Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for each grade level or course? What recommendations do you have for improvement?

In general, there is a cohesive development of mathematics concepts from kindergarten to precalculus. I strongly recommend that a horizontal alignment document is developed to insure that overloading in a grade level or course does not occur. The review committee must spend some time determining the approximate calendar length of the proposed standards for the grade level or course to insure that concepts missing at any grade level?

The Process Standards and the Content Standards are separate components and should be formatted as course feedback.

5. Are the Student Expectations (SEs) clear and specific?

At several points there are references to fluency in relation to strategies. I recommend that Review

Expert Feedback on the Mathematics Standards

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 1

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?

The review committee has added several important student expectations that have strengthened the knowledge and skill statements. Skip counting by fives (useful for counting nickels) should not have been omitted, however.

2. Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?

In the introduction, section (II), *joining* and *combining* seem to denote the same action. I suggest changing *combining* to *changing.*

The phrase "in all positions" in 1N10-12 is troublesome. I suggest rewording the student expectations to indicate "missing sums and missing addends" in 1N10. Likewise, I suggest "missing results and quantities" in 1N11 and 1N12. In fact, there is overlap in these student expectations and 1A01-3. Look at Kindergarten for clarification of language.

Is the term *conceptual subitizing* critical in describing this important skill? Should this student expectation be moved with those addressing number patterns?

Fluency is addressed in 1N14 with applying basic fact strategies. This is a proficiency needing consistent interpretation and definition.

3. Are there specific areas that need to be updated or reworked?

The student expectations noted above should be clarified or combined. There should be more continuity between place value and the numbers used in addition and subtraction. Rewording is needed for 1N02.

4. Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?

The content standards for grade 1 are rigorous and age-appropriate, with the exception of 1N02-5 in which the upper limit of 999 is too large for first graders. Expanded notation should be left for grade 2.

5. Are the Student Expectations (SEs) clear and specific?

7. Do you have any other suggestions for ways in which the mathematics standards can be improved?

Remove the mark-ups and look at the revised draft as a new document. Check for uniformity of language, precision in the way that student expectations are gauged, and flow of conceptual development (skip counting to 130 in both Grade 1 and 2). Determine the skills that first grade students should have by the end of the year.

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 2

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 3

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?

The review committee has added, deleted, and clarified many student expectation, resulting in a much more coherent whole. There are several areas needing further changes for a complete and logical development of third grade concepts.

2. Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?

Are the fractions in 3N06-12 limited to those greater than zero but less than one or does these include fractions greater than one? I see a first reference to fractions greater than one in grade 4 (4N11). Clarify so that mixed numbers will be introduced in grade 2 if necessary.

3. Are there specific areas that need to be updated or reworked?

Set models should be specified in addition to part-whole models to support 3N9. Also, the pictorial model for determining how many more identical fractional parts are needed to make a whole should be extended to show that a whole and a fractional part (unit fraction) equals the number of fractional parts (such as 1 and 1/3 would equal four 1/3's).

4. Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?

The content standards for grade 3 are rigorous and age-appropriate.

5. Are the Student Expectations (SEs) clear and specific?

I believe the revisions have helped greatly with clarity and specificity. Having the research to back up the changes is valuable. There are some remaining questions.

Is there a way to specify that 3N17 is a definition of division?

6. Is the subject area aligned horizontally and vertically?

Work with second and fourth grade committees to determine tight alignment.

7. Do you have any other suggestions for ways in which the mathematics standards can be improved?

Remove the mark-ups and look at the revised draft as a new document. Check for uniformity of language, precision in the way that student expectations are gauged, and flow of conceptual development. Determine the skills that third grade students should have by the end of the year.

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 4

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 5

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. **Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?**

   The review committee has added, deleted, and clarified many student expectation, resulting in a much more coherent whole.

2. **Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?**

   Rational numbers are referenced for the first time in 5N07. Clarification should be given.

3. **Are there specific areas that need to be updated or reworked?**

   Because of the amount of new concepts being moved down from grades 6-8, I recommend that division with decimals be postponed until grade 6, which is still a year earlier than we've addressed in the our current TEKS.

4. **Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?**

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Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 6

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?

The review committee has added, deleted, and clarified many student expectation, resulting in a much more coherent whole. However, there is too much content for a single year.

2. Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?

In 6P08, change "numbers" to "rational number equivalents" for clarity.

3. Are there specific areas that need to be updated or reworked?

I strongly recommend a complete reworking of the Numbers and Operations and the Proportionality focal areas.

4. Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?

The development of percents is not well supported in the current version. Insert a student expectation between 6P03 and 6P08 to begin conceptual underst 2 1(r)7(o2x(31-12(un)-12te)6(n)1Io ep-12(,)-1(r-8(t)-1(u(e)6(sof)

7. Do you have any other suggestions for ways in which the mathematics standards can be improved?

Remove the mark-ups and look at the revised draft as a new document. Check for uniformity of language, precision in the way that student expectations are gauged, and flow of conceptual development.

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 7

Submitted by Jacqueline Weilmuenster

September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?

The review committee has added, deleted, and clarified many student expectation, resulting in a much more coherent whole. However, there is too much content for a single year.

2. Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?

In 7P01, insert "using multiple representations, including…" for clarity. In 7P06, insert "extend to the ratio" of the area of a circle to the square if its radius.

3. Are there specific areas that need to be updated or reworked?

The student expectation added after 7A11 is not a good fit here. Writing equations to represent the angles relationships when parallel lines are cut by a transversal would be more appropriate in grade 8, and not necessarily as an algebraic standard.

4. Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?

We need to establish the concept of volume of prisms resulting from the area of the base multiplied by the height, using concrete and pictorial models. This important idea has to come before 7A02-03. Write as "explain verbally and symbolically the relationship between the base area, height, and volume of a prism".

5. Are the Student Expectations (SEs) clear and specific?

In 7A06, are rhombi included because they are on the reference chart? This will change with the revisions to the TEKS. Rhombi are special cases of parallelograms and aren't needed in this student expectation.

6. Is the subject area aligned horizontally and vertically?

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft – Grade 8

Submitted by Jacqueline Weilmuenster
September 19, 2011

1. Is a complete and logical development of mathematics concepts followed for this grade level? What recommendations do you have for improvement?

The review committee has added, deleted, and clarified many student expectation, resulting in a much more coherent whole. However, there are several areas needing additional work.

2. Have the correct vocabulary and terminology been used? Where can changes be made for accuracy and/or clarity?

Using the expectation of illustrating is problematic. Rewrite 8N01 as "use rational numbers to approximate irrational values on a number line. Include pi and irrational square roots of numbers less than 225." I see no need for cube roots at this point. In 8A02, omit "illustrate and" and write as "explain verbally and symbolically".

In 8P14, omit "initial value" unless limiting the applications to the first quadrant. Change 8P08 to "compare linear and non-linear situations as represented in tables, graphs and equations". In 8A09, add "on both sides of the equal sign" for consistency.

3. Are there specific areas that need to be updated or reworked?

In Number and Operation, reorder the student expectations: 8N01, a combination of 8N03 and 4, 8N01, and a combination of 8N02 and 5. In Proportionality, reorder 8P01 and 8P02.

4. Are the mathematics concept/content statements grade-level appropriate? Are important concepts missing at any grade level?

Take pyramids out of grade 7, add both their surface area and volume to grade 8. Add dilations to 8G01-3.

5. Are the Student Expectations (SEs) clear and specific?

Rewrite 8P01 as "generalize that the ratio of corresponding sides of similar figures are proportional, including a figure and its dilation. Rewrite 8P02 as "identify the similarities and differences between a given figure and its dilation(s), such as angle measures, side lengths, and areas, including figures graphed on a coordinate plane.

6. Is the subject area aligned horizontally and vertically?

With the effort to complete rational number operations by the end of grade 7 and introduce into eighth grade a large amount of content previously relegated to Algebra 1, there is a concern that our students will find it even more difficult to achieve fluency with operations.

7. Do you have any other suggestions for ways in which the mathematics standards can be improved?

Remove the mark-ups and look at the revised draft as a new document. Check for uniformity of language, precision in the way that student expectations are gauged, and flow of conceptual development. Determine the skills that eighth grade students should have by the end of the year.

Expert Feedback on the Mathematics Standards
Revised Commissioner's Draft –

Revised Commissioner's Draft – Algebra 2

Submitted by Jacqueline Weilmuenster

September 19, 2011

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