



# Year 8 – Term 4 – Kemnal Keys

Unit 8: Fractions, Decimals, Percentages and Ratios	Unit 9: Probability	Unit 10: Number Skills
<ul style="list-style-type: none"> <li>To increase an amount by a percentage, work out the percentage of the amount, then add it to the original amount.</li> <li>To decrease an amount by a percentage, work out the percentage of the amount, then subtract it from the original amount.</li> </ul>	<ul style="list-style-type: none"> <li>Probability = <math>\frac{\text{Number of Successful Outcomes}}{\text{Total Number of Outcomes}}</math></li> <li>If the probability of an event happening is P, then the probability of an event not happening is <math>1 - P</math>.</li> <li>Events are mutually exclusive when they cannot happen at the same time.</li> <li>Events are exhaustive if they include all possible outcomes.</li> </ul>	<ul style="list-style-type: none"> <li><math>2^4 = 2 \times 2 \times 2 \times 2</math>.</li> <li><math>2^4</math> is '2 to the power of 4'.</li> <li>The small number is called the index or power and tells you how many 2s to multiply together.</li> <li>The power key on your calculator may look like <math>y^x</math> or <math>x^y</math>.</li> </ul>
<ul style="list-style-type: none"> <li>To decrease an amount by a percentage, you can subtract the percentage from 100%, then work out the multiplier.</li> <li>To increase an amount by a percentage, you can add the percentage to 100%, then work out the multiplier.</li> </ul>	<ul style="list-style-type: none"> <li>Predicted outcomes = Probability <math>\times</math> Number of trials.</li> <li>Estimated Probability = <math>\frac{\text{Frequency of Event}}{\text{Total Frequency}}</math></li> <li>This estimated probability is also called the experimental probability.</li> <li>A sample space diagram shows all the possible outcomes. You can use it to find a theoretical probability.</li> </ul>	<ul style="list-style-type: none"> <li>Prime factors are factors that are prime numbers. The factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, and 36. The prime factors are 2 and 3.</li> </ul>
<ul style="list-style-type: none"> <li>Sometimes you want to find the original amount after a percentage increase or decrease. You can use the unitary method.</li> </ul>	<ul style="list-style-type: none"> <li>Curly brackets { } show a set of values.</li> <li><math>\in</math> means 'is an element of'.</li> <li>An element is a 'member' of a set.</li> <li><math>\xi</math> means the universal set – all the elements being considered.</li> </ul>	<ul style="list-style-type: none"> <li>All positive integers can be written as a product of prime factors.</li> <li>This is called prime factor decomposition.</li> <li>The product is often written in index form (numbers with powers).</li> </ul>
<ul style="list-style-type: none"> <li>You can compare proportions using percentages.</li> </ul>	<ul style="list-style-type: none"> <li><math>A \cap B</math> means A intersection B. This is all the elements that are in A and in B.</li> <li><math>A \cup B</math> means A union B. This is all the elements that are in A or B or both.</li> <li><math>A'</math> means the elements not in A.</li> </ul>	<ul style="list-style-type: none"> <li>You can use prime factors decomposition to find the highest common factor (HCF) or lowest common multiple (LCM) of two or more numbers.</li> </ul>