



VIRGINIA BOARD OF EDUCATION

AGENDA ITEM

Agenda Item: L

Date: December 12, 2023

Title: First and Final Review of the Advisory Board on Teacher Education and Licensure's Recommendation for a Passing Score for the Praxis® Earth and Space Sciences (5572) Test for the Science-Earth Science Endorsement

Presenter: Rob Gilstrap, Assistant Superintendent for Education Preparation

Purpose of Presentation

Action required by state or federal law or regulation.

Executive Summary

The proposed recommendation from the Advisory Board on Teacher Education and Licensure (“ABTEL”) is to set a passing score for the new Praxis® Earth and Space Sciences (5572) Test for the Earth Science endorsement. The Praxis® Earth and Space Sciences (5572) test will replace the Praxis® Earth and Space Sciences: Content Knowledge (5571) test. The **new** assessment was designed and developed through work with practicing Earth and space sciences teachers, teacher educators, and higher education content specialists to reflect the science knowledge teachers need to teach the Earth and space sciences curriculum and to reflect state and national standards, including the National Science Teaching Association Preparation Standards for Earth and space sciences. This test will be required for individuals seeking initial licensure unless exempted by holding a full, clear out-of-state license with no deficiencies and can be taken and passed to add an endorsement in Earth Science by individuals holding a valid renewable teaching license.

Educational Testing Service (“ETS”) provides a recommended passing score from the multistate standard-setting study to help education agencies determine an appropriate operational passing score. For the Praxis Earth and Space Sciences test, the recommended passing score¹ is 62 out of a possible 100 raw-score points. The scale score associated with a raw score of 62 is **154** on a 100–200 scale.

The current Praxis® Earth and Space Sciences: Content Knowledge (5571) Test has a Board prescribed passing score of 156 on a 100-200 scale. The Praxis® Earth Sciences (5572) test is a **new** assessment and the previous passing score was not a consideration of ETS or ABTEL when establishing this test's passing score. Because this is a **new** assessment, ABTEL is also recommending that a data review be conducted after one year to determine if the passing score is providing for the greatest opportunity of teachers entering the profession while maintaining rigor.

On November 9, 2023, [information regarding the multistate standard-setting process](#) was presented to ABTEL members by Malik K. McKinley, Sr., Director of Client Relations, Professional Educator Programs, Office for Teacher Licensure and Certification, Student and Teacher Assessment Division, Educational Testing Service. ABTEL members reviewed the standard-setting report and recommended that the Board approve the passing score of 154 (the standard setting panel's recommendation).

Attached are the Multistate Standard-Setting Technical Report - Praxis® Earth and Space Sciences (5572) Test and the Praxis® Study Companion. Also attached is a literature review and analysis of licensure assessment and student outcomes that was provided to the Virginia Board of Education (Board) in January 2022 that might provide useful information regarding the predictive value of teacher licensure assessments on student outcomes.

This item supports Priority 2 of the Board's [Comprehensive Plan: 2018-2023](#)

Action Requested

Final review: action requested at this meeting.

Superintendent's Recommendation

The Superintendent of Public Instruction recommends that the Board of Education waive first review and approve the recommendation of the Advisory Board on Teacher Education and Licensure to establish a cut score of 154 for the Praxis® Earth and Space Science (5572) test. Individuals may take either the currently prescribed assessment for Earth and Space Science, Praxis® (5571) or the new Praxis® Earth and Space Science (5572) test through July 2024; in January 2024, only the new Praxis® Earth and Space Science (5572) test will be offered in Virginia. Beginning January 2024, the Praxis® Earth and Space Science (5571) test will be accepted only for those individuals who took and passed the test during the period it was prescribed by the Board of Education.

Rationale for Action

As required by [8VAC20-23-40\(E\)](#), individuals seeking licensure must achieve a qualifying score on professional assessments . . . as prescribed by the board” The Board must set such qualifying score for the Praxis® Earth and Space Sciences (5572) Test for the Earth Science endorsement so that individuals seeking licensure may obtain a license.

Previous Review or Action

No previous review or action.

Background Information and Statutory Authority

Currently, the Board requires the following assessments for initial licensure:

- Virginia Communication and Literacy Assessment (VCLA);
- Praxis Subject Assessments; and
- Praxis® Teaching Reading: Elementary (5205) for specified endorsements.

The Board prescribes the Praxis Subject Assessments as a professional teacher’s assessment requirement for initial licensure in Virginia. The current Board of Education’s prescribed assessment for earth science is the Praxis® Earth and Space Sciences (5572).

The Praxis® Earth and Space Sciences (5571) test will replace the Praxis® Earth and Space Sciences: Content Knowledge (5572) test. This **new** assessment is designed and developed through work with practicing Earth and space sciences teachers, teacher educators, and higher education content specialists to reflect the science knowledge teachers need to teach the Earth and space sciences curriculum and to reflect state and national standards, including the National Science Teaching Association Preparation Standards for Earth and space sciences. Content and practices measured reflect the Disciplinary Core Ideas (DCIs) and Science and Engineering Practices (SEPs) established by the National Research Council in A Framework for K-12 Science Education and included in the Next Generation Science Standards.

In December 2021, a multistate standard-setting study was designed and conducted by the Educational Testing Service (ETS) to support the decision-making process of education agencies establishing a passing score (cut score) for Praxis® Earth and Space Sciences (5572) test. Panelists from 10 states and Washington, D.C., participated on the panel. The education agencies recommended panelists with (a)) experience as either Earth and space sciences teachers or college faculty who prepare those Earth and space sciences teachers and (b) familiarity with the knowledge and skills required of beginning earth science teachers.

A detailed summary of the study, Multistate Standard-Setting Technical Report - Praxis® Earth and Space Sciences (5572) is attached. The technical report contains three sections. The first section describes the content and format of the test. The second section describes the standard-setting processes and methods. The third section presents the results of the standard-setting study.

The Praxis® Earth and Space Sciences Study Companion is also attached. This document describes the purpose and structure of the test. In brief, the test measures whether entry-level Earth and space sciences teachers have the knowledge/skills believed necessary for competent professional practice as an earth science teacher. The 2-hour and 30 minute assessment contains 125 selected-response items covering four content areas: *Nature and Impact of Science Engineering* (approximately 19 items), *Earth’s Processes and Materials* (approximately 56 items), *Earth’s Hydrosphere and Atmosphere* (approximately 28 items), and *Astronomy* (approximately 22 items). As described in the test description, more than 40 percent integrate a *Science and Engineering Practice* and about 25% assess content applied to a *Task of Teaching Science*. The reporting scale for the Praxis Earth and Space Sciences test ranges from 100 to 200 scale-score points.

Multistate Standard-Setting Study

The Multistate standard-setting study for the Praxis® Earth and Space Sciences (5572) test is detailed in the attached report.

The following table presents the estimated conditional standard error of measurement (CSEM) around the recommended passing score. A standard error represents the uncertainty associated with a test score. The scale scores associated with one and two CSEM above and below the recommended passing score are provided. The conditional standard error of measurement provided is an estimate.

Conditional Standard Error of Measurement Summaries PRAXIS® EARTH AND SPACE SCIENCES (5572)

	Raw Score	Scale Score Equivalent
<i>Recommended passing Score (CSEM)</i>	62 (4.88)	154
-2 CSEM	53	141
-1 CSEM	58	148
+1 CSEM	67	161

+2 CSEM	72	168
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The Code of Virginia provides the authority for the Board of Education to promulgate Licensure Regulations for School Personnel.

Section [22.1-298.1](#) of the Code of Virginia states, in part, the following:

C. The Board of Education's regulations shall include requirements that a person seeking initial licensure:

1. Demonstrate proficiency in the relevant content area, communication, literacy, and other core skills for educators by achieving a qualifying score on professional assessments or meeting alternative evaluation standards as prescribed by the Board;
2. Complete study in attention deficit disorder;
3. Complete study in gifted education, including the use of multiple criteria to identify gifted students; and
4. Complete study in methods of improving communication between schools and families and ways of increasing family involvement in student learning at home and at school.

Board regulation [8VAC20-23-40](#)(B) states, in part, the following:

B. All candidates who hold at least a baccalaureate degree from a regionally accredited college or university and who seek an initial Virginia teaching license shall obtain passing scores on professional teacher's assessments prescribed by the Virginia Board of

Education. With the exception of the career switcher program that requires assessments as prerequisites, individuals shall complete the professional teacher's assessment requirements within the three-year validity of the initial provisional license.

Board regulation [8VAC20-23-70\(A\)](#) states, in part, the following:

A. An individual who holds a teaching license may add an additional teaching endorsement to the license by passing a rigorous academic subject test for endorsements in which a test is prescribed by the Virginia Board of Education. This testing option does not apply to individuals (i) who are seeking an early/primary 5 education preK-3 or elementary education preK-6 endorsement, special education endorsements, or a reading specialist endorsement or (ii) who hold a Technical Professional License, Vocational Evaluator License, Pupil Personnel Services License, School Manager License, or Division Superintendent License.

Stakeholder Engagement

During the November 9, 2023 meeting, ABTEL members reviewed the standard-setting report and recommended that the Board establish a passing score of 154 for the Praxis® Earth and Space Sciences (5572) Test.

Implementation and Communication

Upon adoption by the Board, a written communication will notify school divisions and educator preparation programs of the approval of the new passing score of 154 for the Praxis® Earth and Space Sciences (5572). The new passing score will be updated on the Professional Educator's Assessment Resource document on the VDOE's website.

Impact on Fiscal and Human Resources

The individuals taking the Praxis® Earth and Space Sciences (5572) Test will incur the costs for the test.