Initial Analysis and Response to
EdReports Review of
Everyday Mathematics 4

Submitted: April 21, 2016

Issue 1
Frequent misinterpretations and misrepresentations of content standards led to an arbitrarily poor review of *Everyday Mathematics*.

We have found numerous examples of instances where the reviewer misinterpreted the standard, or, misrepresented the instruction in *Everyday Mathematics* that supports a standard.

Evidence
Grade K, Indicator 1a
From the review: The materials assess the use of a pan balance. Pan balances are meant to measure mass, a Grade 3 expectation (3.MD.A.2), not weight. To use the pan balance to measure weight, the gram weights would need to be used.

Everyday Mathematics Response
This reveals a lack of understanding on the reviewer's part of weight and mass and also apparently of the relevant Grade K MD standards, which call for direct comparisons of weight, for which a pan balance is a completely appropriate tool. This suggests a lack of expertise with the Grade K standards.

Grade K, Indicator 1c
From the review: Unit 1 has four lessons and two practices which are supporting work, and only one, Lesson 1-8, supports major work. Lessons 1 and 2, pages 40-47, focus on students comparing length and examining pattern block shapes as they participate in a social activity; while these lessons align with standards for supporting work, there is no connection to the major work of the grade. Lesson 1-12 focuses on shapes, supporting work of the grade. There is a missed opportunity here to support major work through a connection to counting sides or corners or sorting and counting groups.

Everyday Mathematics Response
The following text is taken directly from the Grade K Teacher's Lesson Guide, Lesson 1-2, p. XX: *How many sides does the square have? Name or point to a shape with a different number of sides. Introduce the term side by having children trace each side of a shape with their fingers and count how many sides there are. Children may also sort the pattern blocks.* Lesson 1-12 is a slightly less explicit, but still has text and sample annos that encourage children to count and compare in this context.

Grade K, Indicator 1e
The reviewer states: "Differentiation options, present in most lessons, offer opportunities for students at different instructional levels to engage with the standards. In some instances, the differentiation tasks, while aligned to standards, are not aligned

to the same standard as the focus lesson. An example of this is lesson 1-1. The lesson focus is K.MD.2, "Directly compare two objects with a measurable attribute in common to see which has more of or less of the attribute and describe the difference." The readiness task asks students to match measurable attributes which does not address the same standard. **There is concern that students engaging in the readiness tasks might not reach the full depth of the standard.** The extra practice and enrichment tasks are aligned to the lesson standard."

Everyday Mathematics Response
The boldface text above is confusing. Why does a readiness activity need to address the full depth of the standard? Our intention for Readiness, which seems not to be understood by the reviewers, is to provide access to the lesson concepts and skills for children who may need that. Sometimes this access will relate directly to the standard(s) in the lesson (probably not at the full depth of the standard(s) – especially not in a Readiness activity for the very first lesson of the grade); sometimes it will be more of a prerequisite for the standard(s) in the lesson. This is completely consistent with the learning progressions approach of the CCSSM.

Grade 2, Indicator 1e
The review states: Everyday Mathematics Second grade materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards:

2.NBT.A.2: There is only one lesson that works with counting to 1000. Unit 1 provides one lesson where children create a math scroll to 1000, and then 1000 is not discussed again until lesson 9-5 where the thousand cube is introduced.

Everyday Mathematics Response
Children practice counts to 1000 in several Math Boxes on a regular basis.

2.NBT.A.3: Expanded form is taught in 6-8 and reviewed in lesson 9-5. There is not a lesson teaching writing numbers to 1000 in word form, although it is stated in the standard. Students are only asked to put numbers in word form on eight questions in the series in either Math Journals or Home-links. 1000 is not introduced until lesson 9-5.

Everyday Mathematics Response
Expanded form is introduced in lesson 4-4, and in this lesson children are taught how to write numbers **to** 1,000 which is the standard. Children begin writing number words in Lesson 1-3, they write the number of school days daily, and the practice writing number words **to** 1,000 in several Math Boxes.

2.NBT.B.7: Subtraction strategies for multi-digit numbers are not shown until lessons 9-6 and 9-7.Addition strategies based on models are not introduced until lesson 6-7.

***Everyday Mathematics* Response**
The focus of Units 2 and 3 is on addition and subtraction fact strategies. These strategies include using the commutative property and using addition to solve subtraction facts. We introduce place value with 3-digit numbers in Unit 4. Immediately after the place-value lesson we introduce the game *Target* that uses base-10 blocks to model addition and subtraction of 2-digit numbers (however, we do provide the option to play the game with larger numbers). Computation with larger numbers is based on strategies (counting up, making friendly numbers, combining 10s and 1s, counting back). Manipulatives such as base-10 blocks, number grids, number lines, and so on, are often used as tools to support children's learning. Beginning in Unit 5, children begin mentally adding and subtracting 10 and 100 to 2-and 3-digit numbers. They are also introduced to open number lines to record their computation thinking. It is only after children have been exposed strategies to add and subtract within real-life contexts, such as money and measurement, that they are introduced to formal addition and subtraction algorithms. By Unit 6, children are expected to have developed strategies for solving addition problems. Then in Unit 6, children are introduced to an addition algorithm and they explore subtraction with larger numbers using base-10 blocks. It is important that children have opportunities to develop subtraction strategies along with a solid understanding of the subtraction concept prior to being introduced to a formal algorithm. In Unit 7 children explore the associative property of addition by adding 4 or more addends. Expand-and-trade subtraction, new to EM4, is introduced in Unit 9. This algorithm is revisited in Grade 3, Unit 3. Trade-first subtraction is now introduced in Grade 3, Unit 6.

2.NBT.B.9: There are no problems where students are to explain how and why strategies work.

***Everyday Mathematics* Response**
During several lessons, Lesson 2-4, 2-5, 2-6, 2-7, 3-1, 3-8, 5,6, 6-6, 6-8 to name a few, children discuss how and why the strategies they are using make sense. There are also practice pages and Math Boxes where children explain this, for example, Math Box 2-10 and Math Journal 1, page 79

2.OA.B.2: It is impossible to tell if students can fluently add and subtract within 20 since no lessons focus on mental math and strategies.

***Everyday Mathematics* Response**
In addition to the fact strategies lessons in both Units 2 and 3, all Mental Math and Fluency activities focus on mental math and strategies. In addition to these

lessons, every unit includes a Fact Triangle practice and fact games practice. For the Fact Triangle activity, children record those facts they know from memory and those they need need to know from memory. They record a mental strategy to help they with those they still need to learn. Beginning in Unit 5, and every unit thereafter, children play *Beat the Calculator*, a game in which they are to demonstrate fluency. On *Teacher's Lesson Guide,* page 448 and in each unit when they play the game, there is an Assessment Check-In that states "…..Circulate and observe small groups of children as they play the game and track their progress on *Assessment Handbook,* pages 98-99. Children are expected to know from memory all sums of two 1-digit number by the end of second grade."

Grade 2, Indicator 1f
From the review: While the materials have many instances where two or more domains are connected, often the connections are only surface-level connections. For example, lesson 2-8 shows a connection between 2.OA.2, 2.OA.3, 2.NBT.2, 2.NBT.7, 2.MD.6, 2.G.1 and 2.G.3. However, the lesson is divided into parts, and the parts only truly address one standard at a time. Additionally, 46 of the lessons are only aligned to one domain.

Everyday Mathematics Response
It is clear that the reviewer does not understand the components of *Everyday Mathematics*. Lesson 2-8 is an Explorations Lesson. Each unit in *Everyday Mathematics* has an Explorations lesson. As stated in Volume 1, page xxxvii, *Explorations Lessons occur once per unit and give children three unique opportunities to explore new concepts and tools in an informal small-group setting.* These activities were carefully placed in the curriculum to provide opportunities for children to explore concepts or tools before formal instruction took place. They are small-group activities that are not meant to be connected to each other.

Grade 3, Indicator 1e
Everyday Mathematics Grade 3 materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards:
3.OA.C.8: There are 18 lessons aligned to this standard; however, only four lessons, 2-4, 2-5, 3-2 and 5-10, have students doing two-step problems.

Everyday Mathematics Response
This is inaccurate, as there are multiple practice pages and Math Boxes problems that involve two-step problems. For example, see Lessons 2-10 (Part 3 Solving More Multistep Number Stories, Math Boxes #2), Lesson 2-12 (Math Boxes #2), Lesson 3-1 (Math Boxes #1), Lesson 3-3 (Math Boxes #1), Lesson 3-5 (Math Boxes #3), Lesson 3-7 (Math Boxes #3), Lesson 3-8 (Part 3 Making Sense of Number Stories), and so on. Also 3.OA.8 is not limited to work with two-step

problems. 3.OA.8 also expects children to determine whether their answers are reasonable, which applies to all computation and number story work.

Grade 3, Indicator 1e

The review states that material related to future, grade-level content is not clearly identified or related to grade-level work. The third grade materials have at least 16 instances where future, grade-level content is present and not identified as such. Lessons with future, grade-level content include the following:

- Lesson 1-1, which is focused on 1.NBT.B.3, compares two, two-digit numbers using the symbols <, >, or =; lesson 1-3, which is focused on 2.MD.C.7, tells and writes time to the nearest 5 minutes; and lesson 1-7, which is focused on 2.MD.D.10, draws a bar graph with a single scaled unit.
- Lesson 3-7 is focused on 2.G.A.2, partitioning a rectangle into rows and columns.
- Lesson 4-4 is focused on 2.G.A.1, recognizing and drawing shapes having specified attributes.
- Lessons 6-8, 6-9, 6-10, and 6-11 focus on 5.OA.A.1, using parentheses in numerical expressions and evaluating the expressions.
- Lesson 9-5 focuses on 4.NBT.B.5, multiplying a whole number of up to four digits by a one-digit whole number.

Everyday Mathematics **Response**

First of all, of the 7 instances that are called out, 3 reference prior grade-level work and 4 reference future grade-level work.

- There is nothing in Lesson 1-1 that involves children using <, =, or > to compare two numbers. Rather, children are finding the difference between two 2-digit numbers. There is a Professional Development note in the margin in Lesson 1-1 (TLG, p. 16) that states "Finding differences on a number grid is a review from Grade 2. The focus of today's lesson is clearly explaining strategies using appropriate mathematical language. This is an important skill that will be emphasized and practiced throughout the year." This note clearly calls out the prior grade content that is addressed in the lesson and discusses the Grade 3 lesson focus on SMP6. The activity in Lesson 1-3 that involves telling time is titled "Reviewing Telling Time," which suggests that the content (telling time to the nearest 5 minutes) is from the prior grade. Prior to instruction on telling time to the nearest minute in Lesson 1-5, teachers need to have a sense of children's time telling capabilities to the nearest 5 minutes. In Lesson 1-7, children compare a scaled bar graph to a single scale bar graph; they do not draw a bar graph with a single scaled unit. Rather, this lesson is the introduction to scaled bar graphs and children produce a graph with a scale that has an interval of 2.
- The introduction to Exploration C in Lesson 3-7 includes "Children partitioned rectangles in Second Grade Everyday Mathematics." This is clearly a reference to prior grade-level content, which the reviewer says is missing. The lesson guide goes on to say "Explain that we can find the area of a shape by dividing, or partitioning it, into equal parts. Have children….practice partitioning

rectangles and measuring area." This activity supports and connects 3.MD.5, 3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7, 3.MD.7a, and 3.G.2

- In the Unit 4 Mathematical Background: Content (TLG p. 320), there is explicit reference to work in earlier grades, which the reviewer says is missing. "Children have been sorting shapes into categories since Kindergarten, developing increasingly sophisticated classification systems as their understanding of geometry and their mathematical vocabulary grow. In this unit, children review the geometric properties of polygons and identify and sketch common polygons. Children also explore attributes of quadrilaterals, using mathematical language such as parallel sides and right angles, and classify quadrilaterals into categories and subcategories based on their properties. They extend this reasoning to explore the relationships between categories of quadrilaterals."
- The footnote for 3.OA.8 expects children to evaluate equations using the order of operations when no grouping symbols are present. In order to use the order of operation rules, one needs to learn about parentheses. See Bill MacCallum's blog on this topic. Based on the footnote, the use of parentheses and the order of operations rules are Grade 3 expectations.
- Lesson 9-5 focuses on the use of the area model for multiplication, which supports, among other Grade 3 standards, 3.MD.7c. Children decompose factors into smaller numbers that are easy to multiply and that fall within the scope of 3.OA.7 or 3.NBT.3. While this lesson lays a foundation for 4.NBT.B.5, the work is well within the scope of Grade 3.

Grade 3, Indicator 1e
The review states that there are 13 lessons aligned to 3.OA.B.5; however only one lesson has students understanding the relationship between multiplication and division, Lesson 6-3.

Everyday Mathematics Response
3.OA.5 reads "Apply properties of operations as strategies to multiply and divide." The lessons tagged to this standard involve the application of properties of operations as strategies to multiply and divide. It's 3.OA.6, which reads "Understand division as an unknown factor-problem." that references the relationship between multiplication and division. Also, 3.OA.7 references this relationship.

Grade 3, Indicator 2c
The review states that:
- Lesson 3-3 is aligned to 3.OA.8. Students do not solve two-step word problems in this lesson. Although estimation is used during the process of learning partial-sums addition, there is no evidence of application of standard 3.OA.8 in the Focus portion of this lesson.

- Lesson 3-4 is aligned to 3.OA.8. Students do not solve two-step word problems in this lesson. Although estimation is used during the process of learning column addition, there is no evidence of application of standard 3.OA.8 in the Focus portion of this lesson.
- Lesson 3-5 is aligned to 3.OA.8. Students do not solve two-step word problems in this lesson. Although estimation is used during the process of learning counting-up subtraction, there is no evidence of application of standard 3.OA.8 in the Focus portion of this lesson.
- Lesson 3-6 is aligned to 3.OA.8. Students do not solve two-step word problems in this lesson. Although estimation is used during the process of learning "expand-and-trade subtraction," there is no evidence of application of standard 3.OA.8 in the Focus portion of this lesson.
- Lesson 6-1 is aligned to 3.OA.8. Students do not solve two-step word problems in this lesson. Although estimation is used during the process of learning "trade-first subtraction," there is no evidence of application of standard 3.OA.8 in the Focus portion of this lesson.

Everyday Mathematics Response
3.OA.8 includes the following statement: "Assess the reasonableness of answers using mental computation and estimation strategies including rounding." In each of the above-mentioned lessons, children are expected to make estimates and to determine whether their answers are reasonable. This clearly supports 3.OA.8.

Grade 5, Indicator 1a
From the review: All unit assessment items are on Grade 5 level. There are no scoring rubrics provided for the educators; however, all assessments do provide answer keys. One exception is question 14 on the Unit 6 Assessment (page 55 of the Assessment Handbook). The context of the problem is not Grade 5 appropriate. It asks students to calculate the volume of a house. This problem could be either removed or the context changed without affecting the course for students.

Everyday Mathematics Response
The review claims that the context of Problem 14 on the Grade 5, Unit 6 PC is not Grade 5 appropriate because it asks students to calculate the volume of a house. I don't understand why the reviewers made this determination, or what criteria they are using to determine whether or not a context is grade-level appropriate. There is nothing in the standards that dictates what contexts may or may not be used.

Grade 5, Indicator 1e
From the review: When looking at 5.NBT.6, finding whole-number quotients of whole numbers with up to fourdigit dividends and two-digit divisors, there are 110 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**

First, there are at least 5 lessons that require students to solve division problems that have exactly a four-digit dividend and exactly a 2-digit divisor, so the claim that only 1 lesson does this is incorrect. We identified problems with 4-digit dividends and 2-digit divisors in the Focus part of Lessons 2-10, 2-11, 2-12, 6-11 and 6-12. Second, the standard 5.NBT.6 reads (in part): "Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors…" This standard clearly does not require that every exposure be 4-digit dividends and 2-digit divisors.

Grade 5, Indicator 1e

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 10 Focus lessons listed in the online spiral tracker as aligning to this standard, and they all address 5.NF.1. There are a couple of explanations that we can think of that the reviewer might not consider some lessons as hits – explanations that I think are wrong, but even these explanations don't lead to the conclusion that there are only 3 lessons aligned.

- If they don't consider mixed-number addition and subtraction as aligning to the standard. Since 5.NF.2 clearly calls for the inclusion of mixed-numbers, we also included instruction with mixed numbers for 5.NF.1.
- If they don't consider 5.NF.2 hits to include 5.NF.1. We believe that in order to solve contextualized fraction addition and subtraction problems, one has to add and subtract with fractions (5.NF.1).
- If they don't consider applications as hits. For example, in Lesson 7-1, students have to add partial products when they multiply mixed numbers. The partial products are often fractions with unlike denominators. This is clearly a hit of 5.NF.1.

Grade 5, Indicator 1e

From the review: 5.NBT.A.1: There are only five lessons align to this standard.

Everyday Mathematics **Response**

There are 11 Focus lessons listed in the online spiral tracker as aligning to this standard. There is no explanation as to why they only consider that five lessons are aligned. Clearly there is a mismatch in our interpretation of this standard, but there is no explanation given, so no way for us to address the mismatch.

Grade 5, Indicator 2c

From the review: Standard 5.NF.7.C has 30 exposures within the curriculum and is listed as the Focus of a lesson for three separate lessons.

- The Focus portions of Lessons 5-13, 5-14, and 7-4 are aligned to 5.NF.7.C.
- On the Lesson 5-13 Math Journal worksheet "Solving Fraction Division Problems," students are given one-step word problems requiring division of a fraction by a non-zero whole number. In this lesson, the word problems are very similar, and the directions and problems are so scaffolded that true application of the standard is not achieved.
- In Lesson 5-14, students continue to work the same types of one-step word problems that they encountered in Lesson 5-13. Additionally, students are asked to write one-step word problems to match division problems. Students are not provided with multi-step problems that truly require application of the standard.
- In Lesson 7-4, students again solve one-step word problems and write one-step word problems to match division problems. Students are not provided with any multi-step problems.
- Student work with this standard focuses on routine problems. Even when students are writing their own word problems, the provided sample answers are typically one-step routine problems. For example, the "Multiplying and Dividing Fractions" Math Journal in Lesson 7-10 gives a one-step sample word problem involving drinks. Both of the sample answers for the "Fraction Division Problems" Math Journal in Lesson 7-4 are about meatloaf.

Everyday Mathematics Response
In Grade 5, the EdReports review repeatedly states that the materials do not meet standard 5.NF.7.C because the problems are not multi-step problems. There is nothing in the standards that indicates that problems need to be multi-step problems, only "real world problems". Requiring multi-step problems to achieve true application of the standard is an opinion, not supported by the language of the standard In fact, the examples given by CCSS in 5.NF.7c are single step problems. Specific problems are criticized for their use of food and drinks, despite the standard's requirement for "real world problems". As such, we should not be penalized based on our coverage of this standard. Here is the full text of the standard.

CCSSM Standard 5.NF.7c
Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (c) Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*

Grade 6, Indicator 1e
The review states: The instructional materials reviewed for Grade 6 are not consistent with the progressions in the standards. Content from prior grades is not clearly

identified or connected to grade-level work, and students are not given extensive work with grade-level problems. Material related to prior grade level content is not clearly identified or related to grade level work. The Grade 6 materials have two instances where prior grade-level content is present and not identified as such.

Everyday Mathematics Response

Grade 6 Everyday Mathematics includes problems related to all of the examples provided in the CCSSM documents and generally develops and assesses only grade-level problems. In addition, 80% of the lessons focus on major work for the grade level. How could there not be "extensive work with grade-level problems"?

<u>**Issue 2**</u>
EdReports review tools are not equipped to review a spiral curriculum, often leading to a false finding that *Everyday Mathematics* did not attending to the full meaning of content standards.
There review tools and process show a definite bias against a spiraling curriculum. The review indicates that anything that isn't "direct instruction" (in the Focus part of the lesson) is not instruction. This overlooks the importance of the practice or warm-up opportunities. As a result, the review does not fully consider all of the coverage for standards across the course of the year.

In addition, critiques are often taken out of context, without considering the coverage of the standard over the course of the entire year. So, for example, a critique that the full-depth of the standard is not met in a lesson that falls relatively early in the year misses the curriculum's intentional development of that standard through the spiral over the course of the whole year.

Based on their comments, the reviewers did not appear to understand that they needed to consider both the content of the lessons *and* the placement of those lessons within the year-long spiral in order to fairly evaluate coverage of the standards

<u>***Evidence***</u>
<u>**All Grades, Indicator 1b**</u>
From the review: To determine the amount of time on major work, the standards covered in the focus lessons were considered since that is where direct instruction takes place and the majority of the lesson takes place during this time.

> ***Everyday Mathematics* Response**
> This statement shows a basic lack of understanding of a spiral curriculum. Direct instruction takes place in more than just the Focus parts of the lesson. This statement discounts the importance of the instruction and learning that takes place outside of the Focus part of the lesson.

<u>**Grade K, Indicator 1f**</u>
From the review: Lesson 1-10 shows a connection between K.CC.4, K.OA.3, and K.OA.5. The lesson has students subitizing but does not have students decomposing numbers or finding the number when added that makes a ten.

> ***Everyday Mathematics* Response**
> There are a few problems with this comment from the review: 1) When the teacher asks "What did you see? How did you see it?" that engages children in decomposing numbers, so it is not accurate that students are not decomposing numbers. 2) We didn't tag K.OA.4 in this lesson, which would be the standard related to asking them to find the number that makes a ten. 3) We didn't tag

K.OA.4 because it's too early in the year to tag K.OA.4 for our sequence. In theory, you could ask kids about K.OA.4 in this context, and we do later in the year. But in practice, that doesn't make a lot of sense for Kdg kids in their 3rd week of school, which is why we saved it for later in the year. Our field testing in classrooms supports this decision, and K.OA.4 is adequately covered later in the year, so it did not need to be done here, nor would that have been preferable.

Grade 2, Indicator 1e

The content does not always meet the full depth of standards. This mainly occurs because of a lack of lessons addressing the full depth. For example, there are seven lessons which address 2.OA.1; however, only three of them are subtraction. The others are addition. Additionally, the majority of the subtraction problems use friendly numbers and do not have students using place value understanding to prepare for use of the standard algorithm. Another example is 2.NBT.6 which has only two lessons with students adding up to four digits. A third example is 2.MD.5 which has only three lessons relating addition and subtraction to length. Everyday Mathematics Second grade materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards:

Everyday Mathematics **Response**
It is clear that the reviewer did not understand the spiral. While in each case the number of lessons may be correct, the reviewer clearly did not take into the account the numerous practice hits for each of these standards. There are 153 hits on this standard in which there are 34 hits on subtraction through Volume 1 only. Volume 2 will have several more hits. Lessons 3-9, 3-10, 6-9 specifically focus on using place value understanding to solve number stories and to prepare children for use of the algorithm. There are two instructional lessons for 2.NBT.6 however, there are 17 practice and application hits. Similarly, 2.MD.5 has 25 hits where children are relate addition and subtraction to length.

Grade 2, Indicator 1e

The review states: Everyday Mathematics Second grade materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards:

2.NBT.A.1: Lesson 2-1 introduces place value through 100 using money, but it's not clearly connected back to all whole numbers. In Lesson 4-7, the place value grid through hundreds is introduced again.

Everyday Mathematics **Response**
Lesson 2-1 is an introductory lesson to connect place value in a concrete manner, using money. Instruction of place value using whole numbers begins in Lesson 4-

4. In Lesson 4-7, children are introduced to a place-value game that uses the Place-Value Game Mat.

Grade 2, Indicator 2b

The instructional materials lack activities to build fluency adding and subtracting within 20 (2.OA.2). No lessons focus on building fluency strategies for adding and subtracting within 20. Most fluency questions have sums that stay below 10 and sometimes 15. Subtraction work focuses mainly on taking away from 10; a minimal number of activities address subtraction work within 20, such as Lesson 3-2, Math Journal 1, page 47. On Math Journal pages, one or two problems may be devoted to addition and subtraction. These problems are not usually focusing on adding and subtracting within 20.

Everyday Mathematics Response
The entire content of Grade 2, Units 2 and 3 focuses on addition and subtraction fluency.

Grade 2, Unit 2

Contents

Lesson and Overview	Page	Common Core State Standards*
2-1 Grouping by 10s Children explore place-value concepts as they play *The Exchange Game* with money and practice grouping by 10s using $1, $10, and $100 bills.	150	2.NBT.1, 2.NBT.1a, 2.NBT.3, 2.NBT.7, 2.NBT.8, 2.MD.8 SMP2, SMP5, SMP6
2-2 Addition Number Stories Children write and solve addition number stories.	156	2.OA.1, 2.OA.2
2-3 Doubles and Combinations of 10 Children explore doubles and combinations of 10 to build fact fluency.	162	2.OA.2 SMP5, SMP6, SMP7
2-4 The Making-10 Strategy Children use a strategy based on place value to add within 20.	168	2.OA.2, 2.NBT.9 SMP2, SMP7
2-5 The Near-Doubles Strategy Children use the near-doubles strategy to solve addition facts.	174	2.OA.2, 2.NBT.9 SMP1, SMP2, SMP3
2-6 The Turn-Around Rule for Addition Children use dominoes to explore the turn-around rule for addition.	180	2.OA.2, 2.NBT.9 SMP3, SMP7, SMP8
2-7 Open Response Subtraction and the Turn-Around Rule Day 1: Children solve an open response problem by writing number stories and models. Day 2: Children discuss solutions and revise their work.	186	2.OA.1, 2.OA.2, 2.NBT.9 SMP1, SMP4, SMP6
2-8 Explorations Exploring Addition Tools, Odd and Even Patterns, and Shapes Children explore counting up, odd and even numbers, and shapes.	194	2.OA.2, 2.OA.3, 2.NBT.2, 2.NBT.7, 2.MD.6, 2.G.1, 2.G.3 SMP2, SMP5, SMP7
2-9 Even Numbers and Equal Addends Children identify even and odd numbers, and they write number models to express even and odd numbers as sums.	200	2.OA.2, 2.OA.3 SMP2, SMP7
2-10 Name-Collection Boxes Children generate equivalent names for numbers and write them in name-collection boxes.	206	2.OA.2, 2.NBT.3, 2.NBT.5 SMP1, SMP2
2-11 Playing *Name That Number* Children find many ways to name numbers.	212	2.OA.2, 2.NBT.3, 2.NBT.5 SMP1, SMP2
2-12 Frames and Arrows Children skip count, add, and subtract to solve Frames-and-Arrows problems.	218	2.NBT.2, 2.NBT.5 SMP7, SMP8
2-13 Assessment Unit 2 Progress Check Day 1: Administer the Unit Assessments. Day 2: Administer the Cumulative Assessment.	226	

*The standards listed here are addressed in the **Focus** of each lesson. For all the standards in a lesson, see the Lesson Opener.

Grade 2, Unit 3

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Lesson and Overview	Page	Common Core State Standards*
3-1 Open Response Using Addition Strategies Day 1: Children solve an open response problem using their own fact strategies. Day 2: The class discusses selected drawings and explanations, and children revise their work.	244	2.OA.2 SMP1, SMP6, SMP7
3-2 Subtraction from Addition: Think Addition Children write subtraction number stories and generate related addition and subtraction facts.	254	2.OA.1, 2.OA.2, 2.NBT.5, 2.NBT.9 SMP4, SMP7
3-3 Fact Families Children generate fact families using related numbers on Fact Triangles.	260	2.OA.2, 2.NBT.5 SMP5, SMP7
3-4 Playing *Salute!* Children play *Salute!* to find missing addends.	266	2.OA.2, 2.NBT.3, 2.NBT.5 SMP1, SMP3, SMP6
3-5 Subtraction Strategies: Counting Up and Counting Back Children discuss and use the counting-up and counting-back strategies for subtraction.	272	2.OA.2 SMP1, SMP6, SMP8
3-6 − 0 and − 1 Fact Strategies and *Subtraction Top-It* Children explore the − 0 and − 1 fact strategies and play *Subtraction Top-It*.	278	2.OA.2, 2.NBT.5, 2.NBT.9 SMP3, SMP7, SMP8
3-7 "What's My Rule?" Children find missing numbers and missing rules in "What's My Rule?" problems.	284	2.OA.1, 2.NBT.7, 2.NBT.9 SMP2, SMP7, SMP8
3-8 Using Doubles to Subtract Children use doubles to solve subtraction facts.	292	2.OA.1, 2.OA.2 SMP6, SMP7
3-9 Going-Back-Through-10 Strategy for Subtraction Children use the going-back-through-10 strategy for subtraction.	298	2.OA.1, 2.OA.2, 2.MD.6 SMP2, SMP3
3-10 Going-Up-Through-10 Strategy for Subtraction Children use the going-up-through-10 strategy for subtraction.	304	2.OA.2, 2.MD.6 SMP1, SMP3, SMP5
3-11 Explorations Exploring Rectangles, Fact Wheels, and Coins Children cover rectangles with squares, practice addition and subtraction facts on a fact wheel, and make coin stamp booklets.	310	2.OA.2, 2.MD.6, 2.G.2 SMP1, SMP6, SMP8
3-12 Assessment Unit 3 Progress Check Day 1: Administer the Unit Assessments. Day 2: Administer the Open Response Assessment.	316	

*The standards listed here are addressed in the **Focus** of each lesson. For all the standards in a lesson, see the Lesson Opener.

Grade 3, Indicator 1e

The review states that the content does not always meet the full depth of standards. This mainly occurs because of a lack of lessons addressing the full depth. For example, there are fifteen lessons which address 3.OA.1; however, they only ever specifically address multiplication of 0,1, 2, 5, and 10. Another example is fractions. In Grade 3, there are 9 standards devoted to fractions, all of which are major work; 19 lessons directly address fractions.

Everyday Mathematics Response
There are actually 100 exposures to 3.OA.1, 37 of which occur in the Focus portion of lessons. In addition to work with foundational facts (0, 1, 2, 5, and 10), extensive

work is provided with square products, near squares, and the development of multiplication fact strategies for products of one-digit numbers. There are 4 sets of Fact Triangles: 2s, 5s, and 10; multiplication squares; 3s and 9s; and remaining facts. By strategically presenting the multiplication facts along with appropriate strategies, children are given the opportunity to develop fluency with foundational facts (2s, 5s, 10s, and squares) and use those facts to derive the other facts using strategies such as adding a group, subtracting a group, doubling, and breaking apart. The full depth of 3.OA.1 and 3.OA.7 is met with this coverage.

There are 90 exposures to 3.NF.1, 49 exposures to 3.NF.2, and 99 exposures to 3.NF.3 – these include Warm-Up, Focus, and Practice portions of lessons, all of which support the spiral structure of Everyday Mathematics. The full depth of the 3.NF standards is met with this coverage.

Grade 3, Indicator 2c
The reviewer states: "Lesson 9-5 only contains one worksheet addressing 3.OA.3. The "Jonah's Garden" activity is asking students to determine how many seeds can be planted if nine seeds are planted in each of 16 rows. The problem is very scaffolded. Students are first provided with a rectangle and asked to divide it into two sections: one section of 10 rows and one section of 6 rows. Although dividing this garden and using the scaffolding does allow students to work with two multiplication equations that are within 100 as required by the standard, if a student attempts to solve the word problem without using the provided scaffolding, the multiplication is not within 100 as required by the standard."

Everyday Mathematics Response
This suggests that this standard is not covered elsewhere in the program, when in fact it covered in the Focus section 73 times, and practiced in 56 activities.

Grade 4, Indicator 1c
Report states: "Lesson 6-9 is focused on Measuring Angles. The lesson focuses on supporting standards 4.MD.5, 4.MD.5.A, 4.MD.5.B, and 4.MD.6."

Everyday Mathematics Response
Lesson 6-9 is an introduction to angle measurement. This cannot be tied to major work until the idea of an angle as a unit of measure is established. Later angle lessons do connect this to major work. See Lessons 6-11 and 8-2.

Grade 4, Indicator 1c
The review states: "Lesson 6-10 is focused on Using a Half-Circle Protractor. The focus portion of this lesson is aligned to supporting standards 4.MD.5, 4.MD.5.A, 4.MD.5.B and 4.MD.6."

> ### *Everyday Mathematics* Response
> This is an introduction to using a protractor. This cannot be tied to major work until students know how to measure using a protractor. Later angle lessons do connect this to major work. See Lessons 6-11 and 8-2.

Grade 4, Indicator 1e

Report states: "Everyday Mathematics Grade 4 materials do not provide extensive work with grade-level standards. For example, the instructional materials do not provide extensive work with the following standards: 4.NF.1: Only three lessons align to this standard, 3-1, 3-2, and 3-3."

> ### *Everyday Mathematics* Response
> 4.NF.1 is in the focus portion of 10 lessons: 3-1, 3-2, 3-3, 3-4, 3-6, 3-8, 5-4, 5-5, 7-13 and 8-13. 4.NF.1 deals with equivalent fractions and Lesson 3-4 is called "An Equivalent Fractions Rule" and this lesson involves direct work with the standard. Lesson 3-6 involves comparing fractions where students create equivalent fractions in order to compare. This list could go on.
> They often discounted lessons that include application of content.

Grade 4, Indicator 1e

Report states: "4.NF.7: There are two lessons aligned to this standard, lessons 3-10 and 3-13."

> ### *Everyday Mathematics* Response
> There are 5 lessons aligned to this standard: 3-8, 3-10, 3-11, 3-12, 3-13 with no explanation why only 2 are considered aligned.

Grade 5, Indicator 1e

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 to this standard.
- 5.NF.A.1: Only three lessons align to this standard, two for addition and one for subtraction.
- 5.NF.B.3: There are only six lessons aligned to this standard.

> ### *Everyday Mathematics* Response
> The reviewer has incorrectly calculated the number of lessons that address a standard (in many cases), and they also do not seem to understand the importance of distributed practice in developing mastery. The miscounting of lessons has been addressed elsewhere in the review. Here, we'd like to point out that only counting the Focus parts of lessons disregards the amount of instruction and learning that occurs during the Warm-Up and Practice sections of the lesson.

In addition, nowhere in the CCSS or any related document are there requirements for the number of lessons that must be taught for particular standards. The reviewers seem to indicate that there is some sort of number of lessons that we have not hit, but that number is arbitrary and unclear. The number of lessons needed is a decision that should be made by curriculum developers.

Grade 5, Indicator 1e
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 subtraction and two sharing addition and subtraction. The other two lessons are not aligned to the standard.

The reviewer states that materials do not provide extensive work with grade level standards, nor does the content meet the full depth of the standards. Here are some examples that they give:
- There are 132 exposures for 5.NBT.7 but only 14 Focus lessons.
- The review claims that there are only 5 lessons aligned to 5.NBT.1. There are actually 11.
- The review claims that there are only 3 lessons aligned to 5.NF.1. There are actually 10.
- The review claims there are only 5 lessons aligned to 5.NF.3. There are actually 12.

  ### *Everyday Mathematics* **Response**
  We're completely flummoxed why 132 exposures and 14 Focus lessons are not sufficient for meeting the full depth of this standard. We stand by the alignment of the lessons to the standards we have listed. The reviewers do not indicate which lessons they believe to be misaligned, so we cannot provide any explanation.

Grade 6, Indicator 2b
The reviewer states: "The instructional materials lack activities to build fluency computing with multi-digit numbers, 6.NS.2 and 6.NS.3. Standards 6.NS.2 and 6.NS.3 have a total of 215 exposures in the instructional materials. Exposures could include problems in the Math Boxes, problems in the Math Journal, direct instruction during the Focus lesson, problems during the online or hands-on game, and/or homework problems."

  ### *Everyday Mathematics* **Response**
  We are unclear how 215 exposures is not sufficient coverage for these fluency standards. This count also does not include all of the work with solving equations and inequalities where students apply their computation skills. It's not clear what the standard is for sufficient hits.

They list: 6.NS.2 (long division with whole numbers and standard algorithm) has 61 exposures listed and three focus lessons, but only one lesson actually introducing the algorithm (the other two lessons apply the algorithm). They cite <u>only</u> 44 exposures to whole-number division, of which half come in preparation for the standard algorithm and half come after the introduction of the algorithm. They commented that there are <u>only</u> 154 exposures to 6.NS.3 (computation with multi-digit numbers including decimals), but this will not include all of the work with decimal computation in the context of solving equations. Lessons do not tag computation every time students must use computation, rather lessons tag computation when it is the focus or it is explicit practice in the lessons.

Grade 2, Indicator 1c
From the review: At times, supporting work does not enhance and support the major work of the grade. At times, standards listed at the beginning of each unit are logically connected to each other; however, when the specific work of the unit and lessons is examined, some connections are missed or not specifically noted for teacher or students. Also, many lessons address supporting work in isolation from major work of the grade. Examples of units and lessons without connections between supporting and major work include the following:

- Lesson 1-9 is focused on odd and even numbers using 10-frames. Supporting work is treated separately from the major work of the grade in the focus lesson. A natural connection for students in Grade 2 would be to apply their work with doubles to the concept of odd and even numbers. Students could explore the concept that if a number can be decomposed (broken apart) into two equal addends or doubles addition facts (e.g., 10 = 5 +5), then that number (10 in this case) is an even number. This connection is not made.

  Everyday Mathematics **Response**
  Lesson 1-9 is an introductory lesson that is laying foundational knowledge. The connection to the Major Work of decomposing numbers into doubles facts is the focus of lesson 2-9, titled "Even Numbers and Equal Addends", when the concept is revisited and further developed as designed in a Spiral Curriculum. The connection is not made in the initial lesson, but is clearly made in subsequent lessons as Everyday Mathematics spaces learning over time to develop deeper understandings.

- Lesson 2-1 introduces place value through 100 using money, but it's not clearly connected back to all whole numbers which would be the natural connection to major work.

  Everyday Mathematics **Response**
  The Teacher's Lesson Guide contains the following instruction that links to the major work of 2.OA.1: "You might have them draw symbols for bills or **write number sentences** to record different ways to make the same total"

- Lessons 4-1 and 4-3 focus on supporting work of the grade. As the focus lesson, supporting work is treated separately from the major work of the grade.

  Everyday Mathematics **Response**
  In Lesson 4.1, activity "Reviewing Units of Time", students are asked to "count the minute marks by fives all the way around the clock". The supporting Math Journal page poses the problem to students "My family went to a movie. It started at 7:30 at night. It it ended at 9:30 at night. How long is the movie? Both of these instances connect the Supporting work to the Major Work of 2.OA.1.

- Lesson 5-5 focuses on arrays and repeated addition which is supporting work of the grade. Supporting work in the focus lesson is treated separately from the major work.

  Everyday Mathematics **Response**
  This Exploration Lesson does in fact connect Supporting work of arrays to major work. In the activity "Introducing Arrays", "Guide [students] to conclude that skip counting by either 2s or 5s is more efficient than counting each individual dots" and has them work with number sentences to represent the array   Exploration A states "Below each array drawn, children write a number model to express the total number of cubes in the array as a sum of equal addends". This clearly links supporting work on arrays to the Major work of 2.OA.1 and 2.OA.2.

- Lesson 6-10 focuses on supporting work of the grade but is not tied to the major work of the grade.

  Everyday Mathematics **Response**
  This Exploration Lesson includes two activities tagged to both Major Work and Supporting Work (2.OA.4 and 2.NTT2), linking number models with arrays. One activity focuses solely on the Major Work (2.MD1 and 2.MD4).

- Lesson 7-9 is focused on supporting work of the grade and does not support the major work of the grade.

  Everyday Mathematics **Response**
  This Exploration Lesson includes one activity that is tagged to both Major and Supporting Work of the grade (2.MD.1, 2.MD.2, 2.MD.3, 2.MD.9).

- Lessons 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7, and 8-11 focus on supporting work of the grade. These focus lessons are treated separate from the major work of the grade level.

Everyday Mathematics **Response**

These lessons focus on the Geometry domain and ,when appropriate, connections to Major Work are made (i.e. In Lesson 8-2 students measure lengths of the sides to show they are the same length (2.MD.1)). These foundational lessons on Geometry introduce the topic with connections to Major Work are made in subsequent lessons. For example, Lessons 8-6 and 8-7 focus on partitioning rectangles into same-sized squares, which is then connected to Major Work in subsequent lessons on arrays and equal groups (Lessons 8-8, 8-9, and 8-10, in addition to the Exploration Lesson of 8-11).

Grade 6, Indicator 1e

The review states: The content does not always meet the full depth of standards. This mainly occurs because of a lack of lessons addressing the full depth of standards. For example, there are eight lessons listed for 6.SP.A.2; however, only three lessons actually align to the full depth of the standard, lessons 1-8, 3-12, and 3-13. The other cited lessons only have students finding central measures in a very procedural manner without looking at the overall shape to bring context. There are 27 lessons listed for 6.RP.A.3; however, only eight lessons align to the full depth of the standard. There are nine lessons listed for 6.NS.B.3; however, only six lessons align to the standard.

Everyday Mathematics **Response**

In terms of 6.SP.2, The reviewer seems to be making the claim that initial introduction of the topic is not part of aligning "to the full depth of the standard." If students have not worked with finding measures of central tendency and comparing the various measures to determine what information about the data is exposed and what information is hidden by a given measure, then how can they fully analyze and compare distributions depicted on graphs? In addition, the reviewer overlooked Lessons 1-12, 1-14, 2-2, 3-4, and 8-9 where there is continued practice with the standard that is intended to strengthen and deepen students' understanding. Finally, there are other lessons applying the standard (6.SP.2—focused on describing a distribution). Lessons in Units 7 and 8 (e.g., 7-6, 7-8, 7-9, 7-10, 7-11, and 8-8) where this is the case do not include 6.SP.2 tags because the emphasized focus is on investigating relationships between variables. The above discussion covers only one of the standards for which they say there is inadequate depth. Perhaps reviewers did not actually look across lessons, but only at the associated lesson tags?

Grade 6, Indicator 1e

The review states: Everyday Mathematics Grade 6 materials do not provide extensive work with grade level standards. For example, the instructional materials do not provide extensive work with the following standards: 6.NS.A.1: Only four lessons align to this standard, one of which is multiplication. 6.NS.C.5: Only four lessons align to

this standard. 6.NS.C.6.B: While there are four lessons aligned to this standard, none of the lessons use reflection across one or both axes.

Everyday Mathematics **Response**

It appears that they are only looking at the tags for Part 2 Focus section of the lesson (and not considering practice tags or lessons where the standard might be integral to the work but not tagged). In terms of 6.NS.1 (fraction division), although fraction division is only developed in three lessons as focus content, there are thirteen lessons tagged as practice opportunities including pages of word problems (such as Lesson 3-12, journal page 153) and games (such as *Fraction Division Top-It*). There are about 30 Math Boxes problems that explicitly include fraction division either in word problems or as naked number computation. In addition, there are numerous places in the equations and expressions lessons where students rely on fraction division to solve the problems. As noted above, computation is not generally tagged when it is not a main thrust of the activity.

6.NS.5 is tagged in seven lessons. They do not all focus on the "meaning of zero," which is the third statement in the standard. Once students understand the role and "meaning of zero" in relation to integers, it is not tagged every time students work with a number line or the 4-quadrant grid. So, either the reviewers are only looking at the highlighted tags, or they are ignoring (or don't recognize) when students are applying this knowledge (as in plotting points with integer coordinates on a 4-quadrant grid). For 6.NS.6b, they have again ignored anything in Part 3. Although there is no direct discussion of "reflecting" points, there is considerable discussion of points being the same distance from the axis in different directions, depending on the sign. Since reflections are not introduced in Grades K–6, it did not seem appropriate to introduce them simply to use that language—especially considering that the concept of absolute value for finding distance is part of the Grade 6 standards.

Issue 3
The review consistently overlooks the volume of instructional moments that support conceptual development, procedural fluency, and application.

Evidence
Grade K, Indicator 1e
From the review: "Additionally, according to the Progressions document, students need to be able to mathematize real-world situations. There are very few opportunities for Kindergartners to practice this skill."

Everyday Mathematics **Response**
The entire Math All Around section (pages 1–14 of *Resources for the Kindergarten Classroom*) is about helping teachers and students mathematicize the classroom environment. Similarly, the Ongoing Daily Routines (pages 1–29 in the *Teacher's Lesson Guide*) provide children with daily opportunities to apply and practice mathematics in real-world situations and contexts. Sampling just from the first two sections of the Teacher's Lesson Guide, Lessons 1-4, 1-7, 1-8, 2-3, 2-8, 2-11, 2-12, and 2-13 engage children in making connections between mathematics and the real world. (A similar list could be made for the other sections in the TLG.) In addition, the "Conclude" section of many lessons often asks children to related the math concepts and skills from that lesson to the real world, and the Connections activities also often feature mathematizing real-world situations. It doesn't appear that the reviewers looked carefully enough at the lessons to identify these opportunities, which have always been a hallmark of Everyday Mathematics.

Grade 2, Indicator 2a
From the review: Materials partially meet the expectation for developing conceptual understanding of key mathematical concepts, especially where called for in specific content standards or cluster headings. There are good conceptual discussion pieces located throughout the work. Some good conceptual Home-Link and practice problems exist; however, these come before the focus lessons, which, without the lesson to understand the concept, could present possible issues for the students.

Lessons which miss opportunities to develop conceptual understanding are listed below.
- 1-11 Comparing Numbers: The lesson does not employ visual representations of numbers to illustrate the difference in amounts when comparing numbers. Students should be able to see the difference using base-10 blocks or other groups of objects.
- Lesson 1-3 does not work on building conceptual knowledge. Although labeled with 2.NBT.A, students are not developing understanding of place value. In this lesson students are learning to use various math tools.

- 5-2 through 5-4, using and calculating with coins: These activities are more about measuring value with money and do not clearly connect to learning about the concepts of place value using coins as visual representations of numbers.

Everyday Mathematics **Response**
In every case, the Home-Link is practice for the day's lesson. There is never a case where children practice a concept or skill that was not addressed during that day's lesson. The same is true for practice. Children do not practice a skill or concept until after it has been introduced in a lesson. Specific examples would be helpful.

Lesson 1-11 has students comparing numbers and money amounts by writing *is less than, is greater than, or is equal* to and then by using symbols. They review mnemonic devices that help children remember the meaning of the symbols. The focus in this lesson is on numbers to 120 (first grade standard) and pennies and dimes (first grade place value). In Lesson 4-5, children use base-10 blocks to compare numbers larger than 120. The *Assessment Check-In* states that children are only expected to compare 2-digit numbers and problems with pennies and dimes.

Lesson 1-3 includes conceptual understanding. Children are using tools (coins) but they are also engaging in mathematical concepts. The Mathematical Background states: *It is important for chidren to have experience with money because of its inherent usefulness and, like most measures, because of the context it provides for number stories (2.MD.8). Our base-10 monetary system is an excellent vehicle for studying place value, fractions, and decimal notation. In Lessons 1-3 and 1-8, children count combinations of coins to practice skip counting and deepen their understanding of place-value concepts (2.NBT.2).*

Lessons 5-2 through 5-4 involve adding combinations of coins in a "real-life" context. Children use coins to solve problems that involve buying items and making change. They provide contextualized practice with skip counting and serve as vehicles for adding and subtracting 2-digit numbers. Children model the problems with coins and drawings and are practicing money skills by alternating between the roles of customer and clerk.

Grade 3, Indicator 2a
The review states that Lesson 1.8 begins students on 3.OA.1 by using pictures and discussing grouping. In lesson 1.10, students subitize and practice doubling, then fact families. In lesson 1.12, there is more work with 2s, 5s and 10s. In lesson 2.6, students practice making sense of equal groups using pictures, counting, skip counting, arrays, and repeated addition. Lesson 3.9 begins with word problems to reinforce the mathematics of 3.OA.1. Lesson 3.11 has students build arrays with counters. Lesson 5.6 returns to doubling; this time using area. In lesson 7.2, there are arrays and estimation. Few questions directly address students' conceptual

understanding. Rather, it appears the totality of the activities is designed to encourage students to develop understanding. Teachers are not provided many opportunities to check this understanding.

Everyday Mathematics **Response**
We are unclear what the reviewer is getting at here with the comment "Few questions directly address student's conceptual understanding."

In Lesson 1-8, children are asked to share their pictures and solution strategies for the following problem "Ellie bought 3 packs of stickers. There are 6 stickers in each pack. How many stickers did Ellie buy in all?" Children are also asked to determine what all the representations for the problem have in common and to share the number models that match their sketches. In Lesson 1-10, questions about the equal groups on Quick Look cards include "Did everyone understand Rebecca's strategy? Explain it in your own words." and "How could you try Rebecca's strategy on the next image?" When noticing the similarities between addition doubles and multiplying by 2, questions include "Do you think this will always happen when we multiply by 2? What is another example that follows this rule?" Questions in Lesson 2-6 that help children reflect on the efficiency of their strategies include "How did s/he solve this problem? Does the strategy work for this problem? How do you know? Can you think of a faster and easier strategy?" The Mental Math and Fluency in Lesson 3-9 does involve number stories that support 3.OA.1. The Part 2 Focus portion of the lesson also supports 3.OA.1 when addressing multiplication squares, arrays, and multiplication fact strategies. Questions in this lesson include "How does this number sentence match this array? How are your arrays alike? Why are they all square? How did you figure out the product?" Lessons 3-11 and 3-12 (not included by the reviewer) both support 3.OA.1 with adding- and subtracting-a-group strategies. Questions include "How could you use your first product to find a new total number of crayons? How do you know whether a fact is a helper fact for you?" Lesson 5-6 introduces the doubling strategy with the use of arrays and area models. Questions include "Do you think doubles will always be even numbers? Why or why not? Do you think all even numbers are doubles? Why or why not?" There are clearly a number of questions that support conceptual understanding in these lessons.

There are 10 opportunities in the first 5 units to assess children's understanding of 3.OA.1; however, the reviewer suggests there are not many opportunities to check this understanding.

Grade 3, Indicator 2a
The review states that Lesson 1.9 begins students on 3.OA.2 by posing leading questions and facilitating students' procedures and explanations. Opportunity is not provided for students to really question their strategy nor to relate it in a meaningful way.

***Everyday Mathematics* Response**

Lesson 1-9 is the introduction to division and involves children in solving equal-sharing and equal-grouping number stories. Teachers are asked to facilitate a discussion about making sense of the problems and reflecting on strategies by asking questions such as "What do you know from the problem? How did you decide what to draw first? How did you know you were finished? How did you show your answer in your picture?" The final activity includes the following "Encourage the rest of the class to make sense of each strategy by asking questions and repeating the strategies in their own words." This is clearly the beginning of children developing conceptual understanding for division. That conceptual understanding is built upon in a number of later lessons that support 3.OA.2, such as 2-8, 2-9, and 2-10. Lesson 2-8 (Picturing Division) includes such questions as "How is this picture or representation of the problem similar to another child's? How is it different? How did you use the drawing (array) to help you solve the problem? Does this representation match the problem? How do you know? How does this picture that the pennies are shared equally? Did you show all of your work using drawings, words, or numbers so someone else can understand your thinking? Does your partner's work make sense to you? Lesson 2-9 (Modeling Division) includes questions such as "What is the same and what is different about this strategy and your strategy? Lesson 2-10 (Division Arrays) includes questions such as "What do you notice about numbers that could make arrays with two equal rows? What happens when you cannot make an array? Predict what would happen with n tomato plants? Explain your prediction? Explain the patterns you see in making 2-row arrays with even numbers and with odd numbers?" These questions clearly show opportunities for children to question each other's strategies and relate to them in meaningful ways.

Grade 5, Indicator 2a

From the review: Cluster 5.MD.C calls for conceptual understanding of volume and how volume relates to multiplication and addition. There are 14 focus lessons on fractions. Many of the lessons are directed and explicit, so students do not have many opportunities to struggle with the understanding of the mathematics. There is only one Open Response lesson on volume in the year. There are some missed opportunities to connect conceptual understanding of measurement of volume to other areas.

***Everyday Mathematics* Response**

We disagree with the assessment that the lessons are directed and explicit so that students don't struggle with the understanding of mathematics. Every lesson in Grade 5 was field tested, and the feedback from teachers indicated that these lessons required students to grapple with common misconceptions about volume and develop a deep understanding of volume concepts. Here are some specific examples of how we think student have opportunities to struggle with the mathematics:

- In Lesson 1-5, students directly confront the misconception (seen in our field testing) that only open containers have volume, and not closed containers. In addition, they explore the idea of volume and informally comparing

volumes through a pouring experiment. Neither the TLG nor the MJ tells students how to do this pouring experiment. This activity is open-ended. This informal comparison of volume follows the development of other measurement concepts laid out in CCSS and also is supported by research literature.

- In Lesson 1-6, students experiment with filling rectangular prisms with a variety of pattern blocks. They discuss different errors that could be made when measuring (leaving gaps, having overlaps) and discuss which shape is conducive to packing prisms. This discussion previews the importance of a unit cube. Although students are guided to pack their prisms with pattern blocks, this lesson is not directed or explicit. Teachers are given assistance in guiding the student discussion, but students discover these ideas and are not simply told them.
- In Lesson 1-7, there is a fairly guided discussion about packing prisms with unit cubes. However, this discussion leads to open-ended problems on journal pages 18 and 19 in which students work together to solve partially-packed prism problems. These problems do not have a set solution strategy, and students are expected to share a variety of methods they used to solve the problems.
- In Lesson 1-9, the teacher guides students towards generalizing two formulas for volume. Although there is certainly an end in mind (generalizing two formulas), and the teacher is given guidance in how to get students to these formulas, the focus in this lesson is on helping students use their knowledge about volume to generalize the formulas themselves. Teachers are **not** told to give students the formulas, but to guide students towards them.
- In Lesson 1-12, students play a game. They are allowed to use any strategy for finding the volume of a rectangular prism to play the game. This game does not direct or require students to use a particular strategy.
- Multiple times throughout Unit 1, the teacher is guided to help students connect the ideas of volume to addition and multiplication. It is unclear from the reviewers' comments exactly what other areas volume should connect to conceptually.

Grade 5, Indicator 2a

From the review: In Lessons 6.1-6.3, the Math Journal provides problems to probe student understanding; however, problems simply address student "why?" without providing a task that challenges their thinking. Repetition of mathematical problems detracts from developing conceptual understanding.

Everyday Mathematics **Response**

In Lesson 6-1, students are being asked to generalize patterns. In order to develop a conceptual understanding of what happens when decimals are multiplied and divided by powers of 10, students have to solve a variety of similar problems. Without repetition, they wouldn't have the experience to generalize a rule. The

"why?" problems are the problems that require students to explain why a particular pattern is happening. This is deep, challenging mathematics. There are no journal pages associated with the Focus lesson of 6-2, so it is unclear what the reviewers are referring to here. Lesson 6-3 requires students to solve multistep number stories involving unit conversions. These problems do not ask "why?" but do provide challenging tasks. The journal pages do include problems around the same concept, but the 8 problems on 2 pages are sufficient practice on the concepts.

Grade 5, Indicator 2c

From the review: Some of the problems are tied together through concepts and ideas, but many times, lessons are completely disjoint from one another.

Everyday Mathematics Response

Below are some of the lessons that build upon each other conceptually.
- Lessons 1-5 through 1-12 all deal with the concept of volume, and all build on each other. Although they are all closely related, Lessons 1-7 and 1-8 specifically lead to the development of 2 formulas for calculating volume that are developed in Lesson 1-9.
- Lessons 2-4 through 2-9 all deal with U.S. traditional multiplication, and all build on each other. Lessons 2-5 and 2-9 are applications of the multiplication algorithm.
- Lessons 2-10 through 2-13 all build more sophisticated understandings of multi-digit division.
- Unit 3 all deals with fraction concepts. Its progression is very purposeful – from understanding a fraction as a division of a numerator by a denominator to basic concepts underlying fraction addition and subtraction to basic concepts underlying fraction multiplication. These lessons all build on each other and prepare students for the understanding of fraction computation procedures in later units.
- Lessons 4-1 through 4-5 all deal with concepts critical to understanding decimals. They lead to Lessons 4-11 through 4-14, which introduce decimal addition and subtraction. See the next bullet for the reason for the spacing between these lessons.
- Lessons 4-6 through 4-10 all deal with understanding and plotting points on a coordinate grid. These lessons all relate. This series of lessons falls between the lessons on decimals because it is important for students to have additional practice on basic decimal concepts before jumping into decimal computation.

Grade 5, Indicator 2.g.i

From the review: The open-response lessons could be opportunities for students to construct arguments for or against a mathematical question. However, besides just

working in groups, there is little prompting from the teacher for students to discuss the answers of other groups or students.

Everyday Mathematics **Response**
The Open Response and Reengagement lessons are by design a forum for students to consider and critique the work of others, particularly at the beginning of Day 2. It seems that the reviewer did not consider Day 2.

Grade 6, Indicator 2a
The review states: Cluster 6.RP.A calls for understanding ratio concepts and using ratio reasoning to solve problems. There are 13 Focus lessons on 6.RP.1 and eight focus lessons on 6.RP.2. Many of the lessons are doing "dual duty" as many lessons are marked for both standards. Lessons are so directed and explicit that students do not have the opportunities to struggle with the understanding of the mathematics. There is one Open Response lesson on ratios in the year.

Everyday Mathematics **Response**
Once again, the reviewer neglected the practice sections of lessons. In addition, they earlier marked us down for not connecting standards within a domain, but now the fact that "understanding the concept of ratio" and "understanding the concept of rate" are connected is problematic. The CCSS defines rates as a subset of ratios. Therefore, one would expect that when the lesson focuses on rates, there should be an accompanying tag for ratios. And of course, once again, the reviewers have neglected to include the "practice" opportunities.

It is untrue to claim that "students do not have opportunities to struggle with the understanding of mathematics." Here are some of the instances where students have opportunities to reason about ratio content before exploring particular approaches, representations, or strategies:
• Journal page 83, Problem 1
• Journal page 88, Problems 1 and 2
• Journal pages 92-93—Rectangle ratio exploration
• Journal page 97—Math Message where students determine characteristics that make a ratio a rate.
• Journal page 100—Math Message
• Journal page 148—Math message where students compare problem-solving strategies they use

Grade 6, Indicator 2c
The review states: The materials partially meet the expectation for being designed so that teachers and students spend sufficient time working with engaging applications of the mathematics, without losing focus on the major work of each grade. Most problems are presented in the same way throughout the entire curriculum. There is little variety of problems or types of problems. Problems are presented as short, one

correct answer problems. Some of the problems are tied together through concepts and ideas, but many times lessons are completely disjointed from one apnther.

Everyday Mathematics Response

Types of problems vary tremendously, including: 1. Problems requiring a single, correct answer (e.g., throughout Math Boxes and other places); 2. Problems requiring a short explanation (e.g., journal pages 11–14); 3. Problems requiring making connections between representations (e.g., journal pages 42, 43, 158, 159); 4. Problems requiring diagrams or pictures (e.g., journal page 72, 73, 88, 89); 5. Problems identifying correct versus incorrect information; 6. Multiple choice problems (throughout Math Boxes and other places); 7. True/False problems (throughout Math Boxes and other places). We have included a few references, but all of these can be found throughout the materials.

Units generally focus on 1 or 2 main topics. Lessons build throughout a unit and across units. For example, Unit 1 focuses on developing ideas around statistics and probability (Lessons 1-1 to 1-9) and on locating rational numbers on a number line or on a four-quadrant grid (Lessons 1-10 to 1-14). Other lessons involving statistics and probability, for example, include box plots (Lessons 3-12 to 3-14), absolute mean deviation (Lesson 4-14), and in various applications in Units 6, 7, and 8. Revisiting rational numbers on a number line or on a four-quadrant grid includes exposure in the context of decimals (Lesson 3-2), graphing inequalities (Lessons 4-10 and 4-11), and in various applications in Units 7 and 8.

<u>**Issue 4**</u>
EdReports' narrow interpretations of how to attend to the full meaning of Standards for Mathematical Practices is not supported by the CCSS or Publisher's Criteria.

The *Everyday Mathematics* Goals for Mathematical Practice (GMPs) are designed to operationalize the full text of the Standards for Mathematical Practice (SMPs), not just the SMP headline sentences. The GMPs do not replace the Standards for Mathematical Practice, but they express key aspects of the complex behaviors required by the SMPs in language that elementary school teachers and children can understand. The EM4 approach to the SMPs – breaking the complex skills required by the SMPs down into constituent parts, focusing on those constituent parts, and recombining those parts into complex performances – is a reasonable pedagogic approach, one with ample support in the learning sciences literature; see, for example, Anderson (2002). In fact, the more complex the skill, the more necessary it may be to work on sub-skills that can be broken out – and the SMPs are among the most complex standards in the entire CCSS-M (as well as being the only standards for K-8 that are not broken down by grade level).

It's important to keep in mind that the Standards for Mathematical Practice are K-12 standards, so that performance at the elementary grades will be at a different level than at the higher grades. In particular, one might reasonably expect performances at the lower grades to be less integrative than those at the upper grades.

The EM Teacher's Lesson Guides provide extensive support for teachers to teach the mathematical practices at the lesson level. Each lesson identifies a small set of Standards for Mathematical Practice to focus on and then highlights places in the teacher's materials where those standards are being taught. The SMPs are also extensively treated in the Open Response and Reengagement lessons. The claim that teacher guidance for teaching the SMPs is lacking in EM4 is, simply, unsupportable.

Reference
Anderson, J. R. (2002). Spanning seven orders of magnitude: A challenge for cognitive modeling. Cognitive Science, 26, 85–112.

<u>**Evidence**</u>
<u>**Grade 3, Indicator 2e**</u>
The review states that within the lessons, no teacher guidance on how to help students with the MPs is given. Because there is no guidance on implementation, it is difficult to determine how meaningful connections are made. Additionally, it is difficult to determine if the MPs have meaningful connections since the materials break them into small parts and never address the MPs as a whole. The broken apart MPs can be seen on pages EM8-EM11.

   Everyday Mathematics **Response**

The Implementation Guide includes guidance for teachers regarding the Standards for Mathematical Practices. See Implementation Guide, pages 7-16. Here is an excerpt from page 15: "The mathematical practices cannot be taught as directly as content is taught. Rather, through their problem-solving experiences and reflections on those experiences, students develop proficiency in the mathematical practices and begin to notice and name those practices. After solving a problem, students can examine their solutions to see how they fit with the targeted GMPs. Student learning of the SMPs is a development process, so that students' initial ideas are likely to be somewhat crude. Everyday Mathematics assumes that while the name of the practice remains the same, students' understanding and ability to articulate the practices will grow over time."

Additionally, the My Reference Book and Student Reference Books each include an entire section that provides guidance for the practice standards for teachers, students, and parents. Pages in these books are referenced in several lessons.

Grade 3, Indicator 2g.ii
The review states that Lesson 5.1 states "Be ready to share why you agree or disagree with Samantha." There is no instruction or guidance for the teacher.

Everyday Mathematics Response
The reviewer references the Math Message problem that asks children to determine whether 3 fraction pieces of different sizes each show 1/3 of the whole. The problem reads "Samantha says each piece shows 1-third of the whole because she covered the pink piece with 3 pieces. Do you agree? Explain. The Math Message Follow-Up invites children to explain their answers, but not to identify which are correct. Rather, the class reads the next problem together and children find 3 same-size pieces that cover 1 whole. Then the question is asked, "What looks different about these three pieces and Samantha's three pieces?" Two sample answers are provided. Another question follows "Which piece shows 1-third of a pink piece? How do you know?" Next children are asked to "Think about your answer to the Math Message. How would you show 1-third to Samantha?" There are sample answers provided. There is plenty of guidance and instruction for the teacher in this activity.

Grade 3, Indicator 2g.ii
The review states there are many missed opportunities for students to construct viable arguments and/or to analyze the reasoning of others. An example of this is in Lesson 7.7 where students read a journal page about the volume of a 1-liter container. They are discussing the conservation of mass (in this case liquid). The teacher is prompted to have the students complete the problem independently and then have a class discussion and listen to students answers. Teachers are instructed to provide support for answers that state all containers hold 1-liter of liquid. The opportunity missed here

is encouraging the rich conversation students could have to defend answers by constructing reasonable arguments and defending arguments of others.

Everyday Mathematics Response
The Lesson 7-7 activity the reviewer calls out is in the Part 3 Practice portion of the lesson. Children are asked to complete the problem independently and then share their thinking with their partners; this sentence is followed by a lozenge with GMP3.2 Teachers are then asked to support children in understanding that all the liquid volume of all three containers is the same because they all hold the same amount of water. As teachers provide support for children's understanding, one would expect discussion and conversation that helps children make sense of and clarify each other's thinking, which clearly supports SMP3.

Grade 5, Indicator 2.e
From the review: However, within the lessons, no teacher guidance on how to help students with the MPs is given. Because there is no guidance on implementation, it is difficult to determine how meaningful connections are made.

Everyday Mathematics Response
Here are just a few places in which we give teacher guidance on how to help students with the SMPs.
- From Teacher's Lesson Guide, Lesson 1-2, page 23: Encourage students to use words like row, column, and square unit in their explanations, pointing out how using precise mathematical language helps others understand our thinking. (This addresses SMP6.)
- From Teacher's Lesson Guide, Lesson 2-9, page 162: Tell students that even though there are often multiple ways to solve a problem, mathematicians try to solve problems in the most efficient way. Efficiency refers to solving a problem in a way that minimizes time and effort. Refer students to the Standards for Mathematical Practice Poster for GMP6.4. Ask: Of the strategies we discussed for this problem, which are most efficient? Why? Sample answer: Using a table or number sentence is more efficient than drawing a picture of each envelope because it takes a long time to draw and label each envelope. It takes less time to write out a number sentence. Tell students that they should think about efficiency when solving the open response problem.GMP6.4
- From Teacher's Lesson Guide, Lesson 3-12, pages 294-295:

▶ **Identifying Problem-Solving Strategies**

Student Reference Book, p. 30

WHOLE CLASS   SMALL GROUP   PARTNER   INDEPENDENT

Math Message Follow-Up Invite students to share the questions and strategies they use when solving real-world problems. Expect them to draw some ideas from the problem-solving diagram, but encourage them to add their own questions and strategies. List and display students' contributions. *Sample responses:*

To Get Started GMP1.1
- What do I know? What do I need to find out?
- What information is the problem giving me? Do I have all the information I need? Is there information I can ignore?
- Can I draw a picture of the problem? Can I write a number model?
- What math can help? Is this problem like one I've solved before?
- Can I use fraction circle pieces, number lines, or other tools?

To Keep Going GMP1.3
- Organize the information in the problem.
- Play with the information. Try solving one part of the problem or working backward.
- Make a written record of what I do.
- Create a model (draw a picture, write a number model, make a graph or diagram).
- Think about how my model is helping me solve the problem. Try another model if it's not working.
- Talk to others working on the problem. Try to make sense of their strategies.
- Look back at what I've tried. Does my work make sense?

Tell students that today they will apply what they have learned about fractions to solve a variety of real-world fraction problems. Point out that the list of problem-solving strategies they just discussed can be an important resource as they work through the problems.

<u>Grade 5, Indicator 2f</u>

The Grade 5 Everyday Mathematics instructional materials do not meet the expectation for carefully attending to the full meaning of each practice standard. The lessons do not give teachers guidance on how to implement the standards. Some lessons are attached to standards without having students actually attending to them.

Below are examples of where the full intent of the MPs is not met.

- MP4: Lesson 1-11 has the teacher creating a mathematical model, but not the students. The assessment for unit one, problem 3, is cited with MP4; simply solving equations is not having student creating a mathematical model. Lesson 2-2 is cited with MP4, but students are told what model to use.

    Everyday Mathematics **Response**

    We did not have time to outline and thereby demonstrate the progression of all MPs listed in this indicator, nor for all grades, but are confident when we do we will ably demonstrate full coverage. However, here is information on Grade 5 *Everyday Mathematics* coverage of MP4.

    There are many instances in which MP4 is addressed in a variety of contexts to attend to the full meaning of this standard. Each instance builds on the students' ability to apply knowledge of mathematics to new models. It is invalid to draw conclusions about attending to the full meaning of Mathematical Practice based on the first exposures students have to that Mathematical Practice and not giving time for the Practice to develop. Had the reviewers continued looking at the full 33 lessons across Grade 5 that are tagged to MP4, they would have seen some the below examples and more that clearly expand the expectations of MP4 from the first exposure.

    As stated, Lesson 1-11 has the teacher create a mathematical model, while providing instruction explaining what a model is and how it is used. Instruction includes introducing "Mathematical Model" as a vocabulary term, having students

reflect "How could this model help you solve the Math Message?" Students then interact with problems finding the area of mathematical models of real-life objects. Four lessons later (Lesson 2-2), students are given a mathematical model to solve a real-world problem. As these are the introductory exposure to Mathematical Models, attending to the full meaning in initial exposures is not in line with scaffolded learning over time.

- Lesson 2-6: Students are reminded that number models represent real-world problems using only numbers and mathematical symbols. Furthermore, teachers are instructed to "Encourage students to draw pictures to help them make sense of the problem, and tell them to write an expression to record the calculations." This aligns with the MP4's expectations: "In early grades, this might be as simple as writing an addition equation to describe a situation".
- Lesson 2-13: Students create mathematical models to help solve a problem, then share how the models are useful for solving the problem.
- Lesson 3-1: Students model real-world problems with fraction circles in the first activity. In future activities in this lesson students are given the opportunity to use other models to solve problems, including drawing pictures. Teacher instruction also states "Point out that there are multiple ways to model each problem". It should also be noted that the language of MP4 does not state that students should not be told which model to use.
- Lesson 5-10: The lesson opens with students being presented with the problem: "Draw a picture or fold a piece of paper to help you find 1/3 of 2/5. Explain how your picture or paper folding represents the problem." After sharing their representations, the lesson continues with a real-world problem in which they are asked to use a picture-model to solve a problem, explain their reasoning, and reflect on "what did you do to improve your drawings, number models, and explanations?".
- Lesson 6-10: The lesson focuses on helping students checking whether answers make sense without calculating an exact answer. During the lesson, there are opportunities for students to apply a variety of mathematical models of their own choosing to justify their rationale.

Issue 5
Errors and inaccuracies throughout the EdReports review reveal the lack of discipline and accuracy present in the review process.
Though we have not reviewed each and every citation, our initial review discovered a multitude of errors in the report, which, along with extensive editing mistakes, point to an undisciplined process for review and report compilation. This calls in to question the overall validity of the report.

Evidence
Grade K, Indicator 1a
Wrong lesson numbers are cited in several instances (e.g., the first instance they cite of an out-of-grade assessment does not list the lesson number correctly. Similarly, two of the three instances in which they cite out-of-grade assessments related to comparing weights are incorrect lessons numbers.

> ***Everyday Mathematics* Response**
> Repeatedly citing incorrect lesson numbers reveals a process that was not careful enough given its high-stakes implications.

Grade K, Indicator 1c
From the review: Lessons 6-4 and 6-10 focus on shapes with added work on solid (3-dimensional) shapes. No attempt is made to connect to the major work of the grade in any of these lessons even though students count sides to determine the shape. No connection is made to counting or +1 addition."

> ***Everyday Mathematics* Response**
> If students are counting sides, that actually is a connection to the major work of the grade (and is "counting"). And what connection is to be made here to +1 addition? This erroneous and confusing comment is copied and pasted verbatim two more time in this indicator, referring to 6 different lessons in total.

Grade K, Indicator 1e
The reviewer states: "Differentiation options, present in most lessons, offer opportunities for students at different instructional levels to engage with the standards. In some instances, the differentiation tasks, while aligned to standards, are not aligned to the same standard as the focus lesson. An example of this is lesson 1-1. The lesson focus is K.MD.2, "Directly compare two objects with a measurable attribute in common to see which has more of or less of the attribute and describe the difference." The readiness task asks students to match measurable attributes which does not address the same standard. **There is concern that students engaging in the readiness tasks might not reach the full depth of the standard.** The extra practice and enrichment tasks are aligned to the lesson standard."

Everyday Mathematics **Response**
The boldface text above is confusing. Why does a readiness activity need to address the full depth of the standard? Our intention for Readiness, which seems not to be understood by the reviewers, is to provide access to the lesson concepts and skills for children who may need that. Sometimes this access will relate directly to the standard(s) in the lesson (probably not at the full depth of the standard(s) – especially not in a Readiness activity for the very first lesson of the grade); sometimes it will be more of a prerequisite for the standard(s) in the lesson. This is completely consistent with the learning progressions approach of the CCSSM.

Grades 2-5, Indicator 2.g.iii (excerpt from G5)
From the review: Correct vocabulary is often not used. For example, "Turn-around fact" is used rather than the term commutative property, number sentence is used instead of equation, "name-collection box" instead of equivalent equations or equivalent expressions, "number model" instead of expression, trade-first subtraction, and "top-heavy fraction" instead of fraction.

Some units have a heavy load of required mathematical vocabulary. In Unit 7, there are 39 vocabulary words needed for students in Grade 5 to understand the unit. Some of these words include corresponding terms, fathom, hierarchy, great span, joint, relationship, subcategory and others. In contrast, unit 6 only has 14 vocabulary words for the unit which is a much more manageable number for students in Grade 5.

Everyday Mathematics **Response**
Nowhere does the Publishers' Criteria state that CCSS vocabulary must exclusively be used, nor does it provide guidance on the appropriate amount of vocabulary to be introduced in a curriculum unit. That said, *Everyday Mathematics* always uses the CCSS vocabulary word, even when an *Everyday Mathematics* vocabulary term is used as well. Therefore, the critiques against the vocabulary in *Everyday Mathematics* are unfounded.

Lastly, though reference in the review of Grades 2, 3, 4, and 5, nowhere in *Everyday Mathematics 4* is the term "top-heavy fraction" fraction use to describe an improper fraction.

Grade 5, Indicator 1b
From the review: Each day consists of 15-20 minutes on routines, 30-45 minutes of a core activity, and 15-20 minutes of practice.

Everyday Mathematics **Response**
This is incorrect, as there are no routines in Grade 5.

Grade 5, Indicator 2f

From the review: The assessment for unit one, problem 3, is cited with MP4; simply solving equations is not having student creating a mathematical model.

Everyday Mathematics **Response**

This is incorrect. Problem 3 is not cited with SMP4. Problem 13 is, and this problem asks students to model a real-world context with an expression. That is creating a mathematical model.