

Just in Time Quick Check

Standard of Learning 2.NS.2

Strand: Number and Number Sense

Standard of Learning 2.NS.2

The student will demonstrate an understanding of the ten-to-one relationships of the base 10 number system to represent, compare, and order whole numbers up to 999.

Students will demonstrate the following Knowledge and Skills:

- a) Write the three-digit whole number represented by a given model (e.g., concrete objects, pictures of base 10 blocks).
- b) Read, write, and represent three-digit numbers in standard form, expanded form, and word form, using concrete or pictorial representations.
- c) Apply patterns within the base 10 system to determine and communicate, orally and in written form, the place (ones, tens, hundreds) and value of each digit in a three-digit whole number (e.g., in 352, the 5 represents 5 tens and its value is 50).
- d) Investigate and explain the ten-to-one relationships among ones, tens, and hundreds, using models.
- e) Compose and decompose whole numbers up to 200 by making connections between a variety of models (e.g., base 10 blocks, place value cards, presented orally, in expanded or standard form) and counting strategies (e.g., 156 can be 1 hundred, 5 tens, 6 ones; 1 hundred, 4 tens, 16 ones; 15 tens, 6 ones).
- f) Plot and justify the position of a given number up to 100 on a number line with pre-marked benchmarks of 1s, 2s, 5s, 10s, or 25s.
- g) Compare two whole numbers, each 999 or less, represented concretely, pictorially, or symbolically, using words (greater than, less than, or equal to) and symbols ($>$, $<$, or $=$). Justify reasoning orally, in writing, or with a model.
- h) Order up to three whole numbers, each 999 or less, represented concretely, pictorially, or symbolically from least to greatest and greatest to least.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting and Prerequisite SOL: 1.NS.1e, 1.NS.2c

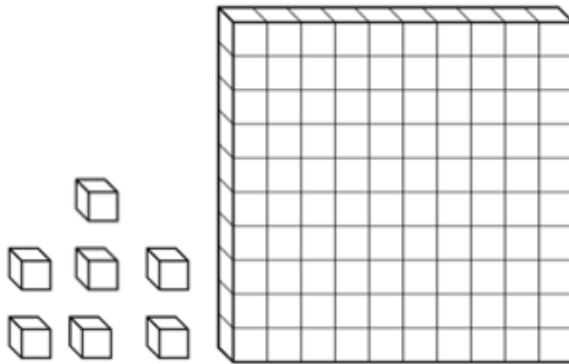
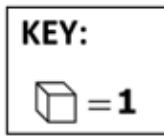
Just in Time Quick Check 2.NS.2

1. A number has:

- three tens
- seven ones
- six hundreds

Write this number. _____

2. Write the number shown in this model. _____



3. $400 + 30 + 7$

Write the number in standard form. _____

4. Write the value of the underlined digit in each number.

a) 872 _____

b) 319 _____

c) 456 _____

5. Sam used cubes to make 129.

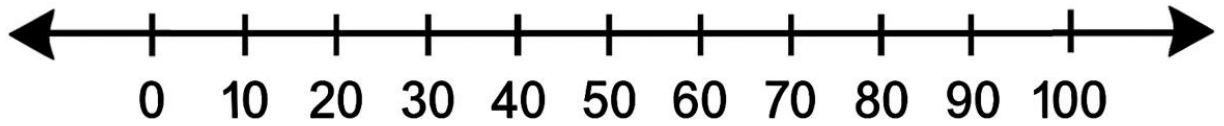
a) Draw cubes to show 129 on this work mat.

H	T	O

b) Draw cubes to show another way to make 129 on this work mat.

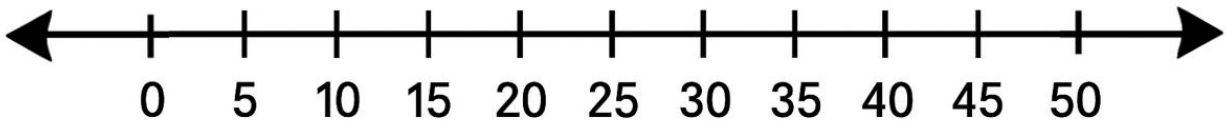
H	T	O

6. Place the number 62 on the number line.



Explain how you determined where to place 62.

7. Place the number 39 on the number line.



Explain how you determined where to place 39.

8. My number is **153**.

- a) Write a number in the chart that is less than my number.
- b) Write a number in the chart that is equal to my number.
- c) Write a number in the chart that is greater than my number.

Less than 153	Equal to 153	Greater than 153

9. Write these numbers in order from least to greatest.

59

76

48

10. Write these numbers in order from greatest to least.

401

502

285

11. Amy rolls 2 number cubes. She rolls a 3 and a 5.

a) Write two 2-digit numbers Amy can make with a 3 and a 5.

b) Compare these two 2-digit numbers in this number sentence:

_____ < _____

12. Juan rolls 2 number cubes. He gets a 4 and a 2.

a) Write two 2-digit numbers Juan can make with a 4 and a 2.

b) Compare these two 2-digit numbers in this number sentence:

_____ > _____

2.NS.2 Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

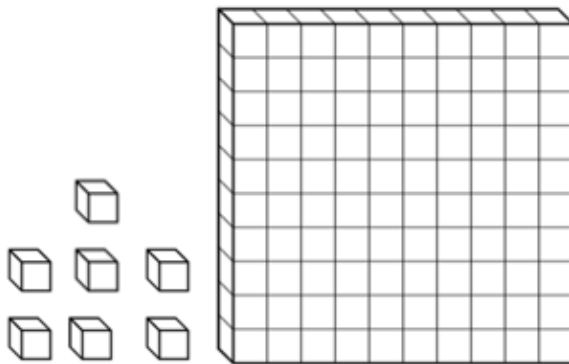
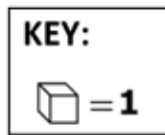
1. A number has:

- three tens
- seven ones
- six hundreds

Write this number. _____

A common error students may make is to use the numerals in the order given rather than using the place value position described, resulting in an incorrect answer of 376. Students may benefit from using manipulatives to first represent and then write the value described in each bullet. It may be helpful to provide students with a place value mat for recording.

2. Write the number shown in this model. _____



Some students may write 71, 701, or 17 in error. These errors may indicate a lack of understanding of the values associated with the base-10 manipulatives, inattention to the key, or difficulty translating from the model to standard form when one of the place value positions is not included in the model (i.e., there are no tens in the model shown). Using a place value mat to organize the values represented by each type of block in the model may help students develop this understanding. Students may also benefit from experience translating concrete models to pictorial representations of those models.

3. $400 + 30 + 7$

Write the number in standard form. _____

Students may attempt to add the non-zero digits when a number is presented in expanded form and incorrectly determine that the number is 14 by adding $4 + 3 + 7$. Another common error that students may make is writing the numbers side by side instead of considering place value, resulting in 400,307. Students making these errors would benefit from experiences with base ten models and recording numbers in expanded form.

4. Write the value of the underlined digit in each number.

a) 872 _____

b) 319 _____

c) 456 _____

Students may fail to address the place value of each digit and simply note the digit itself, showing values of 7, 3 and 6. Students making this error would benefit from experiences modeling numbers with base ten models and connecting the models to expanded form where the value of each digit is visible.

5. Sam used cubes to make 129.

a) Draw cubes to show 129 on this work mat.

H	T	O

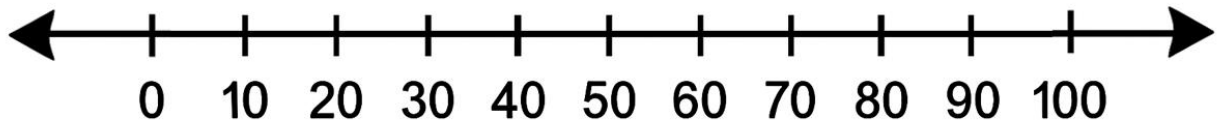
b) Draw cubes to show another way to make 129 on this work mat.

H	T	O

Students may draw 129 unit cubes, which is an accurate representation; however, this may indicate that the student is only able to count by ones to determine the total number of objects in a set. A student relying solely on counting by ones will benefit from activities that involve counting sets of objects by twos, fives, and tens and representing that set using a variety of groupings.

Some students may accurately represent 129 using one hundreds flat, two tens rods, and nine unit cubes but then may use one hundreds flat and twenty-nine tens rods to show the number a different way. This may indicate the student has a rote process for “trading” and a lack of understanding that the base-10 manipulatives provide a physical model structure of the base-10 number system. Activities in which a student constructs sets of ten for trading help build a conceptual understanding of the ten-to-one relationship between adjacent place value positions and the structure of the base-10 number system overall.

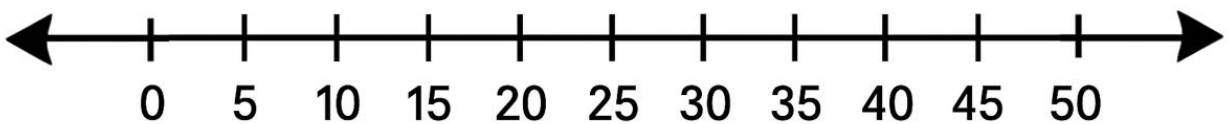
6. Place the number 62 on the number line.



Explain how you determined where to place 62.

Students may place 62 between 60 and 70 on the number line but fail to recognize that 62 should be placed closer to 60 than 70. Some students may always place numbers centered between two labeled spaces on a number line and not consider their relative magnitude. Students making these errors may benefit from using number lines with fewer labels, possibly only having anchor points of 0, 50 and 100 or 0 and 100.

7. Place the number 39 on the number line.



Explain how you determined where to place 39.

Students may place 39 between 35 and 40 on the number line but fail to recognize that 39 should be placed closer to 40 than 35. Students making these errors may benefit from the use of an interactive digital number line that provides immediate feedback on number placement.

8. My number is **153**.

- a) Write a number in the chart that is less than my number.
- b) Write a number in the chart that is equal to my number.
- c) Write a number in the chart that is greater than my number.

Less than 153	Equal to 153	Greater than 153

Possible incorrect answers for greater than (such as 16 or 54) may indicate that students have not yet developed an understanding of place value in three-digit numbers. Having students build or draw the number (e.g., using base-10 blocks) may help develop an understanding of the value of each digit within the number. If students are unable to build a correct number using manipulatives, the teacher may need to spend more time on the vocabulary “greater than,” “less than,” and “equal to.” Using a balance scale and linking blocks is one way to demonstrate this concept in a more concrete way and encourages the use of the vocabulary for comparing numbers.

9. Write these numbers in order from least to greatest.

59 76 48

Students who compare the numbers using the ones place first may incorrectly order the numbers 76, 48, 59. This may indicate that students are relying on the strategy learned for comparing one-digit numbers. It may help students to draw or use base-10 blocks to represent the value of each number, or to use the locations of the numbers on a hundreds chart or number line as support when comparing.

10. Write these numbers in order from greatest to least.

401 502 285

If students answer 285, 502, 401, they may be ordering based only on the values in the ones place. It may be helpful for students to draw or build the number before comparing.

If students answer 285, 401, 502, they may be writing the numbers from least to greatest. Students may need more practice with the vocabulary used for comparing numbers.

11. Amy rolls 2 number cubes. She gets a 3 and a 5.

a) Write two 2-digit numbers Amy can make with a 3 and a 5.

b) Compare these two 2-digit numbers in this number sentence:

_____ < _____

Students who are unable to write two different numbers using the given digits may benefit from using a hundreds chart to find the numbers that have the same two digits. These students will likely benefit from using manipulatives to represent each number before comparing them. Students who say, "thirty-five is less than fifty-three" but write $53 < 35$ understand the relationship between the numbers but are confusing the symbolic notation. These students would benefit from anchor charts that provide the language (e.g., "thirty-five is less than fifty-three") written alongside the same inequality in symbolic notation (e.g. $53 < 35$).

12. Juan rolls 2 number cubes. He gets a 4 and a 2.

a) Write two 2-digit numbers Juan can make with a 4 and a 2.

b) Compare these two 2-digit numbers in this number sentence:

_____ > _____

The most common error students make is confusing the symbols used in inequalities. If the student is confused by the direction, one strategy may be to remind them that the symbol always points to the smaller or lesser number.

It is critical to continue to use the language and the symbols for comparing together to reinforce the relationship. Practice reading inequalities aloud helps build meaning for the notation used.