

Year 7 – Maths – Autumn 1

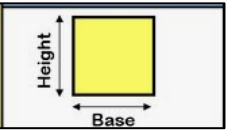
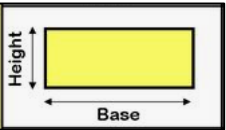
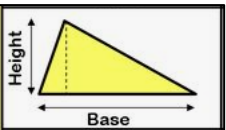
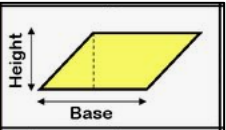
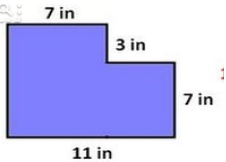
Unit 1 - Place value		
No.	Question	Answer
1.1	What is place value?	The value of where the digit is in the number
1.2	How do you write one?	1
1.3	How do you write ten?	10
1.4	How do you write one hundred?	100
1.5	How do you write one thousand?	1000
1.6	How do you write ten thousand?	10,000
1.7	How do you write one hundred thousand?	100,000
1.8	How do you write one million?	1,000,000
1.9	What does > mean?	Greater than e.g. $3 > 2$
1.10	What does < mean?	Smaller than e.g. $2 < 3$
1.11	What does <i>round</i> mean?	Change a number to the nearest one, ten or hundred in estimation

Unit 2-3 – addition and subtraction		
No.	Question	Answer
2.1	What does sum mean?	To add
2.2	What does commutative mean?	The order of the calculation does not matter e.g. $a + b = b + a$
2.3	What does difference mean?	The result of a subtraction
2.4	What is the perimeter?	The distance all the way around a shape
2.5	What is the result of an even + even?	Even
2.6	What is the result of an even + odd?	Odd
2.7	What is the result of an odd + odd?	Even

Unit 4 - decimals		
No.	Question	Answer
4.1	How do you write one tenth?	0.1
4.2	How do you write one hundredth?	0.01
4.3	How do you write one thousandth?	0.001
4.4	How do you write one ten thousandth?	0.0001
4.5	How do you write one hundred thousandth?	0.00001
4.6	How do you write one millionth?	0.000001





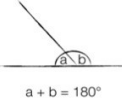
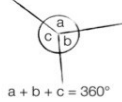
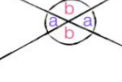

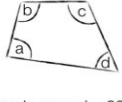
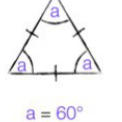
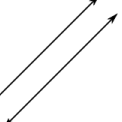
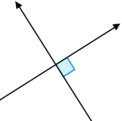
Unit 5 - multiplication		
No.	Question	Answer
5.1	What is a multiple?	A number in the times table
5.2	What is the result of even x even?	Even
5.3	What is the result of odd x even?	Odd
5.4	What is the result of even x odd?	Odd
5.5	What is the result of odd x odd?	Even











Unit 7 - division		
No.	Question	Answer
6.1	What is a factor?	A number that divides into another number without any remainder
6.2	What is the mean?	A form of average
6.3	How do you calculate the mean?	Add up all the numbers and divide by how many there are
6.4	What is a factor bug?	List all the factors in their factor pairs starting from 1 and ...
6.5	What is the HCF?	The highest common factor (the largest whole number that is a factor of both numbers)
6.6	What is the LCM?	The lowest common multiple (the smallest number that is a multiple of both numbers)
6.7	What is the rule for multiples of 3?	The sum of digits is also a multiple of 3 e.g. 453 5+4+3 = 12
6.8	What is the rule for multiples of 5?	All multiples of 5 end in either a 5 or a zero
6.9	What is the rule for multiples of 4?	The last 2 digits are a multiple of 4 e.g. 3432 32 is a multiple of 4 therefore 3432 is also a multiple of 4
6.11	What is the rule for multiples of 2?	All multiples of 2 end in 0, 2, 4, 6 or 8
6.12	What is the rule for multiples of 9?	The sum of digits is also a multiple of 9 e.g. 459 5+4+9 = 18
6.13	Is 0 a factor?	No – you cannot divide any number by zero

Unit 6 - area		
No.	Question	Answer
6.1	How do you find the area of a square? 	$base \times height$
6.2	How do you find the area of a rectangle? 	$base \times height$
6.3	How do you find the area of a triangle? 	$\frac{base \times perpendicular\ height}{2}$
6.4	How do you find the area of a parallelogram? 	$base \times perpendicular\ height$
6.5	How do you find the area of a compound shape? 	Split into rectangles or triangles and add the areas

Year 7 – Maths – Spring 1



Unit 8 - measuring		
No.	Question	Answer
8.1	Distance	Measured in kilometres, metres, centimetres and millimetres
8.2	Mass	Measured in kilograms, grams and milligrams
8.3	Volume	Measured in litres and millilitres
8.4	1cm	10mm
8.5	1m	100cm
8.6	1km	1000m
8.7	1g	10mg
8.8	1kg	1000g
8.9	1l	1000ml
8.10	$\text{km} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{m} \begin{matrix} \xrightarrow{\times 100} \\ \xleftarrow{\div 100} \end{matrix} \text{cm} \begin{matrix} \xrightarrow{\times 10} \\ \xleftarrow{\div 10} \end{matrix} \text{mm}$	
8.11	$\text{Kg} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{g} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{mg}$	
8.12	$\text{l} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{ml}$	

Unit 9 – angles			
No.	Question	Answer	Example
9.1	What is an angle less than 90°?	Acute	
9.2	What is an angle between 90° and 180°?	Obtuse	
9.3	What is an angle greater than 180°?	Reflex	
9.4	What is a right angle?	90°	
9.5	Adjacent angles on a straight line sum to...	180°	 $a + b = 180^\circ$
9.6	Angles around a point sum to...	360°	 $a + b + c = 360^\circ$
9.7	Vertically opposite angles are...	Equal	
9.8	Interior angles in a triangle...	sum to 180°	 $a + b + c = 180^\circ$
9.9	Interior angles in a quadrilateral...	sum to 360°	 $a + b + c + d = 360^\circ$
9.10	All angles in an equilateral triangle...	are 60°	 $a = 60^\circ$
9.11	What does parallel mean?	2 lines at an equal distance apart that will never intersect	
9.12	What does perpendicular mean?	2 lines that meet at a 90° angle	

Unit 10/11 – triangles and quadrilaterals			
No.	Question	Answer	Example
10.1	What are the properties of an equilateral triangle?	All angles are the same size and all sides are the same length.	
10.2	What are the properties of a scalene triangle?	All angles are different sizes and all sides are different lengths.	
10.3	What are the properties of a right-angled triangle?	Contains one angle of 90°	
10.4	What are the properties of an isosceles triangle?	Has 2 sides of equal length and 2 angles of equal size	
10.5	What are the properties of a square?	<ol style="list-style-type: none"> All of its sides are the same length. All of its angles are equal (90°) It has 2 pairs of parallel sides 	
10.6	What are the properties of a rectangle?	<ol style="list-style-type: none"> Opposite sides are the same length All of its angles are equal (90°) It has 2 pairs of parallel sides 	
10.7	What are the properties of a rhombus?	<ol style="list-style-type: none"> All sides are the same length None of its angles are 90° It has 2 pairs of parallel sides 	
10.8	What are the properties of a parallelogram?	<ol style="list-style-type: none"> Opposite sides are the same length None of its angles are 90° It has 2 pairs of parallel sides 	
10.9	What are the properties of a kite?	<ol style="list-style-type: none"> Adjacent sides are the same length 1 pair of opposite angles are equal It has 0 pairs of parallel lines 	
10.10	What are the properties of a trapezium?	<ol style="list-style-type: none"> It has 1 pairs of parallel lines In the special case of an isosceles trapezium it has 1 pair of opposite sides of equal length 	

FDP			
No.	Percentage	Fraction	Decimal
13.1	25%	$\frac{1}{4}$	0.25
13.2	50%	$\frac{1}{2}$	0.5
13.3	75%	$\frac{3}{4}$	0.75
13.4	12.5%	$\frac{1}{8}$	0.125
13.5	20%	$\frac{1}{5}$	0.2
13.6	33. $\dot{3}$	$\frac{1}{3}$	0. $\dot{3}$
13.7	66. $\dot{6}$	$\frac{2}{3}$	0. $\dot{6}$
13.8	10%	$\frac{1}{10}$	0.1
13.9	20%	$\frac{2}{10} = \left(\frac{1}{5}\right)$	0.2
13.10	30%	$\frac{3}{10}$	0.3
13.11	40%	$\frac{4}{10} = \left(\frac{2}{5}\right)$	0.4
13.12	50%	$\frac{5}{10}$	0.5
13.13	60%	$\frac{6}{10} = \left(\frac{3}{5}\right)$	0.6
13.14	70%	$\frac{7}{10}$	0.7
13.15	80%	$\frac{8}{10} = \left(\frac{4}{5}\right)$	0.8
13.16	90%	$\frac{9}{10}$	0.9
13.17	100%	1 whole	1

Unit 13 - fractions			
No.	Question	Answer	Example
13.18	What is the numerator?	The top part of a fraction	$\frac{2}{3}$ Numerator Vinculum Denominator
13.19	What is the denominator?	The bottom part of a fraction	
13.20	What is the vinculum?	The division line in a fraction	
13.21	How do you find an equivalent fraction?	x/÷ numerator AND denominator by the same number	$\frac{5}{7} = \frac{10}{14} = \frac{30}{42}$ (5 to 10 x2, 7 to 14 x2, 10 to 30 x3, 14 to 42 x3)
13.22	How do you simplify a fraction?	÷ the numerator and the denominator by their HCF	$\frac{36}{48} = \frac{3}{4}$ (÷12)
13.23	How do you convert mixed to improper?	Draw a bar model!	
13.34	How do you convert improper to mixed?	Draw a bar model!	
13.25	How do you compare and order fractions?	1. Make the denominators the same OR 2.. Convert to decimals	
13.26	How do you convert fractions to decimals?	1. Find an equivalent fraction with a denominator of 10 or 100 OR 2. Use bus stop division	$\frac{3}{5} = \frac{6}{10} = 0.6$ (x2)

Unit 14 – fractions of an amount			
No.	Question	Answer	Example
14.1	How do you find a fraction of an amount?	÷ by denominator x by numerator	$\frac{3}{5}$ of 20  $20 \div 5 = 4$ $4 \times 3 = 12$
14.2	How do you find the whole, given the fractional part?	÷ by numerator x by denominator	$\frac{2}{7}$ of a number is 6. What is the number?  $6 \div 2 = 3$ $3 \times 7 = 21$

Unit 15 – multiply and divide fractions			
No.	Question	Answer	Example
15.1	How do you multiply fractions?	1. Multiply the numerators 2. Multiply the denominators	$\frac{5}{6} \times \frac{3}{4} = \frac{5 \times 3}{6 \times 4} = \frac{15}{24}$
15.2	How do you divide fractions?	1. Find equivalent fractions with LCM as denominator 2. Divide numerators	$\frac{5}{6} \div \frac{1}{4}$ $= \frac{10}{12} \div \frac{3}{12}$ $= \frac{10}{3}$
15.3	How do you add fractions?	1. Find equivalent fractions with LCM as denominator 2. Add	$\frac{5}{6} + \frac{1}{4}$ $= \frac{10}{12} + \frac{3}{12}$ $= \frac{13}{12}$
15.4	How do you subtract fractions?	1. Find equivalent fractions with LCM as denominator 2. Subtract	$\frac{5}{6} - \frac{1}{4}$ $= \frac{10}{12} - \frac{3}{12}$ $= \frac{7}{12}$


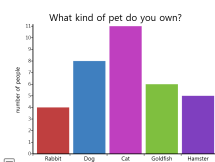

Year 7 – Maths – Summer 1

Unit 16 - BIDMAS		
No.	Question	Answer
16.1	What does BIDMAS mean?	The order in which we do operations
16.2	What does B represent?	Brackets
16.3	What does I represent?	Indices
16.4	What does D represent?	Division
16.5	What does M represent?	Multiplication
16.6	What does A represent?	Addition
16.7	What does S represent?	Subtraction
16.8	What does index mean? (plural indices)	How many times to use the number in a multiplication
16.9	What is 3^2 ?	$3 \times 3 = 9$
16.10	What is 3^3 ?	$3 \times 3 \times 3 = 27$
16.11	What is 3^4 ?	$3 \times 3 \times 3 \times 3 = 81$
16.12	What is p^2 ?	$p \times p$
16.13	What is t^3 ?	$t \times t \times t$

Unit 17 – introduction to algebra			
No.	Question	Answer	Example
17.1	What is a sequence?	A list of numbers following a pattern	3, 7, 11, 15...
17.2	What is the common difference?	The difference between any two consecutive terms in a linear sequence	3, 7, 11, 15... The common difference is 4
17.1	What does $7y$ mean?	$7 \times y$	
17.2	What does ab mean?	$a \times b$	
17.3	What does $3uv$ mean?	$3 \times u \times v$	
17.4	What does $\frac{x}{4}$ mean?	$x \div 4$	
17.5	What is a term?	The separate parts of an expression	7, a, 2a, a^2
17.6	What is an unknown?	An unknown number represented by a letter	a, b, x, y
17.7	What are like terms?	Like terms have "same letter, same index"	3p, 9p, -5p $4x^2$, $12x^2$, $-x^2$
17.8	What is an expression?	A mixture of numbers and letters (no equals sign)	$7a + b - 3c$
17.9	What is an equation?	Two things are equal to one another (equal sign and two 'sides')	$7a + 1 = 8$
17.10	What is a coefficient?	The number in front of the variable	$3x$ (3 is the coefficient of x)
17.11	What does substitute mean?	Replace the letters with the numbers	$a = 3, b = 5, c = 2$ So... $a + b + c$ is... $3 + 5 + 2 = 10$
17.12	What does expand mean?	Multiply the coefficient outside the brackets with each term inside the brackets	$4(3 + x) = 12 + 4x$
17.13	What does factorise mean?	Find the common factor of all the terms and divide so that it is outside the bracket	$12 + 4x = 4(3 + x)$

Year 7 – Maths – Summer 2

Unit 18 – pie charts

No.	Question	Answer	Example																
18.1	What does qualitative mean?	Data that describes something	Hair colour																
18.2	What does quantitative mean?	Data that can be measured or counted	Number of dogs in the park																
18.3	What is discrete data?	Data that can only take set values	Shoe size Number of pets you have																
18.4	What is continuous data?	Data that can take any value (can be decimal)	Height Weight																
18.5	What is primary data?	Data that is collected first hand	Taking a survey																
18.6	What is secondary data?	Data that is collected by someone else	The internet																
18.7	What is a sample?	A smaller group taken from the total population you are testing	In year 8 there are 200 students, I took a sample of 40 to give my survey.																
18.8	What is a tally chart?	A way of collecting data	<table border="1" style="font-size: small; border-collapse: collapse;"> <thead> <tr> <th>Colour</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>III</td> <td>3</td> </tr> <tr> <td>Blue</td> <td>II</td> <td>2</td> </tr> <tr> <td>Green</td> <td>IIII</td> <td>4</td> </tr> </tbody> </table>	Colour	Tally	Frequency	Red	III	3	Blue	II	2	Green	IIII	4				
Colour	Tally	Frequency																	
Red	III	3																	
Blue	II	2																	
Green	IIII	4																	
18.9	What are three things that tally charts should include?	<ul style="list-style-type: none"> The specific category Tally Frequency 																	
18.10	What is a two way table?	Used to represent two sets of data in one table	<table border="1" style="font-size: small; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Girls</th> <th>Boys</th> <th>Total</th> </tr> </thead> <tbody> <tr> <th>Yr 7</th> <td>4</td> <td>3</td> <td>7</td> </tr> <tr> <th>Yr 8</th> <td>6</td> <td>2</td> <td>8</td> </tr> <tr> <th>Total</th> <td>10</td> <td>5</td> <td>15</td> </tr> </tbody> </table>		Girls	Boys	Total	Yr 7	4	3	7	Yr 8	6	2	8	Total	10	5	15
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18.11	What are three things that two way tables must include?	<ul style="list-style-type: none"> One data set along the top row One data set along the left column 2 total headings 																	
18.12	What is a pictogram?	A chart that uses pictures to represent data																	
18.13	What three things must a pictogram include?	<ul style="list-style-type: none"> A heading column A sensible picture A key 																	
18.14	What is a bar chart?	A way of representing data where the height of each bar represents the frequency																	
18.15	What four things must a bar chart have?	<ul style="list-style-type: none"> An x-axis representing frequency A y-axis representing the groups The bars must be the same width The axis must go up in equal increments 																	
18.16	What is a composite bar chart?	A type of bar chart which can represent multiple pieces of data by splitting the bars into sections																	
18.17	What is a pie chart?	A way of representing data in a circle out of 360°																	
18.18	How do you calculate each angle in a pie chart?	Divide by the total frequency and multiply by 360																	

Unit 19 - %s

No.	Percentage	Fraction	Decimal
19.1	25%	$\frac{1}{4}$	0.25
19.2	50%	$\frac{1}{2}$	0.5
19.3	75%	$\frac{3}{4}$	0.75
19.4	12.5%	$\frac{1}{8}$	0.125
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19.6	33. $\dot{3}$	$\frac{1}{3}$	0. $\dot{3}$
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19.15	80%	$\frac{8}{10} = \left(\frac{4}{5}\right)$	0.8
19.16	90%	$\frac{9}{10}$	0.9
19.17	100%	1 whole	1

Unit 19 - %s (cont.)

No.	Question	Answer	Example
19.18	How do you find 1% of an amount?	Divide by 100	1% of 70. $70 \div 100 = 0.7$
19.19	How do you find 10% of an amount?	Divide by 10	10% of 70. $70 \div 10 = 7$
19.20	How do you find 50% of an amount?	Divide by 2	50% of 70. $70 \div 2 = 35$
19.21	How do you find 25% of an amount?	Divide by 4	25% of 70. $70 \div 4 = 17.5$
19.22	How do you express a quantity as a percentage of another?	<ol style="list-style-type: none"> Represent the quantities as a fraction Convert the fraction to decimal 	I score 7 out of 25 on a test $\frac{7}{25} = \frac{28}{100} = 28\%$
19.23	How do you compare and order FDP?	Convert them all to be written in the same representation.	20% or $\frac{2}{5}$? $20\% = \frac{2}{10} = \frac{1}{5}$ $\frac{2}{5} > 20\%$
19.24	How do you increase by a %?	<ol style="list-style-type: none"> Find the percentage Add it on 	Increase £50 by 20% $20\% = \text{£}10$ $\text{£}50 + \text{£}10 = \text{£}60$
19.25	How do you decrease by a %?	<ol style="list-style-type: none"> Find the percentage Take it away 	Decrease £50 by 20% $20\% = \text{£}10$ $\text{£}50 - \text{£}10 = \text{£}40$