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PERFORMANCE REPORT ON MAINE'S PUBLIC SCHOOLS

Maine Public Schools Performance Report 1988

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GOVERNOR

DEPARTMENT OF EDUCATIONAL AND CULTURAL SERVICES

EVE M. BITHER COMMISSIONER

Printed under appropriation 1201.1112

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Foreword

A statutory duty of the Commissioner of Educational and Cultural Services is the preparation and delivery to the Governor and Legislature of an annual report on the status of public education including suggestions and recommendations for its improvement.

I am pleased to present the third annual copy of this report, which contains the results and recommendations from the second full year of tests administered to fourth, eighth, and eleventh grade students in the Maine Educational Assessment Program mandated under the Education Reform Act of 1984.

As the result of an amendment to the reform statutes, we are able in this report to include a summary of the many activities of the State Board of Education.

Charts and graphs have been utilized to emphasize data having a significant impact on public education in Maine utilizing the latest available data. As reporting times for varying statistical information differ, it should be noted that the information presented here is the latest reported at this time.

Eve M. Bither, Commissioner
Maine Department of Educational
and Cultural Services

January 1988

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High School Graduation

Graduation Rates

13,547 Maine students graduated from public high schools in the 1985-86 school year, reflecting a class of '87 graduation rate of 75.0% for Maine seniors. The class graduation rate is the number of high school graduates measured against the ninth grade enrollments four years earlier. Within a state, the class graduation rate is not adjusted for into state and out of state student migration. National data published by the U.S. Department of Education is adjusted for student migration.

Maine data on graduation rates do not reflect adult high school diplomas, which are awarded to young adults between 17 and 20 years of age who have been approved to use the adult diploma route for completing their high school diplomas. The Department is working on new data collection procedures which will more accurately reflect the number of diplomas granted to these young adults who were regular high school students, but received their diplomas in an alternate manner. This new procedure will provide a more accurate indicator of success of Maine high schools to increase graduation rates for Maine students.

High School Completion Programs

The 1980 Census data indicates that 238,000 Maine adults over age 18 do not have a high school credential. In addition this is a very significant number of young people that drop out of our schools each year. As a very viable extension of the K-12 program, Maine's adult education provides opportunities for receiving high school credentials by one of two means:

(1) **Regular High School Diploma.**
Students are given the opportunity to add to their previous high school transcripts to allow them to graduate with a diploma. In Maine an academic course has a minimum of 45 hours of instruction. Maine has developed a new program called ECO (External Credit Option), administered by the Maine Department of Educational Services. This program is a series of home study curriculum that offer academic credit toward the high school diploma. It helps to eliminate such barriers as travel, child care and time commitment.

(2) **High School Equivalency Certificates.**
This program gives an opportunity to earn a High School Equivalency Certificate through the Maine Department of Educational and Cultural Service's General Education Development (GED) Testing Program. The GED certificate is by Maine law equivalent to a high school diploma and is well accepted by Maine institutions of higher education and employers. The GED exam consists of five components: Writing, Math, Social Studies, Science and Reading Skills.

- During the school year 1986-87, 2,888 Maine adults received their GED and another 771 were awarded their regular high school diploma.
- One out of 7 diplomas issued in the United States is based on results from the GED tests. In Maine 1 out of 4 diplomas issued is through the Adult High School Diploma Credential Program.
- Maine's GED program rates among the top 5 in the nation in the percentage of people taking the GED and who pass it. 91.5% of Maine adults who take the GED test, pass it compared to the national average of 72.3%.

Achievement of Public School Students

Maine Educational Assessment 1986-1987

The Maine Educational Assessment program, initiated in the Educational Reform Act of 1984, has completed a second year of reporting on the educational performance in Maine public schools. This new assessment program is beginning to develop a comprehensive picture of student progress in schools across the state. When viewed over time this record of progress will become an invaluable tool for policy planning deliberations at both the state and local levels. As well as reporting on the performance of schools, the MEA is reporting directly to parents of students in grades 4, 8, and 11. The assessment program is administered by the Division of Educational Assessment with the cooperation of the other bureaus and divisions of the Department. Advanced Systems in Measurement and Evaluation, Inc., of Dover, New Hampshire, a firm specializing in student evaluation, is providing contractual support in the testing of nearly 16,000 students in each of grades 4, 8, and 11.

Program Design and Scope

The Maine Educational Assessment (MEA) includes assessment in the subject areas of reading, writing, mathematics, science, social studies, and humanities. In assessing these areas the MEA program combines aspects of standardized achievement testing and program assessment. A set of "common questions" in reading, writing and mathematics are administered to all students in grades 4, 8, and 11. This enables the reporting of test scores for individual students in those three subject areas. Additional questions in all six subject areas, called "matrix sample" questions are included to give broader coverage in each subject area for the purpose of program evaluation at the school level. An assessment should be thought of as a survey of competencies covering as much of a subject domain as possi-

ble. In this way, it is unlike many other types of tests which address more restricted domains and include repeated measures of particular skills or concepts. In an assessment, it is appropriate to include not only questions on skills and concepts expected to be understood by a student in the school, but also questions dealing with content not taught to all students or in all schools. This is consistent with the mission of the MEA to include material that will challenge students across a broad range of proficiency.

Test Administration

The tests were administered by local school personnel in November at grade 8, February at grade 4, and April at grade 11. All public school students and students in private schools with a majority of publicly tuitioned students were tested. Most special education students were included at appropriate levels through the use of a system of test modifications.

Year Two Performance

The following sections of this report are intended to describe the content and findings in each of the six subject areas assessed. These interpretive summaries of results for each of the six subject areas have been developed with the help of Maine teachers and content specialists from Maine colleges. Each subject area assessment is developed and interpreted by advisory committees which represent the subject area as it is presented in the curriculum kindergarten through grade 12. Detailed State Summary Reports are available for each of the six subject areas assessed from the Division of Educational Assessment.

Reading

The reading portions of the 1986-87 MEA again asked students to answer both multiple-choice and open-ended questions based on selections from literary, content, and practical sources. Literary sources included the genres of biography, drama, essay, novel, poetry, and short story. Content area selections were taken from content area magazines, nonfiction trade books, and science and social studies textbooks. Practical selections included directions to complete a task, excerpts from manuals, pamphlets, or guidebooks, and reference tools such as indexes and tables of contents.

Fourth Grade

Fourth graders performed impressively on poetry throughout the test. They did surprisingly well when asked to compare two poems, a difficult task probably not widely included in the grade 4 curriculum. Seventy-four percent of the students could identify the thematic link between the two poems.

Fourth graders demonstrated difficulty in identifying the genre of nonfiction works. In a true story about an owl who lived with a family, only 25 percent were able to identify it as nonfiction. Thirty-one percent labeled it a fairy tale, 24 percent a fable, and 20 percent science fiction. Less than half of the students could tell where an article about the Loch Ness monster may have been published originally. Fourth graders do not seem to be paying attention to all of the cues available to help them discriminate between genres.

In general, 4th graders performed somewhat better on the comprehension questions than on the strategy questions and better on multiple-choice items than on open-ended ones. For example, although 68 percent of the students used a list at the end of a content article to correctly answer a comprehension question, only 10 percent could articulate the purpose of the same list in response to an open-ended question.

Pleasure Reading and Student Scores in Reading

Frequency Read for Pleasure at Home	Grade 4		Grade 8		Grade 11	
	% Students	Avg. Score	% Students	Avg. Score	% Students	Avg. Score
Every day	37	285	24	350	23	350
2 or 3 times per week	33	255	34	282	30	309
Once a week	10	203	13	239	14	278
Less than once a week	10	206	19	212	21	210
Never	10	130	10	135	12	100

*The statewide average scaled score ranges from 260-265.

Eighth Grade

Eighth grade students did very well in answering multiple-choice questions on a page from the Maine Driver License Manual, with scores ranging from a low of 71 percent to a high of 92 percent. The subject was undoubtedly of high interest to them. However students did not fare as well on the open-ended questions for this article. While 55 percent of the students were able to present a good study strategy to prepare for the driver's test, only 17 percent could identify two ways the organizational features of the same page could help in studying for the test. In general, 8th graders had more difficulty with the open-ended questions than with multiple-choice items.

Eighth graders demonstrated difficulty synthesizing and then transferring and applying the ideas of a reading selection to a new situation. For example, in a question on the story "Ooka and the Stolen Smell," students were given an analogous situation and asked to select a solution in keeping with the tenets of the story. Only 55 percent of the students correctly completed the analogy.

Eleventh Grade

Grade 11 students performed especially well on a challenging Mark Twain selection. Seventy-seven percent of the 11th graders were able to draw a correct analogy between the circumstances in the story and another hypothetical situation. Nearly 60 percent of the students were able to offer support for the Twain text in answering an open-ended question concerning Twain's humor.

Eleventh graders demonstrated difficulty with items tapping their cross referencing skills and their understanding of the purpose of the Reader's Guide to Periodical Literature. In a DownEast article, students were asked to identify an entry in parentheses as a cross reference to an earlier issue of the magazine. Only 52 percent of the students correctly identified the purpose of the cross reference. In an article concerning a controversial current event, only 30 percent of the students recognized the Reader's Guide as the appropriate reference tool to use in locating more articles on the same subject. Similar weaknesses were noted in the reference skills of last year's 11th graders.

Students' Attitudes Toward Reading

Students' perceptions of themselves as readers appear to be accurate at all three grade levels. On the average, students who rate themselves as "very good readers" performed very well on the reading test with scores ranging up to 100 points above average, those who rate themselves a "good readers" scored above average, and those who rate themselves as "poor readers" performed poorly on the test with scores about 120 points below average. It is encouraging that many students have positive opinions about their reading ability; 74 to 86 percent rate themselves as "good" or "very good."

Reports of reading for pleasure at home strongly correlated with student achievement.

Reading Assignments

Students in grades 8 and 11 were asked, "How is homework in reading usually assigned?" At grade 8, one-fifth of the students reported that reading homework is usually assigned without discussion. Almost half of the 11th graders report the same. Thirty-five percent and 19 percent of the students at those grade levels respectively report that they usually start homework in class and can ask questions about their assignments then. Forty-four percent of the 8th graders and 35 percent of the 11th graders indicate that background discussion and objectives are usually provided when homework is assigned. This latter mode is consistent with the literature on good instruction which stresses the importance of pre-reading strategies to help readers activate prior knowledge and approach their reading as involved participants.

Writing

Writing was again assessed directly by asking students at all three grades to produce two writing samples in response to specific topics or prompts. Students were given at least one class period for each essay, and more time to finish if they needed it. They could structure their own time within that period and decide whether or not to write a rough draft. Only the final draft was evaluated by the readers who scored the tests.

Fourth grade students were asked to write a narrative piece about a first experience that was special to them and a descriptive piece about one of their favorite activities. Students did somewhat better on the narrative, which may indicate that the narrative prompt was less demanding than the descriptive prompt. In some cases, the similarity of the two tasks led to confusion when students decided to write about the same subject for both prompts.

Eighth grade students also wrote a narrative piece, on an embarrassing incident that happened to someone else, not to the writer. Their second piece was a problem-solving essay about a disagreement they had with an adult. Like 4th graders, the 8th graders performed better on the narrative prompt. Eighth grade students may have experienced difficulty with the second prompt for a variety of reasons. First, the prompt asked students to list their side of the disagreement, the adult's side, and possible solutions. Some students, who had well-developed pre-writing lists, failed to develop their essays.

Other students found it very difficult to represent the adult's point of view and thus left the adult's side out of their piece. Finally, the topic was very emotionally charged for some students and their writing suffered.

Eleventh grade students wrote an expository essay on the causes of the high school dropout problem from their point of view. The students performed reasonably well on this prompt, but the topic elicited a limited range of responses. The second prompt asked for a more expressive piece of writing. Students were asked to write about a person, place, or thing that had changed, describing what it was like before and after it had changed. This topic produced many interesting, well-written papers. The overall performance for the grade 11 students were very similar on both prompts. Perhaps the two tasks were of comparable interest and difficulty.

Scoring Criteria

The same scoring guide was used at all three grade levels, with some variations in developmental standards and increasing expectations when moving from grade 4 to grade 11. The same six scoring criteria were used this year as last: topic development, organization, details, sentences, wording, and mechanics. However, the range was changed from a four-point scale to a six-point scale, to make the students' scores more descriptive and to further discriminate between papers. The anchor or training papers for each grade exemplified the standards acceptable for that grade and were used in training scores.

Each paper was read independently by two trained readers, who rated it in each of the six categories on a scale from 1 (low) to 6 (high). A 6 in any category indicated an outstanding effort. A 5 described an effective, solid response. A 4 was average and generally acceptable. A 3 was limited and considered marginally unacceptable. A 2 generally reflected poor performance, while a 1 indicated very poor performance or a very brief response.

The two readers' scores were added together to make the student's final scores, which ranged from 2 to 12 in each category. If the student's response was considered totally off-topic but otherwise readable, the paper was given a 0 in topic development and scored in the other five categories. If the two readers' scores on any category were more than 1 point apart, a third reading occurred to make a final determination.

The following table shows the statewide means and presents acceptable for all three grade levels, based on the sum of the scores given by both readers. For example, a score of 7 in a category would be obtained if one reader gave the paper a 4 and the other a 3 in that category. The second column, % acceptable, gives the percentage of students who obtained a score of 8 or more on that particular category. Students scoring 8 or above were considered acceptable writers by both scorers, and 7 or below were deemed unacceptable by one scorer.

For purposes of discussion, the six scoring criteria can be divided into two categories: (1) content, which would include topic development, organization, and details and (2) language conventions, which would include sentences, wording and mechanics. For every prompt at all three grade levels, the students' scores were lower for the three content categories than for the three pertaining to writing conventions. The content categories include higher level thinking processes, asking students to focus, organize, and develop their ideas. The conventions categories represent writing skills more frequently addressed in instruction, such as sentence structure, word choice, usage, spelling, capitalization, and punctuation. Students seem to have handled the mechanical aspects of writing better than the more cognitive demands.

Statewide Means and Percents Acceptable for Each Grade

Scoring Criteria	Grade 4 Narrative x	Grade 4 Narrative % acc.	Grade 4 Descriptive x	Grade 4 Descriptive % acc.	Grade 8 Narrative x	Grade 8 Narrative % acc.	Grade 8 Prob. Solving x	Grade 8 Prob. Solving % acc.	Grade 11 Expository x	Grade 11 Expository % acc.	Grade 11 Expressive x	Grade 11 Expressive % acc.
Topic Dev.	7.1*	49.5**	6.4	35.2	6.8	47.5	5.3	19.5	7.4	52.3	7.3	51.4
Organization	7.6	56.3	6.8	37.5	7.6	60.6	6.2	27.0	7.4	47.9	7.4	51.0
Details	7.7	56.4	6.9	39.5	7.6	54.8	6.1	22.7	7.5	51.8	7.4	48.4
Sentences	7.8	61.7	7.2	47.8	7.6	60.3	6.6	33.1	7.6	56.3	7.4	50.8
Wording	7.9	66.6	7.4	33.3	7.8	67.1	6.7	30.2	7.7	59.0	7.5	52.2
Mechanics	7.9	64.9	7.5	59.6	7.8	64.7	7.1	47.5	7.7	59.1	7.6	56.0

*Each student's score is reported as the sum of both readers' judgments and would range from 2 to 12 in each category. The mean is the average of all students' scores in a category.

**The second column reports the percentage of students who obtained a score of eight or above on that particular category. Students who scored at this level or above were considered acceptable writers by both scorers. Those who scored seven or below were deemed not acceptable by one or both scorers.

Grade 4 Results

The largest differences in grade 4 results can be seen when examining how the students did on the two essays in each scoring category. For example, 49.5 percent of the students scored an 8.0 or above in topic development on the narrative prompt. However, only 35.2 percent scored at the same level in topic development on the descriptive prompt—a difference of 14.3 percent of the students. An even greater discrepancy can be seen when looking at the figures for wording. Over 66 percent of the papers were deemed acceptable on the narrative prompt, in contrast to 33.3 percent of the descriptive papers. In fact, the student's scores were higher in all six categories for the narrative topic. In addition to a difference in the demands of the tasks, 4th grade students may have more experience with narrative writing.

Grade 8 Results

At the 8th grade level, the problem-solving prompt proved to be the more difficult of the two, producing lower scores in all six categories when compared to the narrative prompt. While the largest discrepancies occurred in the first three categories, ranging from a 28 to 34 percent difference, there was still a 17 percent difference between the mechanics scores on the two prompts. The mode of discourse and/or the topic has an effect on the writing performance of all students and these 8th graders in particular.

Grade 11 Results

The 11th graders' scores were very close together for the two prompts, differing by only a few percentage points in each category. Overall, they did very well on both essays. The first prompt, asking for an expository essay, received slightly higher scores in five of the six categories. Only organization received a higher score on the expressive prompt. The largest discrepancy in any of the six criteria was a seven point difference in wording, with the expository prompt receiving the higher score. Their overall high performance may be due to a number of factors: the students may have been equally interested in both prompts; the tasks may have called for similar skills and expertise; and/or the two modes of discourse (expository and expressive) might have been equally familiar to them.

Mathematics

This summary is the result of evaluation of student performance on cognitive test questions and the results of the student, teacher, and principal questionnaires.

Interpretation of the data obtained in the mathematics portion of the MEA targeted five key areas of concern: students may be lacking experience in transcribing, manipulating, and ordering numbers as part of the problem-solving process; students are lacking experience with alternative strategies to solving problems — performance on non-routine problems is generally poor and is poorer when the problem does not lend itself to writing an equation or performing quick computations with the numbers given; many students do not have a conceptual understanding of fractions, decimals, or percents — it appears that students are often introduced to formal algorithms for computing without prior conceptual understanding; calculators and computers have not yet been integrated effectively into mathematics curricula.

Operations with Whole Numbers

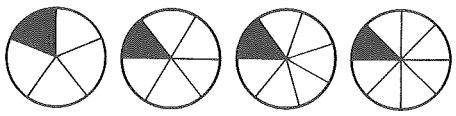
Student performance on computations with whole numbers was satisfactory at all three grade levels. Performance on computation questions varies with the layout of the problems. As expected, students perform best when addition, subtraction, and multiplication problems are arranged vertically. In problem-solving situations, however, numbers are rarely lined up, ready for the application of computational skills. With the widespread use of masters and copiers, students probably have little experience with transcription, manipulation and ordering of numbers. These are important skills required in problem solving and should be taught at all levels.

The discrepancies in performance associated with varying formats of computational problems also indicate that students need to be shown all forms of a problem. It appears, for example, that many students do not realize that $63 - 9$, $9\overline{)63}$, $63/9$, $\frac{63}{9}$, and $9 \times \square = 63$ are all equivalent forms of the same problem. Students should be encouraged to reformat problems into the form with which they feel most comfortable and teachers need to accept equivalent answers to problems.

Students at both grades 4 and 8 perform acceptably on one-step word problems but have difficulty with multi-step/non-routine problems. It appears that students have very little practice with alternative strategies to solving a problem and continue to search for a quick computation that can be performed on the numbers given. Perhaps this is a result of the overuse of routine, textbook problems. Performance on open-ended questions suggests that most students are reluctant to draw pictures or write tables as a means of solving a problem.

Operations with Fractions, Decimals, and Percentages

Comprehension of fractions is lacking at all three grade levels. The results of the grade 4 question depicted suggest that at least one-third of the 4th graders have no conceptual understanding of fractions.



Percent of Students Grade 4			
61%	* E.	$\frac{1}{5}$	Which fractional part of the pie would give you the largest piece?
4%	F.	$\frac{1}{6}$	
4%	G.	$\frac{1}{7}$	
30%	H.	$\frac{1}{8}$	

Only 54 percent of the students at grade 8 are able to add 1/2 and 1/4, a problem much younger students ought to be able to solve in their heads before they have knowledge of any formal algorithms. No student should be taught the formal algorithms for computing with fractions without sufficient conceptual understanding to allow the mental "computation" of problems such as 1/2 + 1/4 or 1/8 + 1/8. By grade 11, 21 percent of the students still cannot add 2/3 and 1/6. Nearly one-half of the 11th graders are unable to add or subtract mixed numerals and even fewer can apply the algorithms for multiplying and dividing with fractions.

Performance at grade 11 suggests that students have very little experience with proportional reasoning. In one question, students were given a table showing the total number of graduating seniors in three different schools and the total number of students from those graduating classes who went to college. Only one-fourth of the students could determine which school had the highest college attendance rate.

Students at all three grade levels are able to perform computations on decimals (only addition and subtraction with the presence of a dollar sign at grade 4); however, conceptual understanding of decimals may be lacking. While 81 percent of the 8th graders can successfully multiply 6.3 times 28.7, only one-fourth know that .25 is equal to 1/4.

Students ought to be able to select the correct answer to this problem long before the formal algorithms for division of decimals are introduced. The results on a similar item at grade 11 suggest the same lack of conceptual understanding.

The lack of comprehension of percentages is much the same. In the open-ended item depicted, only 5 percent of the grade 11 students approached the problem by finding 1 percent of 7,800 and most of these students gave 780 as their answer.

> Mrs. Ambrose's new car cost $7800 plus 5% sales tax. How much more would Mrs. Ambrose have paid for her car if the sales tax were 6% instead of 5%?

Only 52 percent of the students were able to solve this problem using any approach. This is the type of problem that lends itself to discussion of problem-solving approaches. When students are given the opportunity to share their approaches to problems (either in small groups or with the class as a whole), all students may improve their problem-solving skills as well as their understanding of, in this case, decimals.

Geometry

While students at all three grade levels are able to identify basic, regular geometric shapes, their ability to apply geometric principles is lacking. Only one-third of the 8th graders and two-thirds of the 11th graders could determine the measure of an angle in a triangle given the measure of the other two angles. More than one-half of the 11th graders were unable to determine the length of the hypotenuse of a 3-4-5 right triangle given the lengths of the two other legs. Fewer than one-fourth of the 8th graders and one-third of the 11th graders could use the proportionality of corresponding sides of similar triangles to determine the length of an unknown side.

Measurement

Grade 4 performance on measurement questions was generally acceptable. The one area of weakness the test exposed for this grade level was elapsed time. Given a starting and ending time, just over half of the students could determine that 20 minutes had elapsed.

At grades 8 and 11, performance was poor on questions requiring knowledge of equivalents and conversion of units within a system. When asked to find the average of three distances (9 feet, 6 inches; 10 feet, 7 inches; and 10 feet, 2 inches), fewer than one-fourth of the 8th graders were successful. Thirty-five percent converted the distances into 9.6, 10.7, and 10.2. Only one-half of the 11th graders could determine the time a chicken should be put in the oven given the desired finish time, the weight of the meat, and the cooking time per pound.

Problem-Solving Skills

Students are able to determine the most reasonable answer to a problem yet there is evidence that these skills are not generally applied. It appears that students might benefit from exercises such as estimating the approximate answer before attempting the problem. With the growing use of calculators, reasonableness of answers is increasingly important.

Students are not only unable to solve many word problems, they are also unable to demonstrate understanding of the question asked by many problems.

Performance at all three grade levels is poor on questions containing extraneous information. A major part of real problem solving is determining which information is relevant. Students need more exposure to activities that require separating meaningful data from irrelevant data. Students could also benefit from generating their own problems from data sets.

Probability and Statistics

Students at all three grade levels lack understanding of probability.

Students at grades 8 and 11 are lacking understanding of measures of central tendency. While most of the students at grades 8 and 11 are able to compute an average, many do not appear to understand the concept of average. Given a number line with three designated points, only two-thirds of 11th graders and fewer than one-half of the 8th graders were able to select the place on the number line representing the approximate average of the three points. Given a list of seven prices, only one-third of the 11th graders could find the median price. One-third of the students found the average and one-fourth found the price positioned in the middle of the list.

Students at all grade levels can read and interpret graphs but cannot construct graphs or draw conclusions from data. When asked to construct a line graph depicting data, fewer than one-third of the 8th graders were successful.

Computers and Calculators

Moderate usage of computers during mathematics class is associated with higher performance than frequent or no use. While many schools have purchased computers for students, actual student use is rare and the existence of integrated computer programs is even rarer. One-half of grade 4 students indicated little or no exposure to computers in school. While 54 percent of the grade 4 principals indicated that 4th graders have regularly scheduled computer time, three-fourths of the schools do not have any computer curriculum. At grade 11, although four-fifths of the schools have a computer lab and offer computer literacy, 71 percent of the students indicated that they spend no time using a computer at school (for any subject) and another 10 percent rarely use the computer. These data suggest that coordinated computer curricula do not exist in most schools.

As with computers, moderate usage of calculators during mathematics class is associated with higher test scores. In conjunction with the 1987-1988 administration of the Maine Educational Assessment, a sample of students at grades 8 and 11 will be asked to solve mathematics questions using a calculator. The study will provide the data to compare student performance on different types of questions with and without the use of a calculator.

Exercises in Problem-Solving

Results indicate that a varied approach is most effective when teaching problem-solving skills. Individual activities appear to work best when used in moderation, from once a week to a few times per month. The activities associated with high performance include working in small groups during mathematics class, using hands-on materials (e.g. compasses, protractors, geoboards, etc.), and opportunities for students to write their own problems.

Two-thirds of the students at grades 8 and 11 rarely or never work in small groups during math class. Yet real world problems are generally solved by groups of people. Fifty-one percent of the 8th graders never write their own problems. Not only does this activity improve the writer's understanding of problem-solving, it produces problems that are frequently more challenging and more interesting than those supplied by textbooks. One-half of the 8th graders never use hands-on materials in mathematics class.

Teacher Training

Students whose mathematics teachers have a strong mathematics background perform considerably better than students of teachers without such a background. Similarly, students perform better when their teachers are actively involved in professional development activities. Unfortunately, the majority of mathematics teachers in Maine do not participate in such activities on a regular basis and, at the lower grades, teachers with strong math backgrounds are rare.

Science

Scientific Inquiry

Concepts covered include awareness of science and scientific processes, design of experiments, observing and measuring, interpreting and translating data, and drawing conclusions and inferences.

Students appear to understand the concept of control in experimental design.

One-third of the students at grade 4 cannot categorize according to plants vs. animals or natural vs. man-made things.

Students seem to have little experience with data-reduction aspects of measurement. More than one-fourth of the students in grades 8 and 11 fail to recognize that when something is measured repeatedly, the results will not be exactly the same.

Students at grades 8 and 11 are able to read, extrapolate, and interpolate information from graphs, tables and charts. However, they are unable to select the most appropriate graph to represent a data set or to draw conclusions from experimental data. Performance is particularly poor with data sets representing differential change in samples over time.

Life Science

Concepts covered include characteristics of life, systems/functions, and ecology and environment.

Students at all three grade levels appear to have a sound knowledge of facts associated with the life sciences but seem to be lacking understanding of the larger concepts.

Many items in the category "Ecology and Environment" require students to synthesize and apply knowledge. Performance on these items is poor.

There is little or no improvement between grades 8 and 11 on ecology and environment items.

These results are of particular concern in light of the fact that nine out of every ten 11th graders taking this test had already completed or were currently enrolled in biology.

In some areas of life science, students are not only missing larger concepts, but are also missing the facts on which to build understanding of the larger concepts. For example, only one-half of the students at grades 8 and 11 know that plants need water, light, chlorophyll and carbon dioxide in order to perform photosynthesis.

Earth and Space Science

Concepts covered include astronomy, climate and weather, geology, and oceanography.

Although data from the questionnaires indicate that 94 percent of the 8th graders have had at least some earth and space science in the 7th and 8th grades and 45 percent of the 11th graders have completed a high school course on earth science, there appears to be little growth since grade 4. Teacher training in this area is lacking. About one-half of the teachers at grades 8 and 11 have taken one or no courses in the earth and space sciences.

In many schools, college-bound students may be enrolled in something other than earth and space science.

Physical Science

Concepts covered include mechanics, waves and optics, electricity and magnetism, atomic/nuclear physics, nature and structure of matter, physical and chemical changes in matter.

Although student performance in this area follows national trends, efforts must be made to improve instruction.

While knowledge of simple machines was once a common topic for instruction, performance on questions requiring such knowledge is poor.

Students do not understand the properties of heat or light energy. Only one-half of the students at grades 8 and 11 can select the picture that accurately represents the path of a light ray upon striking a mirror at an angle. One-third of the 4th graders cannot select the picture that shows the correct position of a shadow relative to the light source. Only about one-half of the students at all three grade levels identified the movement of a fluid that results after heating (convection).

Understanding of atomic structure and theory was very weak at grades 8 and 11. For example, almost one-half of the 8th graders and one-fourth of the 11th graders are unable to label diagrams as solid, liquid and gas based on the relative distances between the particles.

Performance on items requiring application of the law of conservation of matter is poor at all three grade levels. While some students at grade 4 may not be developmentally ready to apply this law, by grade 8 students should have had laboratory experiences enabling them to understand and apply the law.

Social Studies

The questions developed for use in the social studies component of the MEA cover a range of cognitive levels. This allowed for subsets of the questions in this test to be reported at the school level in three categories — knowledge, comprehension, and higher order (including application, analysis, synthesis, and evaluation). At grades 8 and 11, an additional school level reporting category, Maine Studies, was included as a subset of items.

Physical Environment

Test questions on physical environment dealt with topics such as place geography, climate and terrain, population density and clustering, and environmental issues. Maine students at the upper two grade levels generally performed poorly on place geography questions. However, these students demonstrated a strong understanding of current environmental issues, especially issues concerning the state of Maine. The tendency for students to do better on items dealing most closely with their own environment and frame of reference was apparent throughout the entire social studies test. While this is a positive and anticipated outcome at grade 4, greater growth at grades 8 and 11 was expected.

Student performance was low on items that tested a knowledge of world regions. On two separate items, fewer than half of the 8th graders could identify countries located in Asia and Latin America from lists of countries currently in the news. Only 57 percent of the 11th graders knew that the Amazon River is in South America. Results on questions dealing with United States geography were also poor. Fewer than one-fifth of the 11th graders recognized that Iowa and Illinois are similar in that they are both important farming states in the Midwest. Results at grade 4 were more encouraging with approximately four-fifths of the students recognizing that Maine is in the northeast region of the country and that the U.S. is located on the North American continent. They also did well in identifying general characteristics of climate regions but had problems identifying natural resources and their uses.

History

The items in this section dealt with both world and American history. These two areas were broken down even further at the upper two grades based on periods of time. While performance was slightly better at the 8th grade level in comparison to performance at the 4th and 11th grade levels, overall student performance in history was disappointing.

Students did very poorly on world history items. Although 76 percent of the 8th graders could identify several early South American civilizations and approximately half recognized life-style characteristics of the ancient Sumerians, only one-third of the 11th graders could recognize common characteristics of ancient civilizations. Furthermore, fewer than half of the 11th grade students recognized major contributions of the Greeks and Romans to modern society. The 4th graders did slightly better. Seventy-nine percent knew that the Pilgrims traveled to the new world seeking religious freedom. However, 4th graders had difficulty selecting the first in a series of historical events beginning with Columbus' voyage to the new world. Only 54 percent recognized that Thanksgiving is a celebration of successful cooperation between the Pilgrims and the Indians. Additionally, very few of the younger students could identify early forms of communication and transportation.

In U.S. history, students at both of the upper grade levels demonstrated a minimal knowledge of the colonial period. Additionally, the 11th grade results showed little to no growth over the 8th grade results. At both grades, results on questions concerning the pioneer movement to the west and the Civil War were mixed. Performance was poorest on items covering the time period from Reconstruction through the 20th century. However, students demonstrated their knowledge of more recent American history. Sixty-two percent of the 8th graders identified Martin Luther King, Jr. as a nonviolent civil rights leader while 76 percent and 84 percent of the 8th and 11th graders respectively recognized a description of the proposed "star wars" plan.

Seventy-eight percent of the 4th graders identified George Washington as the first president of the United States. However, they had difficulty making connections between well-known holidays and the historical events on which they are based.

Political Science

The questions in this category tested students' knowledge of types of governmental systems, political processes and the rights and responsibilities of citizenships. Student performance in this area was good overall. Fourth graders displayed an understanding of the basic responsibilities of people involved in government. They did quite well on items addressing citizenship issues. At grade 8, students did well on questions dealing with citizenship and legal rights. However, they did poorly on questions requiring knowledge of the roles and responsibilities of levels and branches of U.S. government, and questions on political and electoral processes. Sixty-three percent of the 11th graders could identify a major principle of democracy, and less than half knew the major role of the U.S. Secretary of State. Sixty-one percent could identify the purpose of the U.S. Constitution. However, on the same question, a third of the students confused the purpose of the Constitution with that of the Declaration of Independence. It would appear that many students lack an understanding of the fundamental concepts of the political structure of our country.

Economics

Questions in the economics category dealt with economic systems and economic terminology, as well as concepts such as supply and demand, effects of industrial growth, personal economics, and consumer behavior.

Performance was good at grade 4. Students identified appropriate uses of tax monies, differentiated between wants and needs, and displayed an understanding of

such economic concepts as profit, competition, and credit. They also did well on questions which exemplified the concept of supply and demand, and questions that dealt with methods of earning and managing money. Eighth grade performance was not as strong in this area. Only 39 percent could identify the main reason that tariffs are placed on imports, and only 40 percent recognized the effects of specialization in industry. Results at the 11th grade level were mixed. Eleventh graders clearly understood the main function of workers' unions but they could not identify what effect the rising value of the American dollar overseas would have on the nation's economy.

Process Skills

Across the grades, students did well on lower level processing skills such as using a map legend or reading a chart. They also were successful in identifying and using a variety of reference materials. Eighth and 11th grade performance on items requiring problem-solving skills in social studies was good. However, students across the three grades did poorly on items that required interpretation (e.g. drawing conclusions from information given in a graph or table)

Sociology and Anthropology

The questions in this category dealt primarily with similarities and differences among peoples, social organization, and social change. At the upper two grades, this section also included questions on current social issues.

Results on questions in this category were generally good across the grades. Fourth graders did well on questions asking them to identify basic needs, cultural universals, and probable reasons for certain social behaviors and conflicts. Eighth and 11th graders were asked about similar topics in a more sophisticated manner, and again results were good. Additionally, at the upper grades, students were given questions dealing with current social issues such as apartheid and changing roles for men and women in society. Students displayed a good understanding of such issues.

Humanities

Literature

Fourth graders performed well on questions dealing with literary genre. One half of the students could recognize that a certain passage was a fable, fairy tale, or legend. At the 11th grade level, however, performance was lower than expected in identification of genre, with the exception of science fiction. Only half of the 11th graders recognized a very famous literary work as a tragedy.

Across the grades, students demonstrated difficulty in recognizing larger ideas, e.g., theme, presented in a literary piece. Students performed better when asked to deal with the more literal information presented within a text. This is consistent with assessment findings in Reading.

Results show some growth in performance from 8 to grade 11 on questions dealing with the identification or explanation of literary techniques and purposes. This is especially true in poetry.

Performance across the grades, as well as across the subdomains of Humanities, was poor in the realm of "Social and Historical Perspectives." Students generally had difficulty identifying and associating famous personalities or historic periods with a literary work or genre.

Visual Arts

Grade 8 students were very successful with questions regarding colors and color families. Grade 11 students showed good visual awareness; they responded well to questions on such art fundamentals as contrast and some basic elements and principles of design.

Growth in understanding of the visual language of art can be seen between grades 8 and 11. In several instances, both grade levels were asked to respond to the same works of art through an interpretive or thematic question; there were gains of 30 percentage points or more from grade 8 to grade 11.

One trend which appeared across the grades was a lack of familiarity with famous architectural works, e.g. prominent structures in our nation's capital. Perhaps the reason for this is that exposure to such structures may be limited to the social studies class in many school systems.

Performance on questions concerning the "Social and Historical Perspectives" of the Visual Arts was very uneven. Although 60-70 percent of the 8th and 11th graders could associate a woven rug design with the Native American culture, only 45 percent of students could associate a famous artist, such as Leonardo da Vinci, with one of his works.

Performing Arts

Grade 4 students showed impressive results in the area of musical instruments and instrument families. By grade 8, students were adept at recognizing famous composers.

Results across the grades were very strong in Performing Arts. Students presumably are exposed to drama in their English classes, and music (and possibly related dance history) in music class, as well as in various extracurricular activities such as band, chorus, gymnastics, plays, etc.

Language

Performance was generally good across the grades in the area of Language. This was especially true in instances where students were asked about language to which they have been exposed—computer language, words borrowed from other languages, slang, or dictionary terminology.

However, when the older students were faced with more formal concepts of language derivation, e.g. the identification of Romance languages, performance was not as good. This finding leads us again to the gap in student understanding of "Social and Historical Perspectives." Students demonstrated their lack of a broad understanding of the derivation of languages and their interrelatedness.

Religion and Philosophy

Questions about religions showed especially weak response patterns. These were questions testing students' general awareness of major religions and their historical impact on society without expounding on the beliefs of any one religion. Although the study of specific religions is not a responsibility of the public schools, a basic knowledge of world religions and the role of religion in the history of civilization is crucial to a broad perspective and an accurate understanding of history. Performance across the grades on the subset of Religion and Philosophy questions which dealt with "Social and Historical Perspectives" was generally poor.

Among 4th graders, only 33 percent could select the non-religious holiday from a list of four common holidays. A mere 29 percent of the 8th graders could associate major religions to their countries of origin. No more than 42 percent of the 11th graders could identify the predominant religion in the Middle East.

In Philosophy, students at the 8th and 11th grade levels proved more capable in recognizing the underlying belief system associated with a statement or behavior. Yet, this good performance appears to be bound by the constraints of ethnocentrism in that students' success was limited to western culture and ideas.

Achievement of College Bound Students

Performance on SAT

Maine college bound seniors scored better than the national average on the verbal section of the Scholastic Aptitude Test given last March. On the math portion of the SAT, Maine seniors maintained the same average as last year.

Maine seniors averaged 433 on the verbal section of the test. The national average was 430. Their 1987 math average was 466, while the national math average was 476.

At the national level, the verbal averages dropped by one and the math averages increased by one over last year.

The 1987 SAT results for Maine show:

- Fifty-five percent of Maine's approximately 15,700 high school seniors took the SAT, a 6.5 percent increase over last year. Nationally 40 percent took the SAT.
- During the past ten years the average math SAT score for Maine seniors has been remarkably consistent remaining within a narrow range from 463 to 468.
- The male math average for seniors in the state was up six points to 494, the highest average in the past 10 years. The female average was down five points to 440.
- The average verbal SAT score for Maine seniors was down one point to 433. From 1978 to 1984, the state average ranged from 426 to 430. In the past three years, the state averages have been higher.
- The state average for reading comprehension remained at 34.4, the same average as in 1986 and a ten-year high.
- The state average in the list of standard written English for 1987 (43.8) was up markedly from 1986 (43.2) and is the highest state average since 1978.

CORRECTION TO CHART BELOW:
1987 Maine Verbal Average should read 433
1987 Maine Math Average should read 466

SAT SCORE AVERAGES 1965-1986: NATIONAL AND MAINE DATA

	National Data				Maine Data		
Year	# Taking Tests	Verbal	Math	Year	# Taking Tests	Verbal	Math
1978	989,185	429	468	1978	7,359	429	467
1979	991,617	427	467	1979	7,827	430	468
1980	991,245	424	466	1980	7,904	427	467
1981	994,046	424	466	1981	8,127	426	465
1982	988,270	426	467	1982	7,898	427	463
1983	962,542	425	468	1983	7,968	427	464
1984	964,684	426	471	1984	7,854	429	463
1985	977,361	431	475	1985	8,669	432	466
1986	1,000,748	431	475	1986	8,674	434	466
1987	1,080,426	430	476	1987	8,685	437	477

Performance on Achievement Tests

In 1987, 2,501 Maine high school seniors, representing 29 percent of the number who took the SAT, took at least one achievement test. Nationally, 20 percent who take the SAT also take one Achievement Test.

Achievement Tests are curriculum-based and are designed to measure educational outcomes or knowledge in specific subject matter areas, such as french, physics, American history and English composition.

Although there was a slight increase in the number taking the SAT test in Maine, there was a decline of 13.2 percent in the number of students taking at least one Achievement Test and a decline of 12.0 percent in the total number of tests taken.

The Achievement Test results also show that:

- In 1987, 16 percent of Maine graduates took at least one Achievement Test, twice the national average.
- The number of tests taken per student was 2.96, up from 2.92 a year ago.
- Students who took at least one Achievement Test earned SAT scores well above the state average in both verbal (503 compared to the state average of 466).
- The six most frequently taken Achievement Tests in 1987 were English composition (2,249), Mathematics Level I (1,791), biology (738), American history (570), Mathematics Level 2 (488), and literature (448).

ACH	Number of Tests Taken	ACH Test Average	Corresponding Maine SAT Averages Verbal Average	Math Average
English Composition	2,249	506(524)	507	551
Mathematics Level I	1,791	527(548)	497	550
Biology	738	523(550)	515	556
American History	570	497(529)	506	532
Mathematics Level II	488	628(662)	539	634
Literature	448	521(528)	524	525
Chemistry	419	542(574)	533	611
French	336	500(545)	532	558
Physics	157	564(597)	537	641
Spanish	122	466(536)	495	524
European History	42	532(547)	562	541
Latin	30	558(561)	593	615
German	21	507(574)	506	527

Maine's Cultural Resources

Maine State Library

The Maine State Library delivers informational services directly to state government and Maine citizens. It also encourages library cooperation statewide in order to enhance the local delivery of information. School libraries are a necessary and valued part of the Regional Library System, and of planning activities recently undertaken toward statewide library automation.

The first regular session of the 113th Maine Legislature (1987) passed landmark legislation on behalf of libraries statewide. Funding for MaineCat, a union catalog of the holdings of hundreds of Maine libraries, was funded in the Part II budget. MaineCat will hold nearly a million catalog record cards covering over three million individual volumes, all on a single CD-ROM disc identical in size to the CD discs currently popular with music enthusiasts. The bill also provides for grant funding each year for the equipment needed to access the disc.

The significance of MaineCat lies in two primary areas: it will be a reference tool of great strength for Maine studies and other areas; and it is the tool that allows local libraries to create local automated applications with relative ease.

The State Library itself was closed to the public during the entire year because of asbestos contamination. Some services were able to continue, notably interlibrary loan, media services, consulting activities and film services, but collection-based services such as book circulation and Books-by-Mail were not available. Library staff used the downtime to accomplish tasks that had waited for years because of lack of manpower. An example: the more than a million cards in the card catalog were arranged according to proper filing rules, with many past errors eliminated.

Maine Arts Commission

The Art Commission's primary mission is to encourage and stimulate public interest and participation in the arts, to expand the state's cultural resources and to foster the freedom of artistic expression. The agency promotes excellence in the arts statewide through matching grants to museums, theaters, schools and other non-profit organizations for project support, touring, exhibition and residency programs, conferences, workshops and technical services.

In 1987, the Art Commission:

- Reached more than 1.7 million citizens and tourists, who attended arts events supported by grants from the Commission.
- Awarded 534 grants to non-profit organizations on an 7:1 matching basis which generated $4,632,521 million in private funds.
- Reached 139,795 students, teachers and administrators with arts programs.

The Commission has taken a leadership role in insuring the integrity of the one-year fine arts requirement for high school graduation, as defined by the 1984 Education Reform Act. In 1987, in conjunction with the Maine Department of Educational and Cultural Services, the Commission reviewed grants for $49,250 in new projects through the state Innovative Educational Grants Program, participated in the creation of an arts consultant position within the MDECS, helped establish gifted

and talented programs which specifically include the arts, and cosponsored a major conference in art education.

Maine's Percent for Art/Art in Public Buildings Program is administered by the Art Commission. Since its inception the number of schools and other state-funded buildings with newly commissioned or purchased artwork has involved $810,000 for public works of art.

In 1987, the Commission sponsored art exhibitions at the Governor's office and at the Attorney General's office, as well as a series of noontime concerts at the State House, all open to the public, to showcase the work of contemporary Maine visual and performing artists. The Commission's Writers at the Library series, cosponsored with the Maine State Library, brought leading New England poets and writers to libraries from Fort Kent to Portland for public readings of their works.

Maine Historic Preservation Commission

The Maine Historic Preservation Commission in 1987 conducted surveys that covered more than 24 square miles and added nearly 900 new properties to the statewide historic resources inventory.

In the area of archaeology, 125 new sites were discovered, ranging from Paleo-Indian villages in the north to a ca. 1636 house site on the coast. Architectural surveys inventoried 731 buildings.

The Commission nominated 204 properties to the National Register of Historic Places, 34 as individual buildings and sites and the balance as components of 4 historic districts.

In its regulatory role the Staff reviewed a thousand Federal and State projects to ensure that they would not damage or destroy significant historic resources. Under the Federal Economic Recovery Tax Act of 1981, owners of registered depreciable properties are eligible for investment tax credits as a result of rehabilitating such properties. The certification process is administered by the Commission. In 1987, 15 projects were processed, representing a private sector investment in preservation of almost $10 million.

The year 1987 saw the second year of a four-year program of 50% matching grants to restore public or nonprofit-owned buildings on the National Register of Historic Places. Funded by a $2 million State bond issue, $500,000 was divided in 1987 between 36 projects ranging from Kittery to Houlton.

In the area of public education, the Commission published 6 more entries of the *Biographical Dictionary of Architects in Maine*, as well as a major report on the history and archaeology of the French in 17th-century Castine. The staff delivered dozens of public slide lectures on archaeology and architectural history, while the Commission's three packaged slide lectures, "The Archaeology of Colonial Maine", "The Archaeology of Prehistoric Maine", and "200 Years of Maine Housing" were used by two dozen public schools. Finally, a draft curriculum unit on Maine prehistory was distributed to more than 30 schools.

Maine State Museum

Following the opening of the "Made in Maine" exhibition, public visitation to the Maine State Museum increased by more than 25 percent to a new high of over 125,000 visitors. Visitation from public schools also reached a new mark as over 32,000 students participated in more than 2,000 school programs provided by the Museum's education staff.

Exhibit work focused on the redesign and reinstallation of the main floor gallery. This was necessary in order to accommodate a number of important acquisitions which deserved public exhibition. In May, the Museum opened a new installation near the front entrance which featured the locomotive engine Lion. The Lion, built in 1846, is considered an important national treasure and its exhibition followed a complete restoration undertaken by the staff of the Museum. A 64-page booklet entitled "Lion" was published by the Museum in concert with the opening.

In August the Museum opened the second part of its main floor redesign by opening a new "Logging and Lumbering" installation. This exhibition features the Lombard log hauler and the Ricker sawmill which had been included in the earlier installation. Additionally, however, the new installation includes rare 18th century fragments of an up-down sawmill built in Augusta, a clapboard saw, numerous small tools and logging artifacts, and a video-tape presentation. The film, which runs continually in the gallery, is composed of images from a number of early films made in the Maine woods prior to the 1930s.

Exhibit work has moved to the lobby area itself. Work has been started on a new sales shop area and a new gallery which will feature Rufus Porter style wall murals painted around 1830. Meanwhile, a new gem and mineral installation is being built. This installation will feature a number of important new acquisitions made during 1987, including the largest known Maine tourmaline crystal.

The curatorial staff has been busy developing its plans to move the entire stored collections of the museum to a new facility. This is a massive task requiring extreme care, security, and careful records keeping. Toward this end, a great effort is being made to enter catalog data into a computer format.

Long range planning for the museum is resulting in the development of a master plan for future development at the Museum.

Profile of Maine

Demographic Information

Demographic statistics provide policy and decision makers with valuable insight into population characteristics and trends. This information is helpful in planning for the present and future educational needs of our citizens. Some of the more significant items have been highlighted below.

- The birth rate in Maine has declined over the past 10 years from 17.9 to 14.6. This decline is substantially greater than that for the nation, which declined from 18.4 to 16.2.
- From 1970 to 1980 Maine's population grew faster than the nation's; during the same period our birth rate decreased. The reason for growth, is that in-migration exceeds out-migration substantially. It should be noted that the largest age group migrating into Maine includes those in the 65 and older category, while the largest percent of out-migration is in the 25 to 45 age group. As a result school enrollment is projected to stabilize over the next few years.
- The population of Maine is slightly older than the population of the nation. In 1980 the median age was 30.4 in Maine and 30.0 in the nation. However, in 1970 the median age in Maine was 28.6. The increase over the decade reflects the high incidence of the in-migration of citizens 65 and older.

Educational Attainment

The educational attainment of Maine's population is significantly higher than that of the nation. In Maine the percent of population completing 12 years of school with no education beyond grade 12 is 39.4. For the nation it is 34.6.

However, in higher education Maine seems to lag behind the nation. The percent of Maine's population with four or more years of college is 14.4 compared to the national figure of 16.2. The percent of high school graduates in Maine's population is 69.1. That is 2.6 percentage points higher than the national figure of 66.5 percent.

The Educational System

Public School Enrollment

The public schools enrollment for Maine has shown a steady decline since 1973. The last two years indicate a slowing trend in enrollment drops. With kindergarten classes now increasing and the birth rates rising slightly, enrollments should level off by the early 1990s.

1986-1987 FALL ENROLLMENT BY GRADE

PUBLIC

Grade	Total	E.U.T.*	State Totals
Ungraded Elementary	97	0	97
Special Elementary	1,617	0	1,617
4-Year Olds Program	155	0	155
Early Pre-Kindergarten	1,088	0	1,088
Kindergarten	16,798	45	16,843
Transitional Grade 1	1,126	0	1,126
Grade 1	16,435	36	16,471
Grade 2	15,611	34	15,645
Grade 3	15,227	36	15,263
Grade 4	14,716	40	14,756
Grade 5	14,402	44	14,446
Grade 6	14,997	31	15,028
TOTAL K-6	112,269	266	112,535
Grade 7	15,365	21	15,386
Grade 8	15,814	13	15,827
TOTAL 7-8	31,179	34	31,213
TOTAL K-8	143,448	300	143,748
Ungraded Secondary	25	0	25
Special Secondary	536	0	536
Grade 9	16,710	0	16,710
Grade 10	16,690	0	16,690
Grade 11	15,368	0	15,368
Grade 12	14,235	0	14,235
Post Graduates	37	0	37
TOTAL 9-12	63,601	0	63,601
TOTAL K-12	207,049	300	207,349

* — Education in Unorganized Territories

Maine's Public Schools

Because of geographic and economic differences in Maine, schools have evolved over the years into different organizations. A brief explanation of each follows:

Cities or Towns with Individual Supervision

A city or town with individual school organization is a single municipality of comparatively large size for Maine (generally 75 or more teachers). One school committee administers the education of all grades in the city or town through a superintendent of schools. City or town charter usually determines the method of budget approval. In many cities and towns, the city council or town council has final budget approval. Since it is a single municipality, cost sharing is not a factor.

School Administrative Districts

A school administrative district (SAD) is a combination of two or more municipalities which pool their educational resources to educate all students. One school committee (comprised of representatives from each of the municipalities) administers the education of grades kindergarten through grade 12 through a superintendent of schools. Budget approval is by majority vote of those present and voting at a district budget meeting. Cost sharing is based on a formula which includes state valuation and/or number of pupils.

Community School Districts

A community school district (CSD) is a combination of two or more municipalities formed to build, maintain, and operate a school building or buildings to educate any or all grades. For example, a CSD may be formed to build and operate a grade seven through 12 school for all towns in the CSD. These same towns will maintain individual control (or belong to a union) for the education of their kindergarten through grade six students. A CSD also may include education of all grades kindergarten through grade 12.

The CSD school committee is comprised of members of each town's local school committee if one exists. CSD school committees are apportioned according to the one person one vote principle. Cost sharing is based on a formula including number of pupils in each town and/or state valuation or any combination of each.

CSD budgets are approved by majority vote of voters present and voting at a district budget meeting.

SUMMARY OF SCHOOLS IN MAINE
1987-88

	Public	Private
High Schools	89	18
Junior-Senior High Schools	25	4
Junior High Schools	48	0
Intermediate Schools (middle)	53	0
Ungraded Schools	0	6
Special Education Schools	8	13
Vocational Centers & Regions	28	0
Combined Elementary & Secondary Schools	9	9
Elementary Schools	496	53
TOTALS	756	103

	Public	Private
Elementary Schools (any grade combination from kindergarten to grade 8)	599	63
Combined Elem. & Sec. Schools (any grade combination which includes both elem. & sec. grades)	40	20
Secondary Schools (any grade combination from grade 9 to grade 12)	109	20
Vocational Regions (regional vocational programs)	8	0
TOTALS	756	103

Unions of Towns

A union is a combination of two or more towns joined together for **administrative purposes only.** Since none of the towns is large enough to justify the cost of employing a superintendent of schools, they share a superintendent's office. Each of the towns maintains its own budget and school board elected at town meetings and operates in every way as a separate unit except for the sharing of superintendent services. A union school committee is comprised of members of each town's school committees, and it conducts the business of the union. All votes of the union committee are cast on a weighted basis in proportion to the population of the towns involved.

Cost sharing for union services are apportioned to each town in proportion to the amount of the superintendent's services required in that town.

Budget approval is accomplished for each town's individual budget in town meetings.

The union budget is approved by weighted vote of the union committee.

Maine Indian Education

There are three reservations of Indian children in Maine. These three reservations are organized exactly as a union of towns described previously.

The reservations are Indian Township, adjacent to Princeton, and Pleasant Point, adjacent to Perry and Eastport, both of the Passamaquoddy Tribe in Washington County, and the Penobscot Nation on Indian Island, north of Old Town in Penobscot County.

Units under District Superintendents and Agents of the Commissioner

A unit assigned to a district superintendent or agent of the commissioner generally is a relatively small unit requiring less than full-time administration.

Education in Unorganized Territories (EUT)

Education in Unorganized Territories (EUT) in Maine is a responsibility of the State. The education of territory children is accomplished by the State operating schools which are in unorganized territories and by the assignment of agent superintendents to assure that each child in an unorganized territory receives education. These agents are assigned by the Commissioner of Education through the Division of Unorganized Territories.

The unorganized territory schools include the Blaine School at Rockwood, Benedicta Elementary School, Brookton Elementary School at Brookton, Connor Consolidated School at Caribou, Kingman Elementary School at Kingman, Edmunds Consolidated School at Dennysville, and Patrick Therriault School at Sinclair.

Educational Program

In Maine, there are 756 public schools located in 283 local educational agencies. Generally, school is in session from late August or early September to mid-June for a minimum of 180 school days, at least 175 of which are instructional days for students in grades K-12. The length of the school week is 25 hours of instructional time except that kindergarten is twelve and one-half hours. Standards and curriculum content vary for elementary schools and secondary schools.

The elementary school curriculum includes, but is not limited to, instruction in:

- Language Arts (reading, writing, spelling, grammar, handwriting, listening and speaking skills)
- Mathematics
- Science
- Maine studies
- Social studies
- Fine arts
- Physical education
- Health
- Library skills

The second level enrollment, grades 9 through 12, is approximately 31 percent of the total public school membership.

A total of at least 16 credits is required for the award of a high school diploma.

Required for high school graduation in the secondary school curriculum are:

- English, four credits
- Social studies, one credit
- American history, one credit
- Science, two credits including at least one credit of laboratory
- Fine arts, one credit which may include art, music, forensics or drama
- Health, one-half credit
- Physical education, one credit
- Mathematics, two credits
- Computer proficiency
- Maine studies, one-half credit if not taken between grades 6-8

Other secondary school instructional requirements include a two year sequence of a foreign language, library skills, and vocational education.

Special education for exceptional students is provided as part of each public elementary and secondary program.

Commencing with the 1987-88 school year each administrative unit must establish a plan for phasing in gifted and talented education programs by 1991-92.

Leadership and technical assistance in all curriculum areas are provided by the Division of Curriculum of the MDECS. In addition the Division provides regulatory functions which include school approval, accreditation, inspections, home-study and other assigned duties. It also has administrative responsibilities for certain federal and privately funded programs. These priorities have been established by legislative and executive department mandate. The target populations served include Maine students, teachers, school administrators and members of the greater community.

Education of the Gifted and Talented

Maine provides a unique opportunity for educators across the state to develop and implement quality programs in the area of gifted and talented education. During 1986-1987, under State permissive legislation, ninety-two school systems, fifty percent of the total number of school systems in Maine, supported programs for the gifted and talented. Fifteen local school administrative units in three regions collaborated to provide regional

programs for secondary school students. Approximately 8,150 students were served in gifted and talented programs state-wide. This represents four percent of the total Kindergarten through grade 12 school-age population in Maine.

The majority of students served were in programs designed to offer opportunities in both the academics and the arts. Fifty-one percent of the programs fit this category, while forty-one percent of the programs served students in academic areas only, and eight percent of the programs served students in the area of arts only.

Two State-sponsored residential summer programs were held for gifted and talented secondary school students. The Maine Summer Humanities Program and the Maine Summer Arts Program served 60 and 72 students respectively.

A Sequenced Team Training Program offered representatives from twenty school administrative units intensive team-training in education of the gifted and talented at the middle or high school level. And, the annual Maine Summer Training Institute offered a week-long professional development session for 180 gifted and talented program teachers, administrators and coordinators. In addition, three conferences were co-sponsored with state-level educational organizations.

Alcohol and Drug Education

A state-wide program of education and training activities designed to increase knowledge about chemical use, abuse and dependency and its impact on individuals, families and communities was continued during fiscal 1987 by the Division of Alcohol and Drug Education Services of the DECS.

- Twenty-seven new school/community teams were trained, bringing the total in the state to 87. As part of developing comprehensive local programs, schools involved in the team development program agree to hold a two-day in-service program for all school staff. In 13 school systems, 3,000 people participated in that program last year.

- Over 60 school systems participated in specialized workshops or advanced training programs related to adolescent chemical dependency issues and curriculum and support groups for elementary children.

- There were 228 on-site consultations with 106 different school systems related to school/community team development.

- Division consultants did presentations on chemical dependency and/or prevention/education programs for 54 school and community groups, including 5 out-of-state conferences and over 6,000 students as part of student awareness programs in 27 schools.

- To further enhance alcohol and drug prevention, education, and treatment programs of schools and community groups statewide; 6,825 films and video-cassettes were circulated, 17,600 pamphlets were distributed, and 92 chemical dependency curricula were circulated.

- New initiatives included submission of recommendations on affected children developed by a task force coordinated by an ISG position shared with the Division of Special Education, continuation of a coaches' initiative to develop prevention strategies for coaches and athletes, that included a statewide conference, and on-going work addressing potential certification for chemical health coordinators and communication issues between schools and treatment providers.

- In 1987, 95 percent of Maine's high schools participated in Project Graduation, a process whereby high school seniors are offered a chemical-free alternative to celebrate their graduation.

Maine School and Public Libraries

Maine has 485 public school libraries and 226 public libraries. Most school libraries are one-person operations. Although not surveyed, the number of volumes in school libraries is estimated to be around 2.5 million, according to consultant estimates. Surveys show 4.5 million volumes in public libraries. Annual circulation per capita is 6.6, which compares very well with national figures.

The Maine Regional Library System, under the direction of the Maine State Library, promotes the sharing of books and other resources among all Maine libraries. Maine is among the top 10 states in terms of interlibrary loan per capita, and probably among the top three, depending on how the figures are interpreted. Within New England, network statistics show that Maine libraries lend to each other more, and borrow outside the region less, than is the case with any other new England state.

School libraries have joined with Maine's other library constituencies to study and work toward the implementation of an effective statewide library network based on the rapidly evolving computer products and services now offered in the national library marketplace. The passage of MaineCat, described earlier, heralds a new era in library cooperative activity using the immense power of library automation.

Secondary Vocational Education in Maine

Vocational Center

Facilities providing vocational education to secondary students governed by a single school administrative unit. It may serve students from other affiliated school administrative units and may include satellite center facilities and programs.

At each vocational center an advisory committee consists of a superintendent and a school board member from each participating administrative unit. There are 20 vocational centers in Maine at Augusta, Bath, Biddeford, Calais, Caribou, Dexter, Ellsworth, Farmington, Lewiston, Madawaska, Naples, Portland, Presque Isle, Sanford, SAD 24 (Van Buren), SAD 27 (Fort Kent), Skowhegan, Waterville, Westbrook and Machias.

Vocational Satellite Program

A facility or program providing vocational education to secondary students administered by a school administrative unit affiliated with a vocational center. The school principal and the director of the vocational center jointly make recommendations to the local superintendent and supervise personnel working in the vocational satellite program.

There are 31 vocational satellite programs in Maine.

Vocational Region

Facilities or programs providing vocational education to secondary school students, governed by a cooperative board consisting of residents from each school administrative unit.

Superintendents within each region serve as an advisory committee to the cooperative board.

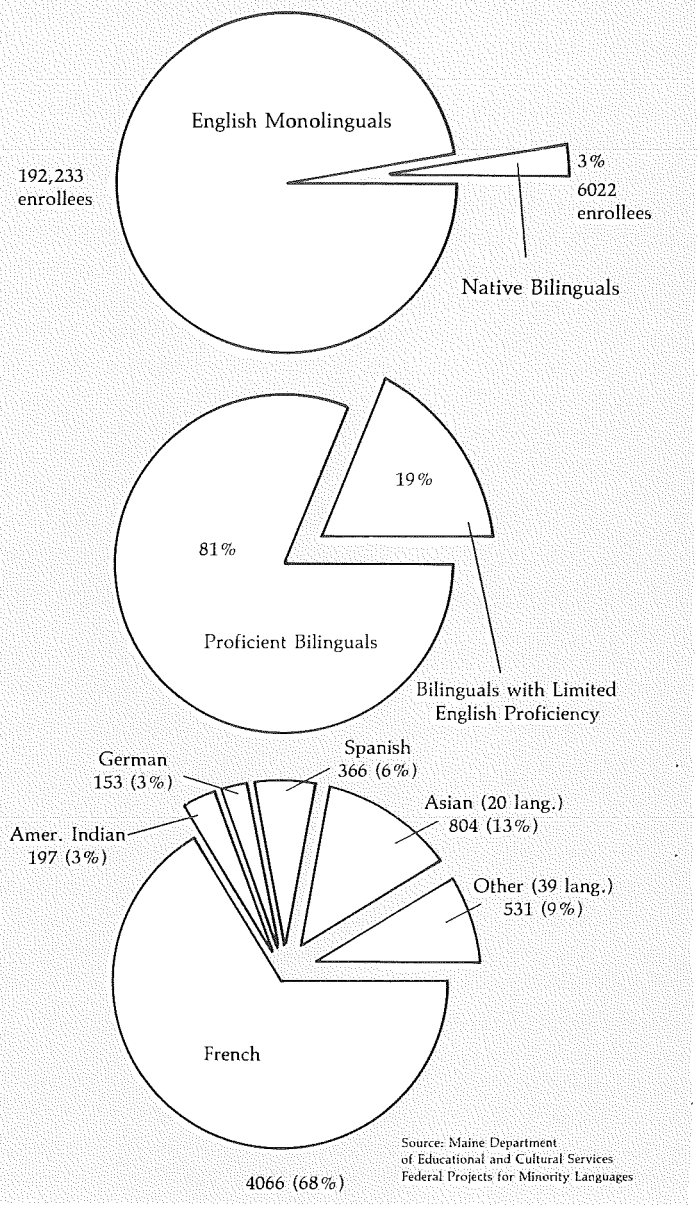
There are 8 vocational regions in Maine at Southern Aroostook County, northern Penobscot County, southern Penobscot County, Waldo County, Knox County, northern Oxford County, eastern Cumberland-Sagadahoc County and southern Oxford County.

Special Student Membership

Recent Immigrant Children in Maine

Although nearly 5,000 of the state's enrollment of language minorities were born here, about 1,000 are recent immigrant children who have difficulty with the English language. 65% of these are refugee children. Support under the federal Transition Program for Refugee is the only funding received in Maine to support the extra educational needs of these children. The graph on the opposite page shows recent trends in federal support for this segment of Maine's population.

MAINE'S PUBLIC AND PRIVATE SCHOOL ENROLLMENT OF LANGUAGE MINORITY CHILDREN
October 1987

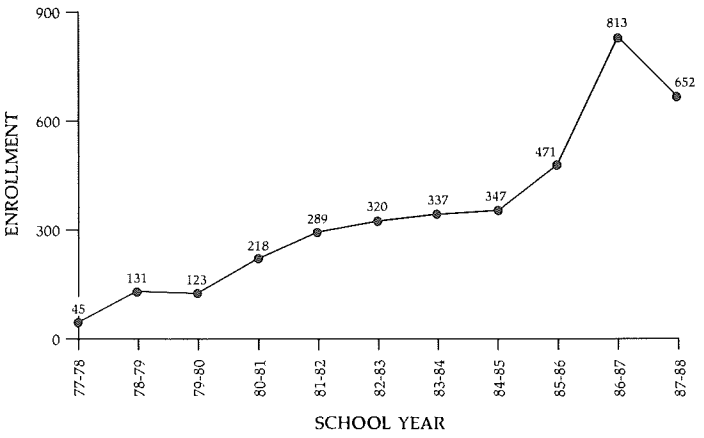


National Origin Minority Groups

Most of Maine's 42,000 minority children (1980 U.S. Census) are of French, Asian, American Indian, or Spanish descent. The 6,000 of these who are natively bilingual are the primary beneficiaries of services provided under Title IV of the Civil Rights Act.

Such services include on-site technical assistance for English as a second language as well as statewide conferences and institutes on culturally relevant curriculum development and teaching methodology. At least 1,100 children are known to be limited English proficient.

SCHOOL ENROLLMENTS OF REFUGEE CHILDREN
CURRENT TRENDS IN MAINE



SOURCE: Maine Department of Educational and Cultural Services
Federal Projects for Minority Languages (1987)

Educationally Disadvantaged Children (Chapter 1)

Chapter 1 of the Federal Education Consolidation and Improvement Act of 1981 replaced Title I ESEA, which was designed to meet the special needs of educationally deprived children. It provides funds for supplementary programs of reading and mathematics for disadvantaged children in low-income areas; for children in institutions for the handicapped; for neglected or delinquent children; and for children of migratory agricultural workers.

In 1986-87, 173 projects provided services to approximately 21,753 students enrolled in public and private schools in Maine. Of these students, 75 percent were in grades one through six, 16 percent were in grades seven through twelve, and 9 percent were in kindergarten.

Maine Chapter 1 programs in both reading and math have made a substantial impact on bringing students who were behind their classmates closer to average achievement rates. The gains exceed more than a year of growth per student average.

Maine Migrant Education

Approximately 65 school systems in maine participate in the Maine Migrant Education Program.

There are 6,016 students identified as eligible children of migrant agricultural workers. Of that number, 3,378 are served. Teachers are employed by the local school administrative units as supplemental academic program staff and work on a one to one or small group basis with the eligible students.

General areas of occupational employment were picking potatoes, apples, blueberries, various fishery related gathering and processing, dairying and poultry processing.

Governor Baxter School for the Deaf

Governor Baxter School for the Deaf consists of two interrelated major branches of operation, **Baxter School** and **Baxter Center.** This organization reflects the concept of Baxter serving as a state-wide resource center on deafness. Baxter School, the educational program, provides direct services for commuter and residential students enrolled at Baxter. School administrators and staff also serve as a resource to Baxter Center by providing a wide range of expertise when needed. Baxter Center includes the outreach program which provides technical assistance upon request for hearing impaired students in public schools. Services are also provided to students' families, deaf preschoolers and adults, educators and other service providers throughout the State. Specialized support services/consultations are also provided to students in the Baxter School program. In summary, Governor Baxter School for the Deaf provides quality educational programming at Baxter School while delivering additional specialized services through Baxter Center.

Administration, school and center staff have been involved in a cycle of short and long-range planning, goal setting, and evaluation activities in order to facilitate optimum student achievement. A broad based collaborative planning process which includes parents and other members of the school community has been involved in school improvement activities.

Baxter School

Baxter School provides educational programming and related services, athletics and co-curricular activities to preschool, elementary, mid-school and high school hearing impaired students at Baxter. More than 50% of these students are partially mainstreamed into Falmouth and other nearby towns. A comprehensive support service is provided for mainstream teachers and students. The School Improvement Plan describes the long-range plan for a complete revision of the school's curriculum that is intended to revitalize curricular offerings and teaching methodology as well as respond to the mandates of the Education Reform Act.

The HUG Team, a substance abuse team established in 1983 with the assistance of the Division of Alcohol and Drug Education, continues to increase awareness of issues related to chemical dependency. The school will serve as a pilot site for the acclaimed chemical dependency curriculum "Here's Looking at You 2000" at selected grade levels during the 1987-88 school year. A classroom based speech program continues. Computer literacy courses have expanded and are available to increased numbers of students and staff. The pre-vocational program (computer science, career education, work study and vocational counseling) is designed for mid-school

and high school students. Selected students attend Portland Regional Vocational Technical Center for more advanced vocational training.

The Residential Program involves about half of the school population. Programming is provided for non-commuting students, students participating in the Independent Living Program and/or extracurricular activities. The Independent Living Program is a developmental, structured program designed to teach independent living skills and decision making skills in an apartment-like setting. The program will be refined and expanded to meet the needs of all residential students. Dormitory renovations are planned to meet fire safety regulations and enhance the independent living experience.

A Multi-Sensory Instructional Resource Center comprised of a Sound Lab and a Communication Technology Lab was developed with support from the Maine Innovative Grant Program (Education Reform Act of 1984). The Sound Lab utilizes a floor that vibrates (as a function of sound sent through the system), and visual based equipment that displays the frequency and intensity of the sound. The room provides a stimulating environment for instruction in the properties of sound, speech therapy, music, occupational/physical therapy and science. The Communication Technology Lab provides structured hands-on experiences with a variety of equipment and devices that are commercially available to foster independent living for hearing impaired individuals.

The University of Southern Maine, in cooperation with Governor Baxter School for the Deaf, established a master's degree program in 1983 to train teachers of the hearing impaired. Governor Baxter School for the Deaf offered the fourth Annual Summer Institute in conjunction with this program this summer.

Baxter Center

The Baxter Center, established in 1983, provides technical assistance to service providers and parents of hearing impaired children throughout the State. A Preschool Outreach Consultant joined the staff in the fall of 1984 to provide services to children 0-5. Consultation and training have been provided to many Maine school districts and other service providers. In-service training continues to be conducted throughout the State. A comprehensive 3-day evaluation including language (English and/or any other language if appropriate), audiological, psychological, educational, occupational therapy, and if appropriate, physical therapy assessments is available at the school. The evaluation is for all hearing impaired children regardless of their mode of communication. The evaluation team makes recommendations to the referring school districts and the parents for appropriate programming needs rather than for specific placement. Sixteen students received complete evaluations at Governor Baxter School for the Deaf during the 1986-87 school year. Baxter Center conducts a Family Learning Vacation annually.

In June of 1986 an Adult Education Coordinator/Program was added to the Baxter Center. This program works with and within the established Adult, Vocational and Continuing Education system to provide continuing education to the deaf adults in Maine.

Baxter Center's Parent/Professional Resource Center focuses on the needs of families of hearing impaired children throughout the State. Annual Family Learning Weekends are provided. Each focuses on a specific topic selected by parents via a needs assessment. This branch of the Baxter Center also serves as a resource and referral source for parents of hearing impaired children and Maine professionals serving this population. It also provides a multilevel comprehensive program of American Sign Language for the public.

Education of Exceptional Students

Twenty-six thousand eight hundred and thirty-eight exceptional students were provided Special Education and Related Services in 1986-1987. This represents 12.77% of the total estimated 5-17 school aged population in Maine.

The majority of students (10,090) served were identified as learning disabled. This represents 37.5% of all exceptional students served, or 4.8% of Maine's 5-17 school aged population. Six thousand three hundred and eighty-five students were identified as having behavioral needs. This represents 2.0% of Maine's 5-17 school aged population.

Exceptional Students Served
Under P.L. 94-142 and P.L. 89-313
1976-1987

Students	Year	Difference	Percent
23,701	1976-77		
21,410	1977-78	(2,291)	(10.7)%
24,283	1978-79	+2,873	13.4%
24,307	1979-80	+24	.001%
25,638	1980-81	+1,331	.05%
25,947	1981-82	+309	.01%
26,485	1982-83	+538	.02%
27,069	1983-84	+584	.02%
27,452	1984-85	+383	.01%
27,845	1985-86	+393	.01%
26,838	1986-87	(1,007)	(.03)%

NET INCREASE 1976-77 TO 1986-87—
3,137 OR 13.24%

Of those students educated in public schools, 52% (13,231) received special education and related services and regular classroom instruction. Thirty percent (7,557) received resource room instruction. Fourteen percent received separate class instruction while approximately 2% received their instruction in residential programs.

The related services most frequently provided to special education students in 1986-87 was speech and language services (33.75%), followed by diagnostic services (19%). Psychological services made up 10% of the related services provided. Counseling services, occupational therapy, transportation (special) and social worker services followed in that order.

Of the special education students between the ages of 16 and 21 in the public school system in 1986-87, two thousand nine hundred and forty-six or 63.06% are still receiving special education services. Seven hundred and twenty graduated with diplomas, while 9.16% or 428 exceptional students dropped out of school. Sixteen and seventeen year olds made up the majority of those students who dropped out.

Data reported on anticipated services needed by special education students between the ages of 16 and 21 in 1986-87 indicates that the most needed services for this age group were first, vocational training and job placement (20.41%), second case management and counseling (13.81%) and third, mental health services (8.35%).

Maine's 0-5 Interdepartmental Coordinated Service Delivery System

Maine's efforts in the development and implementation of a comprehensive service delivery system for all infants and young children, ages 0-5, who are handicapped and/or at risk, and for their families, gained tremendous impetus with the passage of federal public law 99-457 in October 1986.

Almost a decade of progress by the Maine Department of Educational and Cultural Services and the Departments of Human Services and Mental Health/Mental Retardation in 1978 has resulted in the development of an interdepartmental, state-wide delivery system that blends the energies, resources and abilities of a wide variety of public and private providers.

These forces combine on the state and local level to design, implement, evaluate and manage programs and services through treatment and transition into public school at age five. The ultimate goal of the interdepartmental system is to provide the most comprehensive, sensitive and appropriate form of service(s) to families and young infants/children.

Home Study in Maine

Schooling at home continues to grow in Maine. Over 250 programs were approved in 1986-87, 50 more than in 1985-86. With this growth came the need to clarify the regulations and guidelines which govern home instruction in Maine. To bring this about the State provided home instruction workshops for superintendents and home schoolers.

The application for home instruction was revised as a result of the workshops. With more clarity about the regulations for home instruction and an improved application, Maine citizens who choose to home school have a clear route to approval.

This route includes approval by the local board and approval by the Commissioner. An appeals process, outlined in the Guidelines for Equivalent Instruction Through Home Instruction, allows families whose application is denied by the local board to present their case to a state advisory board which then makes recommendations to the Commissioner.

Maine's regulations about home instruction allow home schoolers several options for teaching their children while still serving the state's interest in a full education for each child. Through continued cooperation between local school districts, home schoolers and DECS, home instruction is one way that Maine meets the needs of its students.

Truancy and Dropouts

The new Office of Truancy, Dropout and Alternative education created by the 112th Legislature came into being in December, 1986. The office is staffed by a full-time consultant who serves as a liaison for the Commissioner to a fifteen member Advisory Committee and to the Department. The consultant's services are available to all schools, public and private, to assist schools in planning, developing and implementing strategies for meeting the needs of at-risk youth and dropout prevention models.

The Advisory Committee represents the State Departments of Labor, Corrections, Mental Health and Human Services; educational representatives (teachers, adult education, administration, alternative education), business and private alternative schools. The role of the Advisory Committee includes the review of existing statutes, procedures for gathering information on dropouts, examining policies (local and state) and to make recommendations to the Commissioner for programs and strategies which can deal effectively with dropouts, truancy and improvement of alternative education programs.

School Personnel Profile

Maine Educators - Fall 1986-87

Maine has 13,221 full-time equivalent teachers of whom 8,468 (64.0 percent) are females and 4,753 (36.9 percent) are males.

Males occupy 65.2 percent of all administrative/supervisory positions.

Twenty-two point five percent (22.5 percent) of all Maine teachers have 19 years or more of teaching experience. (2,969)

Forty-three percent (43 percent) of Maine teachers are between the ages of 30 and 39.

Fifty-five point seven percent (55.7 percent) of Maine teachers have a Bachelor's Degree as their highest level of educational attainment. (7,375)

Twenty-two point one percent (22.1 percent) of Maine teachers have a Master's Degree as their highest level of educational attainment. (2,925)

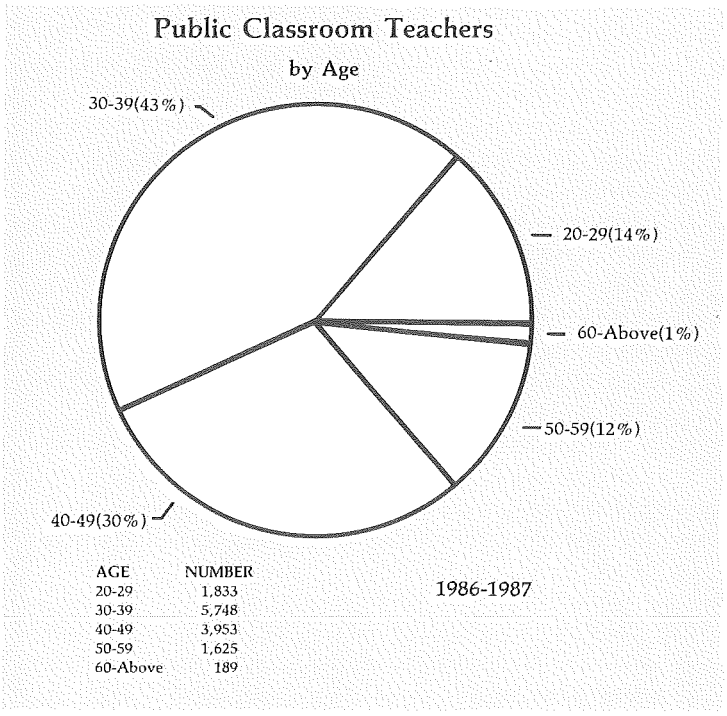
Teacher Education and Certification

Thirteen institutions of higher education are preparing teachers in the State of Maine. Approximately 1,700 people obtained an initial Maine certificate during the 1986-87 school year with about two-thirds of these obtaining their first degree at a Maine college.

The Office of Certification conducts program visits to each institution on a five year cycle to review the various teacher training programs to assure state standards are being met.

The number of individuals entering teacher training programs has declined over the past few years, especially in areas of math, science, business education and special education. Maine expects shortages in these areas to continue along with possible shortages in English and foreign languages until at least 1990.

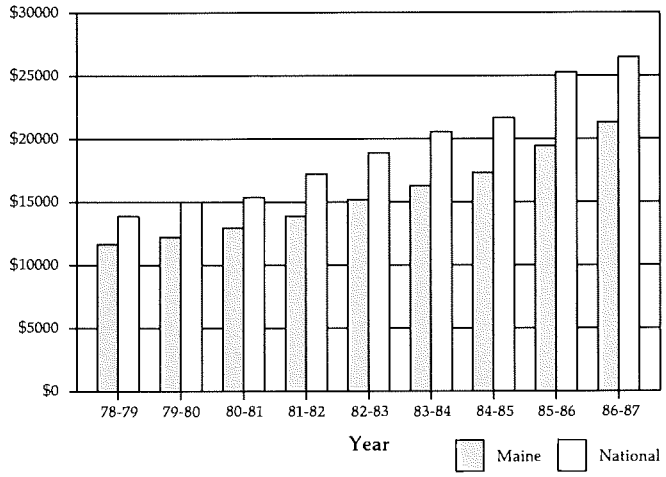
Maine's new certification law, P.L. 845, goes into ef-



MAINE
ADMINISTRATOR/SUPERVISORY POSITIONS
BY MALE & FEMALE
FALL 1986

Position	Number of Positions	Number of Males	% of Total Males	Number of Females	% of Total Females
Superintendent	143	135	94.4	8	5.6
Principals:					
Elementary	431	280	65.0	151	35.0
Secondary	109	102	93.6	7	6.4
Combined	126	100	79.4	26	20.6
Director of Services for Exceptional Children	145	42	29.0	103	71.0
Guidance Counselor	440	221	50.0	219	50.0
Assistant Principal	290	210	72.4	80	27.6
Assistant Superintendent	44	37	84.1	7	15.9
TOTAL	1,728	1,127	65.2	601	34.8

Average Salary for Full Time Teachers



fect on July 2, 1988. The new law will require each teacher in Maine to develop an individual improvement plan in conjunction with the local school unit as part of certification renewal requirements. Beginning teachers will be assisted and guided by experienced teachers during the first two year provisional period of teaching. In addition, experienced teachers may work toward master teacher status through a locally developed support system approved by DECS under State Board of Education regulations and procedures.

All new teachers are required to complete a teacher qualifying exam in communication skills, general knowledge, and professional knowledge, in addition to regular certification standards.

Average Salary for Full-Time Teachers

	Maine	Nation
1978-79	$11,738	$14,000
1979-80	$12,275	$15,000
1980-81	$13,071	$15,400
1981-82	$13,994	$17,200
1982-83	$15,105	$19,000
1983-84	$16,248	$20,500
1984-85	$17,328	$21,800
1985-86	$19,583	$25,317
1986-87	$21,257	$26,372

State Board of Education

A major thrust of the State Board of Education during 1987 has been the oversight of the development and the final adoption of rules and regulations pertaining to the new teacher and administrator certification laws which become effective July 1, 1988.

Rules regarding initial requirements for provisional, professional and master teacher certificates, administrative positions and educational specialists, renewal requirements, specific endorsements, conditional certificates, governance issues relating to support systems and operation of support teams, teacher and administrator action plans, appeals and adjudicatory procedures are some of the many topics the newly adopted certification rules address.

As a result of an internal self-study of the State Board of Education prior to sunset review by the Program and Audit Review Committee of the 113th Legislature, the Board adopted an annual cycle of monthly reviews to ensure that every policy area statutorily assigned to the Board for either rule-making or administrative responsibility be annually reviewed.

This policy review cycle has resulted in prompt attention to emerging issues and more timely and effective policy response.

Policy reviews have been conducted regarding school construction, certification, program approval of teacher education programs, higher education degree-granting and student loans, school lunch programs, school approval, school funding, school administrative district withdrawal, school administrative district re-apportionment and secondary vocational education.

The Board has been actively involved with the Commissioner of the Department of Educational and Cultural Services, the Deputy Commissioner, Associate Commissioners, the Cultural Bureau Directors and other top MDECS administrators in developing a five-year strategic plan for the MDECS.

The State Board of Education is committed to the ongoing goal of furthering educational equity and excellence for all Maine citizens.

The State Board of Education is required by statute to approve all school construction in Maine. Approvals made during 1987 include:

Elementary and middle schools. Five new elementary schools were approved at an estimated cost of $30,519,881. An additional $3,849,461 was approved in local monies for three of these projects. Additions and renovations were approved by the Board for 12 elementary schools at an estimated cost of $11,448,835. An additional $622,170 was approved in local funds for four projects.

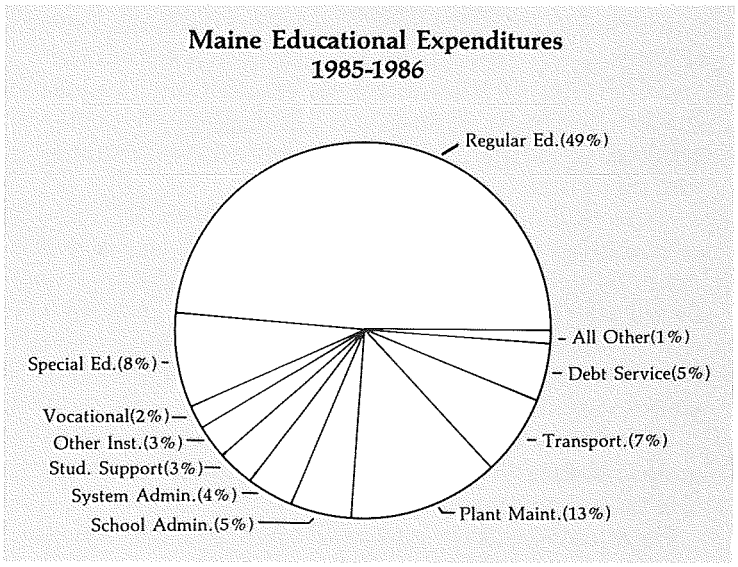
High schools. One new high school was approved this year at an estimated cost of $5,250,000 and additions and renovations to six others at a cost of $8,038,400. An additional $3,864,200 was approved in local funds for three projects.

Locally funded projects. Additions to two elementary schools and one high school were approved at an estimated cost of $1,154,068, all local funds.

Total state/local dollars approved for school construction in 1987 were $55,257,116.

Total local dollars approved for school construction in 1987 were $9,489,899.

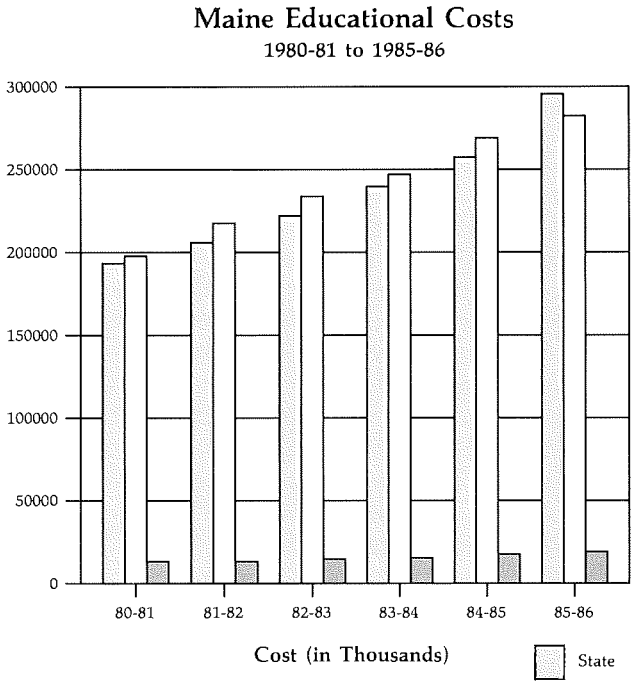
Local School Financing



Types of Local Revenues and Expenditures

In 1985-86, educational expenditures in Maine from State, local and Federal sources totalled approximately $595,380,000.

A breakdown of the percentages of the total for the various costs are shown in the accompanying graph.



Year	State	Local	Federal
80-81	192,778	197,837	13,349
81-82	204,236	216,620	13,377
82-83	220,335	232,897	14,445
83-84	238,951	247,117	15,241
84-85	255,614	268,548	18,170
85-86	295,142	281,692	18,546

Special Education Services

Since the enactment of Federal Public Law 94-142, the Education of All Children's Handicapped Act, considerable progress has been made toward assuring that handicapped children and youth of Maine have a genuine opportunity to receive an education commensurate with their needs. Federal, state and local funds have increased significantly over the past 10 years. However, most of the necessary fiscal effort to provide special education and related services has come from state and local funding.

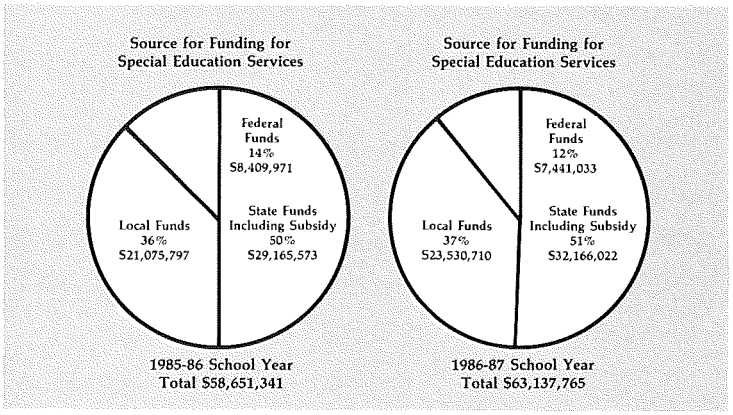
State funding, including subsidy for special education, pre-school programs and gifted and talented has increased from 29.2 million in 1985-86 to 32.2 million in 1986-87.

Local funding increased from 21.4 million in 1985-86 to 23.5 million in 1986-87.

Federal funding decreased from 8.4 million in 1985-86 to 7.4 million in 1986-87.

Costs for special education and related services, preschool programs, and gifted and talented programs increased from 58.7 million in 1985-86 to 63.1 million in 1986-87.

Although costs have increased, the distribution of cost sharing has changed. In 1981-82, the State supported 37 percent of these costs while in 1986-87 the State's share rose to 51 percent. In 1981-82, the local share was 43 percent, while in 1986-87 the local share is 37 percent. In 1981-82, the Federal share equaled 20 percent of these costs while in 1986-87 the Federal share is 12 percent.



Public School Transportation

An average of 165,654 school children were transported daily on school buses to public and private schools in Maine in 1986.

Average cost per mile for the 1,942 publicly owned and 457 privately owned buses was $1.25, a decrease of 3 cents per mile from 1985. Miles traveled during the year totaled 29,436,474 at an average cost of $221.93 per student.

Expenditures for school transportation totalled $36,764,166.92 for the year. Purchases of school buses totaled $3,818,786.63.

School Nutrition Program

During the 1986-87 school year, Maine school feeding programs prepared and served 19,267,133 student meals in 708 public and private schools, 35 residential child care institutions and 5 state institutions. Reimbursement to school feeding programs in the 1986-87 school year was $13,223,255 in Federal funds and $1,055,482 in State matching funds.

To administer the six nutrition programs; school lunches, school breakfasts, milk only schools, preschool milk, summer feeding and nutrition education/training, the division received $329,303 in Federal funding and $183,356 in State funding.

In the 1986-87 school year, there was a 6% increase in the number of school breakfasts served and a 4.6% increase in the number of students purchasing school lunches. 80.6% of breakfast meals were served to students eligible to receive meals at the free or reduced priced rate. 44.5% of the lunch meals were served to those eligible students compared to 49.5% in the 1985-86 school year. The average price of a school lunch in the State of Maine has not increased in the past five years.

The Division of School Nutrition Programs conducted 944 staff hours of training, reaching 1,736 school food service employees and other school staff members in 9 different statewide locations.

State of Maine Education Appropriations

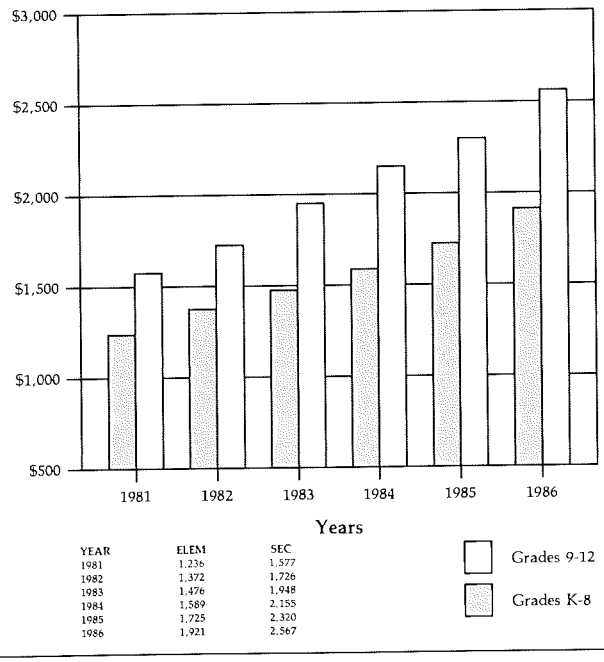
General Purpose Aid

The principle of Maine's school finance law is to equalize the financial effort made by the state's school districts in providing more state aid for poorer school districts and fewer state dollars for richer districts. The principle, and the formulas used to implement it, is designed to assure that the quality of education a pupil receives does not depend upon the wealth of his or her school district.

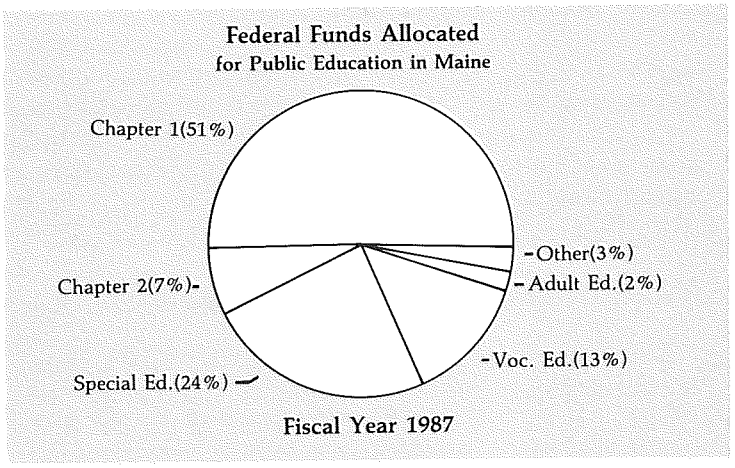
School district wealth is measured by the per pupil value of real property in each district because real property taxes are almost the only means by which districts raise funds. (All property valuations used in school funding formulas are based on figures compiled by the state and therefore, are not subject to local variations in assessing practices.)

Under the 1984 law, at least 55 percent of the total operating cost of Maine's public school system is paid by the state, with the balance coming from local districts. This does not mean, however, that each district receives 55 percent. Depending on its wealth, a district may receive nothing or it may receive up to 90 percent from the state.

Per Pupil Costs



YEAR	ELEM	SEC
1981	1,236	1,577
1982	1,372	1,726
1983	1,476	1,948
1984	1,589	2,155
1985	1,725	2,320
1986	1,921	2,567



Federally Funded Programs

Federally funded programs administered by the Maine Department of Educational and Cultural Services are intended to supplement state and local public education efforts. Each program responds to educational needs which Congress has determined to be a national priority.

The federal contribution for public education in Maine has increased from 27.9 million in 1981 to 30.6 million in 1985.

The school price index for this time period has risen over 43 percent. While the federal contribution has increased by 11 percent, federal appropriations for the past five years have not kept up with inflation.

Federal contributions have been further reduced through the establishment of the Block Grant concept (which consolidates categorical programs) called the Education Consolidation and Improvement Act. This act allocates fewer dollars through this block grant concept than had been allocated to the individually funded categorical programs that now fall under the act.

In short, federal dollars allocated to Maine's educational efforts have declined in purchasing power.

Update on 1984

Legislation Implementation

Implementation of the major components of the 1984 Education Reform Act is on target.

School approval.

A new, five-year school approval process is underway. A key element is a school improvement plan to promote excellence through a process of long-range planning.

Accreditation.

An optional elementary accreditation program has been piloted. All public secondary schools in Maine beginning in the 1989-90 school year are to participate in the accreditation process. This process includes writing a school philosophy and objectives, completing an extensive self-study, hosting a visiting team of outside educators, and implementing the recommendations from the visit. In addition, the visit verifies that the school meets state standards which range from community relations to instructional practice.

Maine Educational Assessment Program.

Elementary and secondary schools across the state are developing strategies to counter curriculum and instructional weaknesses identified in results of the first and second years of 4th-8th-11th grade assessment tests. The third year of testing is being implemented. Results of the first year tests were contained in the 1987 Performance Report on Maine Public Schools. Second year results are published in depth elsewhere in this report. An interdisciplinary effort is underway within the Department of Educational and Cultural Services to examine in depth the significant difference between the performance of boys and girls on the Maine Educational Assessment. Recommendations will be made to the Commissioner outlining strategies and interventions directly applicable to schools and the state department that can reduce the discrepancy in performance and achievement between boys and girls.

Graduation requirements.

The first high school seniors to have experienced new graduation requirements will receive diplomas in 1989.

Instructional Support Group.

An instructional support group of exemplary educators continues to supplement state curriculum consultant services on an annual basis. This program — unique to Maine — has utilized the talents of some of the state's brightest principals and teachers, under an arrangement whereby the contracts of the individuals are purchased by the state for a year.

Early Childhood Education Plan Grant Program.

Intent of this program is to encourage school administrative units to place an increased emphasis on instruction and curriculum for all children in kindergarten through grade 3 and may include programs for four-year-olds. It is not intended as a method of financing existing efforts but as a way of encouraging the development of new or expanded programs.

Initiatives include but are not limited to class size, teacher training, screening, two-year kindergartens, multi-grade classrooms, and learning environments. Funding is limited to $20,000 and requires matching funds based on each district's subsidy allocation formula.

More than 70 grants have been awarded representing all areas of the state. Many address language acquisition and explore ways to make language arts instruction meaningful. Others deal with the issue of readiness and provide an extra year for children, either through a two-year kindergarten or a transitional grade 1 program. Screening is another area of interest. Common to all grants is the strong desire of educators to provide the best possible start in school for Maine's youngest children.

Innovative Educational Grants Program.

This program encourages teachers to work with their colleagues to plan new strategies for improving curriculum and instructional practices in Maine schools. More than 400 innovative programs have been carried out by teachers and schools in the past four years.

Innovative grants are available on a competitive basis to teachers, schools, and school systems. Classroom-based grants are awarded for proposals submitted by individual teachers. School-based grants are awarded on a matching funds basis to individual schools and to two or more schools or school systems.

Since April 1985, from Fort Kent to Kittery and from Rangeley to Lubec, students have participated 648 new and continuation innovative grant programs developed by their teachers and administrators.

Blaine House Scholars Program.

Through interest-free loans, this program encourages graduating high school students, college students and teachers to initiate and/or continue teaching careers in Maine. During the past three years, it has provided 930 interest-free loans to individuals who have the option of repaying the loans by accepting teaching employment in Maine.

Maine Teacher Qualifying Examination Program.

Also a part of the 1984 education reform legislation, this program establishes standard qualifying examinations for persons seeking initial Maine teacher certification. Following an implementation study, the State Board of Education selected the National Teacher Examination Program Core Battery as the examination to be used for the program. The Board also set the qualifying score level for each section of the Core Battery to become effective for applicants after July 1, 1988.

Initiatives

Maine Aspirations Compact.

An education-business partnership established by Governor John R. McKernan, Jr., to design a comprehensive plan to raise the aspirations of Maine students. A broad-based group of Maine citizens has been appointed to identify major educational, societal, cultural and economic issues which support raising aspirations; to increase collaboration between schools, business, industry and institutions of higher education by the establishment of local aspirations compacts; and to heighten public awareness of the importance of the issue of aspirations. The Compact will identify and carry forward issues appropriate for legislative and administrative action.

Research-based Schools Project.

This project is designed to close the gap between research and practice in Maine schools. It proposes that selected elementary, middle, and high schools engage in a process to create school environments based on research findings. The result is to be a new productivity focused on student outcomes and greater discretion and a new vision of professional roles for teachers and administrators. Activities will encompass a year of planning and a year or more of implementation and measurement. Each participating school, in order to implement its plan, must achieve the support of the community, school committee or board, superintendent, building administration, and teaching staff. Resource and material assistance is to be provided by the Maine Department of Educational and Cultural Services for the schools selected.

A Report Card for Maine Schools.

Goals of this task force are to provide information on education statistics to school districts and citizens for their districts and communities in an easy to understand format which will lead to better understanding of the programs, people, and finances of schools, and comparing these local statistics with state and appropriate national norms; to utilize the process to make known to the various publics areas for school improvement and goals for education at the local and state level; and to provide a set of data and a group of participants who can engage in state-wide policy planning efforts. Membership on the task force is representative of public education (teachers, principals, superintendents, school board members), business and industry, and the public at large.

Task Force on Secondary Vocational Education.

This task force is examining all aspects of the complex relationships between education, employment, and economic development in the state. It is made up of nearly 30 individuals representing different agencies and points of view from state government, the educational community, and the private sector. The task force will develop recommendations concerning ways in which education at the secondary level can best prepare Maine youth for productive employment.

Task Force on Postsecondary Education Funding.

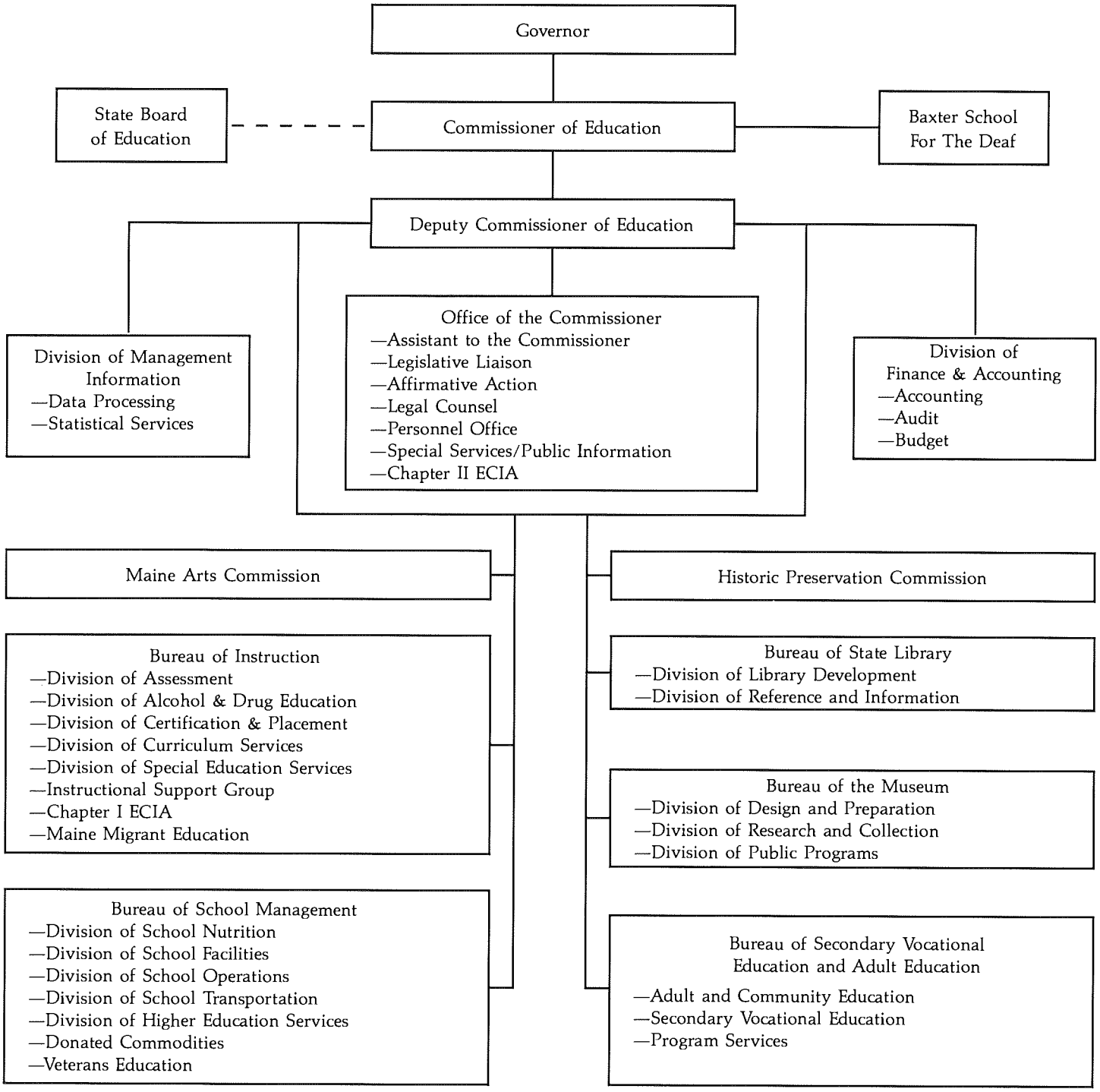
Primary purpose of this task force is to make recommendations which will identify ways to increase the aspirations of students to attend postsecondary educational institutions through more effective financing arrangements. The task force will be free to consider and investigate all aspects of higher education student financing and to make recommendations to the Commissioner of Educational and Cultural Services for administrative implementation, policy consideration, or possible legislative action. Recommendations for an action plan are to be provided to the Commissioner not later than November 1, 1988.

State of Maine

DEPARTMENT OF EDUCATIONAL AND CULTURAL SERVICES

Augusta 04333

ORGANIZATIONAL CHART



TOTAL AUTHORIZED POSITIONS

Department of Educational and Cultural Services

*Total Positions Authorized by the Legislature
(Effective Date 7-01-87)

Governor Baxter School for the Deaf	118.5
Maine Arts Commission	9
Bureau of Historic Preservation	9
Maine State Library Bureau	63.5
State Museum Bureau	32
Unorganized Territory	56.5
Commission to Study the University of Maine	0
	288.5
DECS Central Office Staff Positions	253
Total Positions	541.5

*Position Count includes general fund, federal, block grant, and special revenue positions.

Maine Public Schools
Annual Performance Report

Editing and Layout by Perleston L. Pert Jr., Director
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Charts and graphs prepared by Dale Elliot
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Cover photo:

South Gardiner Grammar School 2nd grade teacher Mrs. Deborah Curtis and students, from left to right, Jason Saucier, Jeff Robinson, Melissa Gavett, Adra Vawter, Tony Allen, Jason Barreto