Core Content

**Cluster Title:** Understand place value.

**Standard 1:** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
- a. 100 can be thought of as a bundle of ten tens—called a “hundred.”
- b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

**MASTERY Patterns of Reasoning:**

**Conceptual:**
- Students will understand that one represents a single unit of measurement in counting.
- Students will understand that ten ones can be “bundled” together to make one set of ten; a ten can also be represented as 10 single units.
- Students will understand that ten sets of ten can be “bundled” together to make a hundred; a hundred can also be represented as 100 single units.
- Students will understand that when numbers are bundled into sets of hundreds, there are zero tens and zero ones.

**Procedural:**
- Students can identify the value of a given digit in a three-digit number (e.g., find the value of the 7 in 706; where 7 = 700).

**Representational:**
- Students can model a given number using base ten blocks, straws, beans, etc (e.g., of most “efficient” form of base 10 where 706 can be thought of as 7 hundreds and 6 ones).

![Base ten blocks](image)

Code: 2NBT1
Students can model the same number in different ways (example using 706 again; 706 can be thought of as 6 hundreds, 10 tens, and 6 ones).

Students can illustrate a given number using a place value drawing in a math notebook.

Supports for Teachers

**Critical Background Knowledge**

**Conceptual:**
Students can identify the value of a given number in hundreds, tens, and ones.

**Procedural:**
Students can group 10 single units into a bundle of 10; group 10 sets of 10 into a bundle of 100.
Students can identify the value of a digit in a two-digit number (e.g., find the value of the 2 in 29; where the 2 represents 20).

**Representational:**
Students can model various numbers using base ten blocks representing hundreds, tens, and ones.
Students can compose a bundle of 10 from ten single units and decompose a bundle of 10 into 10 single units.
Students can model the same number in different ways.

**Academic Vocabulary and Notation**
ones, tens, hundreds, cube, long, flat, decomposing, composing, trading, grouping, regrouping or ungrouping

Code: 2NBT1
**Instructional Strategies Used**

- Teacher models how to represent a three-digit number with base 10 blocks (suggested use: [http://nlvm.usu.edu/](http://nlvm.usu.edu/) or base 10 manipulatives and document camera).

- Students model the same number using manipulatives or pictorial representations.

- Students need repeated practice building numbers with a variety of materials. Students should also write the numbers and be asked to label the place value position.

- Teacher models the concept of grouping 10 single units into a bundle of 10; also groups 10 sets of 10 into a bundle of 100 (suggested use: [http://nlvm.usu.edu/](http://nlvm.usu.edu/) or base 10 manipulatives and document camera).

- Student models the concept of grouping 10 single units into a bundle of 10; also groups 10 sets of 10 into a bundle of 100 using manipulatives or pictorial representations.

- Teacher presents three-digit number with one of the digits underlined (e.g., 251—What is the value of the 5 in this number?).

- Students need repeated practice identifying the value of the underlined digit in a multi-digit number.

**Resources Used**


- [http://nlvm.usu.edu/](http://nlvm.usu.edu/)

- [http://mathwire.com/numberSense/placeValue.html](http://mathwire.com/numberSense/placeValue.html)


Code: 2NBT1
<table>
<thead>
<tr>
<th>Assessment Tasks Used</th>
<th>Problem Task:</th>
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<tbody>
<tr>
<td><strong>Skill-Based Task:</strong></td>
<td>1. There are 431 animals that need to be transported to the circus. If 10</td>
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<td></td>
<td>animals can fit in a trailer and 10 trailers can fit on a truck, how many</td>
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<td></td>
<td>trucks and trailers will be needed to transport the animals to the circus?</td>
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<td>Show your thinking with pictures, words or numbers.</td>
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<td>2. Given three digit cards, build the largest number possible and the</td>
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<td></td>
<td>smallest number possible. Students should also use a model to build or draw</td>
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<td></td>
<td>the numbers. Label the place value positions and tell the value of each digit.</td>
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