Unit 1A: Number and problem solving

CPM framework 5Nn2, 5Nn3, 5Nn5, 5Ps2; Teacher’s Resource 1.1, 1.2

1 Starting numbers – a game for two players.

Each player needs a place-value chart (resource 1) and 6 counters.

Players place their six counters on numbers on their place-value chart, one counter in each row. They should not allow their opponent to see their place-value chart.

Players find the total of the numbers they have covered on their place-value chart and record it here.

My total number ______________

Example: Counters placed on 200000, 40000, 2000, 700, 60 and 8 make a total of ______________.

Take turns to say a number on the place-value chart. If your opponent has a counter on that number they give up their counter. Record the numbers in the table.

Players can have one guess at their opponent’s total number after each turn. Record the guesses using the tables on the following page to help you.

The first player to correctly say their opponent’s total number is the winner.

Hint: Record the guesses that you make so that you can eliminate numbers.
2 A number has six digits.  
It is an even number.  
It is a multiple of 5.  
The number rounds to 854,900 to the nearest 100.  
The number is greater than eight hundred and fifty-four thousand, nine hundred and thirty.  
What is the number? ________________

3 Order these numbers.  
Write them in the spaces below.

658 107  74 922  609 999  841 624  742 229  88 043

Circle the value on the place-value chart below of the digits that appear in the shaded boxes.

Find the total of the circled numbers on the place-value chart.

Show your working below.
4 Play this game with a partner, or an adult at home.
Take turns to choose a spinner to spin.
Choose to multiply or divide the number shown on the spinner by 10 or 100.
If the solution is on the grid of numbers, and not already covered, cover it with a counter.
If your opponent can show that you have placed a counter incorrectly, it is removed from the board.
The first player to have four counters in a row is the winner.

<table>
<thead>
<tr>
<th>900</th>
<th>6.5</th>
<th>800</th>
<th>10 100</th>
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</thead>
<tbody>
<tr>
<td>11000</td>
<td>84.2</td>
<td>42</td>
<td>6050</td>
</tr>
<tr>
<td>561.8</td>
<td>9.7</td>
<td>65</td>
<td>1.1</td>
</tr>
<tr>
<td>842000</td>
<td>60.5</td>
<td>97000</td>
<td>4.2</td>
</tr>
</tbody>
</table>

**Hint:** Use the place-value chart below to help you multiply and divide.

<table>
<thead>
<tr>
<th>hundred thousands</th>
<th>thousands</th>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>tenths</th>
</tr>
</thead>
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Remember

Numbers can be rounded to 10, 100 and 1000. Imagine the number on a number line to help you decide which is the nearest. If the number is halfway between two rounding numbers always round up to the greater value.

1 Write some appropriate numbers in each section of the Venn diagrams.

Choose your own labels for the Venn diagram so that you can put numbers in as many sections as possible.
2. There is a fence around a square field. The farmer measured the fence along one side of the field and found it was 1300 m, to the nearest 100 m.

What could be the smallest total perimeter of the field? ____________
What could be the largest total perimeter of the field? ____________
What do you think the total length of the fence must be to the nearest 1000 m?

__________

Explain how you got your answer.

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

3. Rob and Ravi are paid the same each month, except that Rob’s money is rounded to the nearest $1000, and Ravi’s is rounded to the nearest $100. After 6 months who had received more money?

<table>
<thead>
<tr>
<th>Months</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay ($)</td>
<td>2878</td>
<td>1635</td>
<td>3042</td>
<td>2493</td>
<td>1286</td>
<td>2450</td>
</tr>
</tbody>
</table>

**Hint:** Choose a way to record how much each person gets each month. You could organise the information in a table.