Math 1 (CC)

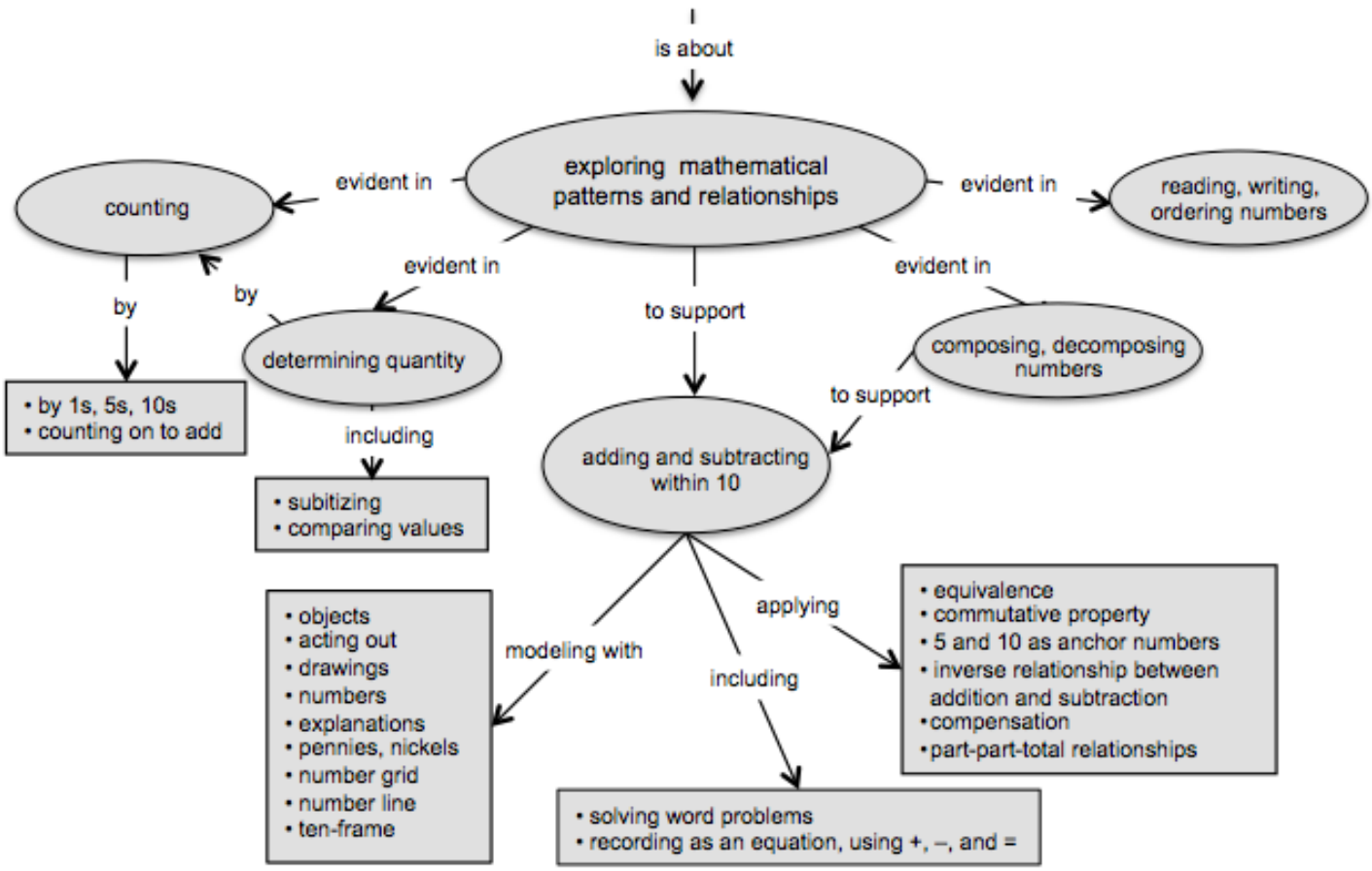
Unit: 1- Building Number Patterns and Meaning (Week 1, 5 Weeks)

Common Core Initiative

Overarching Questions and Enduring Understandings

How does finding number patterns help with counting and computation?

Graphic Organizer



Unit Abstract

The focus of this unit is to develop students' fluency with addition and subtraction facts within 10. To do this, students continue to work with number patterns and relationships, including skip counting by 5s and 10s and identifying the relationship between written and spoken number words and written numerals. They order and compare numbers to develop an understanding of their relative sizes. They become more skilled at instantly recognizing the amounts in a patterned set of objects without counting them (subitizing), e.g., dots on dice, dominos, or a ten-frame. These activities engage students in thinking about part-part-total number relationships and aid in learning the number combinations foundational to learning other basic addition and subtraction facts in first grade.

Students compose and decompose numbers to ten, which provides experiences with the big mathematical ideas of equivalence and the commutative property for addition. They also learn to use strategies such as adjusting the numbers in a problem to make it easier to solve (e.g., 6 + 4 = 5 + 5; 2 + 4 = 3 + 3). They develop fluency with complements of ten

to establish ten as an anchor or benchmark number for future work with addition and subtraction. They solve different types of word problems within sums of 10 that include concretely, pictorially and numerically modeling and explaining their solutions.

When reading the standards below, keep in mind that the focus of this unit is developing strategies and fluency for adding and subtracting within 10. Students will work with larger numbers later in the year.

Unit Overview (Word)
Unit Overview (PDF)

Content Expectations/Standards	Unit Level Standards
Grade 1, Operations & Algebraic Thinking **1.OA.B. Understand and apply properties of operations and the relationship between addition and subtraction.** • 1.OA.B.3. Apply properties of operations as strategies to add and subtract. Students need not use formal terms for these properties. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* • 1.OA.B.4. Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.. **1.OA.D. Work with addition and subtraction equations.** • 1.OA.D.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2. **Grade 1, Number & Operations in Base Ten** **1.NBT.A. Extend the counting sequence.** • 1.NBT.A.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	***Please Note: The standards listed in this section have been modified to be appropriate for this unit. Text in gray font is part of the CCSS-M standard but does not apply to this unit. Text in brackets denotes a modification that has been made to the standard.*** **1.OA.A. Represent and solve problems involving addition and subtraction.** • 1.OA.A.1. Use addition and subtraction within 20 [10] to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **1.OA.C. Add and subtract within 20 [10].** • 1.OA.C.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). • 1.OA.C.6. Add and subtract within 20 [10], demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). **1.OA.D. Work with addition and subtraction equations.** • 1.OA.D.8. Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers [within a sum of 10]. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.

Essential/Focus Questions	Key Concepts
1. What does counting help you understand about numbers? 2. What are strategies to help you count quickly? 3. When you look at two numbers, how can you tell which number is larger? How can you tell which number	commutative property compare compose/decompose equations equivalence

is smaller? 4. How could you explain to a friend what you know about the number 10? 5. What patterns do you see when you list all the addition pairs for ten? 6. How can we show that addition and subtraction are related?	inverse relationship between addition and subtraction part-part-total strategies subitizing sums of ten

Assessment Tasks	Intellectual Processes
Assessment Overview Assessment Powerpoint Assessment Recording Form	**Standards for Mathematical Practice** ***Students will have opportunities to:*** • **make sense of** addition and subtraction word **problems and persevere in solving them**; • **reason abstractly and quantitatively** when breaking numbers apart decomposing ten into equivalent expressions; • **construct viable arguments** explaining how they perceive images in quick images activities; • **model with mathematics**, when solving word problems and explaining solutions; and • **look for and make use of structure** when looking for all two-addend combinations for ten.

Lesson Sequence	Resources
Lesson Overview Highlight Lesson Ten-Frame PowerPoint - 8.12.13 Double Demonstration Ten-Frame Single Demonstration Ten-Frame 10 Black Dots - quick images Dominos to 10 - quick images Say Ten Facts - quick images Ten-Frame Flash - quick images Ten Frame Worksheet	Unit Resources

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