



Arizona Science Teachers Association

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Sara Torres
Executive Director
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September 20, 2018

Dear Arizona State Board of Education Members:

As Executive Director of the Arizona Science Teachers Association (ASTA), and on behalf of the 1200 members of our organization, I would like to share our position on the draft document of the Working Group AZ Science Standards ([Item 5C on agenda](#)).

First and foremost, ASTA is pleased that the draft Science Standards are being shared with you on Monday, September 24, 2018 and as well as on the agenda for possible adoption on October 22, 2018. The Arizona Department of Education (ADE) Standards Section and the Arizona content experts and educators, including many ASTA members, have put in numerous hours writing rigorous standards. We acknowledge the importance of a strong science education for our students which will help them to be scientifically literate in an increasingly competitive world.

ASTA also appreciates the increased transparency at ADE since April which has enabled all stakeholders to follow the standard writing process.

It is important that all of Arizona's students have access to an accurate and complete science education. ASTA would support the State Board of Education adopting the Working Group AZ Science Standards on October 22, 2018, provided they include these modifications:

1. Reinstate the writing committee's original version of 8.L4U2.12 (pg 73) which states:

Gather and communicate evidence on how the process of natural selection provides an explanation of how new species can evolve.

Rationale: *Aligns with learning progression.*

2. *Reword HS.L4U1.28 (pg 110) to:*

Gather, evaluate, and communicate multiple lines of empirical evidence to explain the mechanisms of biological evolution.

Rationale: *This was the writing's committee's original wording for H2+B.L4U2. This wording is aligned with the learning progression and is specific to ensure that teachers of science are not put in a position of teaching non-scientific ideas.*

3. *Reinstate the 4 deleted high school plus standards as originally worded by the working group that include:*

HS+E.E1U1.3 Analyze geoscience data and the results from global climate models to make evidence-based predictions of the current rate and scale of global or regional climate changes.

HS+E.E1U3.11 - Construct an explanation, based on evidence, for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

HS+E.E1U3.12 - Ask questions, define problems, and evaluate a solution to a complex problem, based on prioritized criteria and tradeoffs, that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

HS+E.E1U3.13 - Develop and use a quantitative model to illustrate the relationships among Earth systems and the degree to which those relationships are being modified due to human activity

Rationale: *The HS+ standards are designed for inclusion in expanded, discipline-specific courses. The current deletion of all of these standards diminishes the content and critical understanding that should be addressed in a year-long earth science course.*

4. *Restore the wording of Core Idea L4 (first introduced on pg 6 and update the corresponding description in Appendix 3 to:*

L4: The unity and diversity of organisms, living and extinct, is the result of evolution.

Appendix: All life today is directly descended from a universal common ancestor. Over countless generations changes resulting from natural diversity within a species lead to the selection of those individuals best suited to survive under certain conditions. Species not able to respond sufficiently to changes in their environment become extinct.

Rationale: *This language is consistent with research in science and science education.*

As the state's largest professional science educators association, ASTA respectfully requests that the State Board of Education direct the Arizona Department of Education Standards Section to make these changes before the final draft is presented for adoption on October 22, 2018.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Sara S. Torres".

Sara S Torres
Executive Director