

# CHAPTER I: HIGH SCHOOL ASSESSMENTS

## Section 1. Introduction

The Maryland High School Assessments (MD HSAs) consist of end-of-course tests in Algebra/Data Analysis, Biology, English, and Government. May 2011 was the last administration of the Government HSA. The MD HSAs are referred to as “end-of-course” tests because students take each test as they complete the appropriate coursework. In addition, results from the Algebra/Data Analysis, Biology, and English administrations are used in the Maryland State Department of Education (MSDE) Adequate Yearly Progress (AYP) reports, required under the No Child Left Behind (NCLB) Act for the 2011 school year.

Beginning with students who entered ninth grade in the 2005–2006 school year, satisfactory scores on all four MD HSAs are required in order to earn a Maryland High School Diploma.<sup>1</sup> Information on the interpretation of scores is provided to students, parents, schools, and other stakeholders via the MSDE website.

All MD HSAs are comprised of selected-response (SR) items, which require students to choose between four short response options. In addition, Algebra/Data Analysis tests include items that require a student-produced response (SPR); students must grid in their responses on an answer document or key them in for the online version of the assessment. All MD HSA items are based on content outlined in Maryland’s Core Learning Goals (CLGs).<sup>2</sup> The SR and SPR items are machine-scored. Beginning in May 2009, the MD HSAs are administered online as well as in paper-and-pencil format. Studies of the comparability of online and paper forms of the MD HSAs were conducted in 2009 and 2010. The 2009 report is provided in the 2009 HSA Technical Report in Appendix 1C. The 2010 results were provided to the MSDE (Educational Testing Service, October 29, 2010).

This report provides information about the October 2010 administration and the January, April, May, and Summer 2011 administrations. For the October 2010 administration, one form was administered. For the January 2011 administration, three forms were administered: two forms for the primary administration, and one form for the makeup administration. For the April 2011 administration, one form was administered. For the May 2011 administration, twelve test forms were administered: ten for the primary testing window and one for each of two makeup testing windows. For the Summer 2011 administration, two primary forms were administered: one for the first week of testing and one for the second week of testing.

Each test form consisted of operational and field test items. The operational items were used to produce student scores. Field test items were scored along with the operational items, but examinees’ scores on these items were not included in the computation of their total test scores. For the January and May administrations, performance on the field test items was analyzed, and

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<sup>1</sup> More information on the testing requirement for graduation is available on the Maryland State Department of Education website at [http://mdk12.org/assessments/high\\_school/index.html](http://mdk12.org/assessments/high_school/index.html).

<sup>2</sup> The HSA Core Learning Goals documents can be found on the Maryland School Improvement website at <http://www.mdk12.org/assessments/standards/9-12.html>.

all flagged items were reviewed. Field test items that were approved by ETS content specialists and calibrated were then marked as available for use in the item bank. Items that were deemed unacceptable were marked as “Unavailable” and may be revised and field tested again in the future. With the exception of items selected for public release, the operational items that are returned to the item bank must remain unused for at least one year to minimize item exposure.

The item response model used to calibrate the items on the MD HSAs is the three-parameter logistic (3PL) model. This model is used to generate both total test scores and subscores using item-pattern (IP) scoring. Total test results in the scale score metric are reported to students. Subscores are not reported to students but are aggregated at the classroom level to provide teachers and administrators with additional information about student performance in each of the subscore categories.

Pre-equated item parameters are used to generate student scores. When pre-equated item parameters are used, the parameters are not estimated following an administration; instead, existing bank parameters are used to produce student scores. Using this approach, scores can be calculated and assigned to students immediately after their answer documents have been processed. (Prior to 2004, students’ scores were based on item parameters estimated after each the administration.)

All technical support and analyses were carried out in accordance with both the *ETS Standards for Quality and Fairness* (2002) and the *Standards for Educational and Psychological Testing*, issued jointly by the American Educational Research Association [AERA], American Psychological Association [APA], and National Council on Measurement in Education [NCME] (1999).

The MD HSA chapter of this technical report consists of seven sections and two appendices.

- Section 1 provides an introduction to the MD HSA program.
- Section 2 describes the procedures used for test construction and administration.
- Section 3 discusses the validity of the MD HSAs.
- Section 4 delineates the scoring procedures and score types.
- Section 5 summarizes the results of the analyses of test reliability, decision consistency and decision accuracy.
- Section 6 provides summary statistics and descriptive information about student characteristics.
- Section 7 gives the results of the analysis of field test data, including classical item analysis, differential item functioning, and item calibration and scaling.
- Appendix 1A provides classical item statistics for each operational test item by form administered.
- Appendix 1B provides classical item statistics for each field test item administered.