SECTION ONE: Introduction

1A: Letter to Educators

The work in this draft document is the result of an incredible investment of time and knowledge from Oregon educators to review, comment, and draft an updated version of Oregon K-12 mathematics expectations. Recruitment of panelists began in April 2019, when interested panelists were given a chance to learn about the work before they committed.

Nominations remained open that summer—with an additional cohort added in September 2019—with a total of 118 educators divided into 12 grade level teams committing to the work. Over the course of the school year, several panelists had to drop out of the panel work, with 89 active panelists working on the project by spring 2020. Of these panelists, 28 educators accepted the role as a team co-chair to assist in the review of the content standards and participate at in-person events in August 2019 and March 2020.

Oregon Vision

The Oregon Math Advisory Panel advances mathematics education in our state by cultivating a network of educators that promote equitable math experiences for all students through guidance and support of policies, standards, curricula, assessments, and instructional best practices.

The math panel is committed to ensure that all students attain mathematics proficiency by having access to high-quality mathematics instruction that includes challenging and coherent mathematics content in a learning environment where each student receives the necessary support they need to succeed in mathematics.

Values that guide panel work in helping transform this vision into reality include Equity in Mathematics, Mathematical Growth Mindsets, Problem Solving Relevance, Effective Communication, and Instructional Excellence.

1B: Overview of 2019-21 Math Standards Review and Revision

Phase 1 (April-September 2019)

Goal: Ensure the Commitment of Shared Learning of the standards and the Oregon Equity Lens for all panelists

- Primary Task: Participate in online learning opportunities in spring/summer 2019 and engage in conversations in a Canvas course set up for the content panel.

The first phase of the project included grounding our work in a shared learning experience on the Canvas learning management system so that travel could be minimized by taking advantage of available technologies. Learning sessions were recorded and can be found on the Oregon Math Project YouTube channel.

Phase 2 (October 2019-March 2020)

Goal: Ensure the Language of the standards is accessible to a wide audience

- Primary Task: Review standards and draft content into (1) a standards statement, and (2) Clarifying Guidance(s)
- Additional HS Task: Propose core two credit content for all students
Work in Phase 2 was done primarily in grade level teams meeting virtually through video conferences, sharing documents online. Each team was tasked with creating a version 1.0 document by January 2020. This draft was then shared with all groups for feedback and use at the in-person co-chair meeting on March 2-3, 2020, in Portland, OR.

Additional guests at the March meeting included Shebi Cole and Jason Zimba from Student Achievement Partners, Robert Berry from the National Council of Teachers of Mathematics, and Ted Coe from Achieve. Guest speakers were on site to provide additional guidance to our panelists in drafting the version 2.0 document that is being shared now.

**Phase 3 (November-December 2020)**

**Goal:** Ensure the Commitment to the Focus and Coherence of the standards is maintained or improved
- Primary Task: Review the March 2020 draft (version 2.0) through the lens of focus (e.g., clarity, prioritization) and coherence (e.g., learning within established progressions)
- Create version 3.0 based on content panel feedback

The COVID-19 pandemic significantly disrupted all our lives in a number of ways, including statewide school closures starting mid-March, just after we were able to have our in-person content panel meeting. This impacted our work on math standards, which was put on hold. Work with math standards feedback will move to online only options starting in November 2020.

**Phase 4 (January-February 2021)**

**Goal:** Ensure the Commitment to Expand the Conversation beyond the content panel through a public review process
- Primary Task: Public review of version 3.0 - January 2021
- Coordinate with Oregon Education Service Districts (ESDs) to schedule virtual webinar options for feedback. Separate sessions for K-8 and High School standards will be provided and sign-ups should be done with the hosting ESDs. Dates, times, and registration links can be found on the ODE math standards page.

**Phase 5 (March-April 2021)**

**Goal:** Ensure the Commitment to Incorporate Feedback collected to inform and improve the quality of the standards
- Primary Task: Review feedback from the winter public feedback sessions and incorporate changes as needed
- Connections will also be made to work happening nationally to inform standards work in Oregon. Significant potential changes will be shared with educators and the State Board for possible inclusion in our state standards work (version 4.0).

**Phase 6 (Spring/Summer 2021)**

**Goal:** Ensure the Commitment to Alignment to the Vision of mathematics education in Oregon and ensure standards support this vision
- Primary Task: Present standards to the State Board of Education for adoption, or update timeline if additional time is needed to incorporate feedback and alignment to national work in math education
1C: Acknowledgements

It is with tremendous gratitude that the staff at the Oregon Department of Education (ODE) recognizes the work of the math content panel and the countless hours invested to produce this draft document. This work will continue to be reviewed in spring and summer 2020, with the goal of a public review in fall 2020. Please join us in thanking the content panelists and co-chairs (indicated in bold) for their efforts to support the review of our math standards.

Kindergarten Team
- Apryll Hammers, Medford School District
- Gloria Pereyra-Robertson, Medford School District
- Tamara Carpenito, Siuslaw Elementary School

1st Grade Team
- Brian Baker, Greater Albany Public Schools
- Marcy Doyle, Lincoln County School District
- Jennifer Botenhagen, Newberg School District
- Andrea Kapphahn, Medford School District

2nd Grade Team
- Kelsey Harris, Salem Keizer School District
- Jaimee Massie, Eugene School District
- Lindsay Gates, Ashland School District
- Kerry Morton, Bend-LaPine Schools

3rd Grade Team
- Kayla Hull, Wallowa Education Service District
- Jane Osborne, Hood River County School District
- Samantha Salvitelli, Gresham-Barlow School District

4th Grade Team
- Leslie McGraw, North Clackamas School District
- Nicole Rigelman, Portland State University
- Tim Crider, North Bend School District

5th Grade Team
- Christine Campanella, Portland Public Schools
- Kathy Few, Sisters School District
- Shereen Horton, Hillsboro School District
- Carla Montoya, David Douglas School District
- Natalie Wolf, Gresham-Barlow School District

6th Grade Team
- Melinda Knapp, Oregon State University-Cascades
- Tabatha Roderick, Camas Valley Charter School
- Kara Allan, Lincoln County School District
- Paulie Lime, North Santiam School District
- Christy Toliver, Corvallis School District

7th Grade Team
- Jennifer Bell, Oregon City School District
- Evalena Leitz, Gresham-Barlow School District
- Kama Almasi, Lincoln County School District
- Elizabeth Warren, Estacada School District

8th Grade Team
- Sarah Goehler, Lake Oswego School District
- Roger Hunter, Nyssa School District
- Rachel Aazzerah, Portland Public Schools
- Jon Bennett, South Umpqua School District
- Shannon Parvankin, Gresham-Barlow School District
- Andrea Young, Klamath County School District

Oregon Department of Education Staff
- Colt Gill, Director of the Oregon Department of Education
- Jennifer Patterson, Assistant Superintendent of Teaching, Learning and Assessment
- Alexa Pearson, Director of Standards and Instructional Supports
- Mark Freed, Math Education Specialist
- Andy Byerley, Math Assessment Specialist
- Tom Thompson, STEM Education Specialist
- Aujalee Moore, Administrative Specialist
1D: How to Read the Document

The 2021 draft K-8 mathematics standards is organized into grade level content standards within sections of this document. High school standards are presented in a separate document that can be found on the Oregon Department of Education mathematics standards webpage; public feedback webinar opportunities and survey forms will also be found on this page.

Table 1: Overview of Grade Level Standards and 2021 sections

<table>
<thead>
<tr>
<th>Grade Level Standards</th>
<th>2021 Draft section</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math Practices and Math Modeling</td>
<td>Section 2</td>
<td>Pages 8-11</td>
</tr>
<tr>
<td>Kindergarten Standards</td>
<td>Section 3</td>
<td>Pages 12-24</td>
</tr>
<tr>
<td>Grade 1 Standards</td>
<td>Section 4</td>
<td>Pages 25-39</td>
</tr>
<tr>
<td>Grade 2 Standards</td>
<td>Section 5</td>
<td>Pages 40-54</td>
</tr>
<tr>
<td>Grade 3 Standards</td>
<td>Section 6</td>
<td>Pages 55-74</td>
</tr>
<tr>
<td>Grade 4 Standards</td>
<td>Section 7</td>
<td>Pages 75-95</td>
</tr>
<tr>
<td>Grade 5 Standards</td>
<td>Section 8</td>
<td>Pages 96-115</td>
</tr>
<tr>
<td>Grade 6 Standards</td>
<td>Section 9</td>
<td>Pages 116-138</td>
</tr>
<tr>
<td>Grade 7 Standards</td>
<td>Section 10</td>
<td>Pages 139-158</td>
</tr>
<tr>
<td>Grade 8 Standards</td>
<td>Section 11</td>
<td>Pages 159-178</td>
</tr>
</tbody>
</table>

Each grade level section is divided into three subsections: (1) an introduction, (2) draft standards statements, and (3) crosswalk with CCSS (2010) with draft clarifying guidance. Additional information about what to find in these sections can be found below.

Part A – Introduction

**Critical Areas for Grade Level Mathematics**

For each grade level from kindergarten through grade 8, the Critical Areas outline the essential mathematical ideas for each grade level. The critical areas are designed to bring focus to the standards at each grade level by describing the big ideas that educators can use to build their curriculum and to guide instruction. For each grade, kindergarten through grade 8, there are two, three, or four critical areas which can be found first in each introduction section.

**Grade Level Overview**

Following the critical areas for each grade will be an overview of the grade level domains and clusters. This content is presented unedited from the CCSS (2010), and is proposed to remain the same for the K-8 standards to assist in providing continuity to the Oregon draft 2021 math standards. In general, these terms refer to:

- **Standards** define what students should understand and be able to do.
- **Clusters** summarize groups of related standards. Note that standards from different clusters may sometimes be closely related, because mathematics is a connected subject.
Domains are larger groups of related standards. Standards from different domains may sometimes be closely related.

Figure 1: Domain and cluster headings within Part A: Introduction

Additional Introduction Elements
Each grade level introduction will also include the eight mathematical practices, which can be found in Section two of this document.

Highlights of the major work of the grade, and grade level fluencies, are also presented in the introduction. This information came from the major work of the grade documents created by Student Achievement Partners (SAP), and included in the grade introductions to provide continuity between the Oregon standards and work done by SAP. Grade level fluencies are just an overview in the introduction, and specific wording of the grade level expectations can be found in the standards statement tables in the following section.
Part B – Draft Statements

The 2021 review and revision of K-8 math standards includes efforts to improve readability and access to a wide range of potential readers. The standards document itself is one of the most downloaded documents on the state website and provides an opportunity to share important information to not only educators, but additional audiences—such as parents and community members—as well.

Many of the CCSS (2010) standards were long and technical, and presented barriers to access for many readers interested in grade level expectations. For the 2021 review, the original standards were divided into two parts:

1. Standards statements that will be adopted by the State Board of Education
2. Clarifying guidance that will be used in supporting documents for use by educators to understand the boundaries and examples of a given standard

Figure 2: Domain, Clusters, and Standards Statements within Part B

Table 2: Overview of Standards Statements

<table>
<thead>
<tr>
<th>Audience</th>
<th>Everyone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>A standard is a statement of what a student should know, understand, or do.</td>
</tr>
<tr>
<td>Description</td>
<td>Standards statements need to be written as stand-alone statement(s) in the final document. They could include more than one sentence, but overall word count needs to remain below approximately 40-50 words.</td>
</tr>
</tbody>
</table>
| Considerations | • Lead with clarity  
  o Start with key ideas  
  o First Sentence approximately 10-20 words  
  o Minimize use of conjunctions (and/or)  
  • Include information from CCSSM  
  o Total word count approximately 40-50 words  
  • No Parentheticals  
  o Examples moved to clarifying statements  
  • Technical Considerations  
  o Size (word count, character count, number of paragraphs)  
  o Complexity (words per sentence, characters per word)  
  o Readability (Flesch Reading Ease, Flesh-Kincaid Grade Level) |
Part C – Crosswalk with Clarifying Guidance

A crosswalk between the CCSS (2010) text and the draft Oregon 2021 standards statements is provided in section C for each grade level. Additionally, clarifying guidance is provided that will be included in supporting documents, but not presented to the State Board for adoption. This will allow guidance to be revised and updated as needed without board adoption. Guidance is provided for educators to better understand the scope and boundaries of a given content standard.

Figure 3: Domain and cluster headings within Part C: Crosswalk with Clarifying Guidance

Table 3: Overview of Clarifying Guidance

<table>
<thead>
<tr>
<th>Audience</th>
<th>Teachers, Administrators, Test &amp; Curriculum Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>Clarifying statements extend expectations within standards to decrease possible confusion or ambiguity.</td>
</tr>
<tr>
<td>Description</td>
<td>The intent of clarifying statements is to provide additional guidance for educators to communicate the intent of the standard as supporting resources are developed. Clarifying statements can be in the form of succinct sentences or paragraphs that attend to one of four types of clarifications: (1) Student Experiences; (2) Examples; (3) Boundaries; and (4) Connection to Math Practices.</td>
</tr>
<tr>
<td>Considerations</td>
<td>Clarifying statements are encouraged to draft, but are optional so they could potentially be left blank. The use of sentence frames and titles is also encouraged to indicate the type of clarifying statement. Information could be used in the development of assessments and instructional materials, but it is not a requirement in that all students have the identical experience. They are guideposts that help reduce potential confusion and increase fidelity as educators implement the standards.</td>
</tr>
</tbody>
</table>

- Examples found within the current CCSS document in the form of "i.e." or "e.g." statements should be moved to clarifying statements or removed.
- Standards with an additional level, such as a "4a", "4b", or "4c" statement, should include relevant content in the standards statement, incorporate into the clarifying paragraphs, or be removed.
Example sentence frames for clarifying statements could include, but are not limited to:

- **Student Experiences**
  - "Students should have the opportunity to ____"
  - "Build conceptual understanding by ____"

- **Examples**
  - "Some examples include ____"

- **Boundary Statements**
  - "Students are not expected to ____"
  - "Expectations of the standard include ____"

- **Math Practices**
  - "Opportunities to engage in math practices include ____"

Future work of the clarifying guidance could pull from additional sources outside of Oregon to create supporting documents to guide implementation of the adopted standards.

At this time, please provide feedback on the balance between adopted content standards and clarifying guidance using the provided forms on the Oregon Department of Education mathematics standards webpage, or contact Mark Freed, ODE Math Education Specialist, if you have additional questions or comments about the 2021 draft standards document.