

# MDTP

Mathematics Diagnostic Testing Project

# NEWLETTER

## Alignment of MDTP Tests with California Mathematics Standards

Like many of you, we are interested in the alignment of the MDTP tests with the Mathematics Content Standards for California Public Schools (published this year by the California Department of Education)\* The MDTP workgroup, which is responsible for developing the MDTP tests, is reviewing them in the context of the Standards. We hope this article will help our users consider roles that MDTP can play in supporting their efforts to help your students meet the Standards.

Virtually every MDTP test question addresses knowledge that is described by several Standards. Even so, not all Standards are addressed. There are at least two reasons for this. One is historical: MDTP tests were written before the Standards. As we continue to revise and update MDTP tests and as the curriculum evolves to more closely reflect the Standards, questions aligned with some of the new Standards will be added. The second reason is that MDTP tests are designed to provide diagnostic information to you and your students about some of their mathematical knowledge that is most important for continued success in learning mathematics: they were never intended to be comprehensive tests of course material. Indeed, we all know that it is impossible to test even the essential knowledge and skills of a course in one or two hours. Beyond that, multiple-choice questions cannot adequately assess the ways in which students communicate their understanding of mathematics, which is a vital component of any mathematics instructional program. Our newly released MDTP Written Response Materials notebook provides valuable supplements to the tests that can help you improve student proficiency in this area.

We at MDTP found it useful to consider the Standards from grade 4 through high school. We

often found that test questions were aligned with Standards from earlier grades. This shows that some of the standards concern aspects of mathematics that continue to be important for learning mathematics for many years. The appearance of questions only in later years for some Standards may reflect the need for more than an introduction to an idea or procedure before acquiring proficiency with it.

Even though most MDTP questions are aligned with several Standards, we limited to at most two the number of Standards we would consider primary for each item. With this limitation, 19 of the 32 Algebra 1 Standards are addressed by questions on some MDTP tests intended to be taken after an Algebra 1 course (Geometry Readiness, Second Year Algebra Readiness, Mathematical Analysis Readiness, and Calculus Readiness). More than four-fifths of these 19 Standards are addressed on two or more MDTP tests (for example, both GR and SR). Nine of the 13 missing standards concern aspects of reasoning and communication that are more appropriately assessed through written work than through multiple-choice questions.

We encourage you to work together in reviewing the questions on our tests and other tests to see how well they are aligned with the Standards and your school or district standards or expectations. This activity can enrich your understanding of the standards and roles of MDTP materials in measuring student progress toward meeting them. Understanding the roles and limitations of various tests will help you determine what supplementary assessments might be beneficial for your students and your programs. Our preliminary analysis convinced us that MDTP tests should provide helpful information about student strengths and weaknesses in many of the areas of the Standards.

\*Available at: [http://www.cde.ca.gov/board/mcs\\_intro.html](http://www.cde.ca.gov/board/mcs_intro.html)

# *Insert Artwork*

## MDTP Holds First Teacher Institute

The first MDTP Teacher Institute was held Sunday evening, August 15<sup>th</sup>, 1999 through Wednesday August 18<sup>th</sup>, at UCLA. Thirteen high school, three middle school, and six college teachers gathered for an intensive three days of workshops on MDTP materials, their appropriate and effective uses, and development of professional skills to help participants convey this information to teachers in their region.

While several attendees had twenty or more years of teaching experience, some had been teaching less than five years. All, however, were there because of their desire to do even more on behalf of California's students.

Monday morning began with a workshop on the history of MDTP, test results analysis, and effective use of Written Response materials for a representative group of teachers who were not familiar with MDTP. The institute's director, Dr. Barbara Wells, UCLA site director and a former teacher at both the middle and high school levels, made this first presentation as a way to introduce the institute participants to the goal of the institute: that they be able to present the value of MDTP to groups of California teachers. The highlight of the morning workshop appeared to be the use of a manipulative for helping students understand the concept of percent that had been prompted by the work done with a written response item.

The afternoon was spent analyzing the morning presentation to discover how it was effective and in what ways it could be improved or adapted to different groups.

The next two days were spent in discussions and activities to help clarify how MDTP can be made attractive to teachers who are already overburdened by a growing amount of mandated testing and feel that they are losing instructional time with each period taken for testing. Some participants expressed the feeling that if we can help teachers see the instructional value of MDTP materials they will not look upon this as a loss of time but rather a more targeted way to guide their instruction, thereby increasing the

possibility that student performance on the mandated tests will improve.

Tuesday morning gave us an opportunity to find out how MDTP constructs and validates its diagnostic tests. We also got a deeper understanding of the process used in constructing and refining its written response items, their essence statements and general and specific scoring rubrics.

Throughout the three-day institute we were presented several documents and heard about research related to mathematics education. For example, we found out that about half of regularly admitted UC freshmen in 1995 had started algebra before the ninth grade. We also discussed the CSU's new Entry Level mathematics (ELM) test, and the new Statement on Competencies Expected of Entering College Students adopted by all three segments of California higher education.

But the greatest fun and challenge was the group presentations of our own newly designed MDTP workshops that took place on Wednesday before the end of the Institute. Each group of four or five decided what they wanted to convey about using MDTP materials to aid the classroom teacher and students. Then Monday and Tuesday evenings (I said this was intensive!) we worked with our groups to develop such a presentation.

The presentations were as varied as the participants, and all were excellent. At the conclusion Wednesday afternoon, all deemed the institute an outstanding success. Participants promised to make at least one presentation on MDTP's behalf this year. A warm and collegial camaraderie was evident as participants departed for their homes and their classrooms.

The next teacher institute will be held from July 30<sup>th</sup> through August 3<sup>rd</sup>, 2000. Any California mathematics teacher that would like to attend, should contact their regional MDTP site director an application.

Jack Ladwig, CSU Chico

# LIST OF AVAILABLE TESTS

## Multiple-Choice Tests

### Algebra Readiness Tests

#### AR50/90 • AR50/90S

Tests readiness for algebra. This version requires arithmetic facility. Calculator use is prohibited.

#### AR50X92 • AR50X92S

Same as AR50/90 except a calculator is required.

### Elementary Algebra Diagnostic Tests

#### EA50A90 • EA50A90S

Tests readiness for second course in algebra. Appropriate when the second course follows immediately after first-year algebra and students have not been exposed to a year of geometry. version requires arithmetic facility. Calculator use is optional.

#### EA45X91 • EA45X91S

Same as the EA50A90 except a calculator is required.

### Geometry Readiness Tests

#### GR45A93 • GR45A93S

Tests readiness for geometry after a year of algebra. Includes some informal geometry students should have encountered prior to and during algebra. Would most likely be given near the end of Algebra I or near the beginning of a geometry course. Calculator use is optional.

#### GR45X94 • GR45X94S

Same as the GR45A93 except a calculator is required.

### Second-Year Algebra Readiness Tests

#### SR45A93 • SR45A93S

This test measures the conceptual ideas from first-year algebra and geometry critical for success in intermediate algebra following a course in geometry. This is the test to give near the end of the geometry year or near the beginning of the second-year of algebra. Calculator use is optional.

#### SR45X94 • SR45X94S

Same as the SR45A93 except a scientific calculator is required.

### Mathematical Analysis Readiness Tests

#### MR45A92 • MR45A92S

This test assumes two years of algebra and a year of geometry in preparation for a precalculus course. It has significant geometry content. It would ordinarily be given near the end of this sequence or near the beginning of the next course—typically called trigonometry, precalculus, or mathematical analysis,

#### MR45X94 • MR45X94S

Same as the MR45A92 except a scientific calculator is required.

### Calculus Readiness Tests

(Spanish versions are not available for these tests.)

#### CR40A97

Tests readiness for calculus—40 items, 60 minutes. This version replaces the PC40A93. This test includes more geometry than its predecessor and is calculator optional.

#### CR40X96

Same as the CR40A97 except a scientific calculator is required. This test replaces the PC40X90.

#### CR55A97

Tests readiness for calculus—55 items, 90 minutes. This version replaces the PC60A93. This test includes more geometry than its predecessor and is calculator optional.

#### CR55X96

Same as the CR55A97 except a scientific calculator is required. This test replaces the PC60X90.

#### BC30X97

This test is designed for students enrolled in an AP Calculus course and requires the use of a graphing calculator. The concepts and skills measured by this test are important for success in learning and applying calculus. Since not all the items on this test require the use of a graphing calculator, student will have to decide when the use of a graphing calculator is appropriate. Administering the test early in the course can help identify the strengths and weaknesses of the students' mathematical skills and abilities and can provide information about students' facility with graphing calculators.

#### Notes

- "S" indicates a Spanish version.
- Calculator prohibited, calculator optional, and calculator required versions can not be used in the same class set.



### WRITTEN RESPONSE MATERIALS NOTEBOOK

Written response materials allow students to communicate their understanding of the important conceptual ideas in their mathematics courses. Each notebook includes a general rubric that defines scoring for all MDTP written response items and for each item there is an essence statement as well as a specific rubric for the given item. The content for the items is linked to the topics on the diagnostic tests.

**See the article on page 5 for the latest release information about these materials.**

## REMOVE & KEEP FOR REFERENCE

## MDTP Scoring Sites



### Berkeley

Robert Mattison (510) 642-0752  
Fax: (510) 642-6726

Counties: All areas not served by other sites.

### Chico

Jack Ladwig (530) 898-6367  
Counties: Butte, Colusa, Glenn, Lassen, Modoc, Nevada, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity, and Yuba.

### Davis

Phil Knox (530) 752-2021  
Fax: (530) 752-7706

Counties: Alpine, Amador, Calaveras, El Dorado, Placer, Sacramento, San Joaquin, Solano, Sutter, and Yolo.

### Fresno

Peter Tannenbaum (559) 278-4029  
Counties: Fresno and surrounding areas.

### Fullerton

David Pagni (714) 278-2671  
Fax: (714) 278-3972

Counties: Orange, nearby Los Angeles County, and schools in Riverside close to Fullerton.

### Los Angeles

Barbara Wells (310) 206-8360  
Fax: (310) 206-5369  
E-mail: bgwells@ucla.edu

Counties: Kern, Los Angeles, San Bernardino (except for schools near Fullerton), and Ventura.

### Sacramento

Wallace Etterbeek (916) 278-6534  
Fax: (510) 642-6726

Counties: Selected schools in the Sacramento area.

### San Diego

Richard Pilgrim (858) 534-3298  
Fax: (858) 534-1011  
E-mail: jforsythe@ucsd.edu

Counties: Imperial, Riverside (except for schools near Fullerton), and San Diego.

### San Luis Obispo

Martin Lang (805) 756-2197  
Fax: (805) 756-6537

Counties: San Luis Obispo, Santa Barbara, and southern Monterey.

### Santa Cruz

Michelle Dohl (831) 459-4369  
Fax: (831) 459-3260

Counties: Santa Cruz and northern Monterey.

*(All information correct at time of printing.)*



## 1999-2000 CONFERENCES

### UC DAVIS

WEDNESDAY, NOVEMBER 17, 1999  
4:15PM - 7:30PM

For more information contact: Trish Ramos  
Telephone: **530.752.2015**  
E-mail: **plramos@ucdavis.edu**

### CSU FULLERTON

TUESDAY, JANUARY 11, 2000  
3:00PM - 6:00PM

For more information contact: David Pagni  
Telephone: **714.278.2671**  
E-mail: **dpagni@fullerton.edu**

### UC SAN DIEGO

FRIDAY, MARCH 31, 2000  
4:00PM - 7:00PM

For more information contact: Jean Forsythe  
Telephone: **858.534.3373**  
E-mail: **jforsythe@ucsd.edu**



## MDTP TEACHER INSTITUTE

### UCLA

SUNDAY, JULY 30, 2000 through  
THURSDAY, AUGUST 3, 2000

By application. Please contract your regional site director or Barbara Wells (bgwells@ucla.edu) for more information.

See article on page two.

# Did you know...?

## New Forms of Answer Sheets and Class Information Sheets

MDTP is distributing new forms of student answer sheets and class information sheets. Some MDTP sites are no longer able to process the old forms.

- The **CSU Chico, UC Davis, CSU Fresno, CPSU San Luis Obispo, and UC Santa Cruz** sites are only able to process the new forms.
- The **UC Berkeley, UCLA, and UCSD** sites are able to process both old and new forms.
- The **CSU Fullerton and Sacramento State** sites will continue to use the special forms they had been using.

If your site is only able to process new forms, please return unused scoring materials to your site director. You may request replacement with new forms. Be aware that processing old forms will take significantly longer than processing new ones since the forms will have to be sent to another site.

If your site is able to process both old and new forms, continue to use old forms until new forms are sent to you. Be very careful to NEVER include both old and new forms in the same class. This means not mixing old answer sheets with new ones or with new class information sheets and not mixing new answer sheets with old ones or with old class information sheets.

The following information applies to the forms used at MDTP sites other than CSU Fullerton and Sacramento State.

### NEW

<u>Form</u>	<u>Number</u>	<u>Color</u>
Student Answer Sheet	F-13423-UCB	Green
Class Information Sheet	F-13424-UCB	Orange/Brown

### OLD

<u>Form</u>	<u>Number</u>	<u>Color</u>
Student Answer Sheet	F-25474-UCB	Gray/Blue
Class Information Sheet	F-21804-UCB	Red/Pink

## Written Response Materials Notebooks Available Upon Request

As a result of favorable teacher response to MDTP Written Response Materials, we are offering MDTP users a notebook containing all currently released items. At present there are 17 items: 7 AR; 4 GR; 4 SR; and 2 MR. (No CR items have been released yet.) The notebook includes a form to be returned to MDTP after you have used some of the materials in your classes. Returning the form will enable MDTP to provide you with additional items as they become available and to keep track of the items being used. The notebook contains colorful tabs to indicate the level of the items. It also contains forms to chronicle student and class performance for your records. If you are seriously considering using MDTP Written Response Items in your classes, please contact your site director to order a copy of this notebook.

## Current MDTP Field Tests

This year, MDTP is field-testing a new version of the Algebra Readiness Test. Two additional tests are being field-tested. They are designed to measure readiness for the second and third years of some integrated mathematics curricula. During summer 2000, the MDTP workgroup will analyze the results of these field-tests. Look for more in the next issue of the MDTP Newsletter.

This newsletter is provided through the support of the California State University, the University of California, and the California Academic Partnership Program.