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GRADE 4 • MODULE 1

Place Value, Rounding, and Algorithms for Addition and Subtraction

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ANSWER KEY
Lesson 1 Homework

Name __________________________ Date _________________

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. \(10 \times 4 \text{ ones} = \frac{40}{\text{ones}} = \frac{4}{\text{tens}}\)  

      \[
      \begin{array}{c|c|c|c|c}
        \text{1000's} & \text{100's} & \text{10's} & \text{1's} \\
        \hline
        \phantom{0} & \phantom{4} & \phantom{4} & \phantom{4} \\
      \end{array}
      \]

      \[
      \begin{array}{c|c|c|c|c}
        \text{1000's} & \text{100's} & \text{10's} & \text{1's} \\
        \hline
        \phantom{4} & \phantom{4} & \phantom{4} & \phantom{4} \\
      \end{array}
      \]

   b. \(10 \times 2 \text{ tens} = \frac{20}{\text{tens}} = \frac{200}{\text{ones}}\)  

      \[
      \begin{array}{c|c|c|c|c}
        \text{1000's} & \text{100's} & \text{10's} & \text{1's} \\
        \hline
        \phantom{2} & \phantom{2} & \phantom{2} & \phantom{2} \\
      \end{array}
      \]

   c. \(5 \text{ hundreds} \times 10 = \frac{50}{\text{hundreds}} = \frac{5000}{\text{ones}}\)  

      \[
      \begin{array}{c|c|c|c|c}
        \text{1000's} & \text{100's} & \text{10's} & \text{1's} \\
        \hline
        \phantom{5} & \phantom{5} & \phantom{5} & \phantom{5} \\
      \end{array}
      \]

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

   a. 10 times as many as 1 hundred is \(10\) hundreds or \(1\) thousand.

   b. 10 times as many as \(6\) hundreds is 60 hundreds or \(6\) thousands.

   c. \(10\) times as many as 8 hundreds is 8 thousands.

   d. \(40\) hundreds is the same as 4 thousands.

Use pictures, numbers, and words to explain how you got your answer for Part (d).

\[
\begin{array}{c|c|c|c|c}
\text{1000's} & \text{100's} & \text{10's} & \text{1's} \\
\hline
\phantom{0} & \phantom{0} & \phantom{0} & \phantom{0} \\
\end{array}
\]

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This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
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.

\[
6 \text{ tens} \times 10 = 60 \text{ tens} = 6 \text{ hundreds}
\]

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.

\[
2 \text{ hundreds} \times 10 = 20 \text{ hundreds} = 2 \text{ thousands} = 2000
\]

5. Fill in the blanks to make the statements true.
   a. 4 times as much as 3 is \( \underline{12} \).
   b. 10 times as much as 9 is \( \underline{90} \).
   c. 700 is 10 times as much as \( \underline{70} \).
   d. 8,000 is \( \underline{10 \text{ times as much}} \) as 800.

6. Tomas’s grandfather is 100 years old. Tomas’s grandfather is 10 times as old. How old is Tomas?

\[
\text{Tomas is 10 yrs old.}
\]
1. As you did during the lesson, label and represent the product or quotient drawing disks on the place value chart.
   a. 10 × 4 thousands = _______ thousands = ______________________________

   b. 4 thousands ÷ 10 = _______ hundreds ÷ 10 = _____________________________

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 × 3 tens</td>
<td>30 tens</td>
<td>300</td>
</tr>
<tr>
<td>5 hundreds × 10</td>
<td>50 hundreds</td>
<td>5,000</td>
</tr>
<tr>
<td>9 ten thousands ÷ 10</td>
<td>90 thousands ÷ 10</td>
<td>9,000</td>
</tr>
<tr>
<td>10 × 7 thousands</td>
<td>70 thousands</td>
<td>70,000</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) x 10</td>
<td>20 tens 10 ones</td>
<td>210</td>
</tr>
<tr>
<td>(5 hundreds 5 tens) × 10</td>
<td>50 hundreds 50 tens</td>
<td>5,500</td>
</tr>
<tr>
<td>(2 thousands 7 tens) ÷ 10</td>
<td>2 hundreds 7 tens</td>
<td>207</td>
</tr>
<tr>
<td>(4 ten thousands 8 hundreds) ÷ 10</td>
<td>4 thousands 8 tens</td>
<td>4,080</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?

\[
950 \times 10 = 9500
\]

5. On Saturday, Emily made 10 times as much as on Monday. How much money did Emily collect on Monday?

\[
95 \div 10 = 9.5
\]
Lesson 3 Homework

Name ___________________________________________ Date _______________________

1. Rewrite the following numbers including commas where appropriate:
   a. 4321 \[4,321\]
   b. 54321 \[54,321\]
   c. 224466 \[224,466\]
   d. 2224466 \[2,224,466\]
   e. 10010011001 \[1,001,001,1001\]

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>10 tens</td>
<td>100</td>
</tr>
<tr>
<td>8 hundreds + 2 hundreds</td>
<td>10 hundreds</td>
<td>1,000</td>
</tr>
<tr>
<td>5 thousands + 7 thousands</td>
<td>12 thousands</td>
<td>12,000</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 = \[3,200\]
   b. 14 ten thousands + 12 thousands = \[152,000\]
   
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
   
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</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. \(10 \times 5 \text{ thousands} = \underline{5\,0\,0\,0\,0}\)

How many thousands are in the answer? 50

<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. \((4 \text{ ten thousands} 4 \text{ thousands}) \times 10 = \underline{40 \text{ ten thousands} 40 \text{ thousands}}\)

How many thousands are in the answer? 40

<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. \((27 \text{ thousands} 3 \text{ hundreds} 5 \text{ ones}) \times 10 = \underline{270 \text{ thousands} 30 \text{ hundreds} 50 \text{ ones}}\)

How many thousands are in your answer? 270

<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<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.

\(\underline{\text{store}}\)

\(\underline{\text{school}}\)

They are equal.
Lesson 4 Homework

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

<table>
<thead>
<tr>
<th>1,000,000's</th>
<th>100,000's</th>
<th>10,000's</th>
<th>1,000's</th>
<th>100's</th>
<th>10's</th>
<th>1's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

a. Write the number in word form.

fifty thousand six hundred seventy nine

b. Write the number in expanded form.

50,000 + 6,000 + 70 + 9

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

<table>
<thead>
<tr>
<th>1,000,000's</th>
<th>100,000's</th>
<th>10,000's</th>
<th>1,000's</th>
<th>100's</th>
<th>10's</th>
<th>1's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

a. Write the number in word form.

five hundred six thousand seven hundred nine

b. Write the number in expanded form.

500,000 + 6,000 + 700 + 9
3. Complete the following chart:

<table>
<thead>
<tr>
<th>Number</th>
<th>Word Form</th>
<th>Expanded Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,370</td>
<td>five thousand, three hundred seventy</td>
<td>5,000 + 300 + 70</td>
</tr>
<tr>
<td>50,372</td>
<td>fifty thousand three hundred seventy two</td>
<td>50,000 + 300 + 70 + 2</td>
</tr>
<tr>
<td>39,701</td>
<td>thirty-nine thousand, seven hundred one</td>
<td>30,000 + 9,000 + 700 + 1</td>
</tr>
<tr>
<td>309,017</td>
<td>three hundred nine thousand seventeen</td>
<td>300,000 + 9,000 + 10 + 7</td>
</tr>
<tr>
<td>1,070,070</td>
<td>one million seventy thousand seventy</td>
<td>1,000,000 + 70,000 + 70</td>
</tr>
</tbody>
</table>

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

\[ \overline{6} \overline{5} \overline{0} \]
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 \(\bigtriangledown\) 90,013
   
   \[
   \begin{array}{ccccccc}
   \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} \\
   9 & 0 & 9 & 0 & 1 & 3 & 9 & 0 & 0 & 1 & 3
   \end{array}
   \]

   b. 210,005 \(\bigtriangledown\) 220,005
   
   \[
   \begin{array}{ccccccc}
   \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} & \text{\$MILLIONS} \\
   7 & 1 & 0 & 0 & 0 & 0 & 5 & 2 & 2 & 0 & 0 & 0 & 5
   \end{array}
   \]

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

   a. 501,107 \(\bigtriangledown\) 89,171

   b. 300,000 + 50,000 + 1,000 + 800 \(\bigtriangledown\) six hundred five thousand, nine hundred eight

   c. 3 hundred thousands 3 thousands 8 hundreds 4 tens \(\bigtriangledown\) 303,840

   d. 5 hundreds 6 ten thousands 2 ones \(\bigtriangledown\) 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>

$$1,450 \quad 1,483 \quad 1,670 \quad 1,776$$

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

$$750 \quad 5,007 \quad 5,070 \quad 7,505 \quad 7,550$$

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

$$46,600 \quad 406,200 \quad 426,000 \quad 640,020$$

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.

Nevada Arizona Montana California Texas Alaska
Lesson 6: Find 1, 10, and 100 thousand more and less than a given number.

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 \(460,313\).

   b. Ten thousand more than 300,000 + 90,000 + 5000 + 40 is \(405,040\).

   c. 448,077 is \(101,000\) more than 347,077.

2. Complete the following equations:

   a. \(100,000 + 76,960 = 176,960\)  
   b. \(13,097 - 1,000 = 12,097\)

   c. \(849,000 - 10,000 = 839,000\)  
   d. \(442,210 + 10,000 = 452,210\)

   e. \(172,090 = 171,090 + 1,000\)  
   f. \(854,121 = 954,121 - 100,000\)
Lesson 6 Homework

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

<table>
<thead>
<tr>
<th>145,555</th>
<th>146,555</th>
<th>147,555</th>
<th>148,555</th>
<th>149,555</th>
<th>150,555</th>
</tr>
</thead>
</table>

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

   Adding by 1000 each time.

<table>
<thead>
<tr>
<th>754,321</th>
<th>764,321</th>
<th>774,321</th>
<th>784,321</th>
<th>794,321</th>
<th>804,321</th>
</tr>
</thead>
</table>

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

   Adding by 10,000 each time.

<table>
<thead>
<tr>
<th>125,876</th>
<th>225,876</th>
<th>325,876</th>
<th>425,876</th>
<th>525,876</th>
<th>625,876</th>
</tr>
</thead>
</table>

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

   Adding by 100,000 each time.

<table>
<thead>
<tr>
<th>264,445</th>
<th>254,445</th>
<th>244,445</th>
<th>234,445</th>
<th>224,445</th>
<th>214,445</th>
</tr>
</thead>
</table>

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

   Subtract by 10,000 each time.

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.

   $54,098 + 10,000 = 64,098$
Lesson 7 Homework

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

   a. \(5,900\approx \underline{6,000}\)

   ![Number line for 5,900]

   b. \(4,180\approx \underline{4,000}\)

   ![Number line for 4,180]

   c. \(32,879\approx \underline{33,000}\)

   ![Number line for 32,879]

   d. \(78,600\approx \underline{79,000}\)

   ![Number line for 78,600]

   e. \(251,031\approx \underline{251,000}\)

   ![Number line for 251,031]

   f. \(699,900\approx \underline{700,000}\)

   ![Number line for 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.

\[ 981 \approx 1,000 \]

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.

Louise: \( 5,990 \approx 6,000 \)  
Sophia: \( 4,720 \approx 5,000 \)

Sophia’s family stayed closer to their budget.

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.

\[ 128,902 \approx 129,000 \]

Marsha’s brother is incorrect.
Lesson 8 Homework

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 _______________.

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

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

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

2b. 767,074 rounded to the nearest hundred 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.

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

\[ 164,215 + 216,088 \]

a. Round to the nearest ten thousands.

\[ 160,000 + 220,000 = 380,000 \]

b. Round to the nearest hundred thousands.

\[ 200,000 + 200,000 = 400,000 \]
Lesson 9 Homework

Name ________________________________ Date __________________________

1. Round to the nearest thousand.
   
   a. 6,842 = 7,000
   
   b. 2,722 = 3,000
   
   c. 16,051 = 16,000
   
   d. 706,421 = 706,000
   
   e. Explain how you found your answer for Part (d).

2. Round to the nearest ten thousand.
   
   a. 88,999 = 90,000
   
   b. 85,001 = 90,000
   
   c. 789,091 = 790,000
   
   d. 905,154 = 910,000
   
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest ten thousand.

   87,347 or anything in range of 85,001 to 94,999

3. Round to the nearest hundred thousand.
   
   a. 89,659 = 100,000
   
   b. 751,447 = 800,000
   
   c. 617,889 = 600,000
   
   d. 817,245 = 800,000
   
   e. Explain why two problems have the same answer. Write another number that has the same answer when rounded to the nearest hundred thousand.

   799,999 or anything in range of 750,000 to 849,999
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?

Largest = 849,999
Smallest = 750,000

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?

Smallest = 395,000
Largest = 404,999

\[
\begin{align*}
\text{Smallest} & = 395,000 \\
\text{Largest} & = 404,999
\end{align*}
\]

\[
\begin{align*}
\text{Largest} & = 410,000 \\
\text{Smallest} & = 390,000
\end{align*}
\]

\[
\begin{align*}
\{ & \quad 310,000 \\
\{ & \quad 305,000 \\
\} & \quad 300,000 \\
\} & \quad 295,000 \\
\} & \quad 290,000
\end{align*}
\]

\[
\begin{align*}
\text{Largest} & = 30,499 \\
\text{Smallest} & = 29,500
\end{align*}
\]

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?

Largest = 30,499
Smallest = 29,500