Content Design – Structure, Scope & Sequence of Mathematics Content Addressed Within Numbers Up! Volcanic Panic

Age	Level	Division
7-8	9-10	**Division facts 2x, 5x, 10x** Recognises division as repeated subtraction Recognises division as grouping Recognises division as sharing equally Recognises numbers that are divisible by 2, 5 and 10 Begins to recognise the language of division – *share, equal shares, divide by, how many fives make 20? divisible by…* Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of even 10 multiples to 100 Solves everyday problems involving money and measurement
8-9	11-12	**Division facts 2x, 3x, 4x, 5x, 10x** Recognises division as repeated subtraction Recognises division as grouping Recognises division as sharing equally Interprets *in every* situations as division calculations – *24 cakes, 6 cakes in every box, how many boxes?* Recognises numbers that are divisible by 2, 3, 4, 5 and 10 Recognises the language of division – *share, equal shares, divide by, how many fives make 20? divisible by…, multiples* Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of even 10 multiples to 100 Solves everyday problems involving money and measurement
9	13-14	**Division facts 2x, 3x, 4x, 5x, 10x** Recognises numbers that are divisible by 2, 3, 4, 5 and 10 Recognises the language of division – *share, equal shares, divide by, divide into, how many fives make 20? divisible by…, multiples* Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of even 10 multiples to 100 Recognises and responds to symbols used to stand for unknown numbers in number sentences Begins to recognise that division is the inverse of multiplication Solves everyday problems involving money and measurement

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Age	Level	Division
9-10	15-16	**Division facts 2x, 3x, 4x, 5x, 6x, 10x** Recognises numbers that are divisible by 2, 3, 4, 5, 6 and 10 Recognises the language of division – *share, equal shares, divide by, divide into, how many fives make 20? divisible by…, multiples, remainder* Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of 10 multiples to 100 Understands that quarters are obtained by halving twice Recognises that any number divided by itself is 1 and any number divided by 1 remains the same Recognises that numbers cannot be divided by zero Recognises and responds to symbols used to stand for unknown numbers in number sentences Recognises that division is the inverse of multiplication Recognises that division is non-commutative (is not the same when done in reverse) Gives a whole number remainder when one number is divided by another Uses reasoning to determine whether to round a division answer up or down depending on the context of the answer required Solves everyday problems involving money and measurement
10-11	17-18	**Division facts 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x, 10x** Recognises numbers that are divisible by 2, 3, 4, 5, 6, 7, 8, 9 and 10 Recognises the language of division – *share, equal shares, divide by, divide into, how many fives make 20? divisible by…, multiples, remainder, factor, quotient* Recognises whether or not given numbers are factors of another number Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of 10 multiples to 100 Understands that quarters are obtained by halving twice Recognises that any number divided by itself is 1 and any number divided by 1 remains the same Recognises that numbers cannot be divided by zero Recognises and responds to symbols used to stand for unknown numbers in number sentences Recognises that division is the inverse of multiplication Recognises that division is non-commutative (is not the same when done in reverse) Begins to recognise that the quotient remains the same if both dividend and divisor are divided by the same number e.g. 60 ÷ 12 is the same as 30 ÷ 6 and 15 ÷ 3

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Age	Level	Division
		Gives a whole number remainder when one number is divided by another Uses reasoning to determine whether to round a division answer up or down depending on the context of the answer required Performs mixed calculations using the agreed order of operations Can determine which pair of numbers are the dividend and divisor for a given quotient Solves everyday problems involving money and measurement Calculates using mixed measurement units – e.g. metres and centimetres, litres and millilitres
11	19-20	**Division facts 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x, 10x** Uses known division facts to derive facts for decimal numbers (1 decimal place) Performs a series of divisions (division chains) including calculations using decimal numbers (1 decimal place) Recognises numbers that are divisible by 2, 3, 4, 5, 6, 7, 8, 9 and 10 Understands halving – knows *half of* even numbers up to 20 and of 10 multiples to 100 and derived 1 000 multiples and decimal tenths Understands finding related quarters by halving again Derives other related halves and quarters Know square roots of square numbers up to 10x10 Derives related square roots, including square roots of decimal numbers Recognises a symbol as representing an unknown number in a division equation Recognises whether division number statements are true or false Identifies complementary multiplication and division pairs Identifies a given number as the quotient of a pair of other numbers Divides 4- and 5-digit 1 000 multiples by single digit numbers Uses a process of repeated equivalent division to simplify more complex division calculations Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Uses reasoning to determine whether to round a division answer up or down depending on the context of the answer required Solves everyday problems involving money and measurement

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Age	Level	Division
12-13	21-23	**Division facts 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x, 10x** Uses known division facts to derive facts for decimal numbers (2 decimal places) Performs a series of divisions (division chains) including calculations using decimal numbers (1 decimal place) Recognises numbers that are divisible by 2, 3, 4, 5, 6, 7, 8, 9 and 10 Understands halving – knows *half of* even numbers up to 20 and of 10 multiples to 100 and derived 1 000 multiples and decimal tenths Understands finding related quarters by halving again Derives other related halves and quarters Know square roots of square numbers up to 10x10 Derives related square roots, including square roots of decimal numbers Recognises a symbol as representing an unknown number in a division equation Recognises whether division number statements are true or false Identifies complementary multiplication and division pairs Identifies a given number as the quotient of a pair of other numbers Divides 4- and 5-digit 1 000 multiples by single digit numbers Uses a process of repeated equivalent division to simplify more complex division calculations Recognises that division by a decimal fraction results in a quotient larger than the dividend Uses estimation skills to determine the approximate range of the answer to a division sum Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Uses reasoning to determine whether to round a division answer up or down depending on the context of the answer required Solves everyday problems involving money and measurement
13-15	24-26	**All previous multiplication facts** Uses known division facts to derive facts for decimal numbers (2 decimal places) Derives facts for division of positive and negative integers Performs a series of divisions (division chains) Recognises numbers that are divisible by 2, 3, 4, 5, 6, 7, 8, 9 and 10 Interprets real life situations as division and identifies the mathematical processes needed to solve a given problem Understands halving – knows *half of* even numbers up to 20 and of 10 multiples to 100 and derived 1 000 multiples and decimal tenths Derives other related halves and quarters Know square roots of square numbers up to 12x12 Derives related square roots, including square roots of decimal numbers Derives related cube roots, including cube roots of decimal numbers

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Age	Level	Division
		Recognises a symbol as representing an unknown number in a division equation Recognises whether division number statements are true or false Identifies complementary multiplication and division pairs Identifies a given number as the quotient of a pair of other numbers Uses a process of repeated equivalent division to simplify more complex division calculations Understands and uses relationships between different operators in division operations e.g. division by 10 produces a quotient twice as large as division by 20 and division by 0.2 produces a quotient 10 times larger again Uses estimation skills to determine the approximate range of the answer to a division sum Recognises that division by a decimal fraction results in a quotient larger than the dividend Uses reasoning to determine whether to round a division answer up or down depending on the context of the answer required Solves everyday problems involving money and measurement