Standards Review Update: English Language Arts/Literacy and Mathematics

Board of Elementary and Secondary Education

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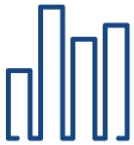
MASSACHUSETTS DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Massachusetts's goal is to prepare all students for success after high school, by:

- Strengthening **curriculum, instruction, & assessment**

- Promoting **educator development**

- Turning around the **lowest performing districts & schools**



- Using **technology and data** to support teaching & learning

- Attending to the **social/emotional/health needs** of students & families

Objectives for this meeting:

- Update the Board on the progress of the review of the *2011 Massachusetts Frameworks for English Language Arts and Literacy* and *Mathematics*.
- Engage in discussion on the proposed revisions in ELA/Literacy and Mathematics.
- Respond to Board questions and clarify next steps in preparation for the November Board meeting.

Agenda

- Framing comments, history & orientation
- ELA/Literacy:
  - Key topics of interest: Reading closely and writing about complex texts; addressing literary concepts
  - Examples of proposed revisions
  - Discussion
- Mathematics:
  - Key topics of interest: Offering of high school Algebra I Model Course in middle school and options for course sequences and pathways
  - Examples of proposed revisions
  - Discussion

Reference Materials

- Final Report: Massachusetts ELA/Literacy and Mathematics Curriculum Frameworks Review by Abt Associates
- Overview of Major Recommendations: Massachusetts Curriculum Frameworks for English Language Arts and Literacy Standards Review 2016
- ELA/Literacy Detailed Proposed Revisions
- Overview of Major Recommendations: Massachusetts Curriculum Frameworks for Mathematics Standards Review 2016
- Mathematics Detailed Proposed Revisions
- 2011 ELA/Literacy and Mathematics Frameworks

Brief History: Standards in Massachusetts

- 1993 Education Reform Act: MA one of first states to implement standards-based reform; mandated development of content standards and a statewide assessment of those standards
- 1995: Board adopted the first Mathematics Framework; and the first ELA Framework in 1997
- 2000: Revised ELA/Literacy and Mathematics Framework adopted; Grade-level Supplements added in 2004
- 2010: Revised ELA/Literacy and Mathematics Frameworks adopted, incorporated the Common Core State Standards
- 2015 Board recommended new assessment and charged ESE with reviewing and revising Curriculum Frameworks

Current Work:

Goal: Make recommendations to the Board to revise the standards, based on evidence from lessons learned during Massachusetts educators' implementation of the standards over the past five years.

Process: Three Phases

- Phase 1 (January-July 2016): Engaged stakeholders and gathered recommendations for revisions;
- Phase 2 (July-October 2016): Engaged content advisors and refined revisions; progress report to the Board;
- Phase 3 (November 2016-Spring 2017): Refine the proposed revisions; bring them to the Board for review and a vote to release for public comment (Nov); conduct public comment period, synthesize public comment; make final revisions and bring the final proposed standards to the Board for vote to adopt.

Orientation to the Curriculum Frameworks:

- Vision statement
- Guiding principles for effective programs
- Orientation and structure
- Learning standards
- Supporting resources for educators and programs

What is a Standard?

- Specifies what students should know, understand, and be able to do
  - Demonstrated knowledge *and* skills
  - Measurable

English Language Arts and Literacy

Major Recommendations for Revisions

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The Structure of the 2011 ELA/Literacy Framework

- "Anchor standards" for College and Career Readiness, PK-12
- Individual grade standards, PK-8; Grade bands for 9-10 and 11-12
- 5 Key Topics for Standards:
  1. Reading Literary and Informational Texts and Foundations of Reading
  2. Writing: argument, explanation, narrative and research
  3. Speaking and Listening: discussion and presentation
  4. Language: standard English conventions and vocabulary development
  5. Literacy in History and Social Studies, Science, and Technical Subjects

Topics of Major Recommendations

- Reading closely and writing about complex texts
- Addressing literary concepts
- Increasing coherence and focus, rigor, and clarity
- Providing resources

1. Reading Closely and Writing about Complex Texts

- To increase coherence, make explicit cross-references among the standards for Reading, Writing, and Language
- To increase rigor, edit standards and provide examples of effective teaching practices
- To increase clarity, expand the glossary; use terms consistently, and include explanatory material on qualitative measures of text complexity

1. Reading Closely and Writing about Complex Texts

- **Coherence: Cross-references among standards (page 2 of Overview)**
  - 2011 Grade 6 Language standard 1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking
  - Proposed Grade 6 standard: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in PK to grade 5. (See Writing standard 5 and Speaking and Listening standard 6 on strengthening writing and presentations by applying knowledge of language.)

1. Reading Closely and Writing about Complex Texts

- **Rigor: Edits to standards and curriculum units that integrate the standards for Reading, Writing, and Language (page 3)**
  - Proposed Grade 10 example: Students read Shakespeare's play, *Richard II,* pay close attention to recurring words and images that associate the king with the sun, brightness, height, and power; they write essays about such image clusters and their impact on the meaning of the play.

1. Reading Closely and Writing about Complex Texts

- Rigor: Text Complexity (page 10)
- 2011 Grade 3 Reading Informational Text
  - By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 complexity band independently and proficiently.
- Proposed revision:
  - Independently and proficiently read and comprehend informational texts, including history/social studies, science, and technical texts, of appropriate complexity for grade 3 or higher.

1. Reading Closely and Writing about Complex Texts

- **Clarity: Strengthen the Glossary, and add explanatory materials on text complexity (Pages 4 and 5)**
  - Define and use consistently academic vocabulary such as *read closely* and *image* and literary terms such as *theme* and *metaphor.*
- Identify qualitative dimensions of text complexity
  - *Meaning and Knowledge Demands*
  - *Text Structure*
  - *Language Features: vocabulary and syntax*
  - *Connections between text and illustrations or graphics*

2. Addressing Literary Concepts (pages 6 and 7)

- In 2010, Massachusetts added 2 PK-12 standards for Reading Literature and Writing
- Their purpose was to augment the Common Core State Standards' treatment of literary concepts
- In 2016, Massachusetts educators said these standards were difficult to implement because
  - they were too genre specific and
  - they restricted teachers' choice of literary texts

2. Addressing Literary Concepts

- **Proposed revisions (pages 6 and 7)**
  - For greater coherence, delete the 2 MA standards and integrate their content into other Reading, Writing, Speaking and Listening, and Language standards
- **The revisions**
  - streamline the standards for Reading Literature and Writing
  - deepen the importance of conceptual knowledge of literature by applying it to speaking and listening as well as reading and writing

2. Addressing Literary Concepts

- ***2011 grade 8 Reading Literature standard MA.8.A:***
  - *Identify and analyze the characteristics of irony and parody in literary works.*
- **Proposed grade 8 Reading Literature standard 4:**
  - Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning, tone, and mood, including the use of allusion and irony. (See Language standards 4-6 on applying knowledge of vocabulary to reading.)
- **Proposed grade 8 Language standard 6a:**
  - Understand and use correctly literary and general academic terms to describe and analyze texts (e.g., terms used in previous grades, new terms such as *allusion, analogy, comedy, irony, parody, tragedy*).

2. Addressing Literary Concepts

- ***2011 grade 8 Writing standard MA.3.A:***
  - *Write short narratives, poems, scripts, or personal reflections that demonstrate understanding of irony or parody.*
- **Proposed grade 8 Writing standard 3a:**
  - Demonstrate understanding of literary concepts such as mood, tone, point of view, personification, symbolism, and irony.
- **Proposed grade 8 Writing standard 10:**
  - Write routinely in a variety of genres (e.g., poems, stories, scripts, reflections, essays) over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Your Questions

- We welcome your comments and questions on the proposed revisions we have described and any of the further proposed revisions on pages 8 through 14 of the Overview document.

Mathematics

Major Recommendations for Revisions

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Topics of Major Recommendations

1. Major Theme: Options for Course-Taking Sequences
2. Increase
   - Coherence
   - Focus
   - Rigor
   - Clarity
3. Other Revisions

2011 MA Curriculum Framework for Mathematics Organization

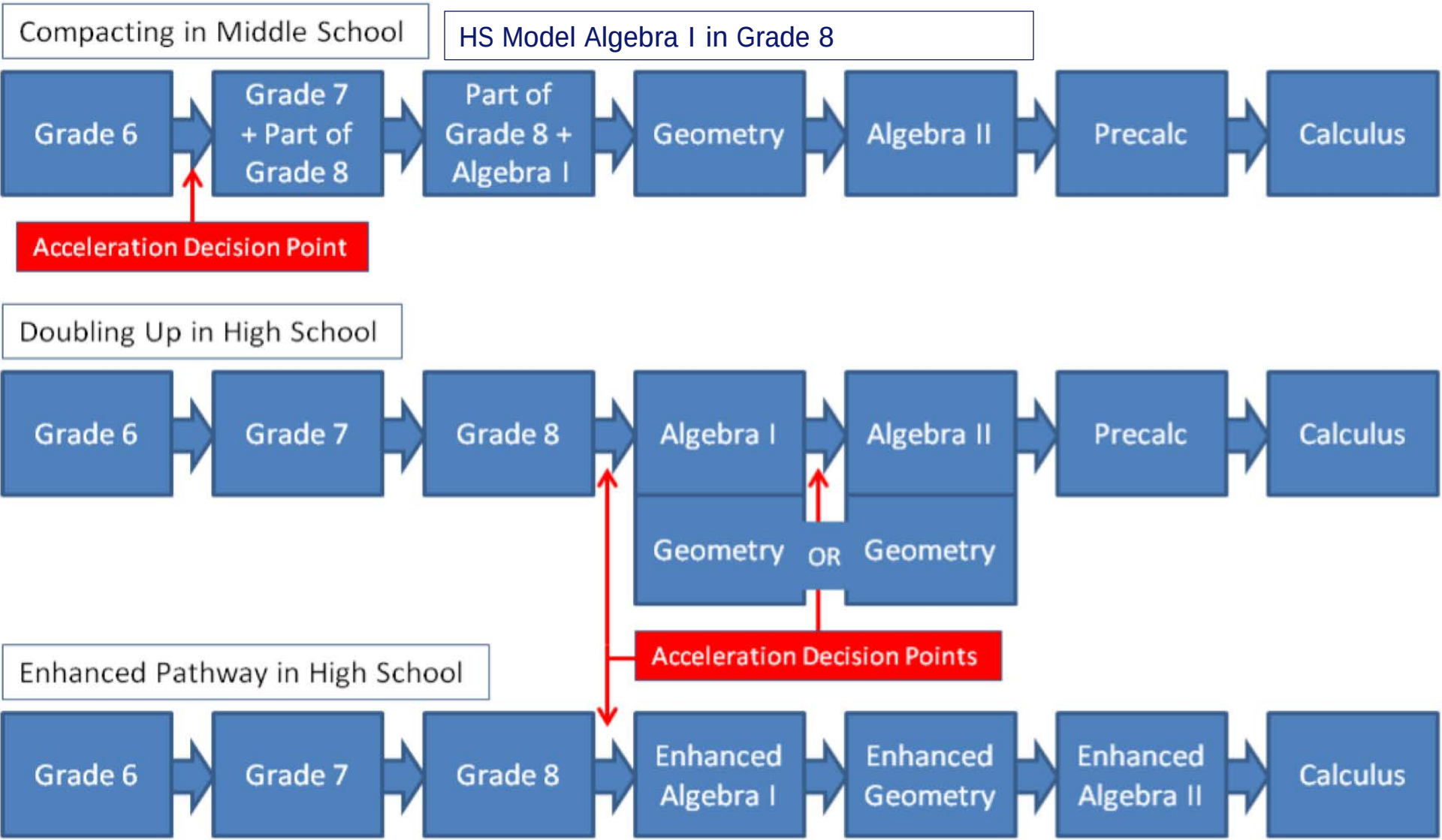
I. Introduction
II. Guiding Principles for Mathematics Programs
III. Standards for Mathematical Practice
IV. Pre-K to 8 Grade-level content standards
    A. Grade-level Introductions highlighting critical areas
    B. Grade-level Overviews of the domains and clusters
V. High School Standards: Conceptual Categories
VI. High School Model Pathways (Traditional and Integrated) and Model Courses (Alg. I, Geom., Alg. II, Math I, Math II, Math II)
VII. Appendices
VIII. Sample of work consulted
IX. Glossary, Illustrations, and tables

Pre-K-8 Domains Progression (p. 1)

Domains	PK	K	1	2	3	4	5	6	7	8
Counting and Cardinality										
Operations and Algebraic Thinking										
Number and Operations in Base Ten										
Number and Operations - Fractions										
Ratios and Proportional Relationships										
The Number System (Rational and Irrational)										
Expressions and Equations (Algebraic)										
Functions (Algebraic)										
Geometry										
Measurement and Data										
Statistics and Probability										

Focus	Coherence	Clarity	Rigor

2011 ESE Guidance Document "Making Decisions about Course Sequences" (p. 1)



1. Options for Course-Taking Sequences: High School Pathways (p. 2)

Recommendations

- Include the guidance document in the high school section of the framework
- Revise the course sequence graphic to include pathways to calculus and other advanced courses

Rationale

- Need a pathway for students who are ready to take the HS Model Algebra I course in Gr. 8
- Need for pathways to calculus for students who are ready to accelerate in high school
- Offer additional pathways for advanced courses tailored to students' interests and plans (statistics, discrete mathematics, advanced functions and trig etc.)

2. Increase Coherence:
Example-Recognizing Patterns (p. 3)

Recommendations

- Added language to recognize and/or identify patterns in grades K-2, Example:
  - Kindergarten.CC.1 Count to 100 by ones and tens. Recognize the one more and ten more patterns of counting.

Rationale

- Maintains the focus on numbers and operations and is foundational for algebraic thinking
- Connects to the Standards for Mathematical Practice
  - Looking for and making use of structure and
  - Look for and express regularity in repeated reasoning

2. Increase Coherence: Consistent Language and Definitions (p. 5)

Recommendations

- Keep the two 'know from memory' standards.
- Add definitions to Framework for fluency, know from memory, standard algorithm, and algorithm
  - Include significance of using strategies to develop number sense and fluency precedes knowing math facts from memory

Rationale

- Students need to be able to quickly recall math facts in order to efficiently calculate and solve more complex calculations and problems as they advance in their mathematical studies

2. Increase Coherence: Consistent Language and Definitions (pp. 3-4)

Fluency: *"*Fluency is knowing how a number can be composed and decomposed and using that information to be flexible and efficient in solving problems. The best way to develop fluency is to develop number sense and to work with numbers in different ways."

(Parish., S. 2014. Number Talks: Helping Children Build Mental Math and Computational Strategies, Grades K–5, 2014, p. 159. Updated with Common Core Connections, Math Solutions.)

Know from Memory: As students work on meaningful number activities they will commit facts to memory (recall and easily retrieve to use when needed) at the same time as understanding numbers and math. Students are expected to build understanding and then they are expected to know facts from memory.

(Adapted from Jo Boaler, 2015, Fluency Without Fear. Youcubed.org)

2. Increase Focus: *Example-Rate (p. 6)*

Recommendations

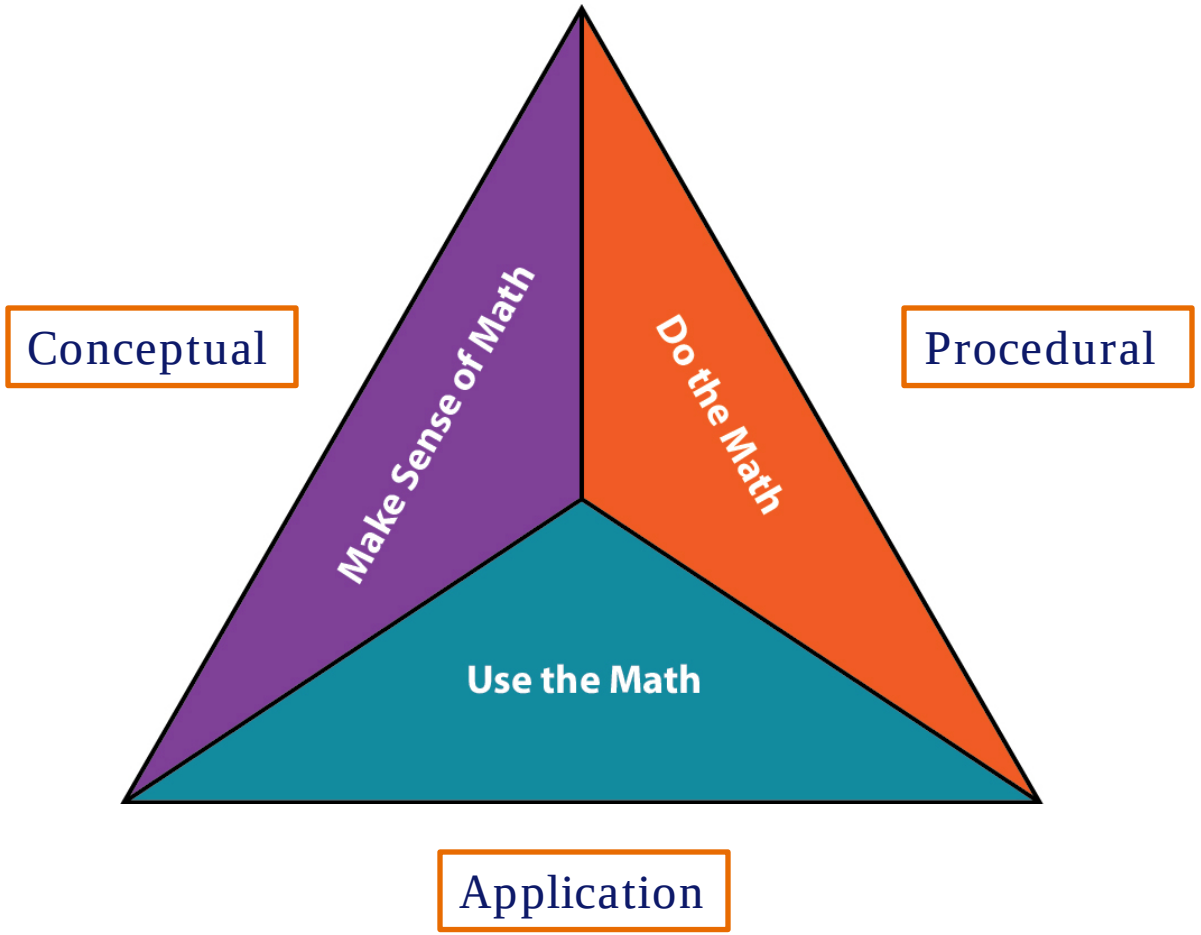
- Add the word "rate" to grade 6 cluster heading of standards in the Ratio and Proportional Relationships domain

  Revised cluster heading: *Understand ratio and rate concepts and use ratio and rate reasoning to solve problems*

Rationale

- Connecting Ratio and Rate is a critical focus in Grade 6
- Using both ratio and rate reasoning to solve problems
- To develop strong proportional reasoning skills and provide a strong foundation for future work with algebraic expressions and equations in grade 7 and linear functions in grade 8

Defining Rigor in the Math Framework



2. Rigor: *Example- 20 High School Plus (+) Standards (p. 7)*

Model Geometry (9)

- (3) G-SRT (Trig)
- (1) G-C4 (Construct a tangent to a circle from a point outside the circle)
- (1) G-GMD (informal argument Cavalieri's) Principle
- (2) S-CP (probability)
- (2) S-MD (probability)

Model Algebra II (11)

- (5) N-VM (vectors and matrices)
- (2) N-CN (complex #s)
- (1) A-APR (the binomial theorem)
- (1) A-APR. (Closure property of rational expressions)
- (2) S-MD (using probability to make decisions)

2. Maintain Rigor: *Example-High School (+) Plus Standards (p. 7)*

Recommendations

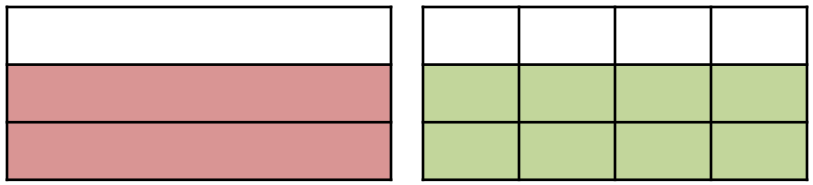
- Retain the high school (+) Plus standards in the Model High School courses

Rationale

- (+) standards are optional
- Equity: Inclusion provides differentiated learning opportunities for students who are ready for advanced content
- Retains coherence within the course by connecting content
- Prepares students for advanced coursework in which the standards are prerequisites

2. Increase Clarity: *Example-Visual Model*

- **Existing Grade 4 number and operations with fractions standard:4.NF.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the numbers and sizes of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- **Added a visual model example**



2/3 of the whole region is shaded

8/12 of the whole region is shaded

2/3 = (2 x 4)/(3 x 4) = 8/12

- **Rationale:** The edit provides clarification for types of visual models that can be used to explain fraction equivalency.

3. Revisions to Other Sections (p. 9)

Recommendation

- Standards for Mathematical Practice descriptions by narrower grade spans
- Update Appendices
  - Glossary
- Hyperlink standards to examples, glossary terms, Model Curriculum Units, etc.

Rationale

- The narrower grade span descriptions make them more relevant, understandable, and usable for teachers to engage students in the math content
- Updated appendices make the Framework more user-friendly

Your Questions

- We welcome your comments and questions on the proposed revisions we have described and any of the further proposed revisions in the Overview document.