

**Cluster 4: Understanding Place Value to Read, Write and Compare Numbers**

**Duration:** 4-5 weeks

**Content Standards:**

**This list includes standards addressed in this cluster, but not necessarily mastered, since all standards are benchmarks for the end of the year. Note strikethroughs and recommendations in the Important Considerations section for more information.**

**NC.2.NBT.1**

Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.

- Unitize by making a hundred from a collection of ten tens.
- Demonstrate that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds, with 0 tens and 0 ones.
- Compose and decompose numbers using various groupings of hundreds, tens, and ones.

**NC.2.NBT.2**

Count within 1,000; skip-count by 5s, 10s, and 100s.

**NC.2.NBT.3**

Read and write numbers, within 1,000, using base-ten numerals, number names, and expanded form.

**NC.2.NBT.4**

Compare two three-digit numbers based on the value of the hundreds, tens, and ones digits, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

**Mathematical Practices:**

1. Make Sense of Problems and Persevere in Solving Them
2. Reason Abstractly and Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
5. Use Appropriate Tools Strategically
6. Attend to Precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

**What is the Mathematics?**

During the first three clusters in second grade, students applied their knowledge of first grade place value concepts. Cluster 4 builds upon this knowledge as students explore the idea that a hundred is ten tens and that numbers greater than 100 are composed of some hundreds, some tens and some ones.

- Expanded form is an expression of place value.
- Previous work with operations will allow students to build their place value knowledge, so that future operations can build to larger numbers.

**Important Considerations**

- At this time of the year, students will have had experiences with multiple strategies for addition and subtraction. They should have the foundation in place necessary to begin working with place value concepts with larger numbers.
- Place value needs to be understood before problem solving within 1,000.
- Place value manipulatives need to be proportional. Base ten blocks and cubes are proportional because the ten is exactly ten times larger than the one. Dimes and pennies are not proportional because the dime is actually smaller than the penny.
- As students are modeling numbers to determine the number of hundreds, tens, and ones, they should have opportunities to name the same number in different ways (ex. 143 is 1 hundred, 4

tens, and 3 ones, but it could also be described as 14 tens and 3 ones). Students continue to build flexibility in naming numbers in different ways throughout the rest of the year.