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ABSTRACT

The Delaware Student Testing Program ties student achievement to the state's content standards that define the knowledge and skills Delaware students need to succeed beyond high school. This report explains the testing program and how to interpret it for administrators and boards of education. Each school receives English language and mathematics reports for the school at grades 3, 5, 8, and 10, as appropriate. Each school district superintendent, and ultimately the school district's board of education, receives English language arts reports and mathematics reports for the tested grades. Following an introduction to the tests, section 2 discusses understanding the language arts report, with information on the grade levels, testing dates, and norms for the grades tested. School, district, and state scores are compared. Similar information in section 3 explains the mathematics report. An appendix contains sample individual, classroom, and state reports for English language arts. (SLD)

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A SCORE RESULTS GUIDE FOR BOARDS AND ADMINISTRATORS

Prepared by the Assessment and Analysis Group
Assessment and Accountability Branch

Delaware Department of Education
December, 1998

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Section I:

Introduction to the

DSTP

Delaware students must meet world class standards if they are to be competitive and successful in a global economy. To prepare our students for their future, our schools must support rigorous standards and each of our teachers must set high expectations. Our students must also commit themselves to the achievement of excellence.

Any system that hopes to accomplish such ambitious goals must have a yardstick by which to measure its progress. For the past several years Delaware educators have been developing the Delaware Student Testing Program (DSTP), which now will serve as such a yardstick. The tests are tied to the Delaware content standards that define the knowledge and skills required for our students to succeed beyond high school. The results of the DSTP provide us with an understanding of how well we are preparing students to meet the many challenges that lie ahead. Whatever the results, Delaware students and educators will understand where we are so that we can tell how far we have to go. An honest assessment of where we are is the first step towards getting where we want to be.

In the Spring of 1998, the Department of Education, along with Harcourt Brace Educational Measurement, began its annual administration of the DSTP to students in grades 3, 5, 8, and 10, to provide us with an accurate measure of how our students are doing relative to Delaware's rigorous content standards.

Purpose of the test

The Delaware Student Testing Program is designed to:

- Serve as a measure of progress toward the Delaware standards
- Ensure that students can apply their academic skills to realistic, everyday problems
- Promote better instruction and curriculum by providing timely reports of students' strengths and weaknesses
- Serve as a primary indicator in the statewide accountability system
- Help districts deal with the issue of who should and should not be promoted from grade to grade.

Questions and Answers about the 1998 DSTP

What are “Standards”?

The standards are the result of several years of work by Delaware educators to determine what Delaware students should know and be able to do as a result of their education. The standards for English language arts, mathematics, science and social studies were approved by the State board of Education in 1995. Since then, Delaware’s standards have been widely recognized as among the best in the nation by publications such as *Time*, *Forbes*, and *Education Week*. Each Teacher and each administrator in Delaware has a copy of the Standards.

What Kind of Information Is Tested In Each Part of DSTP?

Reading: Many aspects of reading are assessed using literary, technical, and informational passages. Students are asked to read passages and then demonstrate their ability to analyze and interpret what they have read by answering multiple choice questions, short answer questions, and extended response questions. Because reading is fundamental to success in all areas of education, the reading test is particularly important. Student performance on the reading test will determine whether or not students will be promoted.

Writing: In this section of the test, writing is assessed in two ways. First, students are asked to provide a written response to a prompt (question or statement). Second, students are asked to write a short response to a question about a reading passage. This is done so students recognize that reading and writing are integrally connected.

Mathematics: The mathematics section reflects that success in mathematics depends on a student’s ability to grasp key concepts and solve realistic problems. Multiple choice questions, short answer questions, and extended response questions are used to assess students’ conceptual knowledge, procedural knowledge, and knowledge of mathematical processes across core areas such as computation, measurement, algebra, and geometry. Because the test is focused on reasoning and analysis, students are permitted to use calculators on some parts of the test. The results of the mathematics test will determine whether or not students will be promoted.

What are scaled scores and what is the advantage of using them?

Student correct responses to test items are called raw scores. On the DSTP the reading and mathematics raw scores are converted to a scale score by use of the Item Response Theory, Rasch Model process. This is a widely accepted scaling procedure used by testing companies. The primary purpose of converting raw scores to scaled scores is to aid in interpreting students’ test results. The scaled scores on the DSTP permit comparison of the scores of a student over time from grade 3 to grade 5 to grade 8 to grade 10. This permits an examination the student’s growth over time. Scaling also permits the examination of other trends in performance of groups of students over time.

What are the Scores and How Are They Going to Be Used?

There are five types of scores that can be reported:

1. Individual student scores;
2. Classroom scores (if requested by the classroom teacher);
3. School scores;
4. District scores;
5. State scores.

Individual Student scores:

The results are reported to parents and to schools so they can see indicators of their child's academic strengths and weaknesses. In turn both parents and teachers can then begin to assist the student in meeting the rigorous content standards.

After the DSTP test is administered to Delaware students in 1999, the results will be used to develop decision points for promotion of students and for graduation. Students will need a score equal to or greater than the decision point score to be promoted to the next grade, or to be granted a State of Delaware high school diploma.

Classroom Scores (Optional upon request):

The results of all students in a classroom are reported if the teacher or principal requests the report. This request must be made prior to mailing the answer sheets for scoring. The report can assist the teacher identify common problems students are having in the classroom so that she/he can begin to address them using class time and resources. These problems can be addressed through classroom instruction and/or individual instruction.

School Scores:

The results from student performance on the DSTP for the entire school can assist the Principal in evaluating how the curriculum is increasing student learning: What are the strengths of the curriculum? What are the weaknesses? What overall curriculum changes might be necessary to assist students in meeting the Standards? DSTP results can provide a signal to the Principal that additional resources may be needed or reallocated to assist the teachers in improving instruction.

District Scores:

The results of the district-wide student performance on the DSTP allow the Superintendent to identify strengths and weaknesses common to the schools in the district. This information permits the Superintendent to examine district-wide curriculum that works or curriculum that needs adjustment, and/or resource allocation, and any other adjustment that might be necessary.

Statewide Scores:

The results of the statewide scores permit the Department of Education and Legislators in Delaware to monitor the progress of students toward meeting the Delaware Content Standards. It is anticipated that the Statewide scores on the DSTP will increase for students as teachers and school

administrators to identify strengths and weaknesses and continue to work for changes to improve the educational process.

Reports

DSTP reports are distributed to parents, teachers, school administrators, and Boards of Education as indicated. Examples of these report are included in Appendix A.

Reports sent to parents

Parents receive two reports:

1. The 1998 DELAWARE STUDENT TESTING PROGRAM English Language Arts Individual Report, and
2. The 1998 DELAWARE STUDENT TESTING PROGRAM Mathematics Individual Report.

Reports sent to teachers

If requested, teachers receive two reports for each request:

1. The 1998 DELAWARE STUDENT TESTING PROGRAM English Language Arts Report for the Classroom, and
2. The 1998 DELAWARE STUDENT TESTING PROGRAM Mathematics Report for the Classroom.

Reports sent to administrators

The School Report

Each school receives two reports for each 3rd, 5th, 8th, or 10th grade level:

1. The 1998 DELAWARE STUDENT TESTING PROGRAM English Language Arts Report for the School, and
2. The 1998 DELAWARE STUDENT TESTING PROGRAM School Mathematics Report for the School.

The District Report

Each District Superintendent (and ultimately the Board of Education) receives two reports for each 3rd, 5th, 8th, or 10th grade level:

1. The 1998 DELAWARE STUDENT TESTING PROGRAM English Language Arts Report for the District, and
2. The 1998 DELAWARE STUDENT TESTING PROGRAM Mathematics Report for the District.

SECTION II:

Understanding the Language Arts Report

The English Language Arts Report Summary Report for schools and districts has five sections of information regarding the performance of students in reading and writing:

1. grade, testing date and SAT9 Level and Form;
2. score comparisons of grade tested for reading for the school;
3. score comparisons of grade tested for writing for the school;
4. percentile score for reading for the school;
5. instructional needs for reading and writing for the school.

Each section of the Language Arts Individual Report is discussed separately.

Grade, Testing Date, SAT9 Level/Form and SAT9 Norms

This part of the score report provides general information about the administration of the test:

- The grade level of the students in your school (03, 05, 08, or 10) is reported next to **Grade**.
- The date the students took this test is then listed.
- Following the test date is the **SAT9 Level/form**. The SAT9 is an acronym for the *Stanford Achievement Test-Ninth edition*. This test is a standardized, nationally administered test.

SAT9 Norms

The SAT9 was administered to a representative sample from 225,000 to 250,000 students nationwide. Their score results are referred to as national norms, or more usually, “norms”.

The norms become a reference point used to compare the performance of any student who then takes the SAT9 test. The year the norms were developed for reading was 1995.

Score Comparisons of Grades Tested: Reading

Each report contains reading and writing score comparisons of your school and the district against all students who took the test in Delaware. Remember that for each report your students are being compared with other students at the same grade who took the test. Each school and district score is found on it's respective line between the lowest scale score and the maximum scale score.

If you have students at different grade levels, you will see that different grade levels have different scale values. This difference is related to the highest and lowest score of the students in each different grade, and simply provides an additional piece of information to parents, teachers, and administrators. The State data shows the average performance of all Delaware students who took the Language Arts test.

To assist you in providing help to teachers and students in reading and in writing in your school or district, comments have been provided under the "Instructional Needs" section of the report to guide you. The number of students and the percent of students who triggered each comment in your school, for the school reports, or in your district, for the district report, are provided.

The School's Score

In this section you can see how all the students in your school are performing on reading, compared to all the Delaware students who took the test, by examining the position of the school's score on the scale. Remember that these scores reflect performance of same grade students.

The District's Score

In this section you can see how all the students in the school district are performing on reading, compared to all the Delaware students who took the test, by examining the position of the district's score on the scale. Remember that these scores reflect performance of all district same grade students.

The State of Delaware's Score

In this section you can see how all the students who took the test in the state of Delaware are performing on reading by examining the position of the state's score on the scale. Remember that each respective grade level score report reflects performance of all Delaware students who took the test at that grade level.

Performance Levels: Reading

This information is not yet available because the performance levels in reading for Delaware students have not yet been determined. The process to set the decision points for the performance levels will take place during the summer of 1999 after the spring administration of the 1999 DSTP. A summary of the number and percent of students at each performance level will be reported.

Beginning with the 2000 test administration, for each individual student, decision points based on Performance Level for **reading** and **mathematics** will be used for promotion and graduation decisions. The level at which a student performs will then be used to determine if the student will attend summer school, whether or not a student is promoted to the next higher grade, or whether or not a student will graduate with a State of Delaware high school diploma.

School's or District's Rank (Percentile Rank): Reading

A percentile score is another way of looking at how well students performed on the reading test. The percentile rank, like the scale scores shows how students performed relative to all the same-grade students in the national norms. Percentile rank gives you the additional information as to what percent of students in the norms scored higher or lower than students in your report. For example, if students in your school or district had a reading percentile score of 98, it means that 98 percent of the students in the norms scored below the students in your report and only 2 percent scored at or higher. If students had a reading percentile of 45, it means that 45 percent of the students in the norms scored below the students in your report. If students had a percentile score of 20, it means that twenty percent of students in the norms scored below the students in your report and that 80 percent scored at or higher than your students.

Score Comparisons of Grades Tested: Writing

This section contains school and district score comparisons of student performance in writing against the scores of all students who took the test in Delaware. This score is the average number of correct responses the students in your school or district made to the items over the two writing tests administered. The writing score is found on the line between the 3 to 15 scale. A score of 3 is the lowest score a student can obtain, and a score of 15 is the highest score a student can obtain.

The School's Score

In this section you can see how all the students in your school are performing on writing, compared to all the Delaware students who took the test, by examining the position of the school's score on the scale. Remember that these scores reflect performance of same-grade students.

The District's Score

In this section you can see how all the students in the school district are performing on writing, compared to all the Delaware students who took the test, by examining the position of the district's score on the scale. Remember that these scores reflect performance of all district same-grade students.

The State of Delaware's Score

In this section you can see how all the students who took the test in the state of Delaware are performing on writing by examining the position of the state's score on the scale. Remember that each respective grade level score report reflects performance of all students at that grade level.

Performance Levels: Writing

This information is not yet available because the performance levels in writing for Delaware students have not yet been determined. The process to set the decision points for the performance levels will take place during the summer of 1999 after the spring administration of the 1999 DSTP. A summary of the number and percent of students at each performance level will be reported on the school and on the district report.

School and District Instructional Needs Comments: Reading and Writing

This section of the report provides feedback that depends on what items students answered correctly and incorrectly, and/or how the items were answered. For each comment or cluster of comments, the number and the percent of students that triggered the comment is reported. The intent of the Instructional Needs comments report is to help principals and teachers see areas in which they might improve or focus instruction. Research has repeatedly confirmed that the single greatest factor in a student's education is the teacher. This being the case, it makes sense that we provide an additional tool for those in the best position to help students achieve at higher levels.

When feasible, we ask principals to encourage their teachers to request classroom reports to more acutely assist their students. While providing Instructional Needs comments will result in questions from parents, principals and teachers can take the opportunity to help parents see why this type of reporting represents a significant improvement over more traditional reporting methods.

Because of the unique nature of the DSTP some of the information from the first test administered was available immediately after the individual items had been scored. That information, in the form of a summary of Instructional Needs comments (diagnostic report), was sent to schools as early as possible to assist them in planning the school year. The rest of the data was sent in December. In future years the process will occur on a much shorter timeline and ALL information will be released at the same time.

Instructional Needs Comments: Reading

The comments on the Instructional Needs in reading:

- reflect the Delaware content standards for reading;
- are listed from basic to complex as indicated in the Delaware content standards for reading;
- were developed to help teachers examine the instructional needs of their students.

The comments are produced (triggered) by what items the students answered correctly or incorrectly. It should be noted that the reading standards support twelve broadly stated comments that relate to reading. Not all comments are triggered at all grade levels. Following are the comments that can be triggered by student responses to one or more of the reading items.

1. Providing enough details to answer open-ended questions¹;
2. Reading more carefully to better understand what is happening in a text;
3. Understanding the central ideas in a text;
4. Identifying information necessary to understanding a text;
5. Using information to make reasonable interpretations;
6. Identifying and understanding why a text was written;
7. Drawing conclusions based on information in the text;
8. Understanding the effects of an author's decisions;
9. Connecting and synthesizing information into a clear interpretation within and across texts, ideas, and concepts;
10. Formulating, expressing, and supporting opinions;
11. Making and supporting inferences about contents, events, characters, setting, theme, and style;
12. Continuing use of good reading strategies.

For example, if a student answered incorrectly a series of open-ended reading items that needed more details, then a comment would be triggered suggesting that the student work on "Providing enough details to answer a open-ended questions."

Note that each student's report will likely differ from another student's report. A summary the number of students and the percentage of students who triggered a comment are provided for your review and analysis.

Instructional Needs Comments: Writing

The Instructional Needs comments triggered for writing depend on the writing score of the students. A cluster of comments is triggered according to a student's "average" performance across two writing tests. Triggering the cluster of comments in this way allows us to create a hierarchy of comments that will help push all students towards the upper end of the state writing rubric, and thus towards the state standards for writing.

It should be noted that the comments on the Instructional Needs in writing:

- reflect the Delaware content standards for writing;
- were developed to help teachers examine the instructional needs of their students;
- occur in "clusters" as opposed to individual comments to better reflect the integrated nature of the writing rubric and the Delaware writing standards.

The writing standards support four broadly stated clusters of comments that relate to writing. Each student that took the test will receive a cluster of comments to match their scores. Following are the comments that can be triggered by the students' written responses. The comments come directly from the state writing rubric and the state standards. Two comments: *organizing their writing around a simple topic or central idea* and *working to avoid errors in conventions of English usage, grammar, spelling, and*

¹ This comment refers to the degree to which students provided complete answers to constructed response items.

punctuation that interfere with understanding, are repeated in clusters 1 and 2 to show that developing writers need continued instruction in these areas.

Cluster 1

- organizing the writing around a simple topic or central idea;
- writing in complete sentences with a variety of length and structure;
- working to avoid errors in conventions of English usage, grammar, spelling, and punctuation that interfere with understanding;
- doing more than restating the prompt.

Cluster 2

- organizing the writing around a simple topic or central idea;
- working to avoid errors in conventions of English usage, grammar, spelling, and punctuation that interfere with understanding;
- supporting ideas with more specific details;
- doing more than making generalities regarding the prompt.

Cluster 3

- using effective and varied introductions and closings;
- writing in a consistent style with precise vivid word choice;
- writing with a clear logical progression of ideas using smooth transitions;
- responding directly to the prompt.

Cluster 4

“Congratulations on an excellent performance” on at least one of the two writing prompts. The comments below are to encourage the student to strive for excellence by:

- continuing to write in the same effective manner;
- trying new and varied approaches when producing written work.

For administrator review and analysis, a summary of the number of students and the percentage of students who triggered each cluster of comments are provided for the school on the school report, and for the entire district on the district report.

Using the Reading and Writing Instructional Needs Comments

Remember that the school level and district level diagnostic reports will indicate the number and percentage of students in the school for whom the comment was triggered. This means that the higher the percentage of students indicated as having a need, the more likely it is that additional instruction in that area of the standards will improve test scores.

Principals

To best utilize the information we would recommend the steps below.

1. Meet with teachers according to standards grouping (i.e., K-3, 4-5, 6-8, 9-10/11) to review the comments and the related standards. It is highly desirable that all teachers within a grade cluster participate in the discussions. The accountability system and the DSTP reflect the degree of success at reaching the standards, which is much broader and more comprehensive than a single grade level.
2. Discuss the kinds of practices, assignments, teaching strategies, etc. that they are using, and whether or not those practices are in line with the standards and address the comments. Some suggestions are included in the subsequent sections of this guide.
3. Work through the reports with the groups of teachers, discussing strengths and areas for improvement. All teachers should be reminded that year one of the DSTP is a baseline year and subsequently no value judgments about student performance should be made from test scores, although inferences about the possibilities for improvement are entirely justified. If a school seems to have all the comments triggered at about the same rate, teachers should be encouraged to prioritize their efforts so they don't feel as if they have to do everything all at once. Be sure to talk about the kinds of activities that teachers feel would help students in the particular area(s) of the standards where they seem to need some help.
4. Go through each comment and the related standards to discuss what you and your teachers might say to a parent whose child has had a particular comment triggered. The comments were intentionally written in teacher/standards language, which will be foreign to some parents, and they will need some clarification. Teachers should be prepared to explain to parents how they intend to address their concerns in your teaching practices.
5. Meet regularly throughout the year to review progress in teaching the standards, working with parents, etc.

This kind of strategy should help make the best use of the Instructional Needs data, particularly in terms of helping understand the standards and what can be done to help students perform at even higher levels.

Ideas for reflection: Reading

Following is a partial list of broadly stated questions that you and your teachers can discuss as you reflect on the Instructional Needs comment reports in an attempt to help students improve. As no two schools are exactly alike, it is our hope that these questions will begin to lead you to answers that are specific to the needs of the students in your school.

- How does reading instruction in your school align with the Delaware standards for reading?
- What does reading instruction look like in the classroom?
- What pre-reading strategies do are used to help students get ready to read?
- What strategies are used to help students self-monitor their comprehension?
- What strategies are used to help students critically analyze and evaluate text?
- What strategies are used to help students identify the central ideas in a text?
- Do students have ample opportunity to read?

- Do students keep reading logs or reading journals?
- How do students select books and other materials for independent reading?
- What strategies are used to encourage students to read a variety of materials, e.g., literary, informative, technical?
- What opportunities are provided for students to talk about what they have read?
- Do students write about what they have read?
- How are students encouraged to compare and contrast information from a variety of sources?
- How is students' reading assessed?
- How do students assess their own reading?

Ideas for reflection: Writing

Following is a partial list of broadly stated questions that can be asked and discussed with teachers as you reflect on the diagnostic reports in an attempt to help students improve. As no two schools are exactly alike, it is our hope that these questions will lead you to answers that are specific to the needs of your students.

- How does the writing instruction align with the Delaware standards for writing?
- What does writing instruction look like in your school?
- Is writing process taught?
- Do students have ample opportunity to write?
- Do students have ample opportunity to write for different purposes and audiences using a variety of forms?
- How are the students helped to generate content for their writing?
- How do you help students organize their writing?
- What strategies are used to encourage your students to revise their writing?
- Are students encouraged to write in different content areas?
- How is writing assessed?
- Is the state writing rubric used to teach and/or assess writing?
- How do students assess their writing?
- How is assessment data used to improve your students' writing?

We would also encourage you and your teachers not to expect easy solutions, quick fixes, or step by step approaches that presume the test has been designed to solve problems— it has not. The DSTP was specifically designed to help identify student strengths and weaknesses, but working to enhance their strengths and to overcome their weaknesses is best placed in the hands of the professionals who instruct students on a daily basis.

Superintendents and Boards of Education

Test scores are a powerful tool when used properly by the Chief School Officer and Boards of Education. They provide a measure of progress made and can be an indicator of priorities. In the beginning, superintendents and school boards should find monitoring the reading and writing scores of the schools in their district, as well as the statistics associated with the Reading and the Writing Instructional Needs comments, useful information to drive decision making and resource allocation. This monitoring should be done over time.

Caution must be used during the monitoring process. Reaction without thorough analysis of trend data, and the analysis of the underlying factors related to the scores trends would not be prudent. It should be a goal to treat the causes of low scores, and not the symptoms. Remember that instructional programs often help improve scores. Various programs can be explored with principals and teachers in the district to best benefit the districts, schools, teachers, and most importantly, the students.

A process that is an excellent first step that can be used by districts seeking to improve achievement is curriculum alignment. This activity involves studying what is written about the curriculum, what is taught in the district's classrooms, and what is assessed or tested. District curriculum workers, principals, and teachers should analyze the instructional programs of the district and schools in regard to these elements and then take whatever steps are needed to bring the three into alignment. For example, if a study shows that by the end of a grade cluster, students are expected to be able respond to literary texts representing various historical periods in English Language Arts, then all students must have opportunities to acquire those skills during that cluster.

For districts to conduct alignment activities in English language arts and writing that center on Delaware's content Standards, they will need the documents that are available to all Delaware districts: The alignment teams will need:

- New Directions: State of Delaware English Language Arts curriculum Framework, 1995;
- Teacher's Desk Reference, 1998;
- Delaware Student Testing Program Item Sampler, 1998;
- Draft: High School Performance Indicators, 1998.

The 1995 document forms the foundation on which the DSTP is based; however, it should be noted that the performance indicators for English language arts are essentially the same as those found in the frameworks, so that a district could use either in its alignment work. Of course, districts will want to include local curriculum documents in the study as well.

Standards-based alignment also poses new issues to boards of education, superintendents, and other curriculum planners. In the days before standards, norm reference tests asked students to "identify", or "choose", or "match." This required factual learning and rarely asked students to do anything with what they were supposed to have learned. The Delaware State Testing Program, grounded as it is in high standards for all learners, asks students to "analyze," "evaluate," "apply" and more. To help students meet or exceed these high standards and to apply what they have learned requires classrooms in which problem solving, inquiry, and application are fostered.

We would also encourage administrators and Boards of Education **NOT TO** expect easy solutions, quick fixes, or step by step approaches that presume the test has been designed to solve problems—it has not. The DSTP was specifically designed to help identify student strengths and weaknesses,

but working to enhance their strengths and to overcome their weaknesses is best placed in the hands of the professionals who instruct students on a daily basis.

SECTION III:

Understanding the Mathematics Report

The mathematics individual report has four sections of information on classroom performance:

1. grade, testing date and SAT9 Level and Form;
2. score comparisons of grade tested for mathematics;
3. percentile score for mathematics;
4. instructional needs for mathematics.

Each section of Mathematics Report is discussed below.

Grade, Testing Date, SAT9 Level/Form and SAT9 Norms

This part of the score report provides general information about the administration of the test:

- The grade level of the students in your classroom (03, 05, 08, or 10) is reported next to **Grade**.
- The date the students took this test is then listed.
- Following the test date is the **SAT9 Level/form**. The SAT9 is an acronym for the *Stanford Achievement Test-Ninth edition*. This test is a standardized, nationally administered test.

SAT9 Norms

The SAT9 Mathematics test was administered to a representative sample of approximately 250,000 students nationwide, and their mathematics score results are referred to a “norms”. The norms become a reference point used to compare any individual student’s performance. For the 1998 tests, the year the norms were developed for mathematics was 1995.

Score Comparisons of Grade Tested: Mathematics

This section contains score reports, one for each grade level in the school and the district. Each report contains score comparisons of your school and the district mathematics scores against all Delaware students who took the test. Remember that your students are being compared with other students at the same grade level who took the test. Each school and district score is found on the respective line between the lowest scale score and the maximum scale score.

If you have students at different grade levels, you will see that different grade levels have different scale values. This difference is related to the highest and lowest score of the students in each different grade, and simply provides an additional piece of information to parents, teachers, and administrators. The State data shows the average performance of all Delaware students who took the Mathematics test.

To assist you in providing help in mathematics to teachers and students in your district, comments have been provided under the "Instructional Needs" section of the report to guide you. The number of students and the percent of students in your school (for the school reports) or in your district (for the district report) who triggered each comment is provided.

The School's Score

In this section you can also see how all the students in your school are performing in mathematics compared to all the Delaware students who took the test by examining the position of the school's score on the scale. Remember that these scores reflect performance of same-grade students.

The District's Score

In this section you can also see how all the students in the school district are performing in mathematics compared to all the Delaware students who took the test by examining the position of the district's score on the scale. Remember that these scores reflect performance of all district students in the same grade.

The State of Delaware's Score

In this section you can also see how all the students who took the test in the state of Delaware are performing in mathematics by examining the position of the state's score on the scale. Remember that each respective grade level score report reflects performance of all students at that grade level.

Performance Levels: Mathematics

This information is not yet available because the performance levels in mathematics for Delaware students have not yet been determined. The process to set the decision points for the performance levels will take place during the summer of 1999 after the spring administration of the 1999 DSTP. A summary of the number and percent of students at each performance level will be reported.

Beginning with the 2000 test administration, for each individual student, decision points based on Performance Level for reading and mathematics will be used for promotion and graduation

decisions. The level at which a student performs will then be used to determine if the student will attend summer school, whether or not a student is promoted to the next higher grade, or whether or not a student will graduate with a State of Delaware high school diploma.

School's or District's Rank (Percentile Rank): Mathematics

A percentile score is another way of looking at how well students performed on the mathematics test. The percentile rank, like the scale scores shows how students performed relative to same-grade level students in the national norms. Percentile rank gives you the additional information as to what percent of students in the norms scored higher or lower than students in your report. For example, if students in your school or district had a reading percentile score of 82, it means that 82 percent of the students in the norms scored below your students and only 18 percent scored at or higher. If students had a reading percentile of 34, it means that 66 percent of the students in the norms scored at or above the students in your report. If students had a percentile score of 15, it means that fifteen percent of students in the norms scored below the students in your report and that 85 percent scored at or higher than your report.

School or District Instructional Needs Comments: Mathematics

This section of the report provides feedback that depends on what items students in your school or your district answered correctly and incorrectly, and/or how the items were answered. A summary of the number of students and the percentage of students who triggered each comment is provided for your review and analysis.

The intent of the Instructional Needs comments report is to help principals and teachers see areas in which they might improve or focus instruction. Research has repeatedly confirmed that the single greatest factor in a student's education is the teacher. This being the case, it makes sense that we provide an additional tool for those in the best position to help students achieve at higher levels.

When feasible, we ask principals to encourage their teachers to request classroom reports to more acutely assist their students. While providing Instructional Needs comments will result in questions from parents, principals and teachers can take the opportunity to help parents see why this type of reporting represents a significant improvement over more traditional reporting methods.

Because of the unique nature of the DSTP some of the information from the first test administered was available immediately after the individual items had been scored. That information, in the form of a summary of Instructional Needs comments (diagnostic report), was sent to schools as early as possible to assist them in planning the school year. The rest of the data was sent in December. In future years the process will occur on a much shorter timeline and ALL information will be released at the same time.

Using the reports

Principals

Remember that the school level Instructional Needs comments report (diagnostic report) will indicate the number and percentage of students in the school for whom the comments were triggered. This means that the higher the percentage of students indicated as having a need, the more likely it is that additional instruction in that area of the standards will improve test scores.

It should be noted that the mathematics Instructional Needs comments:

- reflect the Delaware content standards for mathematics;
- are listed in a manner consistent with the Delaware standards for mathematics;
- were developed to help teachers examine the instructional needs of their students.

The mathematics standards support approximately twelve broadly stated comments— depending on the grade level—that relate to mathematics. Not all comments are triggered at all grade levels. The comments for the mathematics diagnostic reports were developed by grouping together several of Delaware’s mathematics content standards with similar content. For example, content standards 5 and 6 are reported under the category *Number Concepts*. Standards 7 and 10 are reported under the category *Patterns, Algebra, and Functions*. Following are all the comments that can be triggered by student responses to the mathematics items. They are listed according to grade level so principals and teachers can see the connections and integration of concepts across the curriculum.

Grade 3

Number Concepts

- measuring
- using appropriate computation strategies
- using estimation skills to approximate an answer
- using the concept of place value
- using fractions to represent part of a whole

Patterns, Algebra, and Functions

- using basic number properties such as even/odd, reversibility of multiplication, etc.
- recognizing and extending a variety of patterns

Geometry

- recognizing and transforming geometric figures
- analyzing properties of simple geometric figures

Probability and Statistics

- reading and interpreting simple graphs

- determining the likelihood of simple events

Reasoning and Communication

- solving multi-step problems
- communicating mathematical arguments

Grade 5

Number Concepts

- measuring length or finding the area of simple figures
- using appropriate computation or estimation strategies
- using the concept of place value
- modeling fractions and decimals with situations and pictures
- using mathematical operations with understanding

Patterns, Algebra, and Functions

- using algebraic reasoning
- recognizing and extending a variety of patterns
- reading and interpreting simple graphs

Geometry

- recognizing and transforming geometric figures
- analyzing properties of simple geometric figures

Probability and Statistics

- constructing, reading, and interpreting simple graphs
- determining the likelihood of simple events
- calculating and using the mean (average) of a set of values in meaningful context

Reasoning and Communication

- solving multi-step problems
- communicating mathematical arguments
- reasoning about properties of numbers or geometric figures

Grade 8

Number Concepts

- using estimation skills to approximate an answer
- modeling fractions and decimals with situations and pictures
- determining the equivalence or relative sizes of fractions, decimals, percents, and exponential expressions
- applying the concepts of area and volume

Patterns, Algebra, and Functions

- representing concrete situations using graphs or variables
- recognizing, extending, or generalizing a variety of patterns
- solving simple equations using informal methods

Geometry

- transforming geometric figures
- analyzing properties of geometric figures

Probability and Statistics

- interpreting a variety of statistical graphs
- determining the probability of events

Reasoning and Communication

- solving multi-step problems
- communicating mathematical arguments

Grade 10

Number Concepts

- using mathematical operations, including exponents and roots, with understanding
- finding the area of regions or volumes of space shapes

Patterns, Algebra, and Functions

- using algebra to describe and analyze situations
- constructing and interpreting graphs
- solving equations and inequalities

Geometry

- analyzing and applying properties of geometric figures
- coordinate geometry
- applying right triangle relationships

Probability and Statistics

- determining the probability of events
- analyzing data and graphs

Reasoning and Communication

- multi-step problem solving
- communicating mathematical arguments

Ideas for reflection

Following is a partial list of broadly stated questions that you and your teachers can ask and discuss as you reflect on the Instructional Needs comments (diagnostic reports) in an attempt to help students improve. As no two schools are exactly alike, it is our hope that these questions will begin to lead principals and teachers to answers that are specific to the needs of their schools and students.

- Are there areas of instruction that seem to require more attention than they are currently receiving? For example, are probability and statistics integrated into the ninth and tenth grade mathematics curriculum?
- Are the topics that seem to need additional attention actually taught? For example, do six and seventh grade teachers “get to” geometry?
- When topics are presented, does the mode of instruction fit the desired outcomes? For example, do all elementary level students “estimate and then measure” a variety of objects using standard and non-standard units?
- Do teacher questions during instruction elicit higher-order thinking about the mathematics?
- Are students required to explain their work on tests and quizzes in writing or by drawing graphs or charts? Are rubrics used to score student responses?
- Do students need more experience applying concepts in context? Are problem contexts used to promote access for diverse learning?

For the principal to best utilize the information in this part of the report we would recommend the steps below. A brief vignette of a discussion around the geometry standard is included to help illustrate the process.

1. Gather together the teachers from a standards grouping (i.e., K-3, 4-5, 6-8, 9-10/11) to review the comments and the related standards. It is highly desirable that all teachers within a grade cluster participate in the discussions. The accountability system and the DSTP reflect a schools’ degree of success at reaching the standards, which is much broader and more comprehensive than a single grade level.

For example, a principal or administrator could gather a group of middle level mathematics teachers to examine the geometry comments triggered by their students. Teachers should come prepared with the standards, their lesson plans, and their district curriculum guides.

2. Discuss the kinds of practices, assignments, teaching strategies, etc. that teachers are using, and whether or not those practices are in line with the standards and address the comments. Some suggestions are included in the subsequent sections of this guide.

Examine the comments and the patterns by which they were triggered. In our hypothetical example 25% of the students triggered transforming geometric figures, and 60% triggered Analyzing properties of geometric figures. Teachers should discuss the significance of the results— in this instance it would appear that they have done a fairly good job addressing the need identified in the standards to “recognize, construct, and transform geometric figures.” However, it would also appear that some changes may be required if students are to improve at “analyzing properties of and discovering relationships among geometric figures.” Teachers should be guided through Mathematics Standard 8, spatial sense and geometry, in an attempt to see where their own curriculum addresses the parts of the standards that the test indicates need to be addressed.

3. Work through the reports with the groups of teachers, discussing strengths and areas for improvement. All teachers should be reminded that year one of the DSTP is a baseline year and subsequently no value judgments about student performance should be made from test scores, although inferences about the possibilities for improvement are entirely justified. If a school seems to have all the comments triggered at about the same rate, teachers should be encouraged to prioritize their efforts so they don't feel as if they have to do everything all at once. Be sure to talk about the kinds of activities that teachers feel would help students in the particular area(s) of the standards where they seem to need some help.

Discuss the reasons why one of the bullets was triggered more often than the other. Was it a timing issue in the curriculum? Something the adopted text doesn't cover? etc. Is the conversation one that will require teachers from the elementary or the high school and/or the district as well to ensure that materials covered at one level are built on at the next level rather than just repeated?

Or is it the way the material is being presented? Are students being asked to discover or investigate the properties, as opposed to just listing them to pass a quiz or test? If a close examination reveals that procedural, rather than conceptual knowledge is being valued, what changes are needed to bring conceptual knowledge to the fore?

Also, teachers need to be reminded that no value judgments can or should be made from this information— this simply provides a starting point for the discussion that can help focus efforts over the coming year.

4. Have teachers go through each comment and the related standards in order to discuss what they might say to a parent whose child has had a particular comment triggered. The comments were intentionally written in teacher/ standards language, which will be foreign to some parents, and they will need some clarification. Be prepared to explain to parents how you intend to address their concerns in your teaching practices

Teachers could discuss the changes they intend to make as a result of the scores. For example, schools might make some adjustments to the curriculum by including more activities in geometry, e.g., investigations using computer software, to help students build conceptual knowledge. Teachers could point to those changes and identify that they either have been or will be made with the specific intent of helping the students in a particular area.

5. Have teachers meet regularly throughout the year to review their progress in teaching the standards, working with parents, etc.

Remind the teachers that change does not occur overnight, that help is available, and then work hard to track progress over time.

This kind of strategy should help principals and teachers make the best use of the Instructional Needs comments information, particularly in terms of helping understand the standards and what can be done to help students perform at even higher levels. We would encourage principals and teachers to peruse the data carefully as they make decisions about how and what to teach.

We would also encourage administrators and teachers not to expect easy solutions, quick fixes, or step by step approaches that presume the test has been designed to solve problems— it has not. The DSTP was specifically designed to help identify student strengths and weaknesses, but working to enhance their strengths and to overcome their weaknesses is best placed in the hands of the professionals who instruct students on a daily basis.

Superintendents and Boards of Education

Test scores are a powerful tool when used properly by the Chief School Officer and Boards of Education. They provide a measure of progress made and an indicator of priorities. In the beginning Superintendents and School Boards should find monitoring the mathematics scores of the schools in their district, as well as the statistics associated with the Instructional Needs Comments useful information to drive decision making and resource allocation. This monitoring should be done over time. The best process is one where there is the wisest use of resources.

Caution must be used during the monitoring process. Reaction without thorough analysis of trend data and analysis of the underlying factors that are related to the scores trends would not be prudent. It should be a goal to treat the causes of low mathematics scores, and not the symptoms.

A process that is an excellent first step that can be used by districts seeking to improve achievement is **curriculum alignment**. This activity involves studying what is written about the curriculum, what is taught in the district's classrooms, and what is assessed or tested. District curriculum workers, principals, and teachers should analyze the instructional programs of the district and schools in regard to these elements and then take whatever steps are needed to bring the three into alignment. For example, if a study shows that by the end of a grade cluster, students are expected to be able to use tables and graphs to describe patterns in mathematics then all students must have opportunities to acquire those skills during that cluster.

For districts to conduct alignment activities in mathematics that center on Delaware's content Standards, they will need some documents that are available to all Delaware districts. Alignment teams will need:

- New Directions: State of Delaware Mathematics curriculum Framework, 1995;
- Teacher's Desk Reference, 1998;
- Delaware Student Testing Program Item Sampler, 1998;
- Draft: High School Performance Indicators, 1998.

The 1995 document forms the foundation on which the DSTP is based; however, it should be noted that the performance indicators for mathematics are essentially the same as those found in the

frameworks, so that a district could use either in its alignment work. Of course, districts will want to include local curriculum documents in the study as well.

Standards-based alignment also poses a new issue to boards of education, superintendents, and other curriculum planners. In the days before standards, norm reference tests asked students to “identify”, or “choose”, or “match.” This required factual learning and rarely asked students to apply what they were supposed to have learned. The Delaware State Testing Program, grounded as it is in high standards for all learners, asks students, for example, to “analyze,” “evaluate,” “apply” and more. To help students meet or exceed these high standards and to apply what they have learned requires classrooms in which problem solving, inquiry, and application are fostered.

Often a concentration of instructional programs will help improve scores. This can be explored with principals and teachers in the district.

We would also encourage administrators and teachers not to expect easy solutions, quick fixes, or step by step approaches that presume the test has been designed to solve problems— it has not. The DSTP was specifically designed to help identify student strengths and weaknesses, but working to enhance their strengths and to overcome their weaknesses is best placed in the hands of the professionals who instruct students on a daily basis.

1998 DELAWARE STUDENT TESTING PROGRAM
English Language Arts Individual Report for
JANE DOE
Student ID#: 123456

GRADE: 03
TEST DATE: 05/04/98
SAT9 LEVEL/FORM: P3/F
SAT9 NORMS: 1995 ES

TEACHER: SMITH - 1515
SCHOOL: SPRINGFIELD ELEM - 12003
DISTRICT: SPRINGFIELD - 12

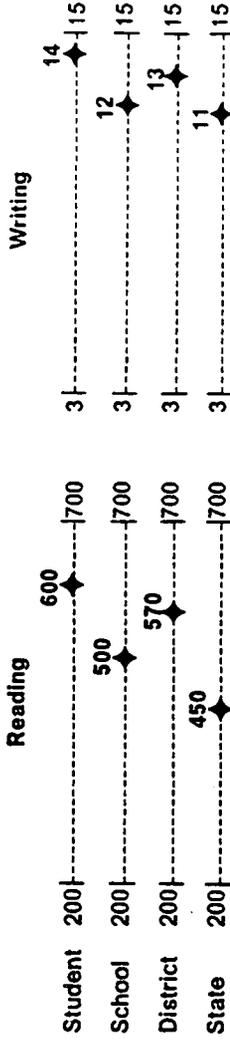
PERFORMANCE LEVELS

This test is designed to measure your student's progress in terms of the Delaware Content Standards. The Reading and Writing performance of this student falls into one of the five levels.

Performance Levels are Reading level and score Writing level and score

NOT YET AVAILABLE

SCORE COMPARISONS OF GRADE TESTED



Certain items on the Reading part of the test were administered to a national sample of students. The percentile below represents how your child performed on those items compared to other students in the same grade throughout the country.

11-----85 ◆

INSTRUCTIONAL NEEDS

To achieve a higher level in READING, your child should work on:

- providing enough details to answer open-ended questions
- reading more carefully to better understand what is happening in a text
- understanding the central ideas in a text
- identifying information necessary to understand a text
- using information to make reasonable interpretations

BEST COPY AVAILABLE

To achieve a higher level in WRITING, your child should work on:

- organizing the writing around a simple topic or central idea
- writing in complete sentences with a variety of length and structure
- working to avoid errors in conventions of English usage, grammar, spelling, and punctuation that interfere with understanding
- doing more than restating the prompt

Appendix A: Sample Reports

Following are samples of the various reports from the 1998 administration of the DSTP. The reports included are:

1. Individual Report for English Language Arts (Reading and Writing).
2. Classroom Report for English Language Arts (Reading and Writing).
3. State Report for English Language Arts (Reading and Writing).

1998 DELAWARE STUDENT TESTING PROGRAM
English Language Arts Summary Report for

SMITH

Group Code: 000

SCHOOL: SPRINGFIELD ELEM - 000
DISTRICT: SPRINGFIELD - 00

GRADE: 03
TEST DATE: XX/XX/XX
SAT9 LEVEL/FORM: P3/SA
SAT9 NORMS: 1995 ES

PERFORMANCE LEVELS

This test is designed to measure student's progress in terms of the Content Standards. The number and percent of students meeting each at each of the five Performance Levels for this group is reported below.

Performance Levels are: Reading level N % Writing level N %

NOT YET AVAILABLE

SCORE COMPARISONS OF GRADE TESTED

	Reading	Writing
Class	XXX ----- XXX	XX ----- XX
School	XXX ----- XXX	XX ----- XX
District	XXX ----- XXX	XX ----- XX
State	XXX ----- XXX	XX ----- XX

Certain items on the reading part of the test were administered to a national sample of students. The percentile below represents how the typical student in the group performed on those items compared to other students in the same grade throughout the country.

1-----:99 XX

INSTRUCTIONAL NEEDS

READING:	N	%
providing enough details to answer open-ended questions	XXXXX	XXX
reading more carefully to better understand what is happening in a text	XXXXX	XXX
understanding the central ideas in a text	XXXXX	XXX
identifying information necessary to understanding a text	XXXXX	XXX
using information to make reasonable interpretations	XXXXX	XXX
identifying and understanding why a text was written	XXXXX	XXX
drawing conclusions based on information in the text	XXXXX	XXX
understanding the effects of an author's decisions	XXXXX	XXX
connecting and synthesizing information into a clear interpretation within and across texts, ideas, and concepts	XXXXX	XXX
formulating, expressing, and supporting opinions	XXXXX	XXX
making and supporting inferences about contents, events, characters, setting, theme, and style	XXXXX	XXX
continuing use of good reading strategies	XXXXX	XXX

WRITING:	N	%
organizing the writing around a simple topic or central idea	XXXXX	XXX
writing in complete sentences with a variety of length and structure	XXXXX	XXX
working to avoid errors in conventions of English usage, grammar, spelling, and punctuation that interfere with understanding	XXXXX	XXX
doing more than restating the prompt	XXXXX	XXX
organizing the writing around a simple topic or central idea	XXXXX	XXX
working to avoid errors in conventions of English usage, grammar, spelling, and punctuation that interfere with understanding	XXXXX	XXX
supporting the ideas with more specific details	XXXXX	XXX
doing more than making generalities regarding the prompt	XXXXX	XXX
using effective and varied introductions and closings	XXXXX	XXX
writing in a consistent style with precise, vivid word choice	XXXXX	XXX
writing with a clear, logical progression of ideas using smooth transitions	XXXXX	XXX
responding directly to the prompt	XXXXX	XXX
Congratulations on an excellent performance on at least one of the two writing prompts. The comments below are to encourage the student to strive for excellence by:	XXXXX	XXX
continuing to write in the same effective manner		
trying new and varied approaches when producing written work		



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