Analysis and Response to
EdReports Review of
Everyday Mathematics 4

Round 2

Submitted: April 28, 2016

<u>All Grades, Indicator 1c</u>
We expect 2/2 scores for all grades in this indicator.

The criteria for assigning two points say that supporting content should be used to support major content "when appropriate." And, the fact that the criteria indicate that "Mathematics is woven throughout the year …" should fit a spiral curriculum like *Everyday Mathematics* very well. However, there is that requirement that no opportunity be missed: "Some natural connections are missed." As with criteria 2a, 2b, 2c, 2gi, and 2gii, such a requirement never to miss an opportunity is unreasonable. See additional comments on Indicator 2a below.

<u>All Grades, Indicator 2a</u>
We expect 2/2 scores for all grades in this indicator.

Through the grades, *Everyday Mathematics* is repeatedly faulted for "missed opportunities" for developing conceptual understanding. We think this is the result of a major flaw with the rubric, particularly as it relates to a spiral curriculum. When standards and concepts are developed over the course of the year, it is not possible to get a full picture of conceptual development without reviewing the entire progression. Looking at only one portion of the learning trajectory leads to false assumption about "missed opportunities." (This same critique can be applied to other Gateway 2 indicators, including 2b, 2c, 2gi, and 2gii.)

In addition, we feel that to fault a program down for "missed opportunities" is a fundamental flaw in the rubric. One could (almost) always find a potential "opportunity" to do something required, whether it's to emphasize conceptual understanding (2a), to emphasize procedural skill (2b), to emphasize applications (2c), or to deal properly with the practice standards (2gi and 2gii) . The real question is not whether any potential opportunities are "missed" but whether good opportunities are called out with sufficient frequency. To require that every possible opportunity be called out (so that none are "missed") is unreasonable and arbitrary.

<u>All Grades, Indicator 2e</u>
We expect 2/2 scores for all grades in this indicator.

The Evidence Guide states: "Every instance of an MP being marked does not necessarily have to encompass the full meaning of an MP, but taken together there should be evidence that the materials carefully attend to the full meaning of each practice standard." This explicitly disallows critiques that take us to task for failing to attend to the full meaning of the practice standard in every instance (or even in any instance), though *Everyday Mathematics 4* is repeatedly faulted for this across the grades.

The requirement that a program be marked down if "… There are instances where the MPs are identified that attend very superficially to a standard (e.g., the first lesson about how to use a protractor is marked as MP. 5)" is unreasonable and, again, introduces the possibility of excessive subjectivity into the review process. The criterion should be whether the full meaning of the standard is properly developed across the grade level.

Though we have only begun our analysis of other programs reviewed by EdReports, we are concerned by the contrasts between the review of *Everyday Mathematics 4* and *Eureka Math*. The contrast on this indicator for Grade 6 provides one example.

The Grade 6 review of *Everyday Mathematics 4* states:
MP4: Lesson 2-3 cites MP4; they are using fraction strips and number lines to visualize fraction multiplication. In the math journal on pages 62 and 63, students are using a number line for fraction multiplication when working with real world problems such as eating parts of a granola bar. This illustrates a lack of full intention of MP4 as it highlights the use of a model (noun) instead of modeling (verb). Lesson 5-6 cites MP4; the teacher tells the students how to make a model, so this lesson does not meet the intent of the standard. Lesson 5-7 and 5-10 (MP4) gives students the model that they are supposed to use, thus not allowing them to create a mathematical model to use.

Contrast the *Everyday Mathematics 4* treatment of modeling with the first example of "modeling" in the EdReports review of Grade 6 *Eureka Math* for this indicator, which involves "Explain how you would show 150 on a number line." and gets full points from the EdReports reviewer.

All Grades, Indicator 2giii
We expect 2/2 scores for all grades in this indicator.

We are faulted across the grades for not using "correct vocabulary." While we use some grade-appropriate language, we *always* pair that with mathematical language. We are careful in all grades to tell teachers when it is appropriate for children to only understand the concept, but not use the vocabulary and when children can be expected to use the mathematical vocabulary.

Mathematical reasoning involves specialized language. Therefore, materials and tools address the development of mathematical and academic language associated with the standards. The language of argument, problem solving and mathematical explanations

are taught rather than assumed. Correspondences between language and multiple mathematical representations including diagrams, tables, graphs, and symbolic expressions are identified in material designed for language development. Note that variety in formats and types of representations—graphs, drawings, images, and tables in addition to text—can relieve some of the language demands that English language learners face when they have to show understanding in math.

Everyday Mathematics 4 is also considerate of English language learners, helping them to access challenging mathematics and helping them to develop grade level language. For example, materials might include annotations to help with comprehension of words, sentences and paragraphs, and give examples of the use of words in other situations. Modifications to language do not sacrifice the mathematics, nor do they put off necessary language development.

The Publishers' Criteria here specifically calls out "helping them develop grade level language" — so that, for example, using "turn-around" with first graders to describe the commutative property of addition is entirely appropriate. Note also that in mathematics, what matters is that terms are defined precisely, so that, for example, our use of "turn-around" fact is well defined — look to the Grade 1, Teacher's Lesson Guide glossary. The use of mathematical language in EM4 is exemplary — very careful, very precise, and at a level of rigor appropriate to the grade level of the student.

Grade K
We feel Grade K was unfairly scored in Gateway 1, and should have the opportunity to move to Gateway 2. Here is additional evidence.

Grade K, Indicator 1c

Everyday Mathematics Response
There examples for this in the Gateway 1 Evidence include linking K.MD.3 to K.CC.5, which *Everyday Mathematics 4* does in every single case where K.MD.3 is included in the program, in addition to linking to K.CC.6 and K.CC.7 (also major work), and linking to K.G.2 and K.G.4 to K.CC.5, which the curriculum does consistently.

Grade K, Indicator 1d

Everyday Mathematics Response
We feel the reviewer may have misunderstood the pacing for kindergarten, and as a result, miscounted the number of lessons, instructions days, assessment days, and time for differentiation. Open Response and Reengagement lessons are designed to be delivered over two days. The curriculum expects that each unit

includes 5 additional days for additional practice, differentiation, and assessment. The assessment days include the administration of the Beginning-of-Year, Mid-Year, and End-of-Year benchmark assessments.

With these, the total number of instructional days is:
- 125 days for instructional lessons (9 units x 14 lesson days)
- 45 days (9 units x 5 days) for additional practice, instruction, and assessment
- Total: 170 days of instruction.

Lastly, the reviewer states: "Kindergarten lessons do provide connections sections at the end of the lesson. There is not a time frame for these connections to other subject areas. There is not enough time allotted in the 45-60 minutes a day to cover the connections portion of the lesson." This comment ties directly to the additional days needed for additional practice, instruction, and assessment. Indeed, it supports the need.

Grade K, Indicator 1f

Everyday Mathematics Response
The criticisms here are similar to those in Indicator 1c, that is, not seeing connections that we actually made. (We could list quite numerous examples of lessons that tag standards in the combinations listed in the Evidence Guide.) We also feel this is an area where the spiral inhibited the reviewer's ability to do their review well.

Here is a summary of how the standards develop across the grade level in kindergarten.

Major Work
- We hit the Counting and Cardinality standards (all major work) super hard in Sections 1-3, so that these foundational skills can be applied throughout the later sections. This is evidence from the expectation statements in the Sections 1-3 Spiral Trace.
- We begin our work with K.OA.3 early in the year, as it lays groundwork for the other OA standards. K.OA.4 is brought in a bit later, as a special case of K.OA.3 (for "10").
- K.OA.1 and K.OA.2 are developed across the year, with kids moving from the more concrete portions of those standards (adding/subtracting using objects, drawings) to the more symbolic portions of those standards (representing with equations) as the year progresses.
- Direct work with K.OA.5 (fluency with +/- within 5) is delayed until the second half of the year to ensure that fluency builds on earlier conceptual work.
- K.NBT.1 (the only NBT standard in kindergarten) begins as kids begin to explore teen numbers in the other standards and when they are comfortable decomposing numbers 10 and smaller (K.OA.3 and K.OA.4). Earlier work with

these other standards lays groundwork for the later work with K.NBT.1. As with the OA standards, we begin with the concrete part of the standard and progress to the more symbolic part.

Supporting Work
- Geometry standards develop across the year to allow for deep exploration of 2D shapes and then deep exploration of 3D shapes. (There are too many Geometry standards to have relegated them all to the end of the year and still allow them to progress in a coherent way with deep understanding.) All of this work is connected to counting and sorting standards as outlined in the Progressions documents and in the evidence guides.
- Measurement standards develop in a way that is similar to the geometry standards, adding dimensions (length, then weight, then capacity, then area) as the year goes on. Again, by spreading over time in this intentional way, we can go into more depth.
- This story can be pieced together from the Mathematical Background and the Spiral Trace/Mastery Expectations in the Unit Organizers, the Teacher Notes throughout the lessons, and in many other places.

Grade 1

Grade 1, Indicator 1c

Everyday Mathematics **Response**
The review claims that much of the supporting work does not "support" major work. But there is no occasion where 1.MD.4 is not also embedded in an activity where major work is also the focus (always 1.OA.6 and, most often, 1.NBT.1). For example, also in Unit 1, the review claims that in Lesson 1-7 tally marks are treated mainly as a means to represent data with little support for using tally marks as a counting tool. This is not true. The first activity introduces tally marks as just that, a counting tool. Furthermore, once tally marks are used in the second activity, the discussion is all about counting and representing the counts with tally marks. The idea that the supporting work does not support the major work is inaccurate.

Grade 1, Indicator 1e

Everyday Mathematics **Response**
While we don't always explicitly label content from the prior grade, there are ample descriptions of cross-grade connections, for example, in the Mathematical Background in the Unit Organizer, and in numerous Professional Development notes throughout the lessons. Beyond this, the rest of the criteria are clearly met. We are taken to task for not labeling future grade content as such, but the examples they cite are inaccurate. First, the reviewer suggests that skip counting

by 2s and 5s is a Grade 2 standard. While that may be true, skip counting is not explicitly excluded from 1.NBT.1. The standard 1.NBT.1 does not specifically call for only counts by ones. Secondly, they suggest that Lesson 9-2 is above grade content because it deals with money. While money is the context, it is only used as a label in problems covering 1.NBT.1, 1.NBT.6, 1.OA.1, and 1.OA.2. Cents is simply used as a label; there is no actual counting of money. This represents a misunderstanding of Grade 1 content on the part of the reviewers.

We are also criticized in 1e for not providing extensive work with the grade-level standards. Reviewers critiqued our coverage on several standards, but *none* of the critiques are actually accurate. For example, they suggest that 1.OA.2 is only covered in two lessons. This is not the case. 1.OA.2 is covered in one routine, the Focus portion of 5 lessons, the Practice section of 7 lessons, and in Math Boxes or Home Links in 11 more lessons. This seems to be another example of the challenges of using this review process for a spiral curriculum, and a failure to recognize the significance of practice in *Everyday Mathematics*.

Grade 1, Indicator 2b

Everyday Mathematics Response
The review suggests that there are very few lessons focusing on fluencies and skills needed for first grade. This is inaccurate and confusing. What, if not focusing on fluencies, are the majority of the lessons in Grade 1 doing? They cite two erroneous examples to support this claim. First they claim students are not spending enough time counting between 100 and 120. If students are doing the routine, they would be doing this every day. Again, they cite 1.OA.2 and claim that it is only covered in two lessons. See above (1e) to refute that claim. These are the only two examples given that Grade 1 does not give the focus and time needed, but both are based on erroneous information.

Grade 1, Indicator 2f

Everyday Mathematics Response
The report suggests that Grade 1 does not have students attending to the full meaning of each practice standard. I think what the reviewers fail to realize is that there will be a learning curve with the standards. Twelfth graders will attend to the meaning of the MPs differently than will first graders. Our job is to break down the MPs and teach them to children. So first grade (and, for that matter, all of elementary school) should teach children the building blocks of the MPs. A good example of this is what they discuss in MP5. Every single one of the 5 lessons they critique says that we tell students to use a given tool and don't let them choose the appropriate tool. First, in order to determine which tool is appropriate, we need to teach children to "use appropriate tools" (as the MP reads). So in early grades, we build up to allowing them to choose the tool, which does happen later in the year in

lessons not cited by the report. Furthermore, this report seems to focus specifically on only one facet of MP5, students choosing the appropriate tool. This MP is about much more than that.

<u>Grade 1, Indicator 2giii</u>

***Everyday Mathematics* Response**
We are taken to task for not using "correct vocabulary." While we do use some grade-appropriate language, we *always* pair that with mathematical language. We are careful in Grade 1 to tell teachers when it is appropriate for children to only understand the concept, but not use the vocabulary and when children can be expected to use the mathematical vocabulary.