**Guidance Document - *GO Math!* Grade K**

This document provides guidance on how teachers can adjust their implementation of *GO Math!* to better meet the requirements of the Common Core State Standards or other College and Career Ready (CCR) standards. Guidance is provided at both the program and chapter levels and was developed through a collaboration between districts currently using *GO Math!* and Student Achievement Partners.

*Part 1: About Go Math!*

Provides a summary of the program and an overall assessment of its strengths as well as areas that require attention to improve alignment.

*Part 2: Program-Level Rules of Thumb*

Program-level Rules of Thumb (RoT) provide alternate ways to use features that appear across the *Go Math!* program K-5. Some districts may want to begin by just sharing Part 2 with teachers and supporting them in making the RoT a part of their daily instructional practice.

*Part 3: Grade-Level Rules of Thumb*

Grade-level RoT provide grade-specific alternate ways to use features in each grade-level of *GO Math!*. It also includes a reference to the Fluency documents which provide supplemental resources to help students meet the fluency expectations at each grade level. Teachers may want to consult these at the beginning of the school year as they are mapping out their year.

*Part 4: Chapter-Level Guidance*

Chapter-level guidance includes recommendations for each lesson in all chapters for each grade-level K-5. Lessons can be deleted, modified or left as is. Sometimes, additional lessons are needed to fully reach the expectations of the standards; in these cases, a link to a free resource is provided. Keep in mind that these lessons are often pulled from comprehensive programs and teachers will need to make decisions about which parts of the lessons to use. Rationale is provided for why each change has been suggested. By studying this rationale teachers can gain a better understanding of the standards and how to use the suggested resources. Teachers may want to consult each chapter-level guidance as part of a PLC before starting to teach the chapter.

Part One: About *GO Math!* (K-5)

*A description of the strengths in alignment and implementation recommendations*

*GO Math!* *K-5*, written to the Common Core State Standards, was first published by Houghton Mifflin Harcourt in 2012. Since its initial publication, a number of updates have been made in addition to the creation of some state-specific versions. For the most part, however, all of these editions and versions have very similar content and the same instructional approaches.

*GO Math!* has created a sequence of chapters and lessons in each grade that allows for the large majority of time to be on the Major Work of the grade. Generally, the content is aligned to the progression that is outlined in College and Career Ready standards with little off-grade-level content and little material that unduly interferes with grade-level learning. Students using *GO Math!* will generally get the right content for the grade level, as outlined by the Standards.

Many lessons that focus on operations provide a mix of strategies and models to help students make sense of the work; however, these strategies and models are rarely connected to each other or used to advance student understanding towards later work they will be doing. For instance, work with addition and subtraction in 1st and 2nd grades includes a variety of representations and strategies that students must learn but does not highlight those strategies which are place-value based and will further students’ understanding of the meaning and properties of the operations.

*GO Math!* provides opportunities for students to experience each aspect of Rigor (Conceptual Understanding, Procedural Skill and Fluency, and Application) required in instruction for students to be college- and career-ready[[1]](#footnote-1). Two components of *GO Math!* that attempt to target Conceptual Understanding are “Math Talk” and “Unlock the Problem.” “Math Talk” generally provides quality conceptual discussion question for students. “Unlock the Problem,” however, is often overly scaffolded which means that students are not having authentic opportunities to make sense of problems and engage with mathematical ideas within lessons that address standards calling for Conceptual Understanding. Overall, the lessons attend to Fluency with addition/subtraction and multiplication/division facts as the focus of chapters and there is a “Fluency Builder” activity that shows up several times a week. However, the Fluency Builder activities do not always correlate to the fluency expectations of the grade level. More work is needed throughout the program to ensure that students meet the required fluencies of each grade. Application problems are provided in each lesson in the Problem Solving **◆** Application section. Many of these problems provide opportunities for students to apply mathematical ideas to real-world or mathematical problems. In addition, the “Problem of the Day” provides other opportunities for Application.

Part Two: Program-Level Rules of Thumb for *GO Math!* (K-5)

*How should teachers use the features of the book to make instruction more aligned?*

The Rules of Thumb below provide general guidance for how to leverage certain features of *GO Math!* to align the program to CCR standards with an emphasis on the Standards for Mathematical Practice (SMPs).  Because the practice of teaching is about so much more than what is provided in instructional materials, the Rules of Thumb serve as general guidance. They are not meant to replace teacher judgement about exactly how to use the materials in every case. There may be times when the Rules of Thumb suggest omitting a certain feature but a teacher still chooses to use that feature sparingly based on the specific content or learning goal for a particular lesson. Note: Some of these features may be slightly different in the Kindergarten materials, as the program is structured a bit differently.

The Rules of Thumb are intended to help users make decisions about how to use the program in a way that is true to the intent of the SMPs. The current references to the SMPs in the program are sometimes inconsistent or inaccurate.  By incorporating the recommendations below, it is much more likely that classroom instruction will allow opportunities for students to engage in the SMPs.

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| **Rule of Thumb** | **Rationale** |
| **1) Daily Routines:****Fluency Builder**: Use only activities that are related to grade-level fluency expectations. See specific guidance on how to supplement in each grade-level document. **Vocabulary Builder**: Rather than doing this as a separate activity, incorporate vocabulary, where appropriate in daily lessons.  | Fluency builder does not consistently match grade-level expectations for fluency. More consistent practice is needed to ensure students meet the fluency expectations of each grade level.MP.6: Vocabulary should be embedded in the lesson as students use and understand precise mathematical vocabulary. |
| **2) Unlock the Problem/Listen and Draw:** Present the problem to students without the scaffolding provided on the student-facing worksheet (e.g., project the problem on the board and have students solve in a math notebook.) Use the scaffolding to drive questions for students as they work and use strategies presented, including those in “Another Way” section as a frame for driving class discussion about student work. It may be also necessary to remove the scaffolding and prompts from the Share and Show that follow these features. | MP.1 requires students to make sense of and solve problems. MP.4 requires students to have opportunities to use mathematics to model problems.  |
| **3) Math Talk:** These bubbles should be used for class discussion or writing prompts for students, especially when lessons align to standards that require Conceptual Understanding. | Students need opportunities to respond to conceptual discussion questions to meet the Standards’ expectations for Conceptual Understanding. |
| **4) Problem Solving ◆ Application (Real World):** Make sure to allow time for students to do these problems, particularly when addressing standards that require Application. **Go Deeper/Think Smarter** generally provide problems that make a good basis for conceptual discussions. Use these for discussion, particularly when addressing standards that require Conceptual Understanding. | MP.3 requires that students have opportunities to construct arguments and critique the reasoning of others which can happen during discussions about these problems. |
| **5) Approach to Strategies and Models for Operations:**Provide more opportunities than are currently offered for students to choose which strategies, representations, and models they use to solve problems. In some cases, this may mean presenting problems that require specific strategies, representations, and models without suggesting or providing those supports outright. [See Chapter Rules of Thumb for more specific guidance at each grade level.] **Note:** This Rule is not saying that strategies, representations, and models should be excluded from instruction. Consistent with the Standards, all are helpful in building students’ understanding of the mathematics. The Rule is intended to incorporate the language of MP.5 and ensure that students ultimately are expected to make choices about which tools to use to solve problems instead of too often being given specific tools within the problems. | Many standards offer examples or choices for models or representations to use to perform operations or solve problems (e.g., 2.NBT.B.7: Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method). As articulated in MP.5, students should “make sound decisions about when...tools might be helpful.” |
| **6) General Approach to Vocabulary:** Do not use the **Developing Math Language** section in the front matter of each chapter. While the listed vocabulary words may be useful in some cases, definitions can be inaccurate or go above grade-level expectations. **Vocabulary Strategy** sections distract from the work of the grade. Vocabulary instruction should be integrated into the work of the lesson.Skip **Vocabulary Builders/Games/Write Way** at the beginning of each chapter. This distracts from the work of the grade. | MP.6 requires attending to precision. The program tends to treat vocabulary as a topic to be taught separately rather than as part of the work of the content standards and MPs. Integrating vocabulary work into the lessons will allow students to communicate precisely and accurately about their mathematical ideas. |
| **7) Assessment:*** Eliminate any questions aligned to lessons/content that has been deleted.
* Add in vetted questions that are aligned to lessons that have been added.
* Remove any directions in questions that require a specific strategy or model.

**Note:** More guidance on chapter assessments will be provided in Fall 2016. | Alignment to content standards |

Part Three: Grade-Level Rules of Thumb for *GO Math!* (Grade K)

*What should teachers think about throughout the course of the year specifically for Grade K to make instruction more aligned?*

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| **Rule of Thumb** | **Rationale** |
| Use the **Kindergarten: Resources for Developing Grade-Level Fluencies** list to provide distributed practice on counting to address K.CC.A.1. | K.CC.A.1 requires students to count to 100 by ones and by tens.Students need ample experiences practicing and learning to count so that they can learn to say numbers before they are able to use the numbers to count objects or to tell the number of objects ([CC/OA Progression, p. 4](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)).  |
| Use the **Kindergarten: Resources for Developing Grade-Level Fluencies** list to provide distributed practice on subitizing to address K.CC.B.5. | K.CC.B.5 requires students to count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration and, when given a number from 1-20, count out that many objects.Students are working to build their skill with conceptual subitizing (recognizing that a collection of objects is composed of two sub-collections and quickly combining their cardinalities to find the cardinality of the collection) ([CC/OA Progression, p. 4](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| Use the **Kindergarten: Resources for Developing Grade-Level Fluencies** list to provide distributed practice on addition and subtraction within 5 across the school year. | K.OA.A.5 requires students to fluently add and subtract within 5. |
| Use the **Kindergarten: Resources for Developing Grade-Level Fluencies** list to provide distributed practice with addition and subtraction problem types to address K.OA.A.2. | K.OA.A.2 requires students to solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.MP.2 requires students to reason abstractly and quantitatively.. |
| Do not require writing numbers in word form as part of math instructional time.  | K.CC.A.3 requires students to write numbers but Kindergarten students are not required to write numbers as words |
| Throughout the year, model and encourage students to use positional vocabulary *above*, *below*, *beside*, *in front of*, *behind*, and *next to*. | K.G.A.1 requires students to use this vocabulary and students will need repeated exposure and practice with these phrases to ensure they meet the expectation of the standard. |

Part Four: Chapter-Level Guidance for *GO Math!* (Grade K)

*How can teachers implement each chapter of Grade K to make instruction more aligned by making minor modifications and supplementing Open Educational Resources (OER)?*

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| **Grade K / Chapter 1: Represent, Count, and Write Numbers 0 to 5** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 1.0.1 | Add | Introduce routine to practice rote counting to 100 that will continue throughout the year: [Illustrative Mathematics, Choral Counting](https://www.illustrativemathematics.org/content-standards/K/CC/A/1/tasks/360)Additional Resource: [YouTube, I Can Count to 100](https://www.youtube.com/watch?v=estMnWVEjrk) | K.CC.A.1 requires students to count to 100 by ones. “Students need experiences practicing and learning to count so that they can learn to say numbers before they are able to use the numbers to count objects or to tell the number of objects” ([CC/OA Progression, p. 4](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)).  |
| 1.0.2 | Add | IM Unit 6, Lesson 1[Count Larger Collections of Objects](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-6/lesson-1/preparation.html) |
| 1.0.3 | Add | Engage in Number Routines such as [Count around the Circle](http://tjzager.com/wp-content/uploads/2016/12/Count-Around-the-Circle-Choral-Counting-Planning-Template.pdf) to familiarize students with counting up from numbers other than 1. Illustrative Mathematics [Counting Circles Task](https://tasks.illustrativemathematics.org/content-standards/K/CC/A/1/tasks/359) |
| 1.1 Model and Count 1 and 2 | Modify | Spend more time on counting objects as opposed to counting out a given number of objects (Share and Show). | K.CC.B.4a requires students to focus on counting objects, not writing numerals. Standard asks students to say number names, not write them. |
| 1.2 Count and Write 1 and 2 | As is |  |  |
| 1.3 Model and Count 3 and 4 | Modify | Spend more time on counting objects (Share and Show directions: questions 1 and 2) as opposed to counting out a given number of objects (questions 3, 4, 5). | K.CC.B.4a requires students to focus on counting objects, not writing numerals. Standard asks students to say number names, not write them. |
| 1.4 Count and Write 3 and 4 | As is |  |  |
| 1.5 Model and Count to 5 | Modify | Spend more time on counting objects (Share and Show directions: questions 1 and 2) as opposed to counting out a given number of objects (questions 3, 4, 5). | KCC.B.4 requires students to connect counting and cardinality. “Students can count out a given number of objects, which is more difficult than just counting that many objects, because counting must be fluent enough for the student to have enough attention to remember the number of objects that is being counted out”([CC/OA Progression, p. 4](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| 1.6 Count and Write to 5 | As is |  |  |
| 1.7 Ways to Make 5 | As is |  |  |
| 1.8 Count and Order to 5 | Delete |  | This lesson is more connected to K.MD.A.1-2 than the CC domain. These standards will be addressed in Chapter 11. |
| 1.9 Understand 0 | Delete |  | K.CC.A.3 requires students to represent a count of no objects and students are working with the concept of zero in this lesson. However, the situation types are beyond those that kindergartners are responsible for. See Table 1: Addition and subtraction situations ([CC/OA Progression, p. 7](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| 1.9.1 | Add | Lesson about the meaning of and write the numeral 0: [EngageNY, Module 1, Lesson 12](https://www.unbounded.org/math/kindergarten/module-1/topic-d/lesson-12)Additional activity:[Montessori Primary Guide, Concept of Zero](http://www.infomontessori.com/mathematics/numbers-through-ten-concept-of-zero.htm) | K.CC.A.3 requires students to write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). Need a lesson to address the meaning of 0 referenced in the parenthetical of K.CC.A.3 |
| 1.10 Identify and Write 0 | As is |  |  |
| Chapter 1 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 1 Rule of Thumb** | **Rationale** |
| There are no chapter-specific Rules of Thumb. Be sure to still apply grade- and program-level Rules of Thumb from Part Two and Part Three of this document. |  |

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| **Grade K / Chapter 2: Compare Numbers to 5** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 2.1 Same Number | As is |  |  |
| 2.2 Greater Than | As is |  |  |
| 2.3 Less Than | As is |  |  |
| 2.3.1 | Add | Engage in Number Routines such as a choral number count to compare the numbers of objects in a group and identify equal groups. This task could be modified, to include examples and questions when one group is greater than, less than, or equal to another. Illustrative Mathematics Task[Which number is greater? Which number is less? How do you know?](http://tasks.illustrativemathematics.org/content-standards/K/CC/C/6/tasks/1210) | K.CC.C.6 requires students to identify groups with equal quantities. “Students first learn to match the objects in the two groups to see if there are any extra and then count the objects in each group and use their knowledge of the count sequence to decide which is greater than the other. Students learn that even if one group looks as if it has more objects matching or counting may reveal a different result” ([CC/OA Progression, p. 5](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)).  |
| 2.3.2 | Add | Illustrative Mathematics Unit 2 Lesson 8 [Compare Matching Images](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-2/lesson-8/lesson.html) |
| 2.4 Compare by Matching Sets to 5 | As is |  |  |
| 2.5 Compare by Counting Sets to 5 | As is |  |  |
| Chapter 2 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 2 Rule of Thumb** | **Rationale** |
| Include experiences matching and comparing objects before moving on to comparisons with numerals. Students should orally identify which set is greater than, less than, or the same using the objects to make the comparison, as needed. | K.CC.C cluster requires students to compare numbers. “Students first learn to match the objects in the two groups to see if there are any extra and then count the objects in each group and use their knowledge of the count sequence to decide which is greater than the other. Students learn that even if one group looks as if it has more objects matching or counting may reveal a different result” ([CC/OA Progression, p. 5](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |

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| **Grade K / Chapter 3: Represent, Count, and Write Numbers 6 to 9** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 3.1 Model and Count 6 | As is |  |  |
| 3.2 Count and Write to 6 | As is |  |  |
| 3.3 Model and Count 7 | As is |  |  |
| 3.4 Count and Write to 7 | As is |  |  |
| 3.5 Model and Count 8 | As is |  |  |
| 3.6 Count and Write to 8 | As is |  |  |
| 3.7 Model and Count 9 | As is |  |  |
| 3.8 Count and Write to 9 | As is |  |  |
| 3.9 Numbers to 9 | Delete |  | K.CC.C.6 requires students to identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, (e.g., by using matching and counting strategies). Many of the problems go beyond the addition situation types required by K.CC.C.6. See Table 1: Addition and subtraction situations ([CC/OA Progression, p. 7](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| Chapter 3 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 3 Rule of Thumb** | **Rationale** |
| The focus of this chapter is on Counting and Cardinality, therefore teacher questions and class discussion should focus on building students’ skill with conceptual subitizing (recognizing that a collection of objects is composed of two subcollections and quickly combining their cardinalities to find the cardinality of the collection). Questions or activities about addition should be saved for later chapters.  | K.CC.A and K.CC.B, the foci for this chapter, require time to be spent on developing counting concepts. KOA.A is about addition (e.g., count 3, count 4, combine for 7), and comes up in later chapters. |

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| **Grade K / Chapter 4: Represent and Compare Numbers to 10** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 4.1 Mount and Count 10 | As is |  |  |
| 4.2 Count and Write to 10 | As is |  |  |
| 4.3 Ways to Make 10 | Delete |  | This chapter focuses on counting to ten; work with K.OA.A.4 is based more on fluency and will come in Chapter 5 when students have more experience with addition. |
| 4.4 Count and Order to 10 | Delete |  | The focus of this lesson on writing numerals is not aligned to K.CC.A.2 which only requires oral rote counting.  |
| 4.5 Compare by Matching Sets to 10 | As is |  |  |
| 4.5.1 | Add | Lesson about matching up objects in two different groups: [EngageNY, Module 3, Lesson 17](https://www.unbounded.org/math/kindergarten/module-3/topic-e/lesson-17)   | K.CC.6 requires students to identify the number of objects in groups and compare groups.“ Students also need to understand that in order to compare objects they need to organize the objects so that even if one group looks like it has more objects (spread out), matching or counting may reveal a different result” ([CC/OA Progression, p. 5](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)).  |
| 4.5.2 | Add | Lesson about use comparison language: [EngageNY, Module 3, Lesson 18](https://www.unbounded.org/math/kindergarten/module-3/topic-e/lesson-18)  |
| 4.5.3 | Add | Practice using comparison language: [EngageNY, Module 3, Lesson 19](https://www.unbounded.org/math/kindergarten/module-3/topic-e/lesson-19) |
| 4.6 Compare by Counting Sets to 10 | As is |  |  |
| 4.7 Compare Two Numbers | As is |  |  |
| Chapter 4 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 4 Rule of Thumb** | **Rationale** |
| There are no chapter-specific Rules of Thumb. Be sure to still apply grade- and program-level Rules of Thumb from Part Two and Part Three of this document. |  |

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| **Grade K / Chapter 5: Addition** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 5.0 | Add | Illustrative Mathematics Unit 4 Lesson 6 [Tell and Act Out Stories](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-4/lesson-6/preparation.html) Additional resources:* [EngageNY, Module 4, Lesson 17: Fluency practice: How Many?](https://www.unbounded.org/math/kindergarten/module-4/topic-c/lesson-17)
* [EngageNY, Module 4, Lesson 37: Concept development](https://www.unbounded.org/math/kindergarten/module-4/topic-h/lesson-37)
 | K.OA.A.1 requires students to model addition with objects, which does not happen enough in this chapter. |
| 5.1 Addition: Add To | As is |  |  |
| 5.1.1 | Add | Lesson about modeling composition and decomposition of numbers to 5 using actions, objects, and drawings: [EngageNY, Module 4, Lesson 1](https://www.unbounded.org/math/kindergarten/module-4/topic-a/lesson-1) | K.OA.A.1 requires students to act out the problem. In the current lessons, they are only given pictures to represent addition problems. |
| 5.2 Addition: Put Together | As is |  |  |
| 5.3 Act Out Addition Problems | Modify | Don’t use the workbook pages; use the problem orally and have students represent the problem or act them out and then write the numbers (eliminating the tracing aspect). If students are presented with the pictures, they may just count instead of making sense of the situations as addition. | K.OA.A.2 requires students to solve addition problems. |
| 5.4 Model and Draw Addition Problems | As is |  |  |
| 5.5 Write Addition Sentences for 10 | Delete | Move this lesson to after lesson 5.11. | K.OA.4 requires students to find a complement of a number to make ten. Moving this lesson later allows for connections between K.OA.A.4 and K.OA.A.3 |
| 5.6 Write Addition Sentences | Delete |  | All of the work that students are doing is with problem types that are not aligned with K.OA.A. See Table 1: Addition and subtraction situations ([CC/OA Progression, p. 7](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| 5.7 Write More Addition Sentences | Delete |  |
| 5.8 Number Pairs to 5 | As is |  |  |
| 5.9 Number Pairs for 6 and 7 | As is |  |  |
| 5.10 Number Pairs for 8 | As is |  |  |
| 5.11 Number Pairs for 9 | As is |  |  |
| 5.11.1 Write Addition Sentences for 10 | Add | Use Lesson 5.5 | K.OA.4 requires students to find a complement of a number to make ten. Moving this lesson allows for connections between K.OA.A.4 and K.OA.A.3 |
| 5.12 Number Pairs for 10 | As is |  |  |
| Chapter 5 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 5 Rules of Thumb** | **Rationale** |
| Minimize the emphasis on writing equations.  | 1.OA.D.7 requires students to understand the meaning of the equal sign; in Kindergarten, emphasis should be on understanding the meaning of the operations. |
| Use all Kindergarten representations listed in Standards for addition and subtraction.  | K.OA.A.1 requires students to use objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions or equations ([CC/OA Progression, p. 8](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)) |

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| **Grade K / Chapter 6: Subtraction** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 6.0 | Add | Lesson about using objects and drawings to find how many are left: [EngageNY, Module 4, Lesson 19](https://www.unbounded.org/math/kindergarten/module-4/topic-d/lesson-19)Additional resource:[EngageNY, Module 4, Lesson 23](https://www.unbounded.org/math/kindergarten/module-4/topic-d/lesson-23) | K.OA.A.1 requires students to model subtraction with objects, which does not happen enough in this chapter. |
| 6.1 Subtraction: Take From | As is |  |  |
| 6.1.1 | Add | Illustrative Mathematics Unit 4 Lesson 7 [Use Objects to Represent Stories](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-4/lesson-7/lesson.html) | K.OA.A.1 requires students to model subtraction with objects, which does not happen enough in this chapter. |
| 6.1.2  | Add  | Illustrative Mathematics Unit 4 Lesson 8 [Represent and Solve Story Problems](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-4/lesson-8/lesson.html) |
| 6.2 Subtraction: Take Apart | As is |  |  |
| 6.3 Act Out Subtraction Problems | Modify | Don’t use the workbook pages. Read the problem orally and have students represent the problem or act it out. If students are presented with the pictures, they may count instead of thinking of the situations as addition. | K.OA.A.2 requires students to solve subtraction problems. |
| 6.4 Model and Draw Subtraction Problems | As is |  |  |
| 6.5 Write Subtraction Sentences | Delete |  | The standard listed is K.OA.A.5, the fluency standard. However, the work in this lesson is with problem types that are not aligned with K.OA.A.2, See Table 1: Addition and subtraction situations ([CC/OA Progression, p. 7](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| 6.6 Write More Subtraction Sentences | Delete |  | Standard listed is K.OA.A.2; however, problems are not aligned with K.OA.A.2 (change or start unknown). See Table 1: Addition and subtraction situations ([CC/OA Progression, p. 7](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |
| 6.7 Addition and Subtraction | As is |  |  |
| Chapter 6 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 6 Rules of Thumb** | **Rationale** |
| Minimize the emphasis on writing equations.  | 1.OA.D.7 requires students to understand the meaning of the equal sign; in Kindergarten, emphasis should be on understanding the meaning of the operations. |
| Attend to all Kindergarten representations for addition and subtraction.  | K.OA.A.1, requires students to use objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions or equations ([CC/OA Progression, p. 8](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)). |

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| **Grade K / Chapter 7: Represent, Count, and Write 11 to 19** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 7.1 Model and Count 11 and 12 | As is |  |  |
| 7.2 Count and Write 11 and 12 | As is |  |  |
| 7.3 Model and Count 13 and 14 | As is |  |  |
| 7.4 Count and Write 13 and 14 | As is |  |  |
| 7.5 Model, Count, and Write 15 | As is |  |  |
| 7.6 Use Numbers to 15 | Delete |  | Aligns to 2.OA.A.1 which requires students to do multi-step word problems. |
| 7.7 Model and Count 16 and 17 | As is |  |  |
| 7.8 Count and Write 16 and 17 | As is |  |  |
| 7.9 Model and Count 18 and 19 | As is |  |  |
| 7.10 Count and Write 18 and 19 | As is |  |  |
| Chapter 7 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 7 Rules of Thumb** | **Rationale** |
| Minimize the emphasis on writing equations.  | 1.OA.D.7 requires students to understand the meaning of the equal sign; in Kindergarten, emphasis should be on understanding the meaning of the operations. |
| Use multiple representations that illustrate teen numbers as 10 ones and some more ones. | K.NBT.A.1 suggests students use objects and drawings in addition to equations to compose and decompose numbers. “Math drawings are simple drawings that make essential mathematical features and relationships salient while suppressing details that are not relevant to the mathematical ideas” ([NBT Progression, p.5](http://commoncoretools.me/wp-content/uploads/2015/03/ccss_progression_nbp_k5_2015_03_16.pdf)). |

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| **Grade K / Chapter 8: Represent, Count, and Write 20 and Beyond** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 8.0.1 | Add | Lesson about students work with collections up to 20 arranged in different ways: [EngageNY: Module 5, Lesson 13](https://www.unbounded.org/math/kindergarten/module-5/topic-c/lesson-13) | K.CC.B.5 requires students to answer “how many?” questions about as many as 20 things arranged in a line, array, or circle, or as many as 10 things in a scattered configuration. |
| 8.0.2 | Add | Practice with collections up to 20 arranged in different ways: [EngageNY: Module 5, Lesson 14](https://www.unbounded.org/math/kindergarten/module-5/topic-c/lesson-14) |
| 8.1 Model and Count 20 | As is |  |  |
| 8.2 Count and Write to 20 | As is |  |  |
| 8.3 Count and Order to 20 | Delete |  | K.CC.A.2 only requires oral rote counting; this lesson goes beyond the scope of the standard. |
| 8.4 Compare Numbers to 20 | As is |  |  |
| 8.5 Count to 50 by Ones | Delete |  | K.CC.A.1 and K.CC.A.3 only require students to recognize numbers up to 20. |
| 8.6 Count to 100 by Ones | Delete |  |
| 8.7 Count to 100 by Tens | Delete |  |
| 8.8 Count by Tens | Delete |  | K.CC.A.1 is about counting orally by 10’s; however, the representations here show 10 as a unit which is beyond the scope of the standard.  |
| Chapter 8 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 8 Rule of Thumb** | **Rationale** |
| There are no chapter-specific Rules of Thumb. Be sure to still apply grade- and program-level Rules of Thumb from Part Two and Part Three of this document. |  |

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| **Grade K / Chapter 9: Identify and Describe Two-Dimensional Shapes** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 9.1 Identify and Name Circles9.2 Describe Circles | Modify | Condense these two lessons. | K.G.A is an Additional cluster and K.G.B is a Supporting cluster. Condensing lessons in this chapter will allow for more time on Major Work of the grade. |
| 9.3 Identify and Name Squares9.4 Describe Squares | Modify | Condense these two lessons. |
| 9.5 Identify and Name Triangles9.6 Describe Triangles | Modify | Condense these two lessons. |
| 9.7 Identify and Name Rectangles9.8 Describe Rectangles | Modify | Condense these two lessons. |
| 9.9 Identify and Name Hexagons9.10 Describe Hexagons | Modify | Condense these two lessons. |
| 9.11 Compare Two Dimensional Shapes | As is |  |  |
| 9.12 Draw to Join Shapes | As is |  |  |
| Chapter 9 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 9 Rules of Thumb** | **Rationale** |
| Do not focus lessons on reading the shape names. | K.G.A.2 calls for correctly naming the shapes, not reading print names of shapes.  |
| Provide examples that are mathematically accurate. | MP6 requires students to attend to the precise language of mathematics. 3D shapes are used in this chapter to describe 2D shapes. Real life objects with curved edges are used to describe polygons. |

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| **Grade K / Chapter 10: Identify and Describe Three-Dimensional Shapes** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 10.1 Three-Dimensional Shapes | As is |  |  |
| 10.2 Identify, Name, and Describe Spheres | As is |  |  |
| 10.3 Identify, Name, and Describe Cubes | As is |  |  |
| 10.4 Identify, Name, and Describe Cylinders | As is |  |  |
| 10.5 Identify, Name, and Describe Cones | As is |  |  |
| 10.6 Two- and Three-Dimensional Shapes | As is | .  |  |
| 10.7 Model Shapes | As is |  |  |
| 10.8 Above and Below10.9 Beside and Next To10.10 In Front Of and Behind | Modify | Condense these three lessons. | K.G.A.1 is part of an Additional cluster and will leave more time for Major Work of the grade  |
| Chapter 10 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 10 Rules of Thumb** | **Rationale** |
| Provide examples that are mathematically accurate. | MP6 requires students to attend to the precise language of mathematics. Real life objects are used to describe and represent shapes inaccurately (e.g., ice cream cone for cone, ball of yarn for sphere). |
| Do not focus lessons on reading the shape names. | K.G.A.2 requires students to correctly name shapes regardless of their orientations or overall size. |

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| **Grade K / Chapter 11: Measurement** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 11.1 Compare Lengths11.2 Compare Heights | Modify | Condense these two lessons. | K.MD.A does not require students to distinguish between length and height  |
| 11.3 Direct Comparison | As is |  |  |
| 11.4 Compare Weights | As is |  |  |
| 11.5 SLength, Height, Weight | As is |  |  |
| Chapter 11 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 11 Rule of Thumb** | **Rationale** |
| There are no chapter-specific Rules of Thumb. Be sure to still apply grade- and program-level Rules of Thumb from Part Two and Part Three of this document. |  |

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| **Grade K / Chapter 12: Classify and Sort Data** |
| **Lesson** | **Action** | **Details for the Action** | **Rationale** |
| 12.0.1 | Add | Illustrative Mathematics Unit 3, Lesson 4[Describe, Compare, and Sort Shapes](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-3/lesson-4/lesson.html) | K.MD.B.3 requires students to count the number of objects in each category and sort categories by count. Students in Kindergarten classify objects into categories, initially specified by the teacher and perhaps eventually elicited from students. For example, in a science context, the teacher might ask students in the class to sort pictures of various organisms into two piles: organisms with wings and those without wings. Students can then count the number of specimens in each pile. K.CC.5 ([CC/OA Progression, p. 4](https://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf)) |
| 12.0.2 | Add | Illustrative Mathematics Unit 7, Lesson 11[Compare and Sort Solid Shapes](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-7/lesson-11/preparation.html)Additional Resource: [Illustrative Mathematics, Sort and Count I](https://www.illustrativemathematics.org/content-standards/K/MD/B/3/tasks/799) |
| 12.0.3 | Add | Illustrative Mathematics Unit 8, Lesson 1[Sort, Count, and Compare Groups of Objects](https://im.kendallhunt.com/k5/teachers/kindergarten/unit-8/lesson-1/preparation.html)Additional Resource: [Illustrative Mathematics, Sort and Count II](https://www.illustrativemathematics.org/content-standards/K/MD/B/3/tasks/990) |
| 12.1 Classify and Count by Color | Delete |  | K.MD.B.3 requires students to classify objects into given categories, count the numbers of objects in each category, and sort the categories by count. In this lesson, the activities focus on counting the number of categories instead of counting how many are in each category.  |
| 12.2 Classify and Count by Shape | Delete |  |
| 12.3 Classify and Count by Size | Delete |  |
| 12.4 Make a Concrete Graph | Delete |  | More aligned to 1.MD.C.4 |
| 12.5 Read a Graph | Delete |  | K.MD.B.3 requires students to sort and classify objects but not graph data. |
| Chapter 12 Test |  | Guidance on chapter tests is currently under development and will be made available Fall 2016. |  |

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| **Chapter 12 Rule of Thumb** | **Rationale** |
| There are no chapter-specific Rules of Thumb. Be sure to still apply grade- and program-level Rules of Thumb from Part Two and Part Three of this document. |  |

1. Student Achievement Partners, The Common Core State Standards Shifts in Mathematics

http://achievethecore.org/page/900/the-common-core-state-standards-shifts-in-mathematics [↑](#footnote-ref-1)