

Vertical Progression:

1st Grade	<p>1.NBT.C Use place value understanding and properties of operations to add and subtract.</p> <ul style="list-style-type: none"> ○ 1.NBT.C.4 Add within 100, including adding a two-digit number, and adding a 2-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, relate the strategy to a written method and explain the reasoning used. Understand that in adding 2-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
2nd Grade	<p>2.NBT.B Use place value understanding and properties of operations to add and subtract.</p> <ul style="list-style-type: none"> ○ 2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. ○ 2.NBT.A.7: Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
3rd Grade	<p>3.NBT.A Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <ul style="list-style-type: none"> ○ 3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100. ○ 3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. ○ 3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.
4th Grade	<p>4.NBT.A Generalize place value understanding for multi-digit whole numbers.</p> <ul style="list-style-type: none"> ○ 4.NBT.A.3 Use place value understanding to round multi-digit whole numbers to any place. <p>4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <ul style="list-style-type: none"> ○ 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.) ○ 4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Students will demonstrate command of the ELG by:

- Fluently adding and subtracting within 1000 and explaining the strategy used to add/subtract.
- Rounding whole numbers to the nearest 10 or 100.
- Multiplying one-digit whole numbers by multiples of 10 in the range of 10-90 and explaining the strategy used.
- Understanding the relationship between multiplication and division (for instance, knowing $8 \times 5 = 40$, one knows $40/5=8$).

Vocabulary:

- hundreds
- multiple
- multiplication
- ones
- one-digit
- place value
- product
- round
- subtraction
- tens

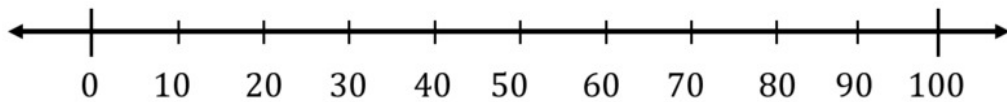
Sample Instructional/Assessment Tasks:

1) Standard: 3.NBT.A.1

Source: <https://www.illustrativemathematics.org/content-standards/3/NBT/A/1/tasks/1805>

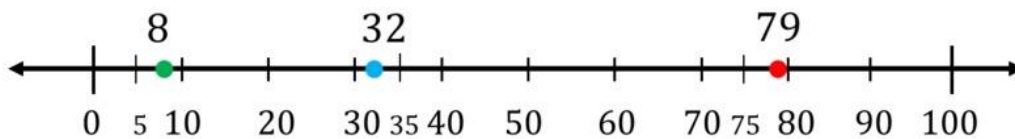
Item Prompt: Rounding to the Nearest 10 and 100

Task: Plot 8, 32, and 79 on the number line.



- a. Round each number to the nearest 10. How can you see this on the number line?
- b. Round each number to the nearest 100. How can you see this on the number line?

Correct Answers: The three numbers are plotted on the number line below:



2) Standard: 3.NBT.A.2

Source:

<http://www.insidemathematics.org/assets/common-core-math-tasks/a%20question%20of%20numbers.pdf>

Item Prompt: Fluently add and subtract within 1000.

Holly's teacher says the school library has 800 books. Holly thinks that the library may have 40 more books. What is the greatest number of books that the library could have? _____ Show how you figured this out.

Tom thinks that the library may have 40 fewer books than 800. What is the smallest number of books that the library could have? _____ Show how you figured this out.

3) Standard: 3.NBT.A.3

Source: Read Tennessee

<http://www.readtennessee.org/sites/www/Uploads/Examples/3.NBT.A.3final.pdf>

Item Prompt: Multiply using strategies based on place value

Aletha has 6 packages of party favors. There are 30 party favors in each package. She knows that $6 \times 3 = 18$. Explain how Aletha can use what she already knows to find out how many party favors she has altogether.

Correct Answer:

Since Aletha knows that $6 \times 3 = 18$, she can multiply the 3 by 10 to make it 30 and multiply the 18 by 10 to make it 180. $6 \times 30 = 180$.