



**Karen B. Salmon, Ph.D.**  
State Superintendent of Schools

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**TO:** Members of the State Board of Education

**FROM:** Karen B. Salmon, Ph.D.

**DATE:** July 24, 2018

**SUBJECT:** Teacher Certification Assessments  
**TEST APPROVAL AND ESTABLISHMENT OF QUALIFYING SCORE**

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**PURPOSE:**

The purpose of this item is to seek State Board approval of the Educational Testing Service (ETS) Praxis subject assessment for Computer Science (5652) and to set the established qualifying score for this test.

**HISTORICAL BACKGROUND:**

Since 1987, the Maryland State Department of Education (MSDE) has required state certification tests to assess basic skills, content knowledge, and pedagogy. These tests provide validation that teacher candidates have entry level skills to begin their professional careers. In an effort to maintain current practice in various content fields, the ETS revises most tests on a five year schedule and at the same time works to create new tests based on a demonstrated need.

To support the decision-making process for state departments of education with regards to establishing a passing score, research staff from the ETS design and conduct Multistate Standard Setting Studies for each test. The panelists, selected from states that will use the test, are recommended by state departments of education to participate as experts for the Multistate Standard Setting Studies. Maryland identified two representatives for the Computer Science Multistate Standard Setting Study conducted in January 2018.

Panelists judge the extent to which knowledge and/or skills reflected by the content specifications are important for entry-level teachers. The ETS also collects content-related validity evidence to confirm the importance of the content specifications for entry level teachers. The ETS provides a recommended passing score from the Multistate Standard Setting Study to assist education agencies in determining an appropriate operational passing score. The recommended passing score for the Computer Science Test is 149. The ETS guides states to adopt a score that does not exceed a plus or minus two standard errors of measurement from the recommended qualifying score. This approach ensures legal defensibility of the score.

**EXECUTIVE SUMMARY:**

In September 2015, the State Board adopted and set the qualifying score for the Computer Science Praxis 5651, and in September 2017, approved the continuation of its use. During that period, the ETS regenerated the Computer Science test to update the content to better align with the K-12 Computer Science Framework, the International Society for Technology in Education standards for Computer Science Educators, and the Computer Science Teachers Association K-12 Computer Science Standards. As of September 2018, the ETS will discontinue the Praxis 5651; therefore, the test currently approved for use in Maryland will no longer be available.

The regenerated Praxis 5652 is designed to assess the computer science knowledge and competencies necessary for a beginning teacher of secondary school computer science. The three-hour assessment contains 100 selected-response items covering five content areas: Impacts of Computing, Algorithms and Computational Thinking, Programming, Data, and Computing Systems, and Networks.

**ACTION:**

I am requesting that the State Board approve the following implementation date and qualifying score for the revised Praxis subject assessment for certification in the area of Computer Science:

<b>Test Code</b>	<b>Test Name</b>	<b>Qualifying Score</b>	<b>Scale</b>	<b>Effective Date</b>
5652	Computer Science	149	100-200	9/1/18

KBS:ss:kem

# Test Approval and Establishment of Qualifying Scores



STATE BOARD MEETING

July 24, 2018

# Purpose

**Approval of the implementation date and  
qualifying score for the Praxis subject assessment  
for Computer Science**

# Background

The Maryland State Department of Education (MSDE) has required certification tests to assess basic skills, content knowledge, and pedagogy

Educational Testing Service (ETS) revises most tests on a five year schedule and creates new tests based on need

- This is a new test aligned to the K-12 Computer Science Framework, International Society for Technology in Education (ISTE) standards for Computer Science Educators, and the Computer Science Teachers Association (CSTA) K-12 Computer Science Standards

ETS conducts two Multistate Standard Setting Studies for each test

- The cut scores from the two panels are averaged and converted to a scaled score which becomes the recommended qualifying score published by ETS
- ETS advises states to adopt a score that does not exceed a plus or minus two standard errors of measurement (SEM) from the recommended qualifying score

# Multistate Standard Setting

Two non-overlapping panels strengthen the technical quality of the recommended cut scores and provides validity to assist states with making certification test decisions

Conducted in January 2018

17 States and Washington D.C.

36 Panelists (2 from Maryland)

- University of Maryland College Park
- Montgomery County Public Schools

Recommended passing score of 149 on a 100-200 scale

Currently 4 out of 5 states have adopted 149 as a passing score

- Arkansas adopted a lower score of 142

# Computer Science Test

Designed to assess the computer science knowledge and competencies necessary for a beginning teacher of secondary school Computer Science

Contains 100 selected response items covering five content areas:

- Impacts of Computing
- Algorithms and Computational Thinking
- Programming
- Data
- Computing Systems and Networks

Currently 5 states have adopted and 4 are in the process of adopting this test

# Computer Science Test : Changes

Content domain for the new test reflects the shift in the field to expand beyond computer programming to include:

- Creativity
- Computational thinking
- Abstraction
- Privacy
- Security
- Social implications of computing

Experts worked with staff from Computer Science Teachers Association and code.org to best reflect this changing in the expanding role of computer science in K-12 schools

Content more fully aligns with the knowledge and skills needed of beginning teachers to effectively teach the breadth and depth of the K-12 computer science curriculum rather than purely focusing on computer programming



# Actions

Adopt the Computer Science (5652) as the required test for Secondary Computer Science

Approve the recommended implementation date and qualifying score as follows:

- **Effective:** July 1, 2018
- **Qualifying score:** 149