GRADE 4 • MODULE 1

Place Value, Rounding, and Algorithms for Addition and Subtraction

Module Overview ................................................................................................................................. 1

Topic A: Place Value of Multi-Digit Whole Numbers................................................................. 1.A.1
Topic B: Comparing Multi-Digit Whole Numbers ................................................................. 1.B.1
Topic C: Rounding Multi-Digit Whole Numbers ................................................................. 1.C.1
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Lesson 1: Interpret a multiplication equation as a comparison.

Date: 5/9/13

1. Label the place value charts. Fill in the blanks to make the following statements true. Draw disks in the place value chart to show how you got your answer, using arrows to show any bundling.

   a. \[10 \times 3 \text{ ones} = \text{_____ ones} = \text{______}\]

   b. \[10 \times 2 \text{ tens} = \text{______ tens} = \text{______}\]

   c. \[4 \text{ hundreds} \times 10 = \text{______ hundreds} = \text{______}\]

2. Complete the following statements using your knowledge of place value:

   a. 10 times as many as 1 ten is _______ tens.

   b. 10 times as many as _______ tens is 30 tens or _______ hundreds.

   c. ____________________________ as 9 hundreds is 9 thousands.

   d. _______ thousands is the same as 20 hundreds.

Use pictures, numbers, and words to explain how you got your answer for Part (d).
3. Matthew has 30 stamps in his collection. Matthew’s father has 10 times as many stamps as Matthew. How many stamps does Matthew’s father have? Use numbers and words to explain how you got your answer.

4. Jane saved $800. Her sister has 10 times as much money. How much money does Jane’s sister have? Use numbers and words to explain how you got your answer.

5. Fill in the blanks to make the statements true.
   a. 2 times as much as 4 is _______.
   b. 10 times as much as 4 is _______.
   c. 500 is 10 times as much as _______.
   d. 6,000 is ________________________________ as 600.

6. Sarah is 9 years old. Sarah’s grandfather is 90 years old. Sarah’s grandfather is how many times as old as Sarah?

   Sarah’s grandfather is _______ times as old as Sarah.
Lesson 1 Exit Ticket

1. Use the number disks in the place value chart below to complete the following problems.

a. Label the place value chart.

b. Tell about the movement of the disks in the place value chart by filling in the blanks to make the following equation true and match what is happening in the place value chart.

\[ \underline{\hspace{2cm}} \times 10 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \]

c. Write a statement about this place value chart using the words “10 times as many.”
1. Label the place value charts. Fill in the blanks to make the following statements true. Draw disks in the place value chart to show how you got your answer.

   a. 10 × 4 ones = _______ ones = __________

   b. 10 × 2 tens = _______ tens = __________

   c. 5 hundreds × 10 = _______ hundreds = __________

2. Complete the following statements using your knowledge of place value:

   a. 10 times as many as 1 hundred is ______ hundreds or ______ thousand.

   b. 10 times as many as ______ hundreds is 60 hundreds or ______ thousands.

   c. ______________________________ as 8 hundreds is 8 thousands.

   d. _______ hundreds is the same as 4 thousands.

Use pictures, numbers, and words to explain how you got your answer for Part (d).
3. Katrina has 60 GB of storage on her tablet. Katrina’s father has 10 times as much storage on his computer. How much storage does Katrina’s father have? Use numbers and words to explain how you got your answer.

4. Katrina saved $200 to purchase her tablet. Her father spent 10 times as much money to buy his new computer. How much did her father’s computer cost? Use numbers and words to explain how you got your answer.

5. Fill in the blanks to make the statements true.
   a. 4 times as much as 3 is _______.
   b. 10 times as much as 9 is _______.
   c. 700 is 10 times as much as _______.
   d. 8,000 is ______________________________ as 800.

6. Tomas’s grandfather is 100 years old. Tomas’s grandfather is 10 times as old. How old is Tomas?
1. As you did during the lesson, label and represent the product or quotient drawing disks on the place value chart.

   a. \[ 10 \times 2 \text{ thousands} = \text{ _______ thousands} = \text{ ______________________________} \]

   b. \[ 10 \times 3 \text{ ten thousands} = \text{ _______ ten thousands} = \text{ ______________________________} \]

   c. \[ 4 \text{ thousands} \div 10 = \text{ _______ hundreds} \div 10 = \text{ ______________________________} \]
2. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10 \times 6 \text{ tens}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$7 \text{ hundreds} \times 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$3 \text{ thousands} \div 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$6 \text{ ten thousands} \div 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10 \times 4 \text{ thousands}$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(4 \text{ tens} 3 \text{ ones}) \times 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$(2 \text{ hundreds} 3 \text{ tens}) \times 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$(7 \text{ thousands} 8 \text{ hundreds}) \times 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$(6 \text{ thousands} 4 \text{ tens}) \div 10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$(4 \text{ ten thousands} 3 \text{ tens}) \div 10$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Explain how you solved the last problem of Set 2. Use a place value chart to support your explanation.
5. Explain how you solved the last problem of Set 3. Use a place value chart to support your explanation.

6. Jacob saved 2 thousand dollar bills, 4 hundred dollar bills, and 6 ten dollar bills to buy a car. The car costs 10 times as much as he has saved. How much does the car cost?

7. Last year the apple orchard experienced a drought and didn’t produce many apples. But this year, the apple orchard produced 45 thousand granny smith apples and 9 hundred red delicious apples, which is 10 times as many apples as last year. How many apples did the orchard produce last year?

8. Planet Ruba has a population of 1 million aliens. Planet Zamba has 1 hundred thousand aliens.
   a. How many more aliens does Planet Ruba have than Planet Zamba?

   b. Write a sentence to compare the populations for each planet using the words “10 times as many.”
Name ________________________________  Date __________________

1. Fill in the blank to complete the number sentence. Respond with a numeral.

   a. (4 ten thousands 6 hundreds) × 10 = _______________________

   b. (8 thousands 2 tens) ÷ 10 = _______________________

2. The Carson family saved up $39,580 for a new home. The cost of their dream home is 10 times as much as they have saved. How much does their dream home cost?
Name ________________________________ Date ______________________

1. As you did during the lesson, label and represent the product or quotient drawing disks on the place value chart.
   a. \(10 \times 4 \text{ thousands} = \underline{\phantom{0000}} \text{ thousands} = \underline{\phantom{0000}}\)

2. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit Form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10 \times 3 \text{ tens})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5 \text{ hundreds} \times 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9 \text{ ten thousands} \div 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10 \times 7 \text{ thousands})</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Fill in the blanks to complete each number sentence. Respond first in unit form, then in standard form.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit Form</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2 tens 1 one) × 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5 hundreds 5 tens) × 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2 thousands 7 tens) ÷ 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4 ten thousands 8 hundreds) ÷ 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Emily collected $950 selling Girl Scout cookies all day Saturday. Emily’s troop collected 10 times as much as she did. How much money did Emily’s troop raise?

5. On Saturday, Emily made 10 times as much as on Monday. How much money did Emily collect on Monday?
1. Rewrite the following numbers including commas where appropriate:
   a. 1234 __________________ b. 12345 __________________ c. 123456 __________________
   d. 1234567 __________________ e. 12345678901 __________________

2. Complete the following chart:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 tens + 5 tens</td>
<td></td>
</tr>
<tr>
<td>3 hundreds + 7 hundreds</td>
<td></td>
</tr>
<tr>
<td>400 thousands + 600 thousands</td>
<td></td>
</tr>
<tr>
<td>8 thousands + 4 thousands</td>
<td></td>
</tr>
</tbody>
</table>

3. Represent each addend with number disks in the place value chart. Show the composition of larger units from 10 smaller units. Write the sum in standard form.
   a. 4 thousands + 11 hundreds = ________________________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tr>
</tbody>
</table>

   b. 24 ten thousands + 11 thousands = ________________________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
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</tbody>
</table>
4. Use the place value chart to represent the following equations with numbers or disks. Write the product in standard form.

   a. 10 x 3 thousands = ________________

      How many thousands are in the answer? ________________

      | millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
      |----------|------------------|--------------|-----------|----------|-----|------|
      |          |                  |              |           |          |     |      |

   b. (3 ten thousands 2 thousands) x 10 = ________________

      How many thousands are in the answer? ________________

      | millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
      |----------|------------------|--------------|-----------|----------|-----|------|
      |          |                  |              |           |          |     |      |

   c. (32 thousands 1 hundred 4 ones) x 10 = ________________

      How many thousands are in your answer? ________________

      | millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones |
      |----------|------------------|--------------|-----------|----------|-----|------|
      |          |                  |              |           |          |     |      |

5. Lee and Gary visited South Korea. They exchanged their dollars for South Korean bills. Lee received 15 ten thousand South Korean bills. Gary received 150 thousand bills. Use disks or numbers on a place value chart to compare Lee and Gary’s money.
Name ____________________________________________ Date ____________________________

1. In the spaces provided, rewrite the following units as digits. Be sure to place commas where appropriate.
   a. 9 thousands, 3 hundreds, 4 ones ________________________________
   b. 6 ten thousands, 2 thousands, 7 hundreds, 8 tens, 9 ones ____________________
   c. 1 hundred thousand, 8 thousands, 9 hundreds, 5 tens, 3 ones ________________

2. Use the place value chart to write 26 thousands and 13 hundreds using digits.

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
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</tbody>
</table>

   How many thousands are in your answer? ____________________
Name ___________________________ Date _________________

1. Rewrite the following numbers including commas where appropriate:
   a. 4321 ________________  b. 54321 ________________
   c. 224466 ________________  d. 222466 ________________
   e. 10010011001 __________________________

2. Complete the following chart:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Unit Form (Use the largest units possible.)</th>
<th>Standard Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 tens + 6 tens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 hundreds + 2 hundreds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 thousands + 7 thousands</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Represent each addend with number disks in the place value chart. Show the composition of larger units from 10 smaller units. Write the sum in standard form.
   a. 2 thousands + 12 hundreds = ________________________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b. 14 ten thousands + 12 thousands = ________________________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
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</tr>
</tbody>
</table>
4. Use the place value chart to represent the following equations with numbers or disks. Write the product in standard form.

a. \(10 \times 5 \text{ thousands} = \) ____________________________

   How many thousands are in the answer? __________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>

b. \((4 \text{ ten thousands} 4 \text{ thousands}) \times 10 = \) __________________________

   How many thousands are in the answer? __________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
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<td></td>
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</tr>
</tbody>
</table>

c. \((27 \text{ thousands} 3 \text{ hundreds} 5 \text{ ones}) \times 10 = \) __________________________

   How many thousands are in your answer? __________________

<table>
<thead>
<tr>
<th>millions</th>
<th>hundred thousands</th>
<th>ten thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

5. A large grocery store received an order of 2 thousand apples. A neighboring school received an order of 20 boxes of apples with 100 apples in each. Use disks or numbers on a place value chart to compare the number of apples received by the school and the number of apples received by the grocery store.
Lesson 4 Problem Set

Name ______________________________ Date ________________

1. On the place value chart below, label the units and represent the number 90,523.

       |       |       |       |       |

a. Write the number in word form.

b. Write the number in expanded form.

2. Represent the number 905,203.

       |       |       |       |       |

a. Write the number in word form.

b. Write the number in expanded form.
3. Complete the following chart:

<table>
<thead>
<tr>
<th>Number</th>
<th>Word Form</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>two thousand, four hundred eighty</td>
<td></td>
<td>20,000 + 400 + 80 + 2</td>
</tr>
<tr>
<td>sixty-four thousand, one hundred six</td>
<td></td>
<td></td>
</tr>
<tr>
<td>604,016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,060,060</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Black Rhinos are endangered, with only 4,400 left in the world. Timothy read that number as “four thousand, four hundred.” But his father read the number as “44 hundred.” Who read the number correctly? Use pictures, numbers, or words to explain your answer.
1. Use the place value chart below to complete the following:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

a. Label the units on the chart.

b. Write the number $800,000 + 6,000 + 300 + 2$ in the place value chart.

c. Write the number in word form.

2. Write one hundred sixty thousand, five hundred eighty-two in expanded form.
Lesson 4 Homework

Name ___________________________ Date __________________

1. On the place value chart below, label the units and represent the number 50,679.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Write the number in word form.

b. Write the number in expanded form.

2. On the place value chart below, label the units and represent the number 506,709.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Write the number in word form.

b. Write the number in expanded form.
3. Complete the following chart:

<table>
<thead>
<tr>
<th>Number</th>
<th>Word Form</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>five thousand, three hundred seventy</td>
<td>50,000 + 300 + 70 + 2</td>
</tr>
<tr>
<td></td>
<td>thirty-nine thousand, seven hundred one</td>
<td></td>
</tr>
<tr>
<td>309,017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,070,070</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Use pictures, numbers, and words to explain another way to say “sixty-five hundred.”
Name ____________________________ Date ___________

1. Label the units in the place value chart. Draw place value disks to represent each number in the place value chart. Use <, >, or = to compare the two numbers. Write the correct symbol in the circle.

a. \( 600,015 \)  \( 60,015 \)

b. \( 409,004 \)  \( 440,002 \)

2. Compare the two numbers by using the symbols <, >, and =. Write the correct symbol in the circle.

a. \( 342,001 \)  \( 94,981 \)

b. \( 500,000 + 80,000 + 9,000 + 100 \)  \( \text{five hundred eight thousand, nine hundred one} \)

c. \( 9 \text{ hundred thousands} 8 \text{ thousands} 9 \text{ hundreds} 3 \text{ tens} \)  \( 908,930 \)

d. \( 9 \text{ hundreds} 5 \text{ ten thousands} 9 \text{ ones} \)  \( 6 \text{ ten thousands} 5 \text{ hundreds} 9 \text{ ones} \)
3. Use the information in the chart below to list the height in feet of each mountain from least to greatest. Then name the mountain that has the lowest elevation in feet.

<table>
<thead>
<tr>
<th>Name of Mountain</th>
<th>Elevation in Feet (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen Mountain</td>
<td>4,347 ft.</td>
</tr>
<tr>
<td>Mount Marcy</td>
<td>5,343 ft.</td>
</tr>
<tr>
<td>Mount Haystack</td>
<td>4,960 ft.</td>
</tr>
<tr>
<td>Slide Mountain</td>
<td>4,180 ft.</td>
</tr>
</tbody>
</table>

4. Arrange these numbers from least to greatest: 8,002 2,080 820 2,008 8,200

5. Arrange these numbers from greatest to least: 728,000 708,200 720,800 87,300

6. One astronomical unit, or 1 AU, is the approximate distance from the earth to the sun. The following are the approximate distances from earth to nearby stars given in AUs:

   Alpha Centauri is 275,725 AUs from earth.
   Proxima Centauri is 268,269 AUs from earth.
   Epsilon Eridani is 665,282 AUs from earth.
   Barnard’s Star is 377,098 AUs from earth.
   Sirius is 542,774 AUs from earth.

   List the names of the stars and their distances in AUs in order from closest to farthest from earth.
Lesson 5 Exit Ticket

Name _________________________________ Date __________________

1. Four friends were playing a game. Use the information in the table below to order the number of points each player earned from least to greatest. Then name the person who won the game.

<table>
<thead>
<tr>
<th>Player Name</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy</td>
<td>2,398 points</td>
</tr>
<tr>
<td>Bonnie</td>
<td>2,976 points</td>
</tr>
<tr>
<td>Jeff</td>
<td>2,709 points</td>
</tr>
<tr>
<td>Rick</td>
<td>2,699 points</td>
</tr>
</tbody>
</table>

2. Use each of the digits 5, 4, 3, 2, 1 exactly once to create two different five-digit numbers.
   a. Write each number on the line and compare the two numbers by using the symbols < or >. Write the correct symbol in the circle.

__________________                        __________________

b. Use words to write a comparison statement for the problem above.
Name _____________________________ Date ______________

1. Label the units in the place value chart. Draw place value disks to represent each number in the place value chart. Use <, >, or = to compare the two numbers. Write the correct symbol in the circle.
   
a. 909,013  ○  90,013
   
   b. 210,005  ○  220,005

2. Compare the two numbers by using the symbols <, >, and =. Write the correct symbol in the circle.
   
a. 501,107  ○  89,171
   
b. 300,000 + 50,000 + 1,000 + 800  ○  six hundred five thousand, nine hundred eight
   
c. 3 hundred thousands 3 thousands 8 hundreds 4 tens  ○  303,840
   
d. 5 hundreds 6 ten thousands 2 ones  ○  3 ten thousands 5 hundreds 1 one
3. Use the information in the chart below to list the height in feet of each skyscraper from least to greatest. Then name the tallest skyscraper.

<table>
<thead>
<tr>
<th>Name of Skyscraper</th>
<th>Height of Skyscraper (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willis Tower</td>
<td>1,450</td>
</tr>
<tr>
<td>Freedom Tower</td>
<td>1,776</td>
</tr>
<tr>
<td>Taipei 101</td>
<td>1,670</td>
</tr>
<tr>
<td>Petronas Towers</td>
<td>1,483</td>
</tr>
</tbody>
</table>

4. Arrange these numbers from least to greatest: 7,550 5,070 750 5,007 7,505

5. Arrange these numbers from greatest to least: 426,000 406,200 640,020 46,600

6. The area of the 50 states can be measured in square miles (sq. miles).

   California is 158,648 sq. miles. Nevada is 110,567 sq. miles. Arizona is 114,007 sq. miles. Texas is 266,874 sq. miles. Montana is 147,047 sq. miles, and Alaska is 587,878 sq. miles.

   Arrange the states listed by area from least to greatest.
Lesson 6 Problem Set

Name __________________________ Date ______________

1. Label the place value chart. Use number disks to find the sum or difference. Write the answer in standard form on the line.
   a. 10,000 more than six hundred five thousand, four hundred, seventy-two is ___________________.

   __________________________

   __________________________


   b. 100 thousand less than 400,000 + 80,000 + 1000 + 30 + 6 is ____________________.

   __________________________

   __________________________


   c. 230,070 is ________________________________ than 130,070.

   __________________________

   __________________________

2. Lucy plays an online math game. She scored 100,000 more points on Level 2 than on Level 3. If she scored 349,867 points on Level 2, what was her score on Level 3? Use pictures, words, or numbers to explain your thinking.

   __________________________

   __________________________

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3. Complete the following equations:

a. 10,000 + 40,060 = ____________

b. 21,195 – 10,000 = ____________

c. 999,000 + 1,000 = ____________

d. 129,231 – 100,000 = ____________

e. 122,000 = 22,000 + ____________

f. 38,018 = 39,018 – ____________

4. Fill in the empty boxes to complete the patterns.

<table>
<thead>
<tr>
<th>150,010</th>
<th>170,010</th>
<th>190,010</th>
</tr>
</thead>
</table>

a. Explain in pictures, numbers, and words how you found your answer.

| 898,756 | 798,756 | | 498,756 |
|---------|---------| |---------|

b. Explain in pictures, numbers, and words how you found your answer.

| 744,369 | 743,369 | 741,369 | |
|---------|---------|---------| |

c. Explain in pictures, numbers, and words how you found your answer.

| 118,910 | | 88,910 | 78,910 |
|---------| |---------|---------|

d. Explain in pictures, numbers, and words how you found your answer.
Lesson 6 Exit Ticket

1. Fill in the empty boxes to complete the pattern.

| 468,235 |  | 471,235 | 472,235 |

a. Explain in pictures, numbers, and words how you found your answer.

2. Complete the following equations.

a. \(1,000 + 56,879 = \) ____________  
b. \(324,560 - 100,000 = \) ____________

c. \(456,080 - 10,000 = \) ____________  
d. \(10,000 + 786,233 = \) ____________

3. The population of Rochester, NY in the 1990 census was 219,782. The 2000 census found that the population decreased by about 10,000. About how many people lived in Rochester in 2000? Explain in pictures, numbers, and words how you found your answer.

| 468,235 |  | 471,235 | 472,235 |

29
Lesson 6 Homework

Name ___________________________________________ Date ________________________

1. Label the place value chart. Use number disks to find the sum or difference. Write the answer in standard form on the line.
   a. 100,000 less than five hundred sixty thousand, three hundred thirteen is ______________.

   

   b. Ten thousand more than 300,000 + 90,000 + 5000 + 40 is ____________________.

   

   c. 448,077 is _________________________ than 347,077.

   

2. Complete the following equations:
   a. 100,000 + 76,960 = ____________  
   b. 13,097 – 1,000 = ____________  
   c. 849,000 – 10,000 = ____________  
   d. 442,210 + 10,000 = ____________  
   e. 172,090 = 171,090 + ____________  
   f. 854,121 = 954,121 – ____________
3. Fill in the empty boxes to complete the patterns.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>145,555</td>
<td>147,555</td>
<td>149,555</td>
</tr>
</tbody>
</table>

a. Explain in pictures, numbers, and words how you found your answer.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>764,321</td>
<td>774,321</td>
<td></td>
<td>804,321</td>
</tr>
</tbody>
</table>

b. Explain in pictures, numbers, and words how you found your answer.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>125,876</td>
<td>225,876</td>
<td>425,876</td>
<td></td>
</tr>
</tbody>
</table>

c. Explain in pictures, numbers, and words how you found your answer.

<p>| | | | | |</p>
<table>
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<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>254,445</td>
<td></td>
<td>224,445</td>
<td>214,445</td>
<td></td>
</tr>
</tbody>
</table>

d. Explain in pictures, numbers, and words how you found your answer.

4. In 2012, Charlie earned an annual salary of $54,098. At the beginning of 2013, Charlie’s annual salary was raised by $10,000. How much money will Charlie earn in 2013? Use pictures, words, or numbers to explain your thinking.
1. Round to the nearest thousand. Use the number line to model your thinking.

   a. \(6,700 \approx \) ________________

   b. \(9,340 \approx \) ________________

   c. \(16,401 \approx \) ________________

   d. \(39,545 \approx \) ________________

   e. \(399,499 \approx \) ________________

   f. \(840,007 \approx \) ________________
2. A pilot wanted to know about how many kilometers he flew on his last 3 flights. From NYC to London he flew 5,572 km. Then, from London to Beijing he flew 8,147 km. Finally, he flew 10,996 km from Beijing back to NYC. Round each number to the nearest thousand, then find the sum of the rounded numbers to estimate about how many kilometers the pilot flew.

3. Mrs. Smith’s class is learning about healthy eating habits. The students learned that the average child should consume about 12,000 calories each week. Kerry consumed 12,748 calories last week. Tyler consumed 11,702 calories last week. Round to the nearest thousand to find who consumed closer to the recommended number of calories? Use pictures, numbers, and words to explain.

4. The cost of tuition at Cornell University is $43,000 per year when rounded to the nearest thousand. What is the greatest possible amount the tuition could be? What is the least possible amount the tuition could be?
Lesson 7 Exit Ticket

NYS COMMON CORE MATHEMATICS CURRICULUM

Lesson 7: Round multi-digit numbers to the thousands place using the vertical number line.

Date: 5/9/13

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Name __________________________________________ Date ______________________

1. Round to the nearest thousand. Use the number line to model your thinking.

```
<p>| | | |</p>
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<tr>
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<td></td>
</tr>
</tbody>
</table>
```

a. 7,621 ≈ __________  
b. 12,502 ≈ __________  
c. 324,087 ≈ __________

2. It takes 39,090 gallons of water to manufacture a new car. Sammy thinks that rounds up to about 40,000 gallons. Susie thinks it is about 39,000 gallons. Who rounded to the nearest thousand, Sammy or Susie? Use pictures numbers and words to explain.
1. Round to the nearest thousand. Use the number line to model your thinking.

   a. 5,900 = _______________

   b. 4,180 = _______________

   c. 32,879 = _______________

   d. 78,600 = _______________

   e. 251,031 = _______________

   f. 699,900 = _______________
2. Steven and his friend were putting together a 5,000 piece puzzle. In one day, they put together 981 of the pieces. About how many pieces did they put together? Round to the nearest thousand. Use what you know about place value to explain your answer.

3. Louise’s family went on vacation to Disney World. Their vacation cost $5,990. Sophia’s family went on vacation to Niagara Falls. Their vacation cost $4,720. Both families budgeted about $5,000 for their vacation. Whose family stayed closer to the budget? Round to the nearest thousand. Use what you know about place value to explain your answer.

4. Marsha’s brother wanted help with the first question on his homework. The question asked the students to round 128,902 to the nearest thousand and then to explain the answer. Marsha’s brother thought that the answer was 128,000. Was his answer correct? How do you know? Use pictures, numbers, and words to explain what you know about place value.
Lesson 8:
Round multi-digit numbers to any place value using the vertical number line.

Name _______________________________ Date ____________________________

Directions: Complete each statement by rounding the number to the given place value. Use the number line to show your work.

1a. 53,000 rounded to the nearest ten thousand is _______________.

1b. 42,708 rounded to the nearest ten thousand is _______________.

1c. 406,823 rounded to the nearest ten thousand is _______________.

2a. 240,000 rounded to the nearest hundred thousand is _______________.

2b. 449,019 rounded to the nearest hundred thousand is _______________.

2c. 964,103 rounded to the nearest hundred thousand is _______________.

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3. 3,875,462 people watched the St. Patrick’s Day Parade in New York City last year. Round this number to the nearest hundred thousand to estimate how many people watched the parade. Use a number line to show your work.

4. A digit is missing in the number below, which was then rounded to the nearest ten thousand. List the possible digits that could go in the thousands place to make this statement correct. Use a number line to show your work.

\[ 13\_644 \approx 130,000 \]

5. Estimate the difference by rounding each number to the given place value.

\[ 712,350 - 342,802 \]

a. Round to the nearest ten thousands.

b. Round to the nearest hundred thousands.
Lesson 8 Exit Ticket

Name ___________________________________________ Date __________________________

1. Round to the nearest ten thousand. Use the number line to model your thinking.

```
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
```

a. 35,124 ≈ ___________

```
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
```

b. 981,657 ≈ ___________

2. Round to the nearest hundred thousand. Use the number line to model your thinking.

```
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
```

a. 89,678 ≈ ___________

```
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
```

b. 999,765 ≈ ___________

3. Estimate the sum by rounding each number to the nearest hundred thousand.

$$257,098 + 548,765 ≈ ___________$$
Name ___________________________  Date ___________________

Directions: Complete each statement by rounding the number to the given place value. Use the number line to show your work.

1a.  67,000 rounded to the nearest ten thousand is _____________.

2a.  867,000 rounded to the nearest hundred thousand is _____________.

1b.  51,988 rounded to the nearest ten thousand is _____________.

2b.  767,074 rounded to the nearest hundred thousand is _____________.

1c.  105,159 rounded to the nearest ten thousand is _____________.

2c.  629,999 rounded to the nearest hundred thousand is _____________.

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3. 491,852 people went to the water park in the month of July. Round this number to the nearest hundred thousand to estimate how many people went to the park. Use a number line to show your work.

4. A digit is missing in the number below, which was then rounded to the nearest hundred thousand. List the possible digits that could go in the ten thousands place to make this statement correct. Use a number line to show your work.

   \[1_\_9,644 \approx 100,000\]

5. Estimate the sum by rounding each number to the given place value.

   \[164,215 + 216,088\]

   a. Round to the nearest ten thousands.

   b. Round to the nearest hundred thousands.
Lesson 9: Use place value understanding to round multi-digit numbers to any place value.

Date: 5/9/13

1. Round to the nearest thousand.

   a. 5,300 = _____________________  
   b. 4,589 = _____________________

   c. 42,099 = _____________________  
   d. 801,504 = _____________________

   e. Explain how you found your answer for Part (d).

2. Round to the nearest ten thousand.

   a. 26,000 = _____________________  
   b. 34,920 = _____________________

   c. 789,091 = _____________________  
   d. 706,286 = _____________________

   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest ten thousand.

3. Round to the nearest hundred thousand.

   a. 840,000 = _____________________  
   b. 850,471 = _____________________

   c. 761,004 = _____________________  
   d. 991,965 = _____________________

   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest hundred thousand.
4. Solve the following problems using pictures, numbers, and words.

a. The 2012 Super Bowl had an attendance of just 68,658 people. If the headline in the newspaper the next day read “About 70,000 People Attend Super Bowl,” how did the newspaper round to estimate the total number of people in attendance?

b. The 2011 Super Bowl had an attendance of 103,219 fans. If the headline in the newspaper the next day read “About 200,000 People Attend Super Bowl,” is the newspaper’s estimate reasonable? Use rounding to explain your answer.

c. According to the problems above, about how many more people attended the Super Bowl in 2011 than in 2012? Round each number to the largest place value before giving the estimated answer.
Lesson 9 Exit Ticket

Name ________________________________ Date __________________

1. Round 765,903 to the given place value:
   - Thousand _______________________
   - Ten thousand ____________________
   - Hundred thousand ________________

2. There are 16,850 Star coffee shops around the world. Round the number of shops to the nearest thousand and ten thousand. Which answer is more accurate? Explain your thinking using pictures, numbers and words.
Lesson 9 Homework

Name ____________________________________________ Date ________________

1. Round to the nearest thousand.
   a. $6,842 \approx \underline{\hspace{2cm}}$
   b. $2,722 \approx \underline{\hspace{2cm}}$
   c. $16,051 \approx \underline{\hspace{2cm}}$
   d. $706,421 \approx \underline{\hspace{2cm}}$
   e. Explain how you found your answer for Part (d).

2. Round to the nearest ten thousand.
   a. $88,999 \approx \underline{\hspace{2cm}}$
   b. $85,001 \approx \underline{\hspace{2cm}}$
   c. $789,091 \approx \underline{\hspace{2cm}}$
   d. $905,154 \approx \underline{\hspace{2cm}}$
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest ten thousand.

3. Round to the nearest hundred thousand.
   a. $89,659 \approx \underline{\hspace{2cm}}$
   b. $751,447 \approx \underline{\hspace{2cm}}$
   c. $617,889 \approx \underline{\hspace{2cm}}$
   d. $817,245 \approx \underline{\hspace{2cm}}$
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest hundred thousand.
4. Solve the following problems using pictures, numbers, and words.

a. At President Obama’s inauguration in 2013, the newspaper headlines stated there were about 800,000 people in attendance. If the newspaper rounded to the nearest hundred thousand, what is the largest number and smallest number of people that could have been there?

b. At President Bush’s inauguration in 2005, the newspaper headlines stated there were about 400,000 people in attendance. If the newspaper rounded to the nearest ten thousand, what is the largest number and smallest number of people that could have been there?

c. At President Lincoln’s inauguration in 1861, the newspaper headlines stated there were about 30,000 people in attendance. If the newspaper rounded to the nearest thousand, what is the largest number and smallest number of people that could have been there?
Name ____________________________ Date __________________

1. Round 543,982 to the nearest

   a. thousand: ________________________
   b. ten thousand: _____________________
   c. hundred thousand: __________________

2. Complete each statement by rounding the number to the given place value.

   a. 2,841 rounded to the nearest hundred is _________________________.
   b. 32,851 rounded to the nearest hundred is _________________________.
   c. 132,891 rounded to the nearest hundred is _________________________.
   d. 6,299 rounded to the nearest thousand is _________________________.
   e. 36,599 rounded to the nearest thousand is _________________________.
   f. 100,699 rounded to the nearest thousand is _________________________.
   g. 40,984 rounded to the nearest ten thousand is _________________________.
   h. 54,984 rounded to the nearest ten thousand is _________________________.
   i. 997,010 rounded to the nearest ten thousand is _________________________.
   j. 360,034 rounded to the nearest hundred thousand is _________________________.
   k. 436,709 rounded to the nearest hundred thousand is _________________________.
   l. 1,852,442 rounded to the nearest hundred thousand is _________________________.

Lesson 10: Use place value understanding to round multi-digit numbers to any place value using real world applications.

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3. Empire Elementary School needs to purchase water bottles for field day. There are 2,142 students. Principal Vadur rounded to the nearest hundred to estimate how many water bottles to order. Will there be enough water bottles for everyone? Explain.

4. Opening day at the New York State Fair in 2012 had an attendance of 46,753. Decide which place value to round 46,753 to if you were writing a newspaper article. Round the number and explain why it is an appropriate unit to round the attendance to.

5. A jet air plane holds about 65,000 gallons of gas. It uses about 7,460 gallons when flying between New York City and Los Angeles. Round each number to the largest place value. Then find out about how many trips the plane can take between cities before running out of fuel?
1. There are 598,500 Apple employees in the United States.
   a. Round the number of employees to the given place value:

      thousand ________________________________

      ten thousand _____________________________

      hundred thousand _________________________

   b. Explain why two of your answers are the same.

2. A company developed a student survey so that students could share their thoughts about school. In 2011, 78,234 students across the United States were administered the survey. In 2012, the company planned to administer the survey to 10 times as many students from 2011. About how many surveys should the company have printed in 2012? Explain how you found your answer.
Name ___________________________________________ Date ________________

1. Round 845,001 to the nearest
   a. thousand: _________________________________________
   b. ten thousand: _______________________________________
   d. hundred thousand: ________________________________

2. Complete each statement by rounding the number to the given place value.
   a. 783 rounded to the nearest hundred is ________________________________.
   b. 12,781 rounded to the nearest hundred is ______________________________.
   c. 951,194 rounded to the nearest hundred is _____________________________.
   d. 1,258 rounded to the nearest thousand is ______________________________.
   e. 65,124 rounded to the nearest thousand is _____________________________.
   f. 99,451 rounded to the nearest thousand is _____________________________.
   g. 60,488 rounded to the nearest ten thousand is ___________________________.
   h. 80,801 rounded to the nearest ten thousand is ___________________________.
   i. 897,100 rounded to the nearest ten thousand is ___________________________.
   j. 880,005 rounded to the nearest hundred thousand is _________________________.
   k. 545,999 rounded to the nearest hundred thousand is _________________________.
   l. 689,114 rounded to the nearest hundred thousand is _________________________.

Lesson 10: Use place value understanding to round multi-digit numbers to any place value using real world applications.
Date: 5/9/13
3. Solve the following problems using pictures, numbers, and words.

   a. In the 2011 New York City Marathon, 29,867 men finished the race and 16,928 women finished the race. Each finisher was given a t-shirt. About how many men’s shirts were given away? About how many women’s shirts were given away? Explain how you found your answers.

   b. In the 2010 New York City Marathon, 42,429 people finished the race and received a medal. Before the race, the medals had to be ordered. If you were the person in charge of ordering the medals and estimated how many to order by rounding, would you have ordered enough medals? Explain your thinking.

   c. In 2010, 28,357 of the finishers were men and 14,072 of the finishers were women. About how many more men finished the race than women? To determine your answer, did you round to the nearest ten thousand or thousand? Explain.
1. Solve the addition problems below using the standard algorithm.

   a. \[ \begin{array}{r}
       6,311 \\
       + \quad 268
     \end{array} \]

   b. \[ \begin{array}{r}
       6,311 \\
       + \quad 1,268
     \end{array} \]

   c. \[ \begin{array}{r}
       6,314 \\
       + \quad 1,268
     \end{array} \]

   d. \[ \begin{array}{r}
       6,314 \\
       + \quad 2,493
     \end{array} \]

   e. \[ \begin{array}{r}
       8,314 \\
       + \quad 2,493
     \end{array} \]

   f. \[ \begin{array}{r}
       1,2378 \\
       + \quad 5,463
     \end{array} \]

   g. \[ \begin{array}{r}
       5,2098 \\
       + \quad 6,048
     \end{array} \]

   h. \[ \begin{array}{r}
       3,4698 \\
       + \quad 7,1840
     \end{array} \]

   i. \[ \begin{array}{r}
       5,44811 \\
       + \quad 3,56445
     \end{array} \]

   j. \[ 527 + 275 + 752 = \]

   k. \[ 38,193 + 6,376 + 241,457 = \]
Directions: Draw a tape diagram to model the following problems. Use numbers and words to explain your work.

2. In September, Liberty Elementary School collected 32,537 cans for a fundraiser. In October, they collected 207,492 cans. How many cans were collected during September and October?

3. A baseball stadium sold some burgers: 2,806 were cheeseburgers and 1,679 burgers didn't have cheese. How many burgers did they sell in all? Use a tape diagram to show your work.

4. On Saturday night, 23,748 people attended the concert. On Sunday, 7,570 more people attended the concert than on Saturday. How many people attended the concert on Sunday?
Lesson 11 Exit Ticket

1. Find the sums of the following:
   
   a. \(23,607 + 2,307\)  
   b. \(3,948 + 278\)  
   c. \(5,983 + 2,097\)

2. The office supply closet had 25,473 large paperclips, 13,648 medium paperclips, and 15,306 small paperclips. How many paperclips were in the closet?
Name ____________________________ Date ____________________

1. Solve the addition problems below using the standard algorithm.

   a. \(7,909 + 1,044\)  
   b. \(27,909 + 9,740\)  
   c. \(827,909 + 42,989\)

   d. \(289,205 + 11,845\)  
   e. \(547,982 + 114,849\)  
   f. \(258,983 + 121,897\)

   g. \(83,906 + 35,808\)  
   h. \(289,999 + 91,849\)  
   i. \(754,900 + 245,100\)
Directions: Draw a tape diagram to model the following problem. Use numbers and words to explain your work.

2. At the zoo, Brooke learned that one of rhinos weighed 4,897 pounds, one of the giraffes weighed 2,667 pounds, one of the African elephants weighed 12,456 pounds, and one of the Komodo dragons weighed 123 pounds.
   a. What is the combined weight of the zoo’s African elephant and the giraffe?
   
   b. What is the combined weight of the zoo’s African elephant and the rhino?
   
   c. What is the combined weight of the zoo’s African elephant, the rhino, and the giraffe?
   
   d. What is the combined weight of the zoo’s Komodo dragon and the rhino?
1. For the bake sale, Connie baked 144 cookies. Esther baked 49 more cookies than Connie.

   a. About how many cookies did Connie and Esther bake? Estimate by rounding each number to the nearest ten before adding.

   b. Exactly how many cookies did Connie and Esther bake?

   c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.
2. Raffle tickets were sold for a school fundraiser to parents, teachers, and students. 563 tickets were sold to teachers. 888 more tickets were sold to students than to teachers. 904 tickets were sold to parents. How many tickets were sold to parents, teachers, and students?
   
a. About how many tickets were sold to parents, teachers, and students? Round each number to the nearest hundred to find your estimate.
   
b. Exactly how many tickets were sold to parents, teachers, and students?
   
c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

3. From 2010 to 2011, the population of Queens increased by 16,075. Brooklyn’s population increased by 11,870 more than the population increase of Queens.
   
a. Estimate the total combined population increase of Queens and Brooklyn from 2010 to 2011. (Round the addends to estimate.)
b. Find the actual total combined population increase of Queens and Brooklyn from 2010 to 2011.

c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

4. During National Recycling Month, Mr. Yardley’s class spent 4 weeks collecting empty cans to recycle.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Cans Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,827</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10,522</td>
</tr>
<tr>
<td>4</td>
<td>20,011</td>
</tr>
</tbody>
</table>

a. During Week 2, the class collected 1,256 more cans than they did during Week 1. Determine the final count of cans collected by Mr. Yardley’s class at the end of the 4 weeks.

b. Assess the reasonableness of your answer in part a by estimating the total number of cans collected.
1. In January, Scott earned $8,999. In February, he earned $2,387 more than he did in January. In March, Scott earned the same amount as he did in February. How much did Scott earn altogether during those three months? Is your answer reasonable? Explain.
1. There were 3,905 more hits on the school’s website in January than February. February had 9,854 hits. How many hits did the school’s website have during both months?
   a. About how many hits did the website have during January and February?
   b. Exactly how many hits did the website have during January and February?
   c. Is your answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.

2. On Sunday, 77,098 fans attended a New York Jets football game. The same day 3,397 more fans attended a New York Giants game than the Jets game. How many football fans watched the Jets and Giants play on Sunday?
   a. What was the actual number of fans who watched the games?
   b. Is your answer reasonable? Round each number to the nearest thousand to find an estimate of how many fans there are.
3. Last year on Ted’s farm, his four cows produced the following liters of milk:

<table>
<thead>
<tr>
<th>Cow</th>
<th>Liters of Milk Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daisy</td>
<td>5,098</td>
</tr>
<tr>
<td>Betsy</td>
<td></td>
</tr>
<tr>
<td>Mary</td>
<td>9,980</td>
</tr>
<tr>
<td>Buttercup</td>
<td>7,087</td>
</tr>
</tbody>
</table>

a. Betsy produced 986 more liters of milk than Buttercup. How many liters of milk did all 4 cows produce?

b. Is your answer reasonable? Explain.
1. Use the standard algorithm to solve the following subtraction problems.

   a. \[ \begin{array}{c}
    7,525 \\
   -3,502 \\
   \hline
    4,023
   \end{array} \]

   b. \[ \begin{array}{c}
    17,525 \\
   -13,502 \\
   \hline
    4,023
   \end{array} \]

   c. \[ \begin{array}{c}
    6,625 \\
   -4,417 \\
   \hline
    2,208
   \end{array} \]

   d. \[ \begin{array}{c}
    4,625 \\
   -4,35 \\
   \hline
    4,180
   \end{array} \]

   e. \[ \begin{array}{c}
    6,500 \\
   -4,70 \\
   \hline
    1,720
   \end{array} \]

   f. \[ \begin{array}{c}
    6,025 \\
   -3,502 \\
   \hline
    2,523
   \end{array} \]

   g. \[ \begin{array}{c}
    23,640 \\
   -14,630 \\
   \hline
    8,970
   \end{array} \]

   h. \[ \begin{array}{c}
    431,925 \\
   -204,815 \\
   \hline
    227,110
   \end{array} \]

   i. \[ \begin{array}{c}
    219,925 \\
   -121,705 \\
   \hline
    98,220
   \end{array} \]

Directions: Draw a tape diagram to represent each problem. Use numbers to solve and write your answer as a statement. Check your answers.

2. What number must be added to 13,875 to result in a sum of 25,884?
3. Artist Michelangelo was born on March 6, 1475. Author Mem Fox was born on March 6, 1946. How many years after Michelangelo was born was Mem born?

4. During the month of March, 68,025 pounds of king crab were caught. If 15,614 pounds were caught in the first week of March, how many pounds were caught in the rest of the month?

5. James bought a used car. After driving exactly 9,050 miles, the odometer read 118,064 miles. What was the odometer reading when James bought the car?
Lesson 13: Use place value understanding to decompose to smaller units once using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.

Date: 5/9/13

1. a. \[8,512 - 2,501\]  
   b. \[18,042 - 4,122\]  
   c. \[8,052 - 1,561\]

2. Draw a tape diagram to represent the following problem. Use numbers to solve and write your answer as a statement.
   a. What number must be added to 1,575 to result in a sum of 8,625?
1. Use the standard algorithm to solve the following subtraction problems.

   a. \[ 2,431 - 341 = \]
   b. \[ 422,431 - 14,321 = \]
   c. \[ 422,431 - 92,420 = \]
   d. \[ 422,431 - 392,420 = \]
   e. \[ 982,430 - 92,300 = \]
   f. \[ 243,089 - 137,079 = \]
   g. \[ 2,431 - 920 = \]
   h. \[ 892,431 - 520,800 = \]

2. What number must be added to 14,056 to result in a sum of 32,713?
Directions: Draw a tape diagram to model each problem. Use numbers to solve and write your answers as a statement. Check your answers.

3. An elementary school collected 1,705 bottles for a recycling program. A high school also collected some bottles. Both schools collected 3,627 bottles combined. How many bottles did the high school collect?

4. A computer shop sold $356,291 worth of computers and accessories. It sold $43,720 worth of accessories. How much did the computer shop sell in computers?

5. The population of a city is 538,381. In that population, 148,170 are children.
   a. How many adults live in the city?
   b. 186,101 of the adults are males. How many adults are female?
1. Use the standard algorithm to solve the following subtraction problems.

\[
\begin{align*}
\text{a. } & \quad 2,460 - 1,370 = 1,090 \\
\text{b. } & \quad 2,460 - 1,470 = 990 \\
\text{c. } & \quad 97,684 - 49,700 = 47,984 \\
\text{d. } & \quad 2,460 - 1,472 = 988 \\
\text{e. } & \quad 124,306 - 31,117 = 93,189 \\
\text{f. } & \quad 97,684 - 4,705 = 92,979 \\
\text{g. } & \quad 124,006 - 121,117 = 2,889 \\
\text{h. } & \quad 97,684 - 47,705 = 49,979 \\
\text{i. } & \quad 124,060 - 31,117 = 92,943
\end{align*}
\]

Directions: Draw a tape diagram to represent each problem. Use numbers to solve and write your answer as a statement. Check your answers.

2. There are 86,400 seconds in one day. If Mr. Liegel is at work for 28,800 seconds a day, how many seconds a day is he away from work?
3. A newspaper company delivered 240,900 newspapers before 6 a.m. on Sunday. There were a total of 525,600 newspapers to deliver. How many more newspapers needed to be delivered on Sunday?

4. A theater holds a total of 2,013 chairs. 197 chairs are in the VIP section. How many chairs are not in the VIP section?

5. Chuck’s mom spent $19,155 on a new car. She had $30,064 in her bank account. How much money does Chuck’s mom have after buying the car?
Use place value understanding to decompose to smaller units up to 3 times using the standard subtraction algorithm, and apply the algorithm to solve word problems using tape diagrams.

Lesson 14 Exit Ticket

Name ____________________________ Date ________________

Directions: Use the standard algorithm to solve the following subtraction problems.

1. \[ 19,350 - 5,761 \]

2. \[ 32,010 - 2,546 \]

Directions: Draw a tape diagram to represent the following problem. Use numbers to solve and write your answer as a statement. Check your answer.

3. A doughnut shop sold 1,232 doughnuts in one day. If they sold 876 doughnuts in the morning, how many doughnuts were sold during the rest of the day?
1. Use the standard algorithm to solve the following subtraction problems.

   a. \[71,989 - 21,492\]
   b. \[371,989 - 96,492\]
   c. \[371,089 - 25,192\]

   d. \[879,989 - 721,492\]
   e. \[879,009 - 788,492\]
   f. \[879,989 - 21,070\]

   g. \[879,000 - 21,989\]
   h. \[279,389 - 191,492\]
   i. \[500,989 - 242,000\]
Directions: Draw a tape diagram to represent each problem. Use numbers to solve and write your answer as a statement.

2. Jason ordered 239,021 pounds of flour to be used in his 25 bakeries. The company delivering the flour showed up with 451,202 pounds. How many extra pounds of flour were delivered?

3. In May, the New York Public Library had 124,061 books checked out. Of those books, 31,117 were mystery books. How many of checked out books were not mystery books?

4. A Class A dump truck can haul 239,000 pounds of dirt. A Class C dump truck can haul 600,200 pounds of dirt. How many more pounds can a Class C truck haul than a Class A truck?
1. Directions: Use the standard subtraction algorithm to solve the problems below.

   a. \[ 101,660 - 91,680 \]
   b. \[ 101,660 - 9,980 \]
   c. \[ 242,561 - 44,702 \]
   d. \[ 242,561 - 74,987 \]
   e. \[ 1,000,000 - 592,000 \]
   f. \[ 1,000,000 - 592,500 \]
   g. \[ 600,658 - 592,569 \]
   h. \[ 600,000 - 592,569 \]
Directions: Use a tape diagram to solve the problems below. Check your answers.

2. David is flying from Hong Kong to Buenos Aires. The total flight distance is 11,472 miles. If the plane has 7,793 miles left to travel, how far has it already traveled?

3. Tank A holds 678,500 gallons of water. Tank B holds 905,867 gallons of water. How much less water does Tank A hold than Tank B?

4. Mark had $25,081 in his bank account on Thursday. On Friday, he added his paycheck to the bank account, and he then had $26,010 in the account. What was the amount of Mark's paycheck?
Name ________________________________  Date ____________________

Directions: Draw a tape diagram to model each problem and solve.

1. 956,204 – 780,169 = ______

2. A construction company was building a stone wall on Main Street. 100,000 stones were delivered to the site. On Monday they used 15,631 stones. How many stones remain for the rest of the week? Write your answer as a statement.
1. Directions: Use the standard subtraction algorithm to solve the problems below.

<table>
<thead>
<tr>
<th>a. 9,656</th>
<th>b. 59,656</th>
<th>c. 759,656</th>
</tr>
</thead>
<tbody>
<tr>
<td>−838</td>
<td>−5,880</td>
<td>−579,989</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d. 294,150</th>
<th>e. 294,150</th>
<th>f. 294,150</th>
</tr>
</thead>
<tbody>
<tr>
<td>−166,370</td>
<td>−239,089</td>
<td>−96,400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>g. 800,500</th>
<th>h. 800,500</th>
<th>i. 800,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>−79,989</td>
<td>−45,500</td>
<td>−276,664</td>
</tr>
</tbody>
</table>
Directions: Use a tape diagram to solve the problems below. Check your answers.

2. A fishing boat was out to sea for 6 months and traveled a total of 8,578 miles. In the first month, the boat traveled 659 miles. How many miles did the fishing boat travel during the remaining 5 months?

3. A national monument had 160,747 visitors during the first week of September. A total of 759,656 people visited the monument in September. How many people visited the monument in September after the first week?

4. Shadow Software Company earned a total of $800,000 selling programs during the year 2012. $125,300 of that amount was used to pay expenses of the company. How much profit did Shadow Software Company make in the year 2012?

5. At the local aquarium, Bubba the Seal ate a 25,634 grams of fish during the week. If, on the first day of the week, he ate 6,987 grams of fish, how many grams of fish did he eat during the remainder of the week?
Name ________________________________ Date __________________

Directions: Estimate first and then solve each problem. Model the problem with a tape diagram. Explain if your answer is reasonable.

1. On Monday, a farm sold 25,196 pounds of potatoes. On Tuesday, they sold 18,023 pounds. On Wednesday, they sold some more potatoes. In all, they sold 62,409 pounds of potatoes in the 3 days.

   a. About how many pounds of potatoes did the farm sell on Wednesday? Estimate by rounding each value to the nearest thousand and then compute.

   b. Find the precise number of pounds of potatoes sold on Wednesday.

   c. Is your precise answer reasonable? Compare your estimate from (a) to your answer from (b). Write a sentence to explain your reasoning.
2. A gas station had two pumps. Pump A dispensed 241,752 gallons. Pump B dispensed 113,916 more gallons than Pump A.
   
a. About how many gallons did both pumps dispense? Estimate by rounding each value to the nearest hundred thousand and then compute.

   b. Exactly how many gallons did both pumps dispense?

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.

3. Martin’s car had 86,456 miles on it. Of that distance, Martin’s wife drove 24,901 miles, and his son drove 7,997 miles. Martin drove the rest.

   a. About how many miles did Martin drive? Round each value to estimate.

   b. Exactly how many miles did Martin drive?

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.
4. A class read 3,452 pages the first week and 4,090 more pages in the second week. How many pages had they read by the end of the second week? Is your answer reasonable? Explain how you know using estimation.

5. A cargo plane weighed 500,000 pounds. After the first load was taken off, the airplane weighed 437,981 pounds. Then 16,478 more pounds were taken off. What was the total number of pounds of cargo removed from the plane? Is your answer reasonable? Explain.
Name ___________________________________________ Date __________________________

Directions: Model each problem with a tape diagram. Estimate and then solve each problem. Explain if your answer is reasonable.

1. Quarterback Brett Favre passed for 71,838 yards between the years 1991 and 2011. His all-time high was 4,413 passing yards in one year. In his second highest year, he threw 4,212 passing yards.

   a. About how many passing yards did he throw in the remaining years? Estimate by rounding each value to the nearest thousand and then compute.

   b. Exactly how many passing yards did he throw in the remaining years?

   c. Assess the reasonableness of your answer in (b). Use your estimate from (a) to explain.
Name ________________________________ Date _________________

Directions: Model each problem with a tape diagram. Estimate and then solve each problem. Explain if your answer is reasonable.

1. Zachary’s final project for a college course took a semester to write and had 95,234 words. Zachary wrote 35,295 words the first month and 19,240 words the second month. How many words did he write during the remaining part of the semester?

a. Round each value to the nearest ten thousand to estimate how many words Zachary wrote during the remaining part of the semester.

b. Find the exact number of words written during the remaining part of the semester.

c. Use your answer from (a) to explain why your answer in (b) is reasonable.
2. During the first quarter of the year, 351,875 people purchased a particular app for their smartphones. During the second quarter of the year, 101,949 fewer people downloaded the app than during the first quarter. How many downloads occurred during the two quarters of the year?
   a. Round each number to the nearest hundred thousand to estimate how many downloads occurred during the first two quarters of the year.
   b. Determine exactly how many downloads occurred during the first two quarters of the year.
   c. Determine if your answer is reasonable. Explain.

3. A local store was having a two-week Back to School sale. They started the sale with 36,390 notebooks. During the first week of the sale, 7,424 notebooks were sold. During the second week of the sale, 8,967 notebooks were sold. How many notebooks were left at the end of the two weeks? Is your answer reasonable? Explain how you know using rounding.
Name ________________________________ Date __________________

Directions: Model each problem using a tape diagram. Solve using numbers and words.

1. Sean’s school raised $32,587. Leslie’s school raised $18,749. How much more money did Sean’s school raise?

2. At a parade, 97,853 people sat in bleachers and 388,547 people stood along the street. How many fewer people were in the bleachers than standing on the street?

3. A pair of hippos weighed 5,201 kg together. The female weighed 2,038 kg. How much more did the male weigh than the female?

4. A copper wire was 240 m long. After 60 m was cut off, it was double the length of a steel wire. How much longer was the copper wire than the steel wire at first?
Name ________________________________  Date __________________

Directions: Estimate, then solve the following problem modeling with a tape diagram.

1. A mixture of 2 chemicals measures 1,034 ml. It contains some of Chemical A and 755 ml of Chemical B. How much less of Chemical A than Chemical B was in the mixture?
1. Gavin has 1,094 toy building blocks. Avery has only 816 toy building blocks. How many more building blocks does Gavin have?

2. Container A and B hold 11,875 L of water altogether. Container B holds 2,391 L more than container A holds. How much water does Container A hold?

3. A piece of yellow yarn was 230 inches long. After 90 inches had been cut from it, the piece of yellow yarn was twice as long as a piece of blue yarn. How much longer than the blue yarn was the yellow yarn at first?
Name __________________________________________ Date ____________________

Directions: Model each problem using a tape diagram. Solve using numbers and words.

1. In one year the factory used 11,650 meter of cotton, 4,950 fewer meters of silk than cotton, and 3,500 fewer meters of wool than silk. How many meters in all were used of the three fabrics?

2. The shop sold 12,789 chocolate and 9,324 cookie dough cones. They sold 1,078 more peanut butter cones than cookie dough cones and 999 more vanilla cones than chocolate cones. What was the total number of ice cream cones sold?

3. In the first week of June, a restaurant sold 10,345 omelets. The second week, they sold 1,096 fewer omelets than the first week. The third week, they sold 2 thousand more than the first week. The fourth week, they sold 2 thousand fewer than the first week. How many omelets did they sell in all in June?
Name __________________________________________ Date ________________

Directions: Draw a tape diagram to represent the problem. Use numbers and words to explain your thinking.

1. Park A covers an area of 4,926 square kilometers. It is 1,845 square kilometers larger than Park B. Park C is 4,006 square kilometers larger than the Park A.

   a. What is the area of all three parks?

   b. Assess the reasonableness of your answer.
Name _____________________________ Date ______________

Directions: Model each problem using a tape diagram. Solve using numbers and words.

1. There were 22,869 children, 49,563 men, and 2,872 more women than men at the fair. How many people were at the fair?

2. Number A is 4,676. Number B is 10,043 greater than A. Number C is 2,610 less than B. What is the total value of numbers A, B, and C?

3. A store sold a total of 21,650 balls. It sold 11,795 baseballs. It sold 4,150 fewer basketballs than baseballs. The rest of the balls sold were footballs. How many footballs did the store sell?
Lesson 19: Create and solve multi-step word problems from given tape diagrams and equations.

Name ____________________________ Date _________________

Directions: Using the diagrams below, create your own word problem and solve for the missing variable.

1. 

![Tape Diagram 1](image)

215,554

2. 

![Tape Diagram 2](image)

215,554

90,457
Draw a tape diagram to model the following equation. Write a word problem and solve for the unknown.

4. \[26,854 = 17,729 + 3,731 + A\]
Lesson 19 Exit Ticket

Name ____________________________ Date ____________________

Directions: Using the diagram below, create your own word problem and solve for the missing variable.

1. 

\[ \begin{array}{c}
\text{15,387} \\
\hline
\text{29,435} \\
\hline
A \\
\end{array} \]

Directions: Using the equation below, draw a tape diagram and create your own word problem. Solve for the missing variable.

2. 

\[ 248,798 = 113,205 + A + 99,937 \]
Name ____________________________ Date __________________

Directions: Using the diagrams below, create your own word problem to solve for the missing variable.

1. At the local botanical gardens, there are _______________ Redwoods and _______________ Cypress trees.

   Redwoods and _______________ Cypress trees.

   There are a total of _______________ Redwood, Cypress, and Dogwood trees.

   How many _______________ ___________________________? 

2. There are 65,302 _______________.

   There are 37,436 fewer _______________.

   How many _______________? 

   65,302

   37,436

   93
3. Use the following tape diagram to create a word problem to solve for the missing variable.

![Tape Diagram](image)

4. Use the equation 27,894 + A + 6,892 = 40,392 to model a tape diagram, create a word problem, and solve.
Name ______________________________ Date ____________________

1. Arrange the following numbers in order, beginning with the smallest.
   504,054  4,450  505,045  44,500
   
   b. Use the words “ten times” to tell how you ordered the two smallest numbers using words, pictures and numbers.

2. Compare using >, <, or =. Place your answer inside the circle.
   a. 1 hundred thousand  10,000
   
   b. 200 thousands 4 hundreds  204,000
   
   c. 7 hundreds + 4 thousands + 27  6 thousands + 4 hundreds
   
   d. 1,000,000  10 hundred thousands
3. Louisiana State University’s Football Stadium has a seating capacity of 92,542.
   
a. According to the 2010 census, the population of San Jose, CA was approximately ten times the amount of people that LSU’s stadium can seat. What was the population of San Jose?
   
b. Write the seating capacity of the LSU stadium in words and in expanded form.
   
c. Draw two separate number lines to round the LSU stadium’s seating capacity to the nearest ten thousand and to the nearest thousand.
   
d. Compare the stadium’s seating rounded to the nearest ten thousand and the seating rounded to the nearest thousand using >, <, or =.
   
e. Which estimate (rounding to the nearest ten thousand or nearest thousand) is more accurate? Use words and numbers to explain.
### Mid-Module Assessment Task Standards Addressed

<table>
<thead>
<tr>
<th>Generalize place value understanding for multi-digit whole numbers.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.NBT.1</strong> 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. <em>For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.</em></td>
</tr>
<tr>
<td><strong>4.NBT.2</strong> 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 &gt;, =, and &lt; symbols to record the results of comparisons.</td>
</tr>
<tr>
<td><strong>4.NBT.3</strong> Use place value understanding to round multi-digit whole numbers to any place.</td>
</tr>
</tbody>
</table>

### Evaluating Student Learning Outcomes

A Progression Toward Mastery chart is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student CAN do now, and what they need to work on next.

### A Progression Toward Mastery

<table>
<thead>
<tr>
<th>Assessment Task Item and Standards Assessed</th>
<th>STEP 1 Little evidence of reasoning without a correct answer.</th>
<th>STEP 2 Evidence of some reasoning without a correct answer.</th>
<th>STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.</th>
<th>STEP 4 Evidence of solid reasoning with a correct answer.</th>
</tr>
</thead>
</table>
| **1** **4.NBT.1** | The student is unable to arrange any numbers and does not provide an explanation. | The student arranged two numbers in order, or arranged the least and greatest numbers correctly with providing some explanation of “ten times.” | The student arranged three or four numbers correctly but was unable to articulate the relationship of the two smallest numbers using the words “ten times.” | The student correctly:
  - Arranged the numbers in the following order: 4,450, 44,500, 504,054, 505,045.
  - Used the words “ten times” to describe the relationship between 4,450 and 44,500. |
## A Progression Toward Mastery

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4.NBT.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The student correctly answered one problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4.NBT.1</td>
<td>4.NBT.2</td>
<td>4.NBT.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The student correctly answered one part, or was able to answer some parts with partial accuracy.</td>
<td>The student correctly answered two of the four parts.</td>
<td>The student correctly answered parts a, b, and c, but was unable to reason in part d.</td>
<td>The student correctly answered all four problems: a. &gt; b. &lt; c. &lt; d. =</td>
<td>The student correctly answered all four problems: a. 925,420 b. 90,000 + 2,000 + 500 + 40 + 2. Ninety-two thousand five hundred forty-two. c. Draws two number lines showing the number rounded to 90,000 and 93,000. d. 90,000 &lt; 93,000 e. Explains rounding to the nearest thousand is most accurate because rounding to a smaller unit gives a more accurate estimate so the difference will be closer to the exact number.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. a. Arrange the following numbers in order, beginning with the smallest.
   
   504,054  4,450  505,045  44,500

   504,054  44,500  505,045  44,500

   

   b. Use the words “ten times” to tell how you ordered the two smallest numbers using words, pictures and numbers.

   44,500 is ten times 4,450 so it comes after 4,450 when going from smallest to greatest.

   

2. Compare using >, <, or =. Place your answer inside the circle.

   a. 1 hundred thousand 10,000

   b. 200 thousands 4 hundreds 200,400

   c. 7 hundreds + 4 thousands + 27 6 thousands + 4 hundreds

   d. 1,000,000 10 hundred thousands
3. Louisiana State University’s Football Stadium has a seating capacity of 92,542.

a. According to the 2010 census, the population of San Jose, CA was approximately ten times
the amount of people that LSU’s stadium can seat. What was the population of San Jose?

```
10M | 4n | Tn | H | T0

9 2 5 4 2
9 2 5 4 2
```
The population of San Jose is 925,420 because that is ten times 92,542.

b. Write the seating capacity of the LSU stadium in words and in expanded form.

```
90,000 + 2,000 + 500 + 40 + 2

Ninety two thousand five hundred forty two.
```

c. Draw two separate number lines to round the LSU stadium’s seating capacity to the nearest
ten thousand and to the nearest thousand.

```
Ten Thousands

100,000

92,542

90,000

Thousands

93,000

92,542

92,000
```

d. Compare the stadium’s seating rounded to the nearest ten thousand and the seating rounded
to the nearest thousand using >, <, or =.

```
90,000 < 93,000
```

e. Which estimate (rounding to the nearest ten thousand or nearest thousand) is more
accurate? Use words and numbers to explain.

Rounding to the nearest thousands is more accurate because the actual number, 92,542, is closer to 93,000 than 90,000.
Rounding to a smaller place value is more accurate because it will be closer to the actual number. That’s why for this problem, rounding to the thousands gave me an estimate closer to the actual number than rounding to the ten thousands.
1. Compare the values of each 7 in the number 771,548. Use pictures, numbers and words to explain.

2. Compare using >, <, or =. Place your answer inside the circle.
   
a. 234 thousands + 7 ten-thousands 241,000

b. 4 hundred thousands - 2 thousands 200,000

c. 1 million 4 hundred thousands + 6 hundred thousands

d. 709 thousands - 1 hundred thousand 708 thousands
3. Norfolk, VA has a population of 242,628 people. Baltimore, MD has 376,865 more people than Norfolk. Charleston, SC has 496,804 less people than Baltimore.

a. What is the total population of all three cities? Draw a tape diagram to model the word problem. Then solve the problem.

b. Round to the nearest hundred thousand to check the reasonableness of your answer for the population of Charleston, SC.

c. Record each city’s population in numbers, in words, and in expanded form.

d. Compare the population of Norfolk and Charlestown using >, <, or =.

e. Eddie lives in Fredericksburg, VA, which has a population of 24,286. He says that Norfolk’s population is about 10 times as large as Fredericksburg’s population. Explain Eddie’s thinking.
End-of-Module Assessment Task Standards Addressed

<table>
<thead>
<tr>
<th>Use the four operations with whole numbers to solve problems.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.OA.3</strong>  Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Generalize place value understanding for multi-digit whole numbers.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.NBT.1</strong>  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. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.</td>
</tr>
<tr>
<td><strong>4.NBT.2</strong>  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 &gt;, =, and &lt; symbols to record the results of comparisons.</td>
</tr>
<tr>
<td><strong>4.NBT.3</strong>  Use place value understanding to round multi-digit whole numbers to any place.</td>
</tr>
<tr>
<td><strong>4.NBT.4</strong>  Fluently add and subtract multi-digit whole numbers using the standard algorithm.</td>
</tr>
</tbody>
</table>

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop on their way to proficiency. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student CAN do now, and what they need to work on next.
A Progression Toward Mastery

<table>
<thead>
<tr>
<th>Assessment Task Item and Standards Addressed</th>
<th>STEP 1 Little evidence of reasoning without a correct answer. (1 Point)</th>
<th>STEP 2 Evidence of some reasoning without a correct answer. (2 Points)</th>
<th>STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)</th>
<th>STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 4.NBT.1</td>
<td>The student is unable to reason about their relationship.</td>
<td>The student can reason about the relationship between two of the 7s, but cannot reason among all three and show a supporting picture or numbers.</td>
<td>The student is able to reason about the relationship of the 7s but their reasoning does not fully support their picture or numbers.</td>
<td>Student correctly reasons the 7 in the hundred thousands place is 10 times the value of the 7 in the ten thousands place. They use a picture or numbers to explain.</td>
</tr>
<tr>
<td>2 4.NBT.2 4.NBT.4</td>
<td>The student correctly answers one of the four parts.</td>
<td>The student correctly answers two of the four parts.</td>
<td>The student correctly answers three of the four parts.</td>
<td>The student correctly answers all four parts:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>a. &gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. &gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. =</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>d. &lt;</td>
</tr>
<tr>
<td>3 4.NBT.1 4.NBT.2 4.NBT.3 4.NBT.4 4.OA.3</td>
<td>The student correctly answers one of the four parts.</td>
<td>The student correctly answers two of the four parts.</td>
<td>The student answers three of the four parts correctly.</td>
<td>The student correctly answers all four parts:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total population of the three cities combined is 984,810.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>a. Baltimore’s population rounded to the nearest hundred thousand is 600,000. If the population of Charleston is 496,804 less than Baltimore, that can be rounded to 500,000. 600,000 - 500,000 = 100,000. Therefore, 122,689 is a reasonable answer for population of Charleston. 122,689 rounded to the</td>
</tr>
</tbody>
</table>
### A Progression Toward Mastery

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>nearest hundred thousand is 100,000.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>Charleston, SC - One hundred twenty-two thousand, six hundred eighty-nine. 100,000 + 20,000 + 2,000 + 600 + 80 + 9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baltimore, MD - Six hundred nineteen thousand four hundred ninety-three. 600,000 + 10,000 + 9,000 + 400 + 90 + 3. Norfolk, VA - Two hundred forty-two thousand six hundred twenty-eight. 200,000 + 40,000 + 2,000 + 600 + 20 + 8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Norfolk, 242,628 &gt; Charleston, 122,689</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>Eddie is correct to think that Norfolk’s population is 10 times that of Fredericksburg’s because Norfolk’s population is about 240,000 while Fredericksburg’s is about 24,000. 240,000 is ten times larger than 24,000.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Compare the values of each 7 in the number 771,548. Use pictures, numbers and words to explain.

The 7 in the hundred thousands place is ten times the value of the 7 in the ten thousands place.

\[ 70,000 \times 10 = 700,000 \]

2. Compare using >, <, or =. Place your answer inside the circle.

a. 234 thousands + 7 ten-thousands  \( \quad \) 241,000

\[
\begin{array}{c}
234,000 \\
+ 70,000 \\
\hline
304,000 \\
\end{array}
\]

b. 4 hundred thousands - 2 thousands  \( \quad \) 200,000

\[
\begin{array}{c}
4,000,000 \\
- 2,000 \\
\hline
3,980,000 \\
\end{array}
\]

c. 1 million  \( = \) 4 hundred thousands + 6 hundred thousands

\[
\begin{array}{c}
1,000,000 \\
+ 600,000 \\
\hline
1,600,000 \\
\end{array}
\]

d. 709 thousands - 1 hundred thousand  \( \quad \) 708 thousands

\[
\begin{array}{c}
709,000 \\
- 100,000 \\
\hline
609,000 \\
\end{array}
\]
3. Norfolk, VA has a population of 242,628 people. Baltimore, MD has 376,865 more people than Norfolk. Charleston, SC has 496,804 less people than Baltimore.
   a. What is the total population of all three cities? Draw a tape diagram to model the word problem. Then solve the problem.

<table>
<thead>
<tr>
<th>Norfolk</th>
<th>242,628</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltimore</td>
<td>376,865</td>
</tr>
<tr>
<td>Charleston</td>
<td>496,804</td>
</tr>
</tbody>
</table>

   \[ \begin{align*}
   \text{Norfolk} + \text{Baltimore} - \text{Charleston} &= \text{total population} \\
   242,628 + 376,865 - 496,804 &= \text{total population} \\
   \hline
   569,493 - 496,804 &= \text{total population} \\
   \hline
   122,689 &= \text{total population}
   \end{align*} \]

   The total population of all three cities is 984,810.

   b. Round to the nearest hundred thousand to check the reasonableness of your answer for the population of Charleston, SC.

   Baltimore rounded to the nearest hundred thousand is 600,000.
   If Charleston is 496,804 less, that can be rounded to 500,000.
   \[ \begin{align*}
   600,000 - 500,000 &= 100,000
   \end{align*} \]

   The population of Charleston as 122,689 is a reasonable answer because 122,689 rounded to the nearest hundred thousand is 100,000.

c. Record each city's population in numbers, in words, and in expanded form.

   - Baltimore: 619,493
     - Six hundred nineteen thousand, four hundred ninety-three
     - 600,000 + 10,000 + 9,000 + 400 + 90 + 3

   - Norfolk: 242,628
     - Two hundred forty-two thousand, six hundred twenty-eight
     - 200,000 + 40,000 + 2,000 + 600 + 20 + 8

   - Charleston: 122,689
     - One hundred twenty-two thousand, six hundred eighty-nine
     - 100,000 + 20,000 + 2,000 + 600 + 80 + 9

d. Compare the population of Norfolk and Charleston using >, <, or =.

   \[ \text{Norfolk} > \text{Charleston} \]

   e. Eddie lives in Fredericksburg, VA, which has a population of 24,286. He says that Norfolk’s population is about 10 times as large as Fredericksburg’s population. Explain Eddie’s thinking.

   Eddie’s thinking is correct because Norfolk’s population is 242,628 which can be rounded to 240,000. Fredericksburg’s population can be rounded to 24,000. 240 thousands is ten times as large as 24 thousands.
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