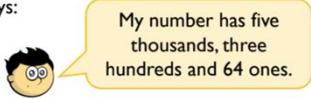
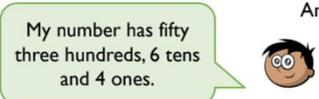
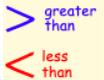


**Power Maths Key Vocabulary**  
**Year 4 – Block B**

Key Vocabulary	Explanation of Terms	Example Question(s)																																								
<p><b>place value</b></p> <p><b>tens</b></p> <p><b>hundreds</b></p> <p><b>thousands</b></p>	<p>A number can have many digits and each digit has a special place and value. Starting from the right the first digit will be at ones place and the second digit at tens place.</p> <table border="1" data-bbox="448 813 916 947"> <thead> <tr> <th>TH</th> <th>H</th> <th>T</th> <th>U</th> </tr> <tr> <td>Thousands</td> <td>Hundreds</td> <td>Tens</td> <td>Units</td> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>In the number 1,456, the digit 1 is in the thousands place. The digit 4 is in the hundreds place. The digit 5 is in the tens place, and the digit 6 is in the ones place.</p>	TH	H	T	U	Thousands	Hundreds	Tens	Units					<p>Jack says:</p> <div data-bbox="1013 629 1324 728">  </div> <p>Amir says:</p> <div data-bbox="997 763 1316 862">  </div> <p>Who has the largest number? Explain.</p> <p>Put one number in each box so that the list of numbers is ordered smallest to largest.</p> <table border="1" data-bbox="1042 1028 1377 1270"> <thead> <tr> <th>1000s</th> <th>100s</th> <th>10s</th> <th>1s</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td></td> <td>3</td> </tr> <tr> <td> </td> <td></td> <td>2</td> <td>7</td> </tr> <tr> <td> </td> <td>2</td> <td>5</td> <td></td> </tr> <tr> <td> </td> <td></td> <td>5</td> <td>9</td> </tr> <tr> <td> </td> <td>3</td> <td>8</td> <td></td> </tr> <tr> <td> </td> <td></td> <td>1</td> <td>5</td> </tr> </tbody> </table>	1000s	100s	10s	1s				3			2	7		2	5				5	9		3	8				1	5
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<p><b>rounding</b></p>	<p>Rounding means to make a number simpler but keeping it close to what it was. The result is less accurate but easier to use in calculations.</p> <p>Example: 73 rounded to nearest 10 is 70 as it is closer to 70 than 80.</p>	<p>What is 89 rounded to the nearest 10? (90)</p> <p>What is 234 rounded to the nearest 10? (230)</p> <p>What is 671 rounded to the nearest 100? (700)</p> <p>Are the statements always, sometimes or never true?</p> <p>Explain your reasons for each statement.</p> <ul style="list-style-type: none"> <li>A number with a five in the tens column rounds up to the nearest hundred.</li> <li>A number with a five in the ones column rounds up to the nearest hundred</li> <li>A number with a five in the hundreds column rounds up to the nearest hundred.</li> </ul>																																								

<p><b>order</b></p> <p><b>ascending</b></p> <p><b>descending</b></p>	<p>To order means the arrangement of things in relation to each other according to a particular sequence or pattern.</p>  <p>Above, the shapes are in order of how many sides they have.</p> <p>Arranging numbers (or other items) in ascending order means to arrange them from smallest to largest. For example, the numbers 12, 5, 7, 10, 1, 160 arranged in ascending order are 1, 5, 7, 10, 12, 160.</p> <p>Arranging numbers (or other items) in descending order means to arrange them from largest to smallest. For example, the numbers 12, 5, 7, 10, 1, 160 arranged in descending order are 160, 12, 10, 7, 5, 1.</p>	 <p>Here are 4 digit cards: Arrange them to make as many 4 digit numbers as you can and order them in ascending order.</p> <p>Order the amounts in ascending order.</p> <p>130 p    £0.32    132 p    £13.20</p> <p>Order the amounts in descending order.</p> <p>257 p    £2.50    2,057 p    £25.07</p> <p>Amir has these digits cards.</p>  <p>He uses them to fill the frame below:</p> <p>£ <input type="text"/> . <input type="text"/> <input type="text"/></p> <p>He makes a total that is more than three pounds but less than six pounds.</p> <p>How many amounts can he make?</p> <p>Order your amounts in ascending order.</p>
<p><b>greater than (&gt;)</b></p> <p><b>less than (&lt;)</b></p>	<p>These symbols can be used to tell us that a number is 'greater than' or 'less than' another number.</p>  <p>When one value is smaller than another we use a "less than" sign (&lt;).</p> <p>Example: 3 &lt; 5</p> <p>When one value is bigger than another we use a "greater than" sign (&gt;).</p> <p>Example: 9 &gt; 6.</p>	<p>Write the amounts as pence, then compare using &lt;, &gt; or =</p> <p>6,209 p    £60.09    £0.54    54 p</p> <p>Write the amounts as pounds, then compare using &lt;, &gt; or =</p> <p>62 p    £6.02    £5,010    5,010 p</p>

		$82 < \square$ $99 < \square$ $76 > \square$ $4 > \square$
--	--	---

(83 or more, 100 or more, 75 or less, 3 or less)

**partition**

Partitioning is used to make solving maths problems involving large numbers easier by separating them into smaller units. By using partitioning, it helps students to understand the values of each digit.

When asked to calculate  $567 + 199$ :

**Partitioning method**

$500 + 100 = 600$

$60 + 90 = 150$

$7 + 9 = 16$

$600 + 150 + 16 = 766$

How can the number 1,227 be partitioned? (1,000, 200, 20 & 7)

How can the number 30,392 be partitioned? (30,000, 300, 90, 2)

Class 4 are calculating  $25 \times 8$  mentally. Can you complete the calculations in each of the methods?

**Method 1**  
 $25 \times 8 = 20 \times 8 + 5 \times 8$   
 $= 160 + \square = \square$

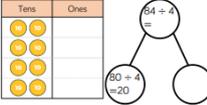
**Method 2**  
 $25 \times 8 = 5 \times 5 \times 8$   
 $= 5 \times \square = \square$

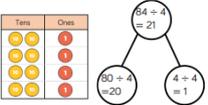
**Method 3**  
 $25 \times 8 = 25 \times 10 - 25 \times 2$   
 $= \square - \square = \square$

**Method 4**  
 $25 \times 8 = 50 \times 8 \div 2$   
 $= \square \div \square = \square$

Can you think of any other ways to mentally calculate  $25 \times 8$ ? Which do you think is the most efficient? How would you calculate  $228 \times 5$  mentally?

Jack is dividing 84 by 4 using place value counters. 

First, he divides the tens. 

Then, he divides the ones. 

Use Jack's method to calculate:  
 $69 \div 3$      $88 \div 4$      $96 \div 3$

**negative**

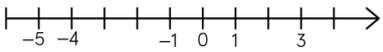
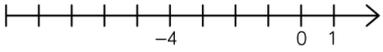
**positive**

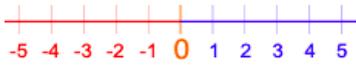
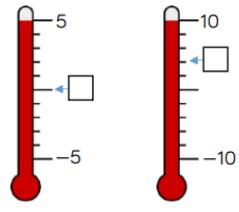
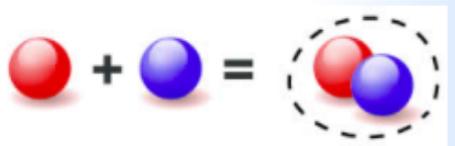
A negative number is a number less than zero.

A positive number is number greater than zero.

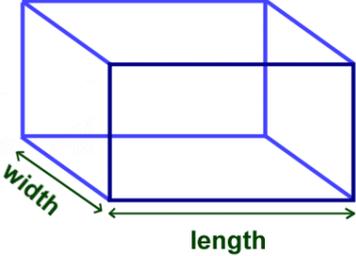
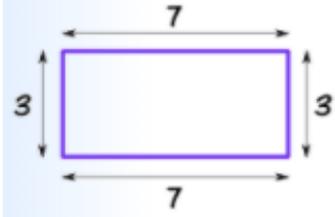
Zero is neither negative nor positive number.

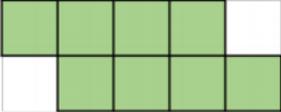
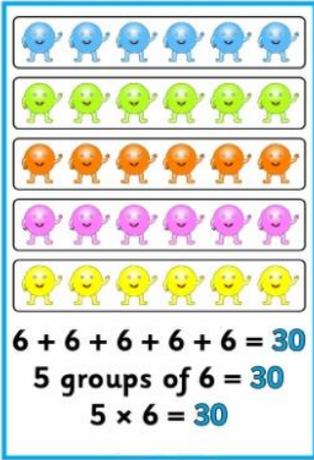
Complete the number lines

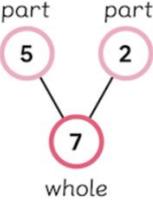



		<p>Fill in the missing temperatures on the thermometers.</p>  <p>Dexter is counting backwards out loud. He says, "Two, one, negative one, negative two, negative three ..." What mistake has Dexter made?</p>
<p><b>add</b></p>	<p>To add is to bring two or more numbers (or things) together to make a combined total.</p> 	<p>Michael has 6 oranges and 89 pears, how much fruit does he have in total? (89 + 6 = 95)</p>  <p>The number being represented is ____</p> <p>Add 3 thousands to the number. What do you have now? Add 3 hundreds to the number. What do you have now? Subtract 3 tens from the number. What do you have now? Add 5 ones to the number. What do you have now?</p> <p>Here are three digit cards.</p>  <p>Alex and Teddy are making 3-digit numbers using each card once.</p> <p>Alex: I have made the greatest possible number.</p> <p>Teddy: I have made the smallest possible number.</p> <p>Work out the total of their two numbers.</p>
<p><b>subtract</b></p>	<p>To take one number away from another.</p> 	<p>There are 100 sweets in a box, Carla eats 11 sweets, how many remain in the box? (100 - 11 = 89)</p> <p>Use a bar model to represent each problem. There are 3,597 boys and girls in a school. 2,182 are boys. How many are girls?</p>

		<p>Car A travels 7,653 miles per year.  Car B travels 5,612 miles per year.  How much further does Car A travel than Car B per year?</p> <p>Use the digit cards to complete the calculation.</p> <p>0 3 4 4 6  7 7 8 9</p> <p> <table style="margin-left: auto; margin-right: auto;"> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc;"></td></tr> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc;"></td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td></tr> <tr><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px;"></td><td style="border: 1px solid black; width: 30px; height: 30px;"></td></tr> </table> </p> <p>The digits in the shaded boxes are odd.</p> <p>Is there more than one answer?</p>												
<p><b>estimate</b></p>	<p>To find a value that is close enough to the right answer, usually without the need of a written calculation.</p> <p>Example: Alex estimated there were 10,000 sunflowers in the field by counting one row then multiplying by the number of rows.</p>	<p>Which of these calculations give an answer of about 100?</p> <p style="text-align: center;">314 - 238  654 - 425  237 - 132  928 - 727</p> <p>(237 - 132)</p> <p>Which of these calculations give an answer of about 900?</p> <p style="text-align: center;">2334 - 1429  4294 - 3213  3061 - 1042  2471 - 1353</p> <p>(2334 - 1429)</p> <p>Match the calculations to a sensible way of estimating an answer.</p>												

		<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">345 + 1,234</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">3,000 + 6,000</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">2,985 + 6,325</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">3,500 + 1,200</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">3,541 + 1,179</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">350 + 1,200</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">2,135 + 6,292</div> <div style="border: 1px solid green; border-radius: 5px; padding: 2px; margin: 2px;">2,000 + 6,000</div> </div> <p>Estimate <math>121 \times 11</math>.  To estimate this in my head I can think of <math>120 \times 10 = 1200</math>.  (My accurate answer is going to be close to 1200.)</p>
<p><b>length</b></p> <p><b>width</b></p>	<p>Length measures how far it is from one end to another, or from one point to another. The length of an object is the greatest of the two or three dimensions of an object.</p> <p>Width is similar to length; the distance from side to side. This is the shorter side while the length is the longer side.</p> 	<p>Tommy thinks that this chocolate bar is 4 cm long. Is he correct?</p>  <p>Which unit would you use to measure the length of a bath? (metres)</p> <p>Which unit of measure would you use to measure to width of your pencil? (millimetres)</p> <p>The length of an equilateral triangle is 4.5m. What would the perimeter of the triangle be? (<math>4.5 \times 3 = 13.5\text{m}</math>)</p>
<p><b>perimeter</b></p>	<p>The perimeter is the distance around a two dimensional (2D) shape. This can be calculated by adding all the sides of a shape together.</p>  <p>The perimeter of this shape is <math>3 + 7 + 3 + 7 = 20</math>.</p>	<p>A square is 2cm long (all sides are the same length). What is the perimeter? (<math>2 + 2 + 2 + 2 = 8\text{cm}</math>)</p> <p>Tick the images where you can find the perimeter.</p>  <p>Explain why you can't find the perimeter of some of the images.</p>

		<p>Here is a shape made from centimetre squares.</p> <p>Find the perimeter of the shape.</p>  <p>Can you use 8 centimetre squares to make different shapes?</p> <p>Find the perimeter of each one.</p>
<p><b>multiply</b></p>	<p>To multiply means to add equal groups. When we multiply, the number of things in the group increases.</p> <p>The basic idea of multiplying is repeated addition:</p> <p>5 multiplied by 3 is the same as 5 + 5 + 5.</p> 	<p>Sally shoots an arrow 48m. Flame shoots her arrow three times as far. How far did Flame's arrow go? (48 x 3 = 144m)</p> <p>How many days in 26 weeks? (7 x 26 = 182)</p> <p>A pencil costs 74p. How much do 3 pencils cost? (74 x 3 = 222 = £2.22)</p> <p>A baseball team has 9 players. In a tournament there are 24 teams. How many players are there in total? (9 x 24 = 216)</p> <p>Annie has multiplied a whole number by 10 Her answer is between 440 and 540 What could her original calculation be? How many possibilities can you find?</p>
<p><b>divide</b></p>	<p>To divide is to separate or be separated into equal parts.</p> <p>Division is the act or process of dividing anything.</p> $8 \div 2 = 4$ <p>8 divided into 2 groups gives a result of 4 per group</p> 	<p>Sara saves her pocket money for 9 weeks, she saves £81. How much pocket money does she get each week? (81 ÷ 9 = 9)</p> <p>A builder needs 7,600 bricks to build a wall. There are 500 bricks in a load. How many loads must the builder buy? (7,600 ÷ 500 = 15.2 = 16 loads)</p>

		<p>Noah buys a pack of 24 cans of cola for £6.00. What is the cost of each can?  <math>(6.00 \div 24 = 0.25 = 25p)</math></p> <p>There are 28 children. They win a school competition for £140. How much do they each get?  <math>(140 \div 28 = 5)</math></p>
<p><b>part whole model</b></p>	<p>A part whole model is a concept illustrating how numbers can be split into parts. Children using this model will see the relationship between the whole number and the component parts, this helps learners make the connections between addition and subtraction.</p> 	<p>Complete the part whole models.</p> 