



## Chapter 5 TAKS–Modified (TAKS–M)

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## Overview

The Texas Assessment of Knowledge and Skills–Modified (TAKS–M) is an alternate assessment based on modified academic achievement standards designed for students receiving special education services who meet participation requirements for TAKS–M. TAKS–M has been designed to meet federal requirements mandated under the No Child Left Behind Act of 2001 (NCLB). According to federal regulations, all students, including those receiving special education services, will be assessed on grade-level curriculum. TAKS–M covers the same grade-level content as the Texas Assessment of Knowledge and Skills (TAKS), but TAKS–M tests have been changed in format (larger font, fewer items per page, etc.) and test design (fewer answer choices, simpler vocabulary and sentence structure, etc.). TAKS–M is administered in English for the same grades and subjects as TAKS, including Student Success Initiative (SSI) retest opportunities. However, successful performance on TAKS–M is not a requirement for graduation. Therefore, it is not considered an exit level test, and there are no grade 11 retest opportunities. Any student who meets participation requirements for TAKS–M may take this assessment, but only 2 percent of the tested population can count as proficient for Adequate Yearly Progress (AYP) performance calculations.

The assessments administered for TAKS–M are illustrated in Table 20.

**Table 20.** 2010–2011 TAKS–M Assessments

<b>2010–2011 TAKS–M Assessments</b>	
<b>Grade</b>	<b>Test Administration</b>
Grade 3	Mathematics and Reading (April)
Grade 4	Writing (March); Mathematics and Reading (April)
Grade 5	Mathematics and Reading (April, May, June); and Science (April)
Grade 6	Mathematics and Reading (April)
Grade 7	Writing (March); Mathematics and Reading (April)
Grade 8	Mathematics and Reading (April, May, June); Science and Social Studies (April)
Grade 9	Reading (March) and Mathematics (April)
Grade 10	English Language Arts (March); Mathematics, Science, and Social Studies (April)
Grade 11	English Language Arts (March); Mathematics, Science, and Social Studies (April)

Linguistically accommodated testing (LAT) administrations of TAKS–M are available for students receiving special education services who are eligible immigrant English language learners (ELLs) taking grades 3–8 and 10 reading/English language arts (ELA) and mathematics tests and grades 5, 8, and 10 science tests.

## **TAKS–M Participation Requirements**

The participation requirements were developed as a result of recommendations from the TAKS–M steering committee and educator advisory committees to assist admission, review, and dismissal (ARD) committees in determining which students should be assessed with TAKS–M.

TAKS–M has specific participation requirements that must be carefully considered when recommending this assessment for students receiving special education services. All students have the right to be instructed in grade-level Texas Essential Knowledge and Skills (TEKS) curriculum so they can reach their academic potential. The participation requirements for TAKS–M describe the type of grade-level instruction of the TEKS that a student should be receiving to participate in TAKS–M. The members of the ARD committee must weigh the benefits of rigorous and challenging expectations with the possibilities of success, given each student’s individual strengths, needs, instruction, and accommodations. Keeping these high standards in mind, the ARD committee must choose the assessment that best matches the educational needs of each individual student. ARD committees should promote high expectations in determining the annual measurable goals documented in each student’s individualized education program (IEP). It is important to emphasize that the academic instructional decisions made by the ARD committee and documented in the IEP must always guide assessment decisions.



Students receiving special education services who have a disability that significantly affects academic progress in the grade-level curriculum and precludes the achievement of grade-level proficiency within a school year are assessed with TAKS–M.

An ARD committee may decide that a student’s knowledge and skills in one or more subject areas can best be assessed with TAKS–M if the student meets all of the following participation criteria.

The student

- needs extensive modifications and accommodations to classroom instruction, assignments, and assessments to access and demonstrate progress in the grade-level TEKS;
- demonstrates academic progress in such a way that even if significant growth occurs during the school year, the ARD committee is reasonably certain that the student will not achieve grade-level proficiency as demonstrated by multiple valid measures of evidence;
- meets some but not all of the participation criteria of TAKS–Alternate (TAKS–Alt); and
- requires an alternate form of TAKS that is more closely aligned with instructional modifications in order to demonstrate knowledge of the grade-level TEKS.

## Test Development

The test development process for TAKS–M follows as closely as possible the procedures used for development of other statewide assessments in Texas, coupled with additional requirements specific to TAKS–M. The blueprints for TAKS–M are aligned to the grade-level TEKS curriculum in the same manner as the TAKS assessments and include the same grade-level content standards as the TAKS blueprints but with fewer items.

For TAKS–M to be meaningfully reported in the accountability system, issues of validity, reliability, fairness, accessibility, and consistency in meaning are carefully considered as a part of the item modification and review processes. As TAKS–M items are developed and reviewed, attention is also given to the standards of fairness and the principles of alignment and universal design. Within the principles of universal design, each item has precisely defined constructs, has maximum legibility, has maximum readability and comprehensibility, is amendable to accommodations, is accessible and non-biased, and considers special populations.

Using results from a literature review of modifications that are appropriate for students with disabilities who are eligible to be assessed with TAKS–M, the Texas Education Agency (TEA) modified existing TAKS items and developed modification guidelines for reading/English language arts, mathematics, science, social studies, and writing to



ensure that (1) the modifications were appropriate for the students with disabilities taking TAKS–M, (2) the modifications did not affect the construct of the items, and (3) the item modifications would be consistent across development years.

Because the items for the TAKS–M assessments are developed on a three-year cycle, no item development occurred during the 2010–2011 year.

## Training

Training opportunities were conducted via the Texas Education Telecommunication Network (TETN), 2010 Education Service Center (ESC) Training, and the 2010 Texas Assessment Conference.

The presentations addressed the following topics:

- how to choose the appropriate assessment
- accommodation policy and clarifications
- documenting accommodation use for alternate assessments
- modification guidelines and processes

## Test Administrations

In spring 2011, all TAKS–M grades and subjects had an operational administration. Approximately 383,000 TAKS–M assessments were administered to approximately 187,000 students who met participation requirements. Districts administered the TAKS–M assessments to eligible students as indicated below.

### Spring/Summer 2011

March:

- Writing at grades 4 and 7
- Reading at grade 9
- ELA at grades 10 and 11

April:

- Mathematics at grades 3–11
- Mathematics at grades 3, 4, 6, 7, and 10 (LAT)
- Reading at grades 3–8
- Reading at grades 3, 4, 6, and 7 (LAT)
- ELA at grade 10 (LAT)
- Science at grades 5, 8, 10, and 11
- Science at grades 5, 8, and 10 (LAT)
- Social Studies at grades 8, 10, and 11



May:

- Mathematics at grades 5 and 8 (LAT)
- Mathematics retests at grades 5 and 8
- Reading at grades 5 and 8 (LAT)
- Reading retests at grades 5 and 8

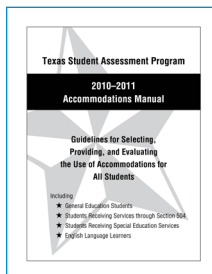
June:

- Mathematics retests at grades 5 and 8
- Reading retests at grades 5 and 8

## Testing Accommodations

Accommodations are practices and procedures that provide equitable access to grade-level curriculum during instruction and assessment. The decision to use a particular accommodation with a student eligible to be assessed with TAKS–M is made on an individual basis and takes into consideration both the needs of the student and whether the student routinely receives the accommodation in classroom instruction and testing.

TEA's *Accommodations Manual* provides guidance to district and campus personnel in selecting, providing, and evaluating the use of accommodations in instruction and assessment. Students eligible for TAKS–M may receive accommodations specified in the *Accommodations Manual* when certain conditions and eligibility criteria are met.



Information about testing accommodations appropriate for TAKS–M administered in 2010–2011 is available in the [2010–2011 Accommodations Manual](#).

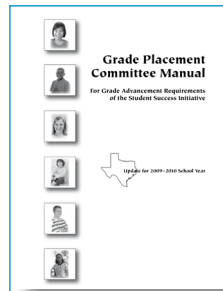
## Student Success Initiative

In 1999 the Texas Legislature enacted the SSI, which originally tied grade-level promotion to satisfactory performance on state-mandated assessments in reading at grade 3, and reading and mathematics at grades 5 and 8. (In 2009 the Texas Legislature eliminated SSI grade advancement requirements for grade 3 students. For more information, refer to [chapter 1](#).)

Students have up to three opportunities to meet the passing standard on the required TAKS tests. Beginning with the 2008–2009 school year, the SSI grade advancement requirements were extended to students taking TAKS–M tests. If a student does not meet the standard, a grade placement committee (GPC) is formed to develop an



accelerated instruction plan (AIP) and make promotion decisions for the student. For students receiving special education services, the ARD committee functions as the GPC.



More information about SSI requirements for TAKS–M assessments administered in 2010–2011 is available in the [2010–2011 Grade Placement Committee Manual](#).

## Scores and Reports

### Description of Scores

For a detailed description of how test scores are derived, refer to [chapter 2](#).

#### RAW SCORE

The number of items that a student answers correctly on the TAKS–M assessment is the student’s raw score. The raw score can be interpreted only in terms of a specific set of test questions. The difficulty of items may vary between test forms over time. Therefore, differences in student performance across test scores cannot be compared using raw scores. To compare student scores across different test forms and different administrations, raw scores are converted to scale scores.

#### SCALE SCORE

Unlike raw scores, scale scores allow direct comparisons of student performance across separate test forms and different administrations. TAKS–M raw scores are transformed into a scale that is common to all test forms. This score accounts for differences in the difficulty of the test forms used for each administration.

The scale score can be used to determine whether a student attained Met Standard or Commended Performance. Performance level cut scores are discussed in the [“Standard Setting”](#) section of this chapter.

For a detailed description of raw scores and scale scores, refer to [chapter 3](#).



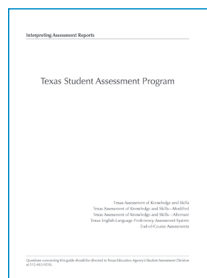
## Report Formats

Two types of reports are provided for TAKS–M, standard and optional reports. Standard reports are provided automatically to districts. Information contained in standard reports is sufficient to satisfy mandatory reporting requirements. To receive optional reports, a district must have completed the Optional Reports Order Form and returned it with the scorable materials. Generally, districts are required to pay a nominal fee for each optional report requested.

Standard and optional reports were provided in spring 2011 for all grades and subjects.

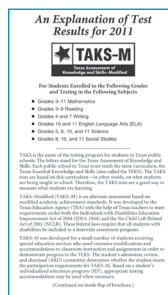
## Standard and Optional Reports for TAKS–M

The standard reports available for the 2010–2011 TAKS–M program include the Confidential Student Report (CSR), Confidential Student Label, Confidential List of Students' Results, Confidential Campus Roster—Students Not Meeting Standard, Statewide Summary Report, Demographic Performance Summary, and Written Performance Summary Report. The optional reports available include the Confidential Electronic Individual Student Record File and Optional Confidential Student Item Analysis Report.



More information about scoring and reporting for TAKS–M is available in the [2010–2011 Interpreting Assessment Reports](#).

## Parent Brochure



TEA developed a parent brochure that provides a brief summary of the TAKS–M program and includes a sample CSR with explanations of each element of the report to help parents better understand their child's score report. The brochure, developed in both English and Spanish, was distributed with individual student results in spring 2011.



## Standard Setting

Standard setting is the process of relating levels of test performance directly to what students are expected to learn as expressed in the statewide curriculum by establishing cut scores that define performance categories like “Met Standard” and “Commended Performance.” Through the standard-setting process, cut scores (or the number of questions a student must answer correctly) are determined to reflect the level of performance a student must demonstrate to match the performance level descriptors for TAKS–M.

The standards used to define student performance for TAKS–M assessments in 2010–2011 were set in August 2008 and August 2009. The standards set in August 2008 were for the AYP grades and subjects, and the standards set in August 2009 were for the non-AYP grades and subjects. In August 2008, panels of educators were convened to recommend cut scores that were then reviewed by TEA and later approved by the Commissioner of Education. The same process occurred for the non-AYP grades and subjects in August 2009. A description of the standard setting process and the approved cut scores for the AYP grades and subjects is available in chapter 9 of the [2007–2008 TAKS–M Technical Report](#). A description of the standard-setting process and the approved cut scores for the non-AYP grades and subjects is available in chapter 5 of the [2008–2009 Technical Digest](#).

## Scaling

Scaling is the statistical procedure used to make test scores easier to interpret and compare across test administrations by placing raw scores on a common scoring metric. As with many of the other programs in the Texas assessment program, the TAKS–M assessment program uses the Rasch Partial-Credit Model (RPCM) to place test items on the same scale across administrations for a given TAKS–M assessment. Once performance standards have been set for an assessment, its initial scale is then transformed to a more user-friendly metric to facilitate interpretation of the test scores. Details of the RPCM scaling method used in Texas are provided in [chapter 3](#).

## Scale Score

A scale score is a conversion of the raw score onto a “scale” that is common to all test forms for that assessment. Scale scores allow direct comparisons of student performance between specific sets of test questions from different test administrations.

After the August 2008 and 2009 standard-setting recommendations, a unique scale transformation was applied such that the resulting scale scores have the recommended cut score for the Met Standard performance level at a scale score of 2100 and the recommended cut score for the Commended





Performance level at a scale score of 2400 (refer to the “[Standard Setting](#)” section of this chapter). The linear transformation of the underlying Rasch proficiency level estimate is as follows:

$$SS_j = (\theta_j \times T1) + T2$$

where  $SS_j$  is the scale score for student  $j$ ,  $\theta_j$  is the Rasch partial credit model proficiency level estimate for student  $j$ , and  $T1$  and  $T2$  are scale score transformation constants that establish the scale score system such that a scale score of 2100 is the cut score for the Met Standard performance level and a scale score of 2400 is the cut score for the Commended Performance level. Values for  $T1$  and  $T2$  are provided in Table 21 for TAKS–M.

**Table 21.** Scale Score Transformation Constants for TAKS–M

Grade	Mathematics		Reading/ELA		Science		Social Studies		Writing	
	$T1$	$T2$	$T1$	$T2$	$T1$	$T2$	$T1$	$T2$	$T1$	$T2$
3	149.3503	2121.4766	135.1047	2120.5765	—	—	—	—	—	—
4	160.3592	2139.7691	132.0306	2133.7866	—	—	—	—	94.6522	2108.8027
5	167.6821	2111.8048	125.1617	2084.5551	178.6033	1885.0509	—	—	—	—
6	201.3558	2111.6585	120.7730	2100.5193	—	—	—	—	—	—
7	203.7767	2147.3169	127.9591	2100.3581	—	—	—	—	114.7491	2062.1558
8	211.6104	2123.1713	119.6554	2086.1439	184.7404	2018.9544	140.2262	2083.9441	—	—
9	173.7116	2134.4470	128.2709	2043.1888	—	—	—	—	—	—
10	179.3508	2141.1430	134.7285	2077.4330	234.1555	2032.6803	150.7083	2048.5934	—	—
11	200.2269	2117.0794	117.6194	2004.0461	188.1822	2021.1705	153.4841	2069.9939	—	—

## Equating

Used in conjunction with the scaling process, equating is the process that “balances” the slight difficulty differences across test forms and administrations to place the scores onto a common scale. Through the use of sophisticated statistical methods, the results of different tests are equated to enable the comparison of scale scores across test forms and test administrations. Most recent activities for TAKS–M were conducted in 2009–2010. During the 2009–2010 school year, field-test equating and pre-equating activities were conducted for all TAKS–M grades and subjects. Refer to chapter 5 the [2009–2010 Technical Digest](#) for more information about field test equating and pre-equating for TAKS–M.



## Reliability

The concept of reliability is based on the idea that repeated administrations of the same test should generate consistent results about student performance. Reliability is a critical technical characteristic of any measurement instrument, because unreliable instruments cannot be interpreted in a valid way. During the 2010–2011 school year, reliability estimates for TAKS–M assessments were conducted through internal consistency, classical standard error of measurement, conditional standard error of measurement, and classification accuracy.

### Internal Consistency

Internal consistency is a measure of the consistency with which students respond to the items within a test. For tests involving dichotomously scored (multiple-choice) items, the Kuder-Richardson Formula 20 (KR20) was used to calculate the reliability estimates, and for tests involving a combination of dichotomous and a polytomous (extended response) items, the stratified coefficient alpha was used to calculate the reliability estimates. As a general rule, reliability coefficients from 0.70 to 0.79 are considered adequate, 0.80 to 0.89 are considered good, and above 0.90 are considered excellent. However, appropriate levels of reliability depend on how an assessment is being used. Reliability values for TAKS–M ranged from 0.76 to 0.89. TAKS–M will be used in conjunction with other criteria to make student-level decisions; therefore, reliabilities of 0.70 and above are an acceptable starting point for TAKS–M reliability estimates. The internal consistency values for each TAKS–M assessment is available in [Appendix C](#).

### Classical Standard Error of Measurement

Classical standard error of measurement (SEM) provides a reliability estimate for a test score. The SEM represents the amount of variance in a test score resulting from factors other than achievement. The SEM is helpful for quantifying the margin of uncertainty that occurs on every test. For example, factors such as chance error, differential testing conditions, and imperfect test reliability can cause a student's observed score (the score achieved on a test) to fluctuate above or below his or her true score (the true proficiency of the student). SEM values for TAKS–M ranged from 1.940 to 3.193 (in raw score points). The SEM values for TAKS–M are provided in [Appendix C](#).

### Conditional Standard Error of Measurement

Conditional standard error of measurement (CSEM) provides a reliability estimate at each score point on a test. CSEM provides an estimate of the average test score measurement error conditional on the proficiency estimate or scale score estimate. CSEM values for TAKS–M ranged from 37 to 237 scale score points across all TAKS–M grades and subjects. In general, the CSEM values



occurring in the middle of the score range for mathematics ranged from 54 to 69, for reading the CSEM values ranged from 37 to 52, and for science the CSEM values ranged from 58 to 72. The CSEM values in the middle of the score range for writing were 37 and 39 scale score points, while the CSEM values in the middle of the score range for social studies were 47 and 48 scale score points. The CSEM values for TAKS–M is available in [Appendix C](#).

## Classification Accuracy

Classification accuracy provides an estimate of the accuracy of student classifications into performance categories based on current test results. Classification accuracy rates for TAKS–M ranged from 77.3 to 96.2. The classification accuracy rates for TAKS–M are provided in [Appendix C](#).

## Validity

Validity refers to the extent to which the test measures what it is intended to measure. Validity in the Texas assessment program is concerned with the general question of whether or not test scores will help educators to make appropriate judgments about student performance. Validity evidence for an assessment can come from a variety of sources, including test content, the response process, the internal structure, relationships with other variables, and the consequences of testing. Texas collects validity evidence annually to support the various uses of TAKS–M scores. The sections that follow describe how these types of validity evidence were collected for the TAKS–M assessments in 2010–2011.

### Evidence Based on Test Content

Validity evidence based on test content refers to evidence of the relationship between tested content and the construct the test is intended to measure. For TAKS–M, test results are used to make inferences about students' knowledge and understanding of the TEKS. Standards-referenced assessments, such as TAKS and TAKS–M, are based on an extensive definition of the content they assess. Therefore, test validity is content based on and tied directly to the statewide curriculum. Because TAKS–M is a modified version of TAKS, the test development processes for both assessments play an intricate role in building validity evidence. To achieve the highest level of content validity, the process of aligning both TAKS and TAKS–M to the curriculum was carefully approached and included review by numerous committees of Texas educators.

When TAKS was designed as the standards-referenced general assessment to measure students' knowledge and understanding of the materials in the TEKS, advisory committees consisting of educators from school districts across the state were formed for each subject area at each grade level. Teachers, test development specialists, and TEA staff members worked together in these committees to identify the TEKS student expectations that were important to assess and to develop test objectives, item development guidelines, and test-item types. In addition, committees met to review and edit TAKS items for content and bias and to review field-test data.



The item writers as well as reviewers for each stage of development verified the alignment of test items with the objectives to ensure that the items measure appropriate content. The sequential stages of item development and item review provide many opportunities for Texas educators to offer suggestions for improving or eliminating items and to offer insights into the interpretation of the statewide curriculum.

When TAKS–M was designed as the alternate assessment based on modified achievement standards, special education content specialists developed detailed modification guidelines so the modifications made to the TAKS items were consistent. After the items were modified, educator committees for each subject area at each grade level reviewed the original TAKS item and the modified TAKS–M version of the item to make sure that the modified item still measured the same underlying skill as the original item. In this way, the alignment between the TEKS curriculum and the TAKS items carries through to the TAKS–M items.

### **Evidence Based on Response Processes**

Response processes refer to the cognitive behaviors required to respond to a test item. Texas collects evidence to demonstrate that the way students respond to test questions on the TAKS–M assessments supports the accurate measurement of the construct.

TAKS–M includes item (or question) types that require students to respond in various ways. These item types include: selected-response items (both stand-alone items and passage-related items) and essay items. Theoretical and empirical evidence has been gathered to suggest that the way in which students respond to these types of questions does not add construct-irrelevant variance.

The evidence the Texas assessment program gathers comes from several sources. When item types were initially modified for TAKS–M, the items were reviewed by educator committees to make sure that the modifications made the items accessible to the TAKS–M student population. In addition, educator review of the items is done to gather evidence that the response processes do not advantage or disadvantage certain student groups (for example: males or females, different ethnic groups, and different disability groups). The process for the review of item content involves (1) an evaluation by educators that the content assessed by the item is appropriately assessed with the planned item type and (2) a judgment by educators that students will be able to accurately demonstrate their knowledge of the content by responding to each item in its planned format. When items are field-tested, data are gathered about students' responses to items, and statistical information—such as item difficulty and item point-biserial correlations—is evaluated taking item type into consideration.



## Evidence Based on Internal Structure

Texas collects evidence that shows the relationship among test questions and test objectives to demonstrate that the parts of a test conform to the test construct. Measures of internal consistency are used to provide validity evidence based on internal structure. Internal consistency measures show to what degree responses to items measuring the same or a similar content are related. Two measures of internal consistency, the Kuder-Richardson Formula 20 and the stratified coefficient alpha, were used for TAKS–M. These two consistency measures also provide reliability evidence for the TAKS–M tests. As a result, the internal consistency evidence for TAKS–M is available in the “[Reliability](#)” section of this chapter under the Internal Consistency results.

## Evidence Based on Relationships to Other Variables

Another source of validity evidence is the relationship between test performance and performance on some other measure, sometimes called criterion-related validity. Several analyses are done to support that TAKS–M assessments and item scores are related to outside variables as intended and are weakly related, if at all, to irrelevant characteristics.

Correlations among the scale scores of TAKS–M subjects were calculated. The correlation between TAKS–M reading and mathematics scale scores was calculated resulting in a moderate correlation of 0.494. This indicates that the scores are related but not redundant, which is to be expected because the two constructs are both academic subjects but assess different skills.

The other subject scores had similarly moderate correlations. Science and math had a correlation of 0.578, writing and reading had a correlation of 0.610, science and reading had a correlation of 0.628, social studies and reading had a correlation of 0.603, and social studies and math had a correlation of 0.516. Social studies and science had the strongest correlation at 0.695, while the correlation between math and writing scores was the weakest at 0.457. This overall range of moderate correlations suggests that all the scores among subjects are related and neither redundant nor irrelevant.

The correlations between the total test score and the TAKS–M objective scores were also calculated within grade and subject. Across all subjects and grades, the correlations between each objective and test score ranged from 0.414 to 0.924. The magnitudes of these correlations were found to support theoretical relations between objectives and the overall test. More specifically, the range of correlations within reading across all grades was 0.718 to 0.924. For mathematics, the range of correlations was 0.414 to 0.821. Science had a correlation range of 0.554 to 0.876, while social studies had a correlation range of 0.617 to 0.838. Lastly, the correlations of the total test score to the objective scores for writing ranged from 0.651 to 0.831.

Additional validity evidence was collected in the form of discriminant validity evidence in analyses demonstrating that the TAKS–M scores were unrelated to demographic variables (e.g., gender and ethnicity). Theoretically, student characteristics should not



relate to students' performance on the assessment; therefore, the lack of meaningful empirical relationships between these measures is expected and is reflected in the overall results of the correlation calculations between total score and gender as well as between total score and ethnicity. The correlation between total score and gender was 0.011, and the correlation between total score and ethnicity was 0.062.

### **Evidence Based on Consequences of Testing**

Another way to provide validity evidence is by documenting the intended and unintended consequences of administering an assessment. Validity evidence showing the impact of administering the TAKS–M assessment was collected through educator surveys during the 2008–2009 school year. Refer to the [2009–2010 Technical Digest](#) for expanded information about these surveys.

### **Measures of Student Progress**

In 2009–2010, the Texas Projection Measure (TPM) for TAKS–M was implemented for the first time. The TPM uses a multilevel, regression-based projection model that estimates whether the student is likely to meet the standard (pass) and/or achieve commended performance (obtain the highest performance level) on TAKS–M tests at a future grade. The measure is based on (1) a student's current and prior year's (if available) performance in the projected subject on TAKS–M and (2) the TAKS–M scores of other students in the same enrolled grade in the student's school district.

The TPM implemented for TAKS–M was designed to be as similar as possible to the model used with TAKS. Both measures require at least two years of data to develop equations and require the equations to be developed the year prior to implementing them. However, the TPM for TAKS–M does differ from the TPM for TAKS in that a TPM is reported only for students who are assessed with TAKS–M in all the subject areas needed to implement the TPM. Also, for TAKS–M, a district mean predictor is used when developing the TPM equations rather than a campus mean predictor. For a full description of the process used to develop the TPM for TAKS–M, refer to "Procedures for Developing the Texas Projection Measure Equations for TAKS–M" on TEA's [Student Assessment Division website](#).

During the 2010–2011 school year, specific changes were made to the TPM for TAKS–M. The changes to the TPM for TAKS–M included:

1. Adding grades and subjects—In 2011, projection equations for grades 3 and 6 mathematics and reading and grade 10 social studies became available for students taking TAKS–M. As a result, the number of equations available in 2011 for TAKS–M increased. In 2011, the TPM for TAKS–M had projection equations available for grades 3, 4, 6, and 7 mathematics and reading and grade 10 ELA, mathematics, science, and social studies. For more information on the specific



TPM equations developed for each grade and subject, requirements for students to obtain TPM projections, and steps to calculate a TPM score, refer to “Calculating Projections with the Texas Projection Measure for TAKS–M” on TEA’s [Student Assessment Division website](#).

2. Adding prior-year score—Whenever possible, students had projections based on current-year and previous-year TAKS–M performance in the projection subject of interest, in addition to the off-subject (subject that is not the projection subject) and district mean predictors. In 2011, projection equations using two years of data were available for students in grades 4 and 7 mathematics and reading. If the student had all necessary information to calculate the projection using this two-year model, the two-year model was applied. If a student had only information necessary for calculating the projection using one year of data (a one-year model), the projection was based on the one-year model.
3. Reporting—In 2011, the reporting of the TPM for TAKS–M changed such that
  - o TPM projections were reported on CSRs only at grade 10;
  - o the student data files and the TPM calculator included TPM information for students in grades 3, 4, 6, 7, and 10; and
  - o TPM summary reports were created and printed only for grade 10.

The reporting changes for the TPM were made because students in grades 3–8 in 2011 will transition to the State of Texas Assessments of Academic Readiness (STAAR) program in 2012. Beginning in 2011–2012, STAAR Modified assessments will replace TAKS–M assessments at grades 3–9. Students in grades 3–8 in 2011 who received a projection for TAKS–M will not be able to compare their 2011 TAKS–M projections to future TAKS–M scores and TAKS–M performance standards. Projected scores based on the TAKS–M scoring system cannot be compared with the STAAR Modified performance standards. However, TAKS–M assessments will continue to be administered in 2012 for students in grades 10 and 11. Therefore, students in grade 10 in 2011 who received a projection for TAKS–M will be able to compare their 2011 TAKS–M projections to their TAKS–M scores and the TAKS–M performance standards in 2012.

The comparison of a student’s projection to his or her actual score and performance classification in the future grade and subject is an evaluation of projection accuracy. As part of the TPM process, TEA conducts annual evaluations of projection accuracy. In order to evaluate the accuracy of the 2010 TAKS–M TPM projections, the 2010 performance classifications of students projected to either “meet the standard” or “not meet the standard” were compared to the students’ 2011 observed results. The TAKS–M projection accuracy results for the 2010 TPM is shown in Table 22. The results show that the percentage of all students with accurate projections ranged from 74.39% to 86.83%. TEA will continue to evaluate projection accuracy in subsequent years for applicable grades and subjects once observable performance data become available.



**Table 22.** TAKS–M Classification Accuracy for the 2010 TPM

Grade/ Subject	Group	N	Total Projection Accuracy		Accurate Classifications		Misclassifications*	
			Accurate Projections	Inaccurate Projections	Met Standard	Did Not Meet Standard	Met Standard	Did Not Meet Standard
Grade 4 to Grade 5 Reading	All Students	9249 (100.00)	8031 (86.83)	1218 (13.17)	7604 (82.21)	427 (4.62)	572 (6.18)	646 (6.98)
Grade 4 to Grade 5 Mathematics	All Students	9079 (100.00)	7469 (82.27)	1610 (17.73)	6747 (74.31)	722 (7.95)	416 (4.58)	1194 (13.15)
Grade 7 to Grade 8 Reading	All Students	9074 (100.00)	7597 (83.72)	1477 (16.28)	6593 (72.66)	1004 (11.06)	885 (9.75)	592 (6.52)
Grade 7 to Grade 8 Mathematics	All Students	9319 (100.00)	6932 (74.39)	2387 (25.61)	4756 (51.04)	2176 (23.35)	1157 (12.42)	1230 (13.20)
Grade 10 to Grade 11 ELA	All Students	6505 (100.00)	5507 (84.66)	998 (15.34)	3999 (61.48)	1508 (23.18)	446 (6.86)	552 (8.49)
Grade 10 to Grade 11 Mathematics	All Students	6659 (100.00)	4985 (74.86)	1674 (25.14)	2518 (37.81)	2467 (37.05)	975 (14.64)	699 (10.50)
Grade 10 to Grade 11 Science	All Students	6077 (100.00)	4624 (76.09)	1453 (23.91)	1790 (29.46)	2834 (46.63)	1179 (19.40)	274 (4.51)

\* Met Standard within the Misclassifications column indicates that the student was incorrectly classified by the TPM as Did Not Meet Standard when in fact the student did meet standard. Did Not Meet Standard within the Misclassifications column indicates that the student was incorrectly classified by the TPM as Met Standard when in fact the student did not meet standard.

## Sampling

Sampling is a procedure to select a smaller number of observations (in this case, Texas students) that are representative of the entire body of Texas students. The results from well-drawn samples allow TEA to estimate characteristics of the larger population of Texas.

Sampling plays a critical role in the research and annual development activities necessary to support the Texas assessment program. The assessment program affects all students (or the population of students) in Texas. A sample is a group of students smaller than the population that can be used to represent the overall population. Through the careful selection of student samples, TEA is able to gather reliable information about student performance on its tests while minimizing campus and district participation. In particular, sampling is used in the Texas assessment program for (1) testing that is part of a research study and (2) stand-alone field tests. In 2010–2011, there were no special studies or stand-alone field tests conducted for TAKS–M. Therefore, sampling was not required for TAKS–M this year.