

Grade 5, Indicator 1e

From the review: ...students are not given extensive work with grade-level problems.

Everyday Mathematics Response

In the EdReports review, Indicator 1b, the reviewers calculated that the time spent on major work was approximately 83 percent. As we pointed out in our response to Indicator 1b, we believe that the reviewers underestimated the amount of time spent on major work. However, even if the time spent on major work is only 83 percent, we do not understand how this translates into the statement that students are not given extensive work with grade-level problems.

From the review: The content does not always meet the full depth of the standards. This mainly occurs because of a lack of lessons addressing the full depth. For example, there are four lessons listed for 5.MD.B.2; however, only one lesson actually aligns to the full depth of the standard Lesson 8-6 has students creating line plots using $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$. The other three lessons only have students creating line plots using $\frac{1}{2}$, a Grade 3 standard.

Everyday Mathematics Response

There are a total of 22 instructional exposures to 5.MD.2 across 11 lessons. The type of data that the materials ask students to represent on line plots varies from exposure to exposure – and are detailed below. But we would like to point out that this reviewer is only looking at a part of the Grade 5 standard in evaluating the coverage. 5.MD.2 also requires students to “Use operations on fractions for this grade to solve problems involving information presented in line plots.” This is different from the Grade 3 standard, and all exposures require students to do this. In several cases, we purposefully used simpler fractions because the computation required of students was complex. Even given this, we feel that students are provided sufficient exposure to meet the full depth of the standard – especially given that this standard is not major work in the grade.

- In Lesson 6-4, students create several line plots, including one using $\frac{1}{8}$ s. (See the Home Link, Problem 1.)
- In Lesson 6-5, students create line plots to the nearest $\frac{1}{2}$. Note, however, that this lesson deals with the concept of “evening out”, called for in the standards. This computational work is difficult, and we purposefully used fractions to the nearest $\frac{1}{2}$ to ensure students could understand and perform the computations called for by the standard.
- In Lesson 6-11, students create line plots to the nearest $\frac{1}{2}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 6-13, students extend their understanding of the concepts in the standard to create a line plot representing decimal data collected in an experiment.
- In Lesson 7-1, students create line plots to the nearest $\frac{1}{4}$ and perform operations on fractions to solve problems about the data shown on the line plot.

- In Lesson 7-6, students create line plots to the nearest $\frac{1}{4}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 7-8, students create line plots to the nearest $\frac{1}{4}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 7-9, students create line plots to the nearest $\frac{1}{8}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 8-2, students create line plots to the nearest $\frac{1}{4}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 8-4, students create line plots to the nearest $\frac{1}{8}$ and perform operations on fractions to solve problems about the data shown on the line plot.
- In Lesson 8-8, students create line plots to the nearest $\frac{1}{8}$ and perform operations on fractions to solve problems about the data shown on the line plot.

From the review: Another example is 5.OA.A.1, using parentheses and brackets in equations and expressions. While there are 50 exposures to this standard according to the online tracker, only four of the exposures are Focus lessons. None of those four lessons teaches students how to use parentheses or brackets; they just expect students to be able to use them.

Everyday Mathematics Response

Note that 5.OA.1 only calls for students to use parentheses and brackets in expressions, not equations, as the reviewer claims.

That being said, students **do** already know how to use parentheses. The treatment of Order of Operations is not entirely transparent in the Common Core State Standards, in particular in its reference to Order of Operations in a footnote in standard 3.OA.8. We consulted with Bill McCallum, one of the lead authors of the CCSS, about the treatment of the Order of Operations, and part of his response read: “And there’s no rule against using parentheses if it is deemed necessary for the stage of development. In fact 3.OA.5 has an example that reads “one can find $8 \times 7 = 8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$.” Subsequently, students are introduced to the use of parentheses in *Everyday Mathematics* in Grade 3 – a choice that is justified by the CCSS.

Because of the work with parentheses in Grade 3, we feel that our treatment of this standard, which is not major work, is sufficient. Teachers review the use of parentheses with students in Lesson 1-1, and they instruct students in the use of brackets and braces in Lesson 1-12 (see “Understanding Grouping Symbols” on page 89 of the *Teacher’s Lesson Guide*). Students practice using grouping symbols in expressions and evaluating expressions with grouping symbols in 51 exposures across 6 units. These exposures include games, journal pages, Mental Math and Fluency exercises, Home Links, and Math Boxes problems. All of these exposures provide opportunities for teachers to provide more explicit instruction if needed. However, our extensive field testing of the Grade 5 materials did not provide evidence that students needed additional direct instruction with this standard.

From the review: When looking at 5.NBT.B.7, using the four operations with decimals, the online tracker shows 132 exposures; however, only 14 lessons are cited as focus lessons. There are only two lessons for division, three for multiplication, three sharing multiplication, one for addition, one for subtractions, and two sharing addition and subtraction. The other two lessons are not aligned to the standard.

Everyday Mathematics Response

We do not understand how the reviewer can claim that 132 exposures and the Focus parts of 14 Focus lessons does not constitute adequate lessons addressing the standard.

There are actually 15 lessons in which the Focus part of the lesson addresses this standard. All lessons that we cite as aligned to the standard are, indeed aligned.

- In Lesson 4-11, students use hundredths grids to represent and solve decimal addition and subtraction problems.
- In Lesson 4-12, students apply whole-number addition algorithms to solve decimal addition problems.
- In Lesson 4-13, students apply whole-number subtraction algorithms to solve decimal subtraction problems.
- In Lesson 4-14, students apply decimal addition and subtraction strategies to add and subtract money.
- In Lesson 6-8, students use estimates to place decimal points in decimal products and quotients. This lesson is foundational for being able to understand and apply decimal multiplication and division strategies.
- In Lesson 6-9, students learn and apply two strategies for solving decimal multiplication problems.
- In Lesson 6-10, students apply a decimal multiplication strategy to solve an Open Response problem involving money.
- In Lesson 6-11, students divide decimals by whole numbers.
- In Lesson 6-12, students divide decimals by decimals.
- In Lesson 6-13, students use decimal operations to analyze the data they collect during an experiment.
- In Lesson 8-1, students multiply decimals to calculate the area of a volleyball court.
- In Lesson 8-6, students compute with decimals to determine the length of time it would take to earn \$1,000,000 at a given hourly wage.
- In Lesson 8-7, students compute with decimals to calculate how long it would take to pay off the national debt at different pay scales.
- In Lesson 8-8, students compute with decimals to solve a time and distance problem.
- In Lesson 8-10, students compute with decimals to calculate their cardiac output.

In addition, there are numerous Warm-Up and Practice opportunities totaling 130

exposures.

From the review: When looking at 5.NBT.6, finding whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, there are 100 exposures according to the spiral tracker; however, there are only 13 lessons. Of those, only one lesson has students using four-digit dividends with two-digit divisors. (Nine of the 13 lessons are misaligned.)

Everyday Mathematics Response

This reviewer implies that 5.NBT.6 requires that students divide four-digit dividends by two-digit divisors to meet the depth of the standard. This is not, in fact, what the standard says. 5.NBT.6 reads, in part: “Find whole-number quotients of whole numbers with **up to** four-digit dividends and two-digit divisors...” (Emphasis ours.) The standard does not require that all problems use four-digit dividends and two-digit divisors, and to require that all lessons do so is not in keeping with the intent of the standard.

However, the reviewer has also not carefully looked at our lessons, and is incorrect in the assessment of the work in the lessons.

- There are 13 lessons in which the Focus content is tagged to 5.NBT.6. Of those 13 lessons:
 - 4 require students to solve division problems involving 3-digit dividends and 2-digit divisors;
 - 4 require students to solve division problems involving 4-digit dividends and 2-digit divisors;
 - 4 are application lessons in which students use division to solve problems (that likely will contain 4-digit dividends and 2-digit divisors – much of the sample work we collected from field testing did);
 - and 1 is an Open Response lesson requiring students to apply their understanding of division concepts.
- There are an additional 59 exposures to this standard in the Warm-Up and Practice parts of lessons. Of those 59 exposures, 19 require students to solve division problems involving 4-digit dividends and 2-digit divisors.
- This means that there are a total of 8 Focus lessons and 19 additional exposures that require students to solve problems involving four-digit dividends and two-digit divisors.

From the review: Everyday Mathematics Grade 5 materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards: 5.NBT.A.1: There are only five lessons align [sic] to this standard.

Everyday Mathematics Response

There are 11 lessons in which the Focus content is tagged to 5.NBT.1, and a total of 88 exposures in Grade 5. We do not know how this reviewer made the determination that only five lessons align to the standard.

From the review: 5.NF.A.1: Only three lessons align to this standard, two for addition and one for subtraction.

Everyday Mathematics Response

There are 11 lessons in which the Focus content is tagged to 5.NF.1, and a total of 100 exposures in Grade 5. We do not know how this reviewer made the determination that only three lessons align to the standard.

From the review: 5.NF.B.3: There are only six lesson aligned to this standard.

Everyday Mathematics Response

There are 12 lessons in which the Focus content is tagged to 5.NF.3, and a total of 77 exposures in Grade 5. We do not know how this reviewer made the determination that only six lessons align to the standard.

From the review: In lessons where prior knowledge is needed, it is not stated that prior knowledge is being used. When future, [sic] grade-level concepts are introduced, there is no mention that the concept will be used in future grades. If the teacher uses the spiral trace at the beginning of the lesson or unit, the teacher will know where prior knowledge is used based on the spiral trace. They also tell when the student will use the skill/concept again in the future of that unit. The spiral trace is not extensive and does not show where the students' learning is really headed. It is listed by lessons and not connecting standards. It does a little better job at the beginning of each unit explaining the spiral trace and what will occur by the end of the unit, but not any further and not connecting to the next standard.

Everyday Mathematics Response

Every unit contains a Unit Organizer, which ends with four pages of mathematical background. In the mathematical background, we explain what background knowledge students have for the content in the upcoming unit, and, when applicable, where that content is headed in Grade 5 and in future grades. In addition, this information is often given to teachers in notes in the margins of the lessons themselves.

Note that Grade 5 *Everyday Mathematics* does not introduce future grade-level content. It deals strictly with Grade 5 CCSS. So although the mathematical background does explain how the Grade 5 content will connect to future work (when applicable), it does not introduce future grade-level work.

We do not understand the critique of the spiral trace. For example, this review says that the spiral trace does not connect "to the next standard." It is unclear to us what "the next standard" is.

This reviewer also seems confused by the different spiral organizers and the information that they show. Every Unit Organizer contains a Spiral Trace. The Spiral Trace shows the lessons in the current unit aligned to a particular standard. When applicable, this Trace

also shows lessons from previous and upcoming units. The reviewer seems to have missed this.

Every lesson also has a Spiral Snapshot. The Spiral Snapshot focuses on a part of an identified CCSS. When applicable, it shows previous lessons in which students have encountered the content, and upcoming lessons in which they will see the content again.

There is also a feature, called the online Spiral Tracker, that provides an exhaustive tracking for every standard, including every activity and assessment linked to that standard. The reviewer does not seem to understand the differences between each of these features, and how they might be used.