

# **Preschool-12 Mathematics Standards Review Committee Report**

## Standards Review Committee Members

House of Representatives Nominees	Senate Nominees	State Board of Education Nominees
Tirzah Smith Adam Ashton Aaron Bullen* Daryl Reed Ben Elmer	Summer Barrett Jennifer Brooks Melanie Mortensen Jennifer Savage* Maren Hilbig*	Tyler Haslam Cydni Rogers Tetro Alea Lee C. David Walters Sarah English Jameson Hardy Beckie Brammer Damon L. Bahr

*\*Invited to participate, did not attend the meetings*

The Standards Review Committee was established through legislation to review the current core standards. The committee is charged with submitting comments and recommendations to the Utah State Board of Education regarding changes to existing standards per the Utah State Board of Education’s approved [Standards Revision Process](#) and Utah Code [53E-4-203](#). This committee met on December 8, 2023, and December 15, 2023, and reached a consensus regarding Preschool-12 Mathematics standards.

The Standards Review Committee for Preschool-12 Mathematics has reviewed the current standards and is prepared to report on the recommendations of these standards to the Standards and Assessment Committee. At this time, the Standards Review Committee recommends the following actions to be taken in the revision of these standards, as well as asking the writing committee to use the essential standards as a guide:

### Elementary (Preschool-5th)

Add:

- Current Preschool (3- and 4-year-old) standards are included in the updated Mathematics Standards document.
- Create space for mathematics in depth and context, presenting content in a relevant and age-appropriate manner.
- Balance more depth with the quantity of standards.
- Detail clear benchmarks for each grade level.

- Add a synopsis for the practice standards at each grade level.

#### Delete:

- Be thoughtful of the quantity of standards that are to be taught in one school year's time. (Under Delete and Clarify)
- Are there standards that can be revised or eliminated because of the tools available to students, ensuring that students use tools appropriately and develop rich conceptual understandings (Under Delete and Clarify)?

#### Emphasize:

- Authentically incorporate the Standards for Mathematical Practice (SMPs) in the Utah Mathematics standards.
- Ensure elementary standards are comprehensive, coherent, and essential--building concrete skills from each grade level.

#### Clarify:

- Be thoughtful of the number of standards that are to be taught in one school year's time. (Under Delete and Clarify).
- How do we make sure that standards are measurable? Standards and skills that can be measured.
- Standards are clearly defined, actionable, and formally assessable.
- Ensure that standards summary language is comprehensible to all stakeholders.
- Ensure that the mathematical practice standards are grade-level appropriate - discussing what it is and is not while expanding.
- Are there standards that can be revised or eliminated because of the tools available to students--ensuring that students use tools appropriately and develop rich conceptual understandings? (Under Delete and Clarify)
- Use more precise and consistent language (e.g., a Line Plot in elementary is called a Dot Plot in Secondary).

## Secondary (6th-12th)

#### Add:

- Standards should represent mathematical depth and be tied to context.
- More language on practice standards and articulating what student mathematical thinking looks like, incorporating different representations, and understanding student ways of thinking. (Clarifying Mathematical Modeling and the Proof Cycle [Bass, 2015])
- Carefully consider how we balance horizontal and vertical coherence as we decide to add and delete standards.
  - Vertical content coherence (e.g., 2-way frequency table, dilations, exponential functions).
  - Horizontal coherence (e.g., 2-way frequency table, dilations, and quadratics in Secondary Mathematics II). (Under Add and Delete)

## Delete:

- Consider the number of standards to be taught in one school year—consider emphasizing standards that open opportunities for all students to engage with mathematics based on interest and aspiration. (Under Delete and Clarify)
- Determine the mathematical standards for everyone and the mathematics that belong in courses students can choose to take. (Under Delete and Clarify)
- Are there standards that can be revised or eliminated because of the tools available to students—ensuring that students use tools appropriately and develop rich conceptual understandings? (Under both Delete and Clarify)
- Update data standards and vertical/horizontal progressions to include data frames, cleaning, and storing data.
- Carefully consider how we balance horizontal and vertical coherence as we decide to add and delete standards.
  - Vertical content coherence (e.g., 2-way frequency table, dilations, exponential functions).
  - Horizontal coherence (e.g., 2-way frequency table, dilations, and quadratics in Secondary Mathematics II). (Under Add and Delete)
- Strongly consider every standard's place in a 21st-century world (e.g., prioritizing mathematics that builds problem-solving tools that allow students to explore procedures so that students can engage with conceptual understanding).

## Emphasize:

- Authentically incorporate the Standards for Mathematical Practice (SMPs) in the Utah Mathematics standards.
- Standards for Mathematical Practice are the priority in Secondary Mathematics.
- Emphasize quality and depth of understanding of standards—balancing conceptual understanding and procedural fluency.
- Balance mathematical thinking and application of mathematics in context with memorization and procedure without context.

## Clarify:

- Consider the number of standards to be taught in one school year—consider emphasizing standards that open opportunities for all students to engage with mathematics based on interest and aspiration. (Under Delete and Clarify)
- Standards are written as learning goals.
- Clarify standards that can be chunked together.
- Determine the mathematics for everyone and the mathematics that belongs in courses students can choose to take. (Under Delete and Clarify)
- Standards are clearly defined and actionable.
- Standards in high school build towards what is taught in early college (reduction in overlap).
- Are there standards that can be revised or eliminated because of the tools available to students, ensuring that students are using tools appropriately and developing rich conceptual understandings while being mindful of all students' access to tools (Under Delete and Clarify)?
- Clarify the coherence of standards vertically and horizontally. The Committee recommends

including this in the standards document, not as an additional resource.

- Horizontally: Which standards in the grade level connect?
- Vertically: How ideas build year over year.
- Clarify the definition of rigor to include conceptual understanding, procedural fluency, and application of mathematical concepts and include clear examples of each (conceptual understanding, procedural fluency, and application).

The Standards Review Committee requests the Utah State Board of Education also consider the following recommendations, which are based on the opinion of committee members where consensus was not reached.

- *None*

Upon Board consideration and direction, staff will incorporate Board recommendations into drafts of the standards before requesting public comment and hearings.