

From: [Suter, Brian](#)
To: [ED, State Board of Ed](#)
Subject: [External] Comments on the proposed rulemaking
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To Whom It May Concern:

Let me first thank the Board for engaging in this long overdue process in revising/updating our State Standards using a rigorous, transparent process rooted in research into best practices. As a 26 year veteran teacher, I cannot convey how relieved I am that based on what I have read in this draft, if these proposed documents are adopted, we will finally have a coherent set of standards that will clearly inform curriculum development and teacher instruction.

While reading through the proposed K-12 Science and Environmental Education standards, I found a few areas which need attention-

Rulemaking

1. Grateful for the recommendation to move forward with revisions. Grateful for the recommendation of the revision of the keystone biology course to reflect the recommended new standards. Grateful for the recommendation of the PSSA 4th and 8th Grade science standards to be revised to reflect the new standards. Would urge the testing year to be shifted from 4th to 5th grade and add second. 4th grade exam would sit in the middle of a cognitively developed grade band and may unintendedly cause districts to omit certain science standards in 5th grade that are outside the tested year.
2. Implementation financial support-grateful for the acknowledgement that financial support for professional development is critical for successful implementation. However, ~\$27,000 per county will not come close to cover the PD gap teachers will have with this paradigm shift. Please consider providing funding to train and financially support coaches to help with implementation in every county.

Appendix B-1

Kindergarten-Earth Systems 1. The proposed standards says to use observations of weather conditions to describe patterns but omits students sharing with others which is a critical part of three dimensional learning-communication.

Grade Three-Life Science-Ecosystems: Interactions 1. The proposed standard asks students to construct an argument that some animals have adaptations to help members survive. This does not match the title Ecosystems: Interactions. The K-12 framework calls for students to understand group dynamics in this grade level. By erroneously making this substitution, the proposed standards create a gap that will effect coherency in the latter years. This proposed standard already appears

appropriately under grade three –Life Science-Biological Evolution: Unity and Diversity #2, describing evolutionary adaptations.

Grade 3-Physical science-Motion and Stability 2. The proposed standard asks the students to complete two practices in one standard. They are first ask to make an observation and communicate it. Then later in the standard, it asks to use this observation to argue that a pattern can be predicted in the future. Communication should be removed from this proposed standard.

Grade 4-Physical Science-Energy-2. The proposed standard asks the student to complete two practices. They are first ask to make an observation and communicate it. Then later in the standard, it asks to use this observation to argue that energy can be transferred. Communication should be removed from this proposed standard.

Grade 5-Earth’s Place in the Universe-1 The proposed standard asks the student to argue that the difference in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. The original writing of this standard replaces compared to other stars with and stars. The purpose of the original phrasing was a focus on patterns more than just our star. I recommend replacing the compared to with other stars.

Grade 5-Earth and Human Activity-2. Has an added proposed standards that is not written three dimensionally and does not connect coherently with the rest of the K-5 standards. Unlike the other standards, the intent is open ended and difficult for teachers to build cognitively appropriate instruction from. I do not see any evidence that other standards were removed. Given the lack of 3D, lack of clarity, an addition of a standard without removing another, and lack of vertical coherence, I recommend removing this standard.

Grade 5-Physical Science-3. The proposed standard asks the student to complete two practices. They are first ask to make an observation and communicate it. Then later in the standard, it asks to use this observation to identify patterns of properties in materials. Communication should be removed from this proposed standard.

Grade 5-Physical Science-Matter and Its interactions-5 Not 3D-Asks to interpret and then analyze data, then observe, then make decisions how to use materials. This is similar to what is asked in Physical science-Matter and its interactions-3. Since there is a lack of 3D/ clarity, an addition of a standard without removing another, a lack of coherence, and a similarity to another standards, this proposed standard should be removed.

K-2 Environment and Ecology-Unlike the 3D, coherently arranged, cognitively appropriate science standards, these standards are extremely vague for teachers, not grade appropriate (example-kindergarten-Decision-making 1. Exam and express your own view on environmental issues.) How would you ask K-2 teachers to measure success, what environmental issues would be proficient for K-2 students to examine and express their own views on?

The K-2 Decision-Making and Personal and Civic Responsibilities sound cognitively out of place and inappropriately places in a science document. These should be in a social science standard.

K-2 EE-Earth's Physical and Living Systems-1 Not 3D. Covered in Grade 5-Earth Systems already

K-2 EE-Earth's Physical and Living Systems-2 Not 3D. Covered in 3rd grade Life Science Standards

K-2 Human Systems-Seem to be social science standards-not 3D written, very vague. Unlike science standards, challenging for teachers to write grade appropriate curriculum and instruction.

K-2 Environment and Society-Vague and not 3D- Example-4 Recognize that change is a normal part of individual and societal life

3-5 Environment and Society-Vague and not 3D

Please consider addressing the above issues in the proposed K-5 Science/EE standards. These proposed standards provide a path forward for students of Pennsylvania to become Science and EE literate citizens. It is critical that we stay true to intent and not generate gaps and overlaps, include core ideas in different grade bands against what the research has proposed is cognitively appropriate, have inconsistent formatting which will lead to confusion as to how to achieve these proposed standards, and omit standards which disrupts vertical coherence.

Regards,

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