

## Just in Time Quick Check

### Standard of Learning 2.NS.1

#### **Strand: Number and Number Sense**

#### **Standard of Learning 2.NS.1**

**The student will utilize flexible counting strategies to determine and describe quantities up to 200.**

*Students will demonstrate the following Knowledge and Skills:*

- a) Represent forward counting patterns when counting by groups of 2 up to at least 50, starting at various multiples of 2 and using a variety of tools (e.g., objects, number lines, hundreds charts).
- b) Represent forward counting patterns created when counting by groups of 5s, 10s, and 25s starting at various multiples up to at least 200 using a variety of tools (e.g., objects, number lines, hundreds charts).
- c) Describe and use patterns in skip counting by multiples of 2 (to at least 50), and multiples of 5, 10, and 25 (to at least 200) to justify the next number in the counting sequence.
- d) Represent forward counting patterns when counting by groups of 100 up to at least 1,000 starting at 0 using a variety of tools (e.g., objects, number lines, calculators, one thousand charts).
- e) Represent backward counting patterns when counting by groups of 10 from 200 or less using a variety of tools including objects, number lines, calculators, and hundreds charts.
- f) Describe and use patterns in skip counting backwards by 10s (from at least 200) to justify the next number in the counting sequence.
- g) Choose a reasonable estimate up to 1,000 when given a contextual problem (e.g., What would be the best estimate for the number of students in our school – 5, 50, or 500?).
- h) Represent even numbers (up to 50) with concrete objects, using two equal groups or two equal addends.
- i) Represent odd numbers (up to 50) with concrete objects, using two equal groups with one leftover or two equal addends plus 1.
- j) Determine whether a number (up to 50) is even or odd using concrete objects and justify reasoning (e.g., dividing collections of objects into two equal groups, pairing objects).

#### Just in Time Quick Check

#### Just in Time Quick Check Teacher Notes

**Supporting and Prerequisite SOL: 1.NS.1**

Just in Time Quick Check 2.NS.1

1. This picture shows John's candies. How many candies does John have? How do you know?



2. Alberto is counting. He says, "30, 40, 50, 60." What are the next three numbers in his pattern?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

What is Alberto counting by? \_\_\_\_\_

3. This is a group of 5 flowers.



I have four of these groups of flowers. How many flowers do I have?

4. Find 45 in the number chart.

Starting at 45, color each number you would say when you count by 5 to 100.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>
<b>41</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>
<b>61</b>	<b>62</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>70</b>
<b>71</b>	<b>72</b>	<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>
<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>	<b>85</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>
<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>100</b>

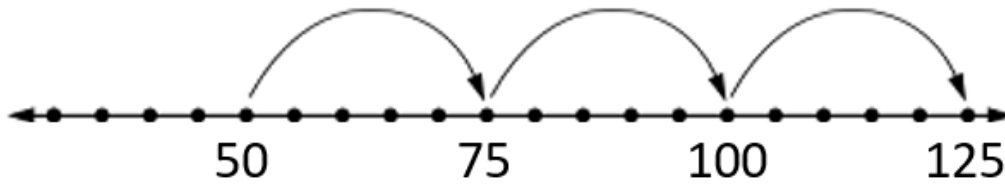
5. Tony is counting "120, 110, 100." What are the next 3 numbers in this pattern?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

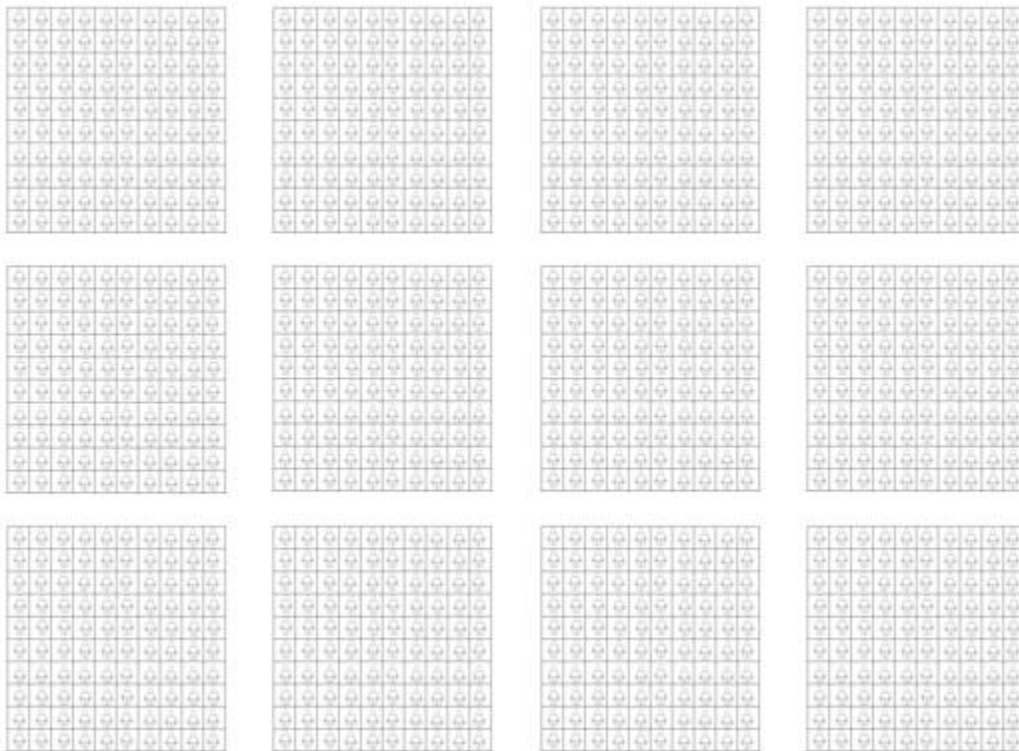
What is he counting by? \_\_\_\_\_

How do you know? \_\_\_\_\_

6. Describe the skip counting pattern displayed on the number line below.



7. The block store displays their minifigures in cases. Each case holds 100 minifigures. Count by one hundreds to determine how many minifigures are in the cases shown below.



8. Circle the number that tells about how many marbles are in the jar.

about 2

about 20

about 200



9. Alex has 36 cubes. He arranged them into two rows.



Does Alex have an odd or even number of cubes? \_\_\_\_\_

How do you know?

10. Tina has 25 marbles. Draw a picture or use counters to show whether Tina has an even number or an odd number of marbles.

Does Tina have an odd or even number of marbles? \_\_\_\_\_

How do you know?

2.NS.1 Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. This picture shows John’s candies. How many candies does John have? How do you know?



*Students may answer “6” and tell you or point to the images to show that they are counting each pair as one. Prompt students to tell you how they know or to count the lollipops for you. Students who cannot count by twos may need practice with one-to-one counting to confirm that each set includes two items. This student may also benefit from practice in counting by twos using sets of items and counting by twos using a hundred chart to build conceptual understanding.*

2. Alberto is counting. He says, “30, 40, 50, 60.” What are the next three numbers in his pattern?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

What is Alberto counting by? \_\_\_\_\_

*Students may write “10, 20, 30.” While this error indicates an understanding that the pattern represents skip counting by tens, it may indicate that students are unable to count on from a given decade or they do not understand that the given pattern continues to increase. Another common error is for students to copy the numbers (30, 40, 50) from the original question. These students will need more practice with making and counting sets of ten. They may need a number line or hundreds chart to practice counting by tens and counting on to a given decade by tens using and grouping sets of items by ten to build conceptual understanding prior to rote skip counting. Conceptual understanding of skip counting is the precursor to recognizing number patterns, counting money, and telling time.*

3. This is a group of 5 flowers.



I have four of these groups of flowers. How many flowers do I have?

*Students who answer “5” are unable to take the information and use it to skip count by fives. Students are simply counting the flowers in the illustration instead of understanding they would need to count that group of flowers four times. Students with an understanding of number patterns may draw additional sets of flowers to be able to count them. This would demonstrate that students understand groups of five but are still in need of a concrete representation. Students who count by fives or write the numbers by fives without drawing additional flowers have a grasp of skip counting by fives and an ability to hold quantities in their heads, facilitating mental math. Conceptual understanding of skip counting is the precursor to recognizing number patterns, counting money, and telling time.*

4. Find 45 in the number chart.

Starting at 45, color each number you would say when you count by 5 to 100.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

*If possible, teachers are encouraged to watch students as they complete the task to determine if the student is counting by fives in sequence (e.g., coloring in 45, then coloring 50, 55, 60, 65, etc.).*

*Students who begin at 5 and color all the multiples of five may not feel comfortable with counting on by fives from any multiple of five. Students who color 45, 55, 65, 75, etc. may be focusing on the 5 in the ones place. Students who color all the numbers with the 5 in the ones*

*place and then all the numbers with a 0 in tens place may understand number patterns and how to use the hundreds chart to look for number patterns, but they have not yet demonstrated skip counting by fives. Each of these errors may indicate that students would benefit from practice with making and counting sets of five using concrete representations, including counters or other manipulatives, and using those sets alongside a hundred chart to foster conceptual understanding for skip counting by fives. This practice should begin with counting by fives from zero and move to counting by fives from other numbers.*

5. Tony is counting “120, 110, 100.” What are the next 3 numbers in this pattern?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

What is he counting by? \_\_\_\_\_

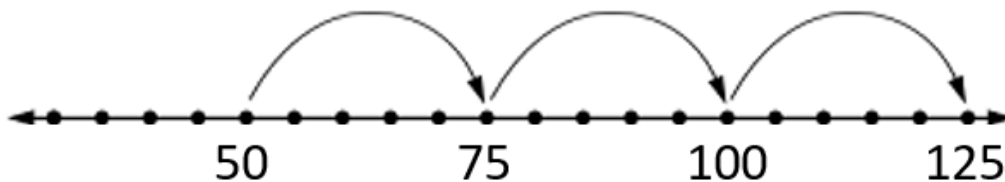
How do you know?

\_\_\_\_\_

*If students count backward by ones (“99, 98, 97...”), ask them to repeat Tony’s counting pattern and continue it. Students who continue to have difficulty may benefit from working with manipulatives, a number line, or a hundred chart.*

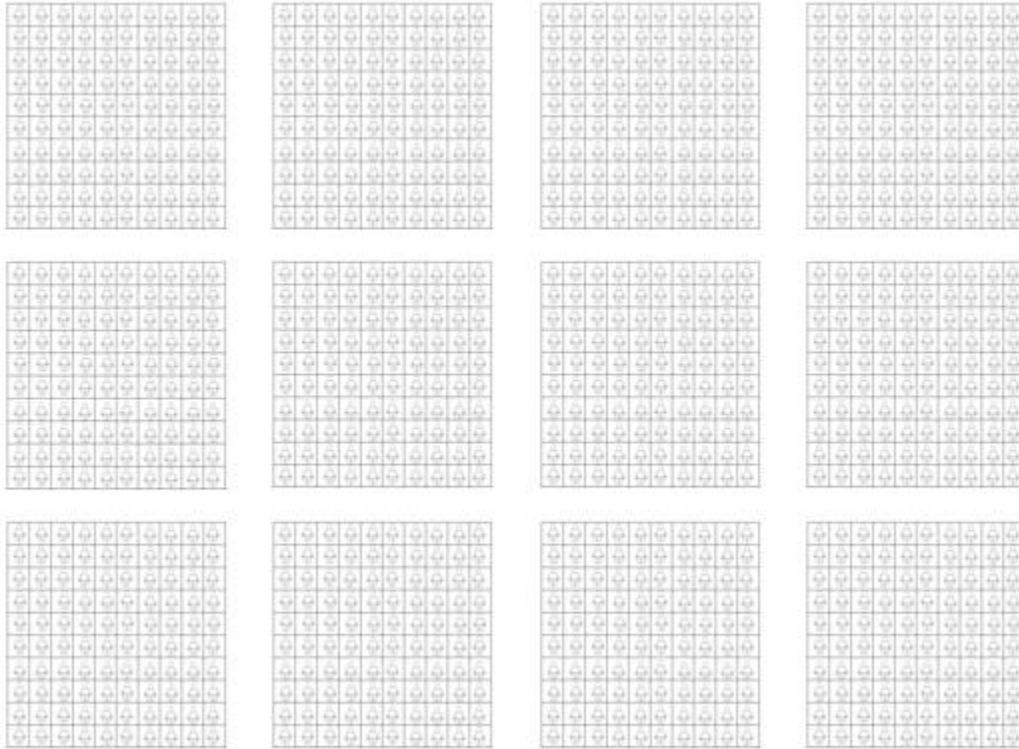
*If students count forward by ones or tens instead of backward by tens from 100, reinforce the vocabulary “forward” and “backward” as it relates to “ten more” and “ten less.” Students may benefit from practicing counting backward by tens on a number line or hundred chart while also counting orally.*

6. Describe the skip counting pattern displayed on the number line below.



*Students may struggle to skip count by 25 starting at a multiple other than 25 and incorrectly describe this as a pattern of counting by 50. Students making this error would benefit from experiences skip counting from various multiples. Consider using count around or choral counting activities that start at various multiples.*

7. The block store displays their minifigures in cases. Each case holds 100 minifigures. Count by one hundreds to determine how many minifigures are in the cases shown below.



*Students may answer “12” and tell you or point to the images to show he or she is counting each case as one. Prompt students to tell you how they know or have them count the cases for you. Encourage students to describe how many minifigures are in one case and discuss how the number should change if they skip count by hundreds. Focus the conversation on what digit changes when skip counting by hundreds and consider having students label each picture with 100, 200, 300, etc. to assist with skip counting. Students that can skip count by hundreds may struggle when counting beyond 1,000. For example, they may say, “nine hundred, ten hundred, eleven hundred, twelve hundred.” It may be beneficial to record numbers in a place value chart to model the standard form of the number to assist with skip counting beyond one thousand.*

8. Circle the number that tells about how many marbles are in the jar.

about 2

about 20

about 200



*Students who lack a sense of magnitude may struggle to estimate that this jar contains approximately 20 marbles and may estimate about 200, knowing that there are more than 2. Even when differences may seem obvious, young students often think that any quantity beyond their counting range is a very large quantity, thereby expressing the quantity in the jar as hundreds rather than tens. Students will benefit from many experiences with counting, working with different-size sets, comparing quantities that have obvious differences and those that do not have obvious differences. These experiences should involve ample practice with concrete objects of different sizes and shapes. In addition, it may be beneficial to provide students with actual jars of concrete materials (e.g., buttons, pencils, unit cubes) to compare and provide one jar with a benchmark number (which might be 10 of that item). Students' sense of magnitude is best activated with concrete models rather than pictorial models.*

9. Alex has 36 cubes. He arranged them into two rows.



Does Alex have an odd or even number of cubes? \_\_\_\_\_

How do you know?

*A common error students may make is focusing on just one digit of the numeral 36 and using that digit to describe whether there is an even or odd amount of objects. These students may focus on the digit 3 and state that 36 is odd because 3 is an odd number. Students who understand the nature of even and odd will express that a quantity of items is even when each item has a partner (or conversely, an odd quantity of items will always have one item without a partner when the items are paired).*

10. Tina has 25 marbles. Draw or use counters to show whether Tina has an even number or an odd number of marbles.

Does Tina have an odd or even number of marbles? \_\_\_\_\_

How do you know?

*Students who do not understand even and odd may draw or organize their representation in a way that does not create easily paired items. For example, if the student organizes the items into a 5-by-5 array, they may consider that the set of marbles looks lined up without any left over and therefore must be even. Without organization, the “How do you know?” response to an incorrect answer may indicate a guess. Students who understand the nature of even and odd will express that a quantity of items is even when each item has a partner (or conversely, an odd quantity of items will always have one item without a partner when the items are paired). To build an understanding of even and odd, students need opportunities to practice with concrete manipulatives that they can move around to pair up.*