

Topic: Growth and Decay

Topic/Skill	Definition/Tips	Example
1. Exponential Growth	<p>When we multiply a number repeatedly by the same number ($\neq 1$), resulting in the number increasing by the same proportion each time.</p> <p>The original amount can grow very quickly in exponential growth.</p>	<p>1, 2, 4, 8, 16, 32, 64, 128 ... is an example of exponential growth, because the numbers are being multiplied by 2 each time.</p>
2. Exponential Decay	<p>When we multiply a number repeatedly by the same number ($0 < x < 1$), resulting in the number decreasing by the same proportion each time.</p> <p>The original amount can decrease very quickly in exponential decay.</p>	<p>1000, 200, 40, 8 ... is an example of exponential decay, because the numbers are being multiplied by $\frac{1}{5}$ each time.</p>
3. Compound Interest	<p>Interest paid on the original amount and the accumulated interest.</p>	<p>A bank pays 5% compound interest a year. Bob invests £3000. How much will he have after 7 years.</p> $3000 \times 1.05^7 = \text{£}4221.30$
4. Exponential Graph	<p>The equation is of the form $y = a^x$, where a is a number called the base.</p> <p>If $a > 1$ the graph increases. If $0 < a < 1$, the graph decreases.</p> <p>The graph has an asymptote which is the x-axis.</p> <p>The y-intercept of the graph $y = a^x$ is (0, 1)s</p>	