**4.NBT.1:**  Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

1.  **How is the 3 in the number 753 similar to and different from the 3 in the number 735?**

2.  **Use the number 333 to explain the relationship between the ones, the tens, and the hundreds places.  Support your answer using a drawing.**

**4.NBT.2:**  Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using **>**, =, and < symbols to record the results of comparisons.

1.  **Jackson wrote 15 thousands + 32 tens as 1,532.  Is he correct?  Explain your answer.**

2.  **Write the number 475 at least 3 different ways using only tens and ones.**

3.  **Write the number 328,416 in expanded form and word form.  Explain the role of the comma in this number.**

4.  **Which is greater:  15 thousands or 3 ten thousands?  How do you know?**

5.  **Compare 3,547,829 and 3,573,942 using >, <, or =.  Justify your thinking.**

6.  **Use a Hundred Board for the following question.**
    Sasha's teacher asked her to find a mystery number.  Her clues were:
    - The mystery number is an odd number.
    - The mystery number is between 40 and 70.
    - The mystery number does not contain a 3.
      The sum of the digits are greater than 10.
    **What are the possible numbers that Sasha might choose as the mystery number?  Why?**

# Hundred Board

| 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 |

**4.NBT.3:**  Use place value understanding to round multi-digit whole numbers to any place.

1.  **Is 9,040 closer to 9,000, or 9,100?  How do you know?  Prove your answer using a number line.**

2.  **Solve the following problem and write an explanation of your thinking in words.  Support your answer using a number line.**

    The fourth grade is collecting cupcakes for the Fall Festival.  The goal is to collect 500 cupcakes.  On the first day Jose brings 4 half dozen packages.  On the second day, Hayley brings 6 packages of 8 cupcakes.  About how many more cupcakes are still needed for the Fall Festival.

3.  **Is 645 in the range of numbers from 655 to 665?  How do you know?**

4.  **Round the number 89 to the nearest ten.  Support your answer using a hundred board.**

5.  **Round the number 43,987 to the nearest thousand.  Support your answer using a number line.**

**Grade 4**
**Assessment 1 *Answer Key***
**Standards 4.NBT.1, 4.NBT.2, and 4.NBT.3**

## 4.NBT.1

1. How is the 3 in the number 753 similar to and different from the 3 in the number 735?

**753 has "3 ones" and has a value of 3.**
**735 has "3 tens" and has a value of 30, which is 10 times greater than the 3 in the ones place from the number 753.**

2. Use the number 333 to explain the relationship between the ones, the tens, and the hundreds places. Support your answer using a drawing.

**Explanation: As you move to the left, each place value is 10 times greater than the place to the right of it.**
**Model drawing should include: 3 hundreds, 3 tens, and 3 ones using base-10 pieces**

## 4.NBT.2

1. Jackson wrote 15 thousands + 32 tens as 1,532. Is he correct? Explain your answer.
**No Jackson is not correct, because the correct amount is 15,320.**
**Jackson said that:**
**15 thousands =1,500**
**32 tens= 32**
**1,500 + 32 = 1,532**

**The correct solution is 15,320:**
**15 thousands=15,000 because of 15 x 1,000**
**32 tens=320 because of 32 x 10**
**15,000 + 320 = 15,320**

2. Write the number 475 at least 3 different ways using only tens and ones.
**Answers may vary, some answers include:**
**1. 47 tens and 5 ones because 47 x 10=470 and 5 x 1 =5, 470 + 5 = 475.**
**2. 46 tens and 15 ones because 46 x 10 = 460 and 15 x 1 = 15, 460 + 15 = 475.**
**3. 37 tens and 105 ones because 37 x 10 = 370 and 105 x 1 = 105, 370 + 105 = 475**

3. Write the number 328,416 in expanded form and word form. Explain the role of the comma in this number.

**328,416:**
**Expanded: 300,000 + 20,000 + 8,000 + 400 + 10 + 6**
**Word: three hundred twenty-eight thousand, four hundred sixteen**

**The role of a comma: Each sequence of three digits made by commas is read as hundreds, tens, and ones, followed by the name of the appropriate base-thousand unit (thousand, million, billion, trillion, etc.)**

4. Which is greater: 15 thousands or 3 ten thousands? How do you know?

**3 ten thousands is greater because:**
**15 thousands = 15 x 1,000 = 15,000**
**3 ten thousands= 3 x 10,000 = 30,000**

**I know 3 ten thousands is greater because 3 ten thousands would be 30,000. If I had 15 thousands, that would be 15,000. 3 ten thousands is double 15 thousands. Therefore, 3 ten thousands is greater than 15 thousands.**

5. Compare 3,547,829 and 3,573,942 using >, <, or =. Justify your thinking.

**3,547,829 < 3,573,942**
**Both numbers have 3 millions and 5 hundred thousands. The number 3,547,829 has 4 ten thousands and the number 3,573,942 has 7 ten thousands. 7 ten thousands is greater than 4 ten thousands, therefore 3,573,942 is the larger number.**

6. Use a Hundred Board for the following question.

    Sasha's teacher asked her to find a mystery number. Her clues were

- The mystery number is an odd number.
- The mystery number is between 40 and 70.
- The mystery number does not contain a 3.
- The sum of the digits are greater than 10.

    What are the possible numbers that Sasha might choose as the mystery number? Why?

***Possibilities for Sasha's Number: 47, 49, 57, 59, 65, 67, 69***
***These are all odd numbers between 40 and 70, do not contain a 3, and the sum of the digits are all greater than 10.***

### 4.NBT.3

1. Is 9,040 closer to 9,000, or 9,100?  How do you know?  Prove your answer using a number line.

**9,040 is closer to 9,000 because:**

**9,040 – 40 = 9,000**

**9,040 + 60 = 9,100**

**Moving back 40 is closer to 9,000 rather than counting on 60 to get to 9,100.**

2. Solve the following problem and write an explanation of your thinking in words.  Support your answer using a number line.

> The fourth grade is collecting cupcakes for the Fall Festival.  The goal is to collect 500 cupcakes. On the first day Jose brings 4 half dozen packages.  On the second day, Hayley brings 6 packages of 8 cupcakes.  About how many more cupcakes are still needed for the Fall Festival.

**First Step:**

**First Day: 4 packages x 6 cupcakes = 24 cupcakes**

**Second Day: 6 packages x 8 cupcakes = 48 cupcakes**

**24 is about 25 (or 20).  48 is about 50.  So you have about 75 because 50 + 25 = 75.  (If student rounded 24 down to 20, then they would have about 70 cupcakes.)**

**Second Step:**

**500 cupcakes needed– 75 cupcakes brought = about 425 more cupcakes needed.  (If student rounded 24 to 20, then they would have 500-70 = about 430 more cupcakes needed.)**

**--OR—**

**First Step:**

**First Day:  4 packages x 5 cupcakes (6 is about 5; 5 is a convenient number) = about 20 cupcakes**

**Second Day:  6 packages x 10 cupcakes (8 is about 10) = about 60 cupcakes**

**20 + 60 = about 80 cupcakes**

**Second Step:**

**500 cupcakes needed – 80 cupcakes brought = about 420 more cupcakes needed**

3. Is 645 in the range of numbers from 655 to 665?  How do you know?

**645 is not in the range of number s 655 to 665 because 645 is 10 less than 655, so it cannot be in the range of the given numbers.**

4.  Round the number 89 to the nearest ten.  Support your answer using a hundred board.
**89 is closest to 90 because one more than 89 is 90.**

5.  Round the number 43,987 to the nearest thousand.  Support your answer using a number line.
**43,987 rounded to the nearest thousand is 44,000 because it is closer to 44,000 not 43,000.  This can be seen on the number line because 43,987 would be positioned closer to the right which is about 44,000.  43,987 is 13 less than 44,000 but 987 more than 43,000. (Show on a number line)**

**43,000                                43,500                          43,987   44,000**