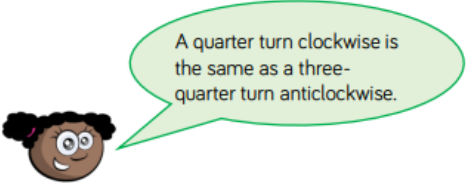
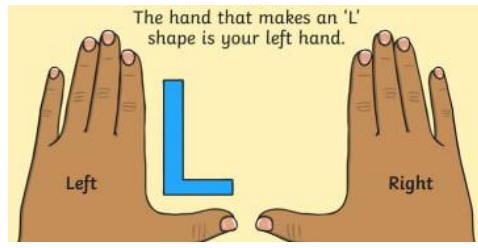


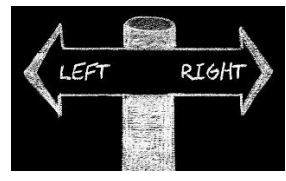
**Power Maths Key Vocabulary**  
**Year 2 – Block C**

Key Vocabulary	Explanation of Terms	Example Question(s)																
<p><b>clockwise</b></p> <p><b>anticlockwise</b></p>	<p>Moving in the direction of hands on a clock is called clockwise.</p> <p>The opposite directions is anticlockwise.</p> <p style="text-align: center;">Clockwise                  Anti-Clockwise</p>	<p>How many different routes can you find to get from start to finish. Use the words 'forwards', 'backwards', 'clockwise', 'anti-clockwise' and 'quarter turn'.</p> <table border="1" data-bbox="1011 837 1414 1133" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td></td> <td></td> <td style="color: red;">Finish</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="color: red;">Start</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Is Whitney correct?</p> <div style="text-align: center;">  <p style="border: 1px solid green; border-radius: 50%; padding: 5px; display: inline-block;">A quarter turn clockwise is the same as a three-quarter turn anticlockwise.</p> </div> <p><b>Convince me.</b></p> <p>(Possible answer: Whitney is correct. A quarter turn clockwise is the same as a three-quarter turn anticlockwise.)</p>				Finish						Start						
			Finish															
	Start																	
<p><b>forwards</b></p>	<p>Forwards means in the direction that one is facing or travelling; towards the front.</p>	<p>Using the words forwards, backwards, left and right, give your partner some instructions to follow when moving around the classroom/house.</p>																
<p><b>backwards</b></p>	<p>Backwards means toward the back or rear.</p>																	
<p><b>left</b></p>	<p>If you are holding a compass and facing north, the direction to the west of you is also to your left. Left is the opposite of right.</p>																	



**right**

If you are holding a compass and facing north, the direction to the east of you is also to your right. Right is the opposite of left.



Complete the stem sentences to describe the movements made.

The has moved 1 square \_\_\_\_\_.

The has moved \_\_\_\_\_ squares \_\_\_\_\_.

The has moved 2 squares up.

The has moved \_\_\_\_\_ squares down.



Record these movements on the grid using arrows.

The moves 1 square right.

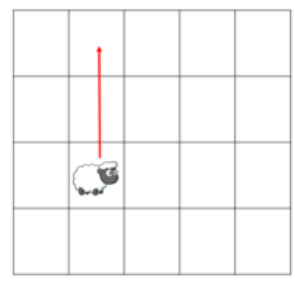
The moves 3 squares forward.

The moves 1 square down.

The moves 1 square up.

Amir

The sheep has moved 2 squares forward.

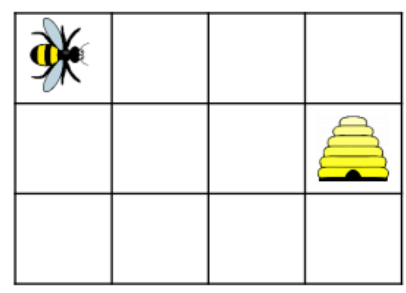


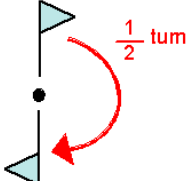
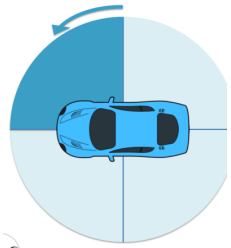


Is Amir correct?  
Explain your reasoning.

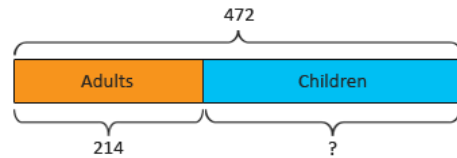
(Amir is incorrect. The sheep has moved 2 squares to the left because of the way it was facing to begin with.)

How many different routes can you write for the bee to get to the hive?

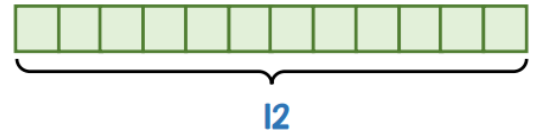
Use the words forwards, backwards, left and right.



<p><b>half turn</b></p>	<p>A half turn results in the object facing the opposite direction (or backwards) to the direction it was originally facing.</p>  <p>The object will have turned 180°.</p>	<p>Always, Sometimes, Never</p> <p>If two objects turn in different directions they will not be facing the same way. (Sometimes. It depends on how far the objects are turned – quarter, half, three quarters or full.)</p> <p>Look at the number shape below:</p>
<p><b>quarter turn</b></p>	<p>If the object is facing upwards then a quarter turn will mean that the object is then facing left or right, depending which direction it turns.</p>  <p>The object will have turned 90°.</p>	 <p>How could the number shape have turned?</p> <p>Describe all possibilities.</p> <p>(No turn Quarter/half/three-quarter or full turn clockwise. Quarter/half/three-quarter or full turn anticlockwise.)</p> <p>Match the turn to the description.</p>  <div style="border: 1px solid gray; border-radius: 10px; padding: 5px; width: fit-content; margin-bottom: 5px;">A full turn.</div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px; width: fit-content; margin-bottom: 5px;">A quarter turn clockwise.</div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px; width: fit-content;">A half turn anticlockwise.</div>
<p><b>bar model</b></p>	<p>A bar model is a pictorial representation of a problem or concept where bars or boxes are used to represent the known and unknown quantities.</p>	<p>Pam has 12 sweets.</p> <ul style="list-style-type: none"> <li>• She gives 3 sweets to her brother.</li> <li>• She gives 4 sweets to her sister.</li> </ul> <p>How many sweets does she have left?</p>



Bar models are most often used to solve number problems with the four operations – addition, subtraction, multiplication and division.

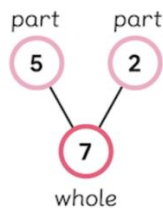


Dan has 6 times as many books as Jack. Dan has 40 more books than Jack. How many books does Dan have?

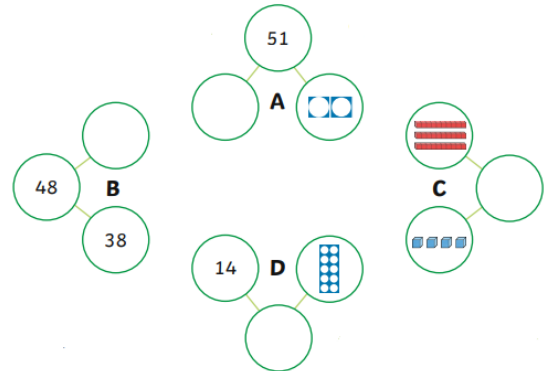


**part whole model**

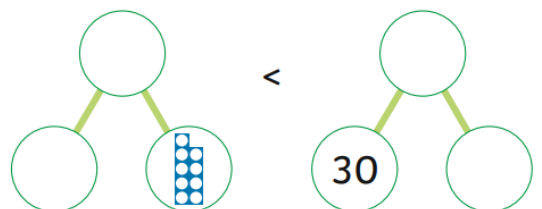
A part whole model is a concept illustrating how numbers can be split into parts. Children using this model will see the relationship between the whole number and the component parts, this helps learners make the connections between addition and subtraction.











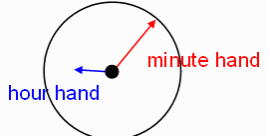







Complete the part-whole models.

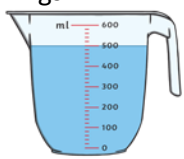

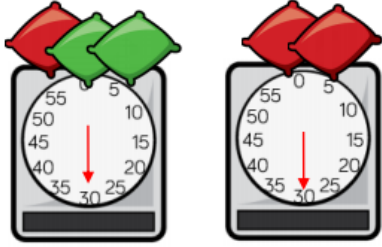

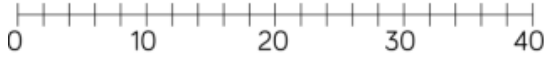






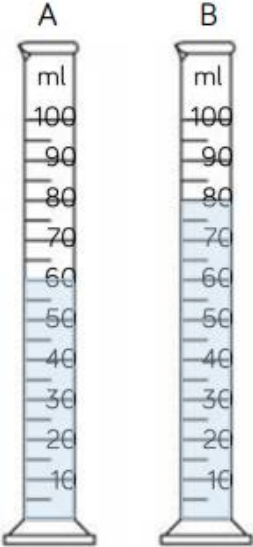

How many ways can you complete the part-whole models to make the calculations correct?



<p><b>o'clock</b></p>	<p>When the minute hand points at 12 it is showing the full hour. This time is called o'clock.</p> 	<ul style="list-style-type: none"> <li>• What do the numbers represent on the clock face?</li> <li>• Which is the hour hand?</li> <li>• Which is the minute hand?</li> <li>• Where will the hour hand be at ____ ?</li> <li>• Where will the minute hand be at ____?</li> <li>• What do you notice about the minute hand at half past?</li> </ul>
<p><b>half past</b></p>	<p>Half past means 30 minutes past an hour. The number on the clock that the hour hand has just gone past tells us which hour we are half an hour past.</p> 	 <p>Who is telling the time correctly?</p> <p> The time is half past 6 Dora</p> <p>The time is half past 3  Amir</p> <p> The time is half past 2 Alex</p>
<p><b>quarter past</b></p>	<p>The word quarter means one-fourth. When we say, "quarter past 6," we mean one-fourth of an hour past 6 o'clock, or 15 minutes past 6.</p> 	<p>Can you spot the mistakes they've made?</p> <p>(Alex is correct. Dora has confused the minute hand with the hour hand. Amir has not noticed that the hour hand has not gone past 3 yet.)</p>
<p><b>quarter to</b></p>	<p>The word quarter means one-fourth. When we say, "quarter to 6," we mean one-fourth of an hour to 6 o'clock, or 15 minutes to 6.</p> 	<p>It is half past 11 so the hour hand should be on the 11</p> <p>Is Alex correct? Explain your reasoning.</p>

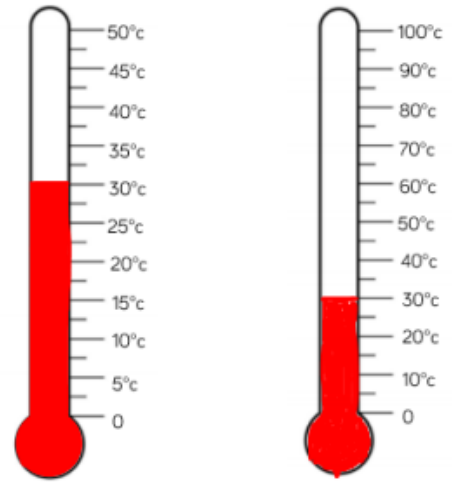
<p><b>minute hand</b></p> <p><b>hour hand</b></p>	<p>The large hand on a clock that points to the minutes. It goes once around the clock every 60 minutes (one hour).</p>  <p>The small hand on a clock that shows the hours. It goes once around the clock every 12 hours (half a day).</p>	<p>(Alex is incorrect. If the time is half past 11 the hour hand should be half way between the 11 and 12.)</p>  <p>Oh no! The minute hand has fallen off the classroom clock!</p> <p>Lunchtime is at 12:00</p> <p>Have the children missed their lunchtime?</p> <p>(Unfortunately, the children have missed their lunch. The hour hand is halfway between 12 and 1 so the time is 12:30.)</p>
<p><b>balance</b></p>	<p>Balance is a state of equilibrium where mass or weight on either side of a measuring device is equal.</p> 	<p>Choose three objects. Use the balance scales to order them from heaviest to lightest.</p>  <p>The _____ is heavier than the _____ but lighter than the _____.</p>  <p>The _____ is lighter than the _____ but heavier than the _____.</p>  <p>Apples weigh more than bananas.</p>  <p>Tommy</p> <p>Two doughnuts weigh the same as two bananas.</p>  <p>Eva</p> <p>Do you agree? Explain why.</p> <p>(3 bananas weigh the same as two apples, so Tommy is correct - an apple must weigh more than a banana. 1 banana weighs the same as 2 doughnuts so Eva is incorrect.)</p> <p>Always, sometimes or never true? The larger the box, the heavier it is. (sometimes)</p>
<p><b>scales</b></p>	<p>A scale is a set of levels or numbers which are used in a particular system</p>	

	<p>of measuring things or are used when comparing things.</p> 	<p>Use scales to record the mass of objects in grams.</p> 
<p><b>mass</b></p> <p><b>gram (g)</b></p> <p><b>kilogram (kg)</b></p>	<p>Mass is a measure of the amount of matter in an object. Mass measures the quantity of matter regardless of both its location in the universe and the gravitational force applied to it. An object's mass is constant in all circumstances; contrast this with its weight, a force that depends on gravity.</p> <p>A gram is a unit of mass in the metric system defined as one thousandth of a kilogram.</p> <p>A kilogram is equal to 1,000g.</p>	 <p>Which is heavier, the red or the green beanbag? Explain why.</p> <p>(The red beanbag weighs more because it weighs the same as two green beanbags.)</p> <p>The brown parcel weighs twice as much as the blue parcel. The green parcel weighs 2 kg more than 30 kg The blue parcel weighs 12 kg less than the green parcel. Draw an arrow to show where each parcel would be on the scale.</p>   <p>(The green parcel weighs 32kg. The blue parcel weighs 20kg. The brown parcel weighs 40kg.)</p>
<p><b>capacity</b></p> <p><b>litre (l)</b></p> <p><b>millilitre (ml)</b></p>	<p>Capacity is the amount something can hold.</p> <p>This is measure in litres (l) and millilitres (ml).</p> 	<ul style="list-style-type: none"> <li>• Which container has the largest/smallest capacity?</li> <li>• How do you know?</li> <li>• Can we order them from largest to smallest?</li> <li>• Which container has the most or least liquid in?</li> </ul>
<p><b>volume</b></p>	<p>Volume is the amount of 3-dimensional space something takes up (also known as the capacity).</p>	<ul style="list-style-type: none"> <li>• How many mugs does it take to fill the bottle? Is this more or less than the pot?</li> <li>• Can we find the difference?</li> <li>• Does the tallest container always hold the most?</li> </ul> <p>Whitney had two full bottles of juice. She poured some juice into two glasses.</p>

		 <p>Which glass has the most juice in? Which has the least juice in? Explain how you know.  (Glass A has the least juice in and Glass B has more juice in. Bottle A has more juice left over which means it has less juice poured out.)</p> <p>A  holds 5 ml of liquid.</p> <p>How many  of liquid are there in each container?</p>  <p>(Container A holds 12 teaspoons. Container B holds 16 teaspoons.)</p>
<p><b>temperature</b></p> <p><b>thermometer</b></p> <p><b>degrees Celsius</b></p>	<p>The temperature is how hot or cold a thing is.</p>  <p>Temperature is measured using a thermometer, usually in degrees Celsius (°C).</p>	<p>Mollie took the temperature at 12pm and again at 5pm. There was a difference of 7°C  What could the temperatures be?</p>



What is the same and what is different about the thermometers/temperatures?



(Both thermometers are showing 30°C. The scale on the first thermometer counts up in 5°C. The scale on the second thermometer counts up in 10°C. The second thermometer will be able to record higher temperatures.)