

MA.2.NSO.1.2

Overarching Standard: *MA.2.NSO.1 Understand the place value of three-digit numbers.*

Benchmark of Focus

MA.2.NSO.1.2: Compose and decompose three-digit numbers in multiple ways using hundreds, tens and ones. Demonstrate each composition or decomposition with objects, drawings and expressions or equations.

Example: The number 241 can be expressed as 2 *hundreds* + 4 *tens* + 1 *one* or as 24 *tens* + 1 *one* or as 241 *ones*.

Related Benchmark/Horizontal Alignment

- MA.2.NSO.2.2/2.4
- MA.2.FR.1.1

Vertical Alignment

Previous Benchmarks

MA.1.NSO.1.3

Next Benchmarks

MA.3.NSO.1.2

Terms from the K-12 Glossary

- Expression
- Equation

Purpose and Instructional Strategies

The purpose of this benchmark is to extend the understanding of place value from grade 1 to include three-digit numbers and help students to identify ways numbers can be renamed flexibly using composition and decomposition. (MTR.2.1)

- Instruction includes the use of base ten manipulatives and place value disks.
- Instruction includes the understanding that 100 can be thought of as a bundle of ten tens – called a “hundred.”
- Instruction includes the idea that the equal sign means “same as” and is used to balance equations.

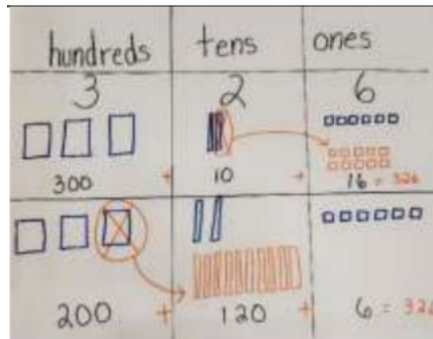
Common Misconceptions or Errors

- Students may think that because the grouping of the digits changes the value also changes.
 - For example, 879 is the same as 87 *tens* + 9 *ones* or 8 *hundreds* + 79 *ones*.

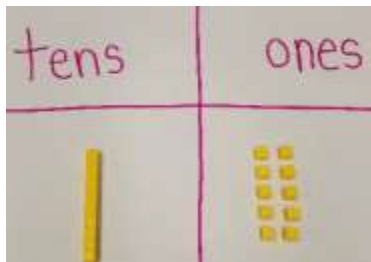
Strategies to Support Tiered Instruction

- Instruction includes opportunities to use base ten blocks and a place value chart with a 3- digit number (e.g., 326). Teacher asks students to exchange one ten and ones.
 - For example, teacher asks students to represent the value using a drawing. Students are asked to explain what they now have and how it is similar and different from the original

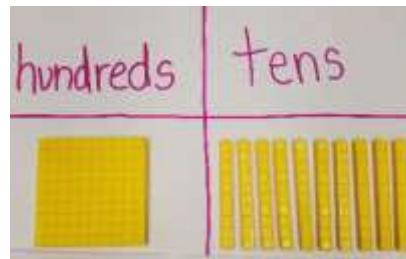
representation of the number. Repeat this process with exchanging hundreds and tens. Teacher has students share the different representations with the group and again compare the similarities and differences. Students are asked to name/identify the different ways to name the values (grouping the hundreds into tens and the tens into the ones, e.g., 32 tens and 6 ones or 3 hundreds and 26 ones, etc.)



- Instruction includes opportunities to use base ten blocks to practice exchanging tens for ones and hundreds for tens. With each exchange, teacher has students represent using both the original representation and the new representation in a drawing on a place value chart. At every opportunity teacher asks students to name/identify the values they are using in the numbers.
 - Example:



One ten can be exchanged for 10 ones.



One hundred can be exchanged for 10 tens.

Questions to ask students:

Show 264 in three different ways using equivalent representations.

Sample answer that indicates understanding: 2 hundreds, 6 tens, and 4 ones or 1 hundred, 16 tens, and 4 ones or 1 hundred 15 tens, and 14 ones or any combination that represents 264.

Find the missing value to make the following statement(s) true.

$$453 = 400 + 50 + 3 \text{ or } 453 = 300 + \underline{\quad} + 3 \text{ or } 400 + 40 + \underline{\quad} + 453$$

Sample answer that indicates understanding: $300 + \underline{150} + 3$ or $400 + 40 + \underline{13}$

Instructional Tasks

Instructional Task 1 (MTR.2.1)

The number 317 can be expressed as 3 hundreds + 1 ten + 7 ones or as 31 tens + 7 ones. Explain using objects or drawings how both expressions equal 317.

Instructional Task 2

Use a place value model to show how the number 134 can be represented as 13 tens and 4 ones.

Instructional Items

Instructional Item 1

Express the number 783 using only hundreds and ones.

Instructional Item 2

Express the number 783 in multiple ways using only tens and ones.

Additional Resources:

[CPALMS Resources](#)

[Decomposing 3-digit number lesson plans](#)

[Additional Instructional Task](#)

Origo 1 Video: [Using Numeral Expanders to Read & Write Numbers](#)

Resources/Tasks to Support Your Child at Home:

- Number Find and Describe - Ask your child to find any number at home or while out with you. Have your child describe to you the number of hundreds, tens, and ones in the number he or she chose. Help your child describe the number in a different way. Example: 358 is 3 hundreds, 5 tens, and 8 ones. It can also be described as 35 tens and 8 ones or 358 ones.
- Practice using [Decomposing 3 digit numbers -digital questions](#).