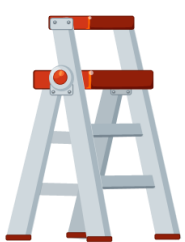
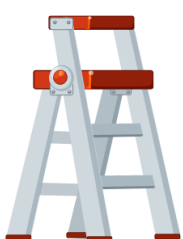





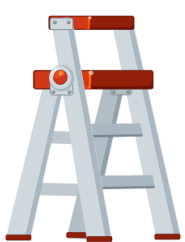
Percentage	I can ...	Prove it!
	<p>H2.1 I can use recurrence formulae</p> <p>H3.2 I can find the nth term for sequences with ratios that are surds</p>	<p>The second term of a geometric sequence is 4 and the 4th term is 8. Find the values of a) the common ratio b) first term and c) the 10th term. Hint:</p> $\begin{matrix} 1 & 2 & 3 & 4 \\ ?, & 4, & ?, & 8 \dots \\ & \downarrow & & \downarrow \\ & ar & & ar^3 \end{matrix}$
	<p>H1.3 I calculate with fractional indices</p>	<p>Calculate the following, leave as a fraction where appropriate:</p> <p>a. $(\frac{1}{5})^{-2}$ b. $(\frac{3}{2})^{-4}$ c. $64^{1/3}$ d. $16^{1/4}$ e. $1^{1/2}$ f. $9^{-1/2}$ g. $125^{-1/3}$</p>
	<p>C1.3 I can solve area problems with surds</p> <p>H1.2 I can rationalise denominators</p>	<p>Which rectangle has a larger area?</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $2\sqrt{3}$ $\sqrt{7}$ </div> <div style="text-align: center;"> $\sqrt{10}$ $1 + \sqrt{2}$ </div> </div>
	<p>C1.2 I can simplify surds</p>	<p><u>Multiplying and dividing</u></p> <p>1. $\sqrt{2} \times \sqrt{3}$ 3. $\sqrt{12} \div \sqrt{3}$ 2. $\sqrt{5} \times \sqrt{2}$ 4. $\sqrt{30} \div \sqrt{3}$</p> <p><u>Taking a number out</u></p> <p>1. $\sqrt{18}$ 3. $\sqrt{8}$ 5. $\sqrt{12}$ 2. $\sqrt{24}$ 4. $\sqrt{200}$ 6. $\sqrt{75}$</p> <p><u>Combining simplification</u></p> <p>1. $2\sqrt{2} \times 2\sqrt{7}$ 4. $12\sqrt{40} \div 3\sqrt{8}$ 2. $2\sqrt{5} \times 3\sqrt{2}$ 5. $14\sqrt{6} \div 2\sqrt{2}$ 3. $2\sqrt{5} \times 3\sqrt{3}$ 6. $4\sqrt{21} \div 2\sqrt{3}$</p>
	<p>H1.1 I can change recurring decimals into fractions</p>	<p>1. Change the following recurring decimals to fractions Hint: Find 100x each time</p> <p>a. $0.\dot{1}\dot{6}$ b. $0.\dot{4}\dot{1}$</p> <p>2. Change the following recurring decimals to fractions Hint: You may need to find 1000x or more!</p> <p>a. $0.\dot{1}2\dot{3}$ b. $0.\dot{3}25\dot{6}$ c. $0.\dot{3}4\dot{3}$</p> <p>5. Change the following recurring decimals to fractions Hint: You will need to work out two multiples of x</p> <p>a. $0.\dot{1}\dot{3}$ b. $0.33\dot{5}$</p>



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	<p>H3.1 I can find the nth term of a quadratic sequence</p>	<p>Work out the nth terms of these sequences:</p> <p>a. 2, 5, 10, 17, 26</p> <p>b. 2, 8, 18, 32, 50</p> <p>c. 0, 3, 8, 15, 24</p> <p>What is the nth term of the sequence below?</p>
	<p>C3.3 I can find the nth term of a geometric sequence</p> <p>C3.4 I can explain whether a term is in a given sequence</p>	<p>Find the nth term of the sequence below:</p> <p>3, 6, 12, 24</p> <p>Explain whether 100 will appear in this sequence.</p>
	<p>C2.3 I can calculate depreciation</p> <p>C2.4 I can solve problems involving growth and decay</p>	<p>Miss Boothman bought a new car over the holidays. The depreciation rate of the car is 20% each year she has it. If she bought the car for £50,000, how much will the car be worth in 5 years' time?</p> <p>A bouncy ball is dropped from the top of the Shard, which is 306 m tall. After each bounce it reaches a height that is 10% less than its previous height. What is the height of the ball after 14 bounces?</p>
	<p>C2.2 I can calculate compound interest</p>	<p>Mr Holmes has £450 to put in a savings account, if he is going to leave the money in the bank for 5 years calculate how much interest he would receive from the following banks:</p> <p>Natwest: 1% compound interest</p> <p>Barclays: 1.2% simple interest</p>



Percentage	I can ...	Prove it!															
	<p>C1.6 I can calculate using numbers in standard form</p>	<p>Complete the following questions:</p> <ol style="list-style-type: none"> $(3 \times 10^4) \times (2 \times 10^8)$ $(4 \times 10^5) \times (8 \times 10^{-3})$ $(7 \times 10^{-3}) \times (3 \times 10^{-2})$ ★ $(6 \times 10^3)^2$ <p>Complete the following questions:</p> <ol style="list-style-type: none"> $(8 \times 10^9) \div (2 \times 10^3)$ $(3.9 \times 10^5) \div (1.3 \times 10^8)$ $(2.2 \times 10^6) \div (4.4 \times 10^2)$ $1 \div (2 \times 10^8)$ 															
	<p>C1.5 I can express numbers in standard form</p>	<p><u>A</u>: Write the following numbers in standard form</p> <ol style="list-style-type: none"> 0.0064 3403000 50000 0.00873 0.4 89 <p><u>B</u>: Change the following numbers so that they are written in standard form <i>Hint: Start by changing from the question into a normal number then change this into standard form. Think carefully - is there a quicker way of doing this?</i></p> <ol style="list-style-type: none"> 23×10^3 0.01×10^{-4} 123×10^3 33.3×10^{-8} 0.009×10^{10} * 7.89×100^3 															
	<p>C1.4 I can apply laws of indices</p>	<ol style="list-style-type: none"> Simplify the following <table border="0" style="width: 100%;"> <tr> <td>a. $b^{12} \times b^{16}$</td> <td>b. $d^{18} \div d^3$</td> </tr> <tr> <td>c. $(k^6)^4$</td> <td></td> </tr> <tr> <td>d. $6h^{11} \times 8h^{17}$</td> <td>e. $36b^8 \div 4b^3$</td> </tr> <tr> <td>f. $(2a)^2$</td> <td></td> </tr> <tr> <td>g. $8f^5 \div 56f^3$</td> <td>h. $2c^5 \times 4c^7$</td> </tr> <tr> <td>i. $(2n^2)^3$</td> <td></td> </tr> </table> Calculate the following: <table border="0" style="width: 100%;"> <tr> <td>a. 3^{-1}</td> <td>b. 5^{-3}</td> <td>c. 8^{-2}</td> </tr> </table> 	a. $b^{12} \times b^{16}$	b. $d^{18} \div d^3$	c. $(k^6)^4$		d. $6h^{11} \times 8h^{17}$	e. $36b^8 \div 4b^3$	f. $(2a)^2$		g. $8f^5 \div 56f^3$	h. $2c^5 \times 4c^7$	i. $(2n^2)^3$		a. 3^{-1}	b. 5^{-3}	c. 8^{-2}
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Percentage	I can ...	Prove it!										
	<p>C3.1 I can generate terms of sequence given the nth term rule</p> <p>C3.2 I can find the nth term of a linear sequence</p>	<p>1. Find the nth term of the following sequences.</p> <p>2. Find the 50th term in the sequence</p> <p>a) 2, 4, 6, 8, 10</p> <p>b) 7, 14, 21, 28</p> <p>c) -2, -1, 0, 1, 2</p> <p>d) 4, 7, 10, 13</p> <p>e) 4, 9, 14, 19</p>										
	<p>C2.1 I can use decimal multipliers to increase and decrease by a percentage</p>	<p>Match the decimal multiplier with the statement</p> <table> <tr> <td>"Increase by 20%"</td> <td>x1.05</td> </tr> <tr> <td>"Decrease by 2%"</td> <td>x1.02</td> </tr> <tr> <td>"Increase by 5%"</td> <td>x0.98</td> </tr> <tr> <td>"Decrease by 12%"</td> <td>x1.2</td> </tr> <tr> <td>"Increase by 2%"</td> <td>x0.88</td> </tr> </table>	"Increase by 20%"	x1.05	"Decrease by 2%"	x1.02	"Increase by 5%"	x0.98	"Decrease by 12%"	x1.2	"Increase by 2%"	x0.88
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	<p>C1.1 I can calculate with powers and roots</p>	<p>Identify the square numbers from the list below:</p> <p>45, 100, 1, 80, 64, 10, 8, 4</p> <p>Calculate:</p> <p>$8^2 =$</p> <p>$5^2 + 2^3 =$</p> <p>$\sqrt{49} - \sqrt{100} =$</p>										



Key Words:

- Rational
- Irrational
- Surd
- Indices
- Compound interest
- Depreciation
- Standard Form
- Recurring
- Geometric
- Arithmetic
- Linear
- Nth term

