-1992	17.8 640	15.1 338	20.9 302	19.3 534	10.4 106	13.8 58	18.2 582
Chemistry 1992-1993	26.0 628	19.5 302	31.9 326	28.4 517	14.4 111	11.1 63	27.6 565
Physics 1991-1992	13.8 297	4.5 110	19.3 187	13.5 260	16.2 37	9.1 22	14.2 275
Physics 1992-1993	14. 369	13.3 173	15.8 196	15.3 321	10.4 48	4.2 24	15.4 345

Table F19. High School Social Science

Test Name	All Students	Females	Males	Non-minority Students	Minority Students	Free & Reduced	Non Free & Reduced
World History Semester 1 1991-1992	24.5 1801	21.1 913	28 888	25.1 1473	22 328	19.6 404	26 1397
World History Semester 1 1992-1993	22.0 1707	21.8 831	22.1 876	23.7 1405	13.9 302	11.0 392	25.2 1315
World History Semester 2 1991-1992	19.1 1625	15.4 818	22.8 807	19.2 1327	18.5 298	14.4 362	20.4 1263
World History Semester 2 1992-1993	18.7 1624	18.2 800	19.1 824	20.5 1335	10.0 289	8.9 349	21.3 1275
Economics Form A 1992-1993	48.0 342	46.3 164	49.4 178	50.7 302	27.5 40	27.8 18	49.1 324
Economics Form B 1992-1993	30.4 404	24.9 205	36.2 199	32.5 357	14.9 47	25.0 36	31.0 368