# MA.4.NSO.1.2

**Overarching Standard:** ***MA.4.NSO.1*** Understand place value for multi-digit numbers.

**Benchmark of Focus**

MA.4.NSO.1.2: Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form.

*Example:* The number two hundred seventy-five thousand eight hundred two written in standard form is 275,802 and in expanded form is 200,000 + 70,000 + 5,000 + 800 + 2 or (2 × 100,000) + (7 × 10,000) + (5 × 1,000) + (8 × 100) + (2 × 1).

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**Related Benchmark/Horizontal Alignment**

- MA.4.NSO.2.5

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**Vertical Alignment**

| Previous Benchmarks | Next Benchmarks |
|---|---|
| • MA.3.NSO.1.1 | • MA.5.NSO.1.2 |
| • MA.3.NSO.1.2 | |

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**Terms from the K-12 Glossary**

- Whole Number

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**Purpose and Instructional Strategies**

The purpose of this benchmark is for students to read numbers appropriately and to write numbers in all forms and have flexibility with the different forms. This benchmark builds on the work in Grade 3 of reading and writing numbers in multiple ways to 10,000 (MA.3.NSO.1.1).

- Students should also have opportunities to explore the idea that 285 could also be 28 tens plus 5 ones or 1 hundred, 18 tens and 5 ones.
- Decomposing numbers flexibly helps students reason through multiplication and division strategies. Multiple representations of the number (K12.MTR.2.1) allow for opportunities to apply the commutative and associative properties. This will allow students to explain their thinking and show their work using place-value strategies and algorithms, in addition to verifying that their answer is reasonable.

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**Common Misconceptions or Errors**

- Students may have misconceptions when translating word form to standard form. Numbers like one thousand often do not cause a problem; however, a number like three thousand four can cause problems for students. Many students will understand the 3000 and the 4 but then instead of placing the 4 in the ones place, students will write the

numbers as they hear them, 30004, not understanding that this number represents more than 3004.

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**Strategies to Support Tiered Instruction**

- Instruction includes opportunities to model and write numbers with a zero in various place values. A place value chart and models such as base-ten blocks or place value disks can be used to help students understand that when the digit in a multi-digit whole number is 0, it represents a 0 of that place value. Extend this understanding to include writing numbers in word and expanded form.
    - For example, in the number 40,607 there are 0 *thousands* and 0 *tens*.

| | Thousands Period | | | Ones Period | | |
|---|---|---|---|---|---|---|
| | hundreds | tens | ones | hundreds | tens | ones |
| | hundred thousand | ten thousand | thousand | hundreds | tens | ones |
| Standard Form | | **4** | **0** | **6** | **0** | **7** |
| Word Form | | *forty thousand* | | *six hundred* | | *seven* |
| Expanded Form | | 40,000 | | 600 | | 7 |
| | 40,000 + 600 + 7 | | | | | |

    - For example, in the number 1,002, there are 0 *hundreds* and 0 *tens*.

| | Thousands Period | | | Ones Period | | |
|---|---|---|---|---|---|---|
| | hundreds | tens | ones | hundreds | tens | ones |
| | hundred thousand | ten thousand | thousand | hundreds | tens | ones |
| Standard Form | | | **1** | **0** | **0** | **2** |
| Place Value Disks | | |  | | |  |
| Word Form | | | *one thousand* | | | *two* |
| Expanded Form | | | 1,000 | | | 2 |
| | 1,000 + 2 | | | | | |

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**Questions to ask students:**

**What does the comma in 24,682 represent?**

- Sample answer that indicates understanding: *The comma represents the separation of the ones and thousands periods.*

**How do you read the number 376,507?**

- Sample answer that indicates understanding: Student reads *three hundred seventy-six thousand, five hundred seven.*

**What is the value of the 4 in 746,098?**

- Sample answer that indicates understanding: *The 4 has a value of 4 ten thousands or 40,000.*

**How would you represent 746,098 in expanded form?**

- Sample answer that indicates understanding: *700,000 + 40,000 + 6,000 + 90 + 8 or (7 × 100,000) + (4 × 10,000) + (6 × 1,000) + (9 × 10) + (8 × 1)*

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**Instructional Tasks**

*Instructional Task 1*

Write each number in standard form and in expanded form.

a. Eight hundred two thousand five hundred fifty
b. Twenty thousand three
c. One thousand four hundred fifty-six
d. Seven hundred nineteen thousand two hundred forty-eight
e. Three thousand eighty-one

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**Instructional Items**

*Instructional Item 1*

Select all the ways to rename the number 2,340.

a. 234 tens
b. 2,340 ones
c. 234 thousands
d. 2 hundreds and 34 ones
e. 2 thousands and 34 tens
f. 2 thousands and 34 ones
g. 2 thousands and 34 hundreds

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**Achievement Level Descriptors:**

| Benchmark | Context | Assessment Limits |
|---|---|---|
| MA.4.NSO.1.2 Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form. Example: The number two hundred seventy-five thousand eight hundred two written in standard form is 275,802 and in expanded form is 200,000 + 70,000 + 5,000 + 800 + 2 or (2 × 100,000) + (7 × 10,000) + (5 × 1,000) + (8 × 100) + (2 × 1). | Mathematical | Given values are limited to whole numbers between 10,001 and 1,000,000. |

| ALD 2 | ALD 3 | ALD 4 | ALD 5 |
|---|---|---|---|
| reads and writes numbers from 0 to 100,000 using standard form. | reads and writes multi-digit whole numbers from 0 to 100,000 using standard form, expanded form, and word form. | reads and writes multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form, and word form. | reads and writes multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form, and word form interchangeably and in multiple forms. |

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**Additional Resources:**

CPALMS Resources

Khan Academy: Finding Place Value

Khan Academy: Writing a Number in Expanded Form

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**Resources/Tasks to Support Your Child at Home**:

- Using a deck of cards or rolling a dice, have your child create a 6 digit number. Have them determine and record the value of each digit. “The 4 is worth 400,000 because it’s located in the hundred thousand place.”
- Spin a 6-digit number with a spinner or dice. Have your child represent the number in standard, expanded and word form. Then modify to give them a number in expanded form and have them determine the standard and word form, etc.