

Number 1
Multiple and integer by a decimal
Divide any decimal by a integer
Multiply and divide negative numbers
Round to significant figures
Order decimals
MINI REVIEW
Order fractions/percentages/decimals
Find fraction amounts
Add and subtract mixed fractions
Multiply and divide mixed fractions
OPEN BOOK ASSESSMENT

DEFINITION A fraction where the numerator is of an equal or larger magnitude than the denominator.	CHARACTERISTICS - Denominator closer to, or an equal distance from, 0 compared to the numerator - Positive improper fractions are greater than or equal to 1	DEFINITION A number made up of an integer and fractional part.	CHARACTERISTICS - Equivalent to an improper fraction - Is the result of adding the integer and fraction parts - Negative signs apply to both the integer and fractional parts
EXAMPLES $\frac{1}{1}$ 1 $\frac{16}{8}$ $\frac{101}{52}$ $\frac{5}{3}$ $\frac{8}{4}$ $\frac{12}{2}$ $\frac{20}{11}$ $\frac{2}{1}$	NON-EXAMPLES $\frac{8}{26}$ $\frac{2}{3}$ $\frac{7}{9}$ $\frac{9}{14}$ $\frac{3}{14}$ $1\frac{1}{2}$ $15\frac{5}{6}$ $3\frac{2}{3}$ $10\frac{6}{7}$ $5\frac{2}{5}$ $6\frac{11}{12}$	EXAMPLES $1\frac{1}{2}$ $15\frac{5}{6}$ $3\frac{2}{3}$ $10\frac{6}{7}$ $5\frac{2}{5}$ $6\frac{11}{12}$	NON-EXAMPLES $\frac{8}{4}$ $\frac{2}{1}$ $\frac{7}{5}$ $\frac{3}{2}$ $\frac{1}{1}$ 1 $\frac{8}{26}$ $\frac{2}{3}$ $\frac{7}{9}$ $\frac{9}{14}$ $\frac{3}{14}$

Indices and standard form

To know square/cube numbers

To know square roots and cube roots

Convert standard form to an ordinary number and back again

To know the first 3 rules of indices

To know the first 5 rules of indices

OPEN BOOK ASSESSMENT

DEFINITION Standard form is written in the form $a \times 10^n$, where a is a number bigger than or equal to 1 and less than 10. n can be any positive or negative whole number.	VOCABULARY • Indices • Power • Place value • Tenth • Hundredth	DEFINITION The multiple created when a positive integer is multiplied by the same positive integer	CHARACTERISTICS • The process of creating a square number is called “squaring” and is shown using an exponent of 2 ($\square^2$)
EXAMPLES 3.6×10^5 1.6638×10^3 4.3×10^{-9} 5×10^{-2}	NON-EXAMPLES 0.043×10^{-7} 520×10^3 0.0074	EXAMPLES $4 (= 2^2)$ $9 (= 3^2)$ $100 (= 10^2)$ $484 (= 22^2)$ $1 (= 1^2)$ $10\,000 (= 100^2)$	NON-EXAMPLES $2 (\neq 1^2)$ 10 1000 5 -4 $\frac{1}{4}$

Percentages
Find any percentage amount
Increase by a percentage amount
Decrease by a percentage amount
Using a multiplier with percentages
To know what prime numbers are
To understand prime factor decomposition
To find the Highest Common Factor
To find the Lowest Common Multiple
MINI REVIEW

DEFINITION The largest whole number (integer) which is a factor of two or more given whole numbers (positive integers).	CHARACTERISTICS • Will be less than or equal to the smallest of the given numbers • Often abbreviated to HCF • All of the given numbers will appear in the times table of the HCF
EXAMPLES $HCF(8, 12) = 4$ $HCF(30, 15) = 15$ $HCF(4, 6, 10) = 2$	NON-EXAMPLES $HCF(1, 2) \neq 2$ $HCF(4, 8) \neq 8$ $HCF(4, 5) \neq 20$

Highest
Common
Factor

DEFINITION The smallest integer which is a multiple of two or more positive integers.	CHARACTERISTICS • Will be greater than or equal to the largest of the numbers • Often abbreviated to LCM • Appears in the times table of all given numbers
EXAMPLES $LCM(8, 12) = 24$ $LCM(30, 15) = 30$ $LCM(4, 5, 6) = 60$	NON-EXAMPLES $LCM(4, 6) \neq 2$ $LCM(3, 5) \neq 1$ $LCM(4, 8) \neq 4$

Lowest
Common
Multiple

DEFINITION A measure of the proportion of one whole, expressed as parts per 100.	CHARACTERISTICS Shown by the symbol % Equivalent to fractions with a denominator of 100.
EXAMPLES "Find 20% of" "Increase 37 kg by 2.6%" "A sale takes 33% off..." "Over its life, the height of a human increases by an average of 225%"	NON-EXAMPLES $0.3 \quad \% \quad \frac{1}{4}$ $0.2356 \quad 1.4$

Percentage

Algebra
simplify algebraic expressions with four operations
Collect like terms
Solve simple equations with one step
Solve equations with two steps
MINI REVIEW
Exapnd single brackets
Exapnd two brackets and simplify
Form and solve an equation with shapes
Form and solve an equation with words
Solve equations with x on both sides
OPEN BOOK ASSESSMENT

DEFINITION An equation in which no variable is subject to an exponent, is part of the denominator of a fraction, or is subject to any other function.	CHARACTERISTICS • Involves at least one variable • No variables have any powers or roots • No variable as the denominator of a fraction
EXAMPLES $3x = 7$ $3x = 2x + 7$ $3 = 2(x + 7)$ $x = 4$ $2x + 8 = y$ $\frac{2y}{7} = 8$ $2x + 8 = 3y - 1$ $2 + 8y = 13 - 3p$ $y = 13 - 3p$	NON-EXAMPLES $(x + 3)(x + 2) = 0$ $\frac{7}{2y} = 8$ $2 + 8 = 13 - 3$ $3p^2 = 2p + 7$ $y = \frac{ab}{13x^2 - 3p}$

DEFINITION The act of multiplying an expression by another expression using the distributive law to create the 'expanded form' of an expression.	CHARACTERISTICS • The expression starts with at least one bracket and the result has no brackets
EXAMPLES $3(x + 2) = 3x + 6$ $5 \times (4 + 7) = 5 \times 4 + 5 \times 7$ $(x + 2)(2x - 5) = 2x^2 - x - 10$	NON-EXAMPLES $10x - 15 = 5(2x - 3)$ $3x + 5x = 8x$ $\frac{x + 4}{3} = \frac{x}{3} + \frac{4}{3}$

DEFINITION Two or more terms, each with the same variables, to the same exponent or with the same function applied.	CHARACTERISTICS • Any variables must identical • If variables are multiplied, the order listed doesn't matter • If exponents or other functions are used, then the same exponent or function must be used.
EXAMPLES $2x, 3x$ $2y, 3y$ $5, -2$ $d, 3d$ $2y^2, 3y^2$ $-2y^2, 3y^2$ $\frac{2}{3}x, \frac{4}{5}x, x$ $3a^4, 5a^4$ $\frac{3}{5}a^2b, \frac{1}{5}a^2b$ $3ab, 5ab$ $3ba, 5ab$ $3\sqrt{x}, 5\sqrt{x}$	NON-EXAMPLES $2x, 3y$ $2y, 3y^2$ $5x^2, 6x^3$ $3a, 5b$ $3a^2b, 5ab^2$

Sequences
To understand different types of non linear sequences
Find the n th term of a sequence
Find missing terms, or the first 5 terms of a sequence
Calculate a term in a sequence
Find if a term is in a sequence
Discover algebraic sequences
OPEN BOOK ASSESSMENT

DEFINITION	CHARACTERISTICS	DEFINITION	CHARACTERISTICS
A sequence where the difference between any two adjacent terms is equal.	- Also called arithmetic sequence. - Each term can be found by adding or subtracting the same number to a previous term. - Has position to term rule in the form $an + b$.	A list of numbers that obeys a set of conditions.	- List of numbers (called terms). - A set of conditions or a "rule" defines how the sequence changes.
EXAMPLES	NON-EXAMPLES	EXAMPLES	NON-EXAMPLES
1, 2, 3, 4, 5, ... -10, -6, -2, 2, 6, ... 7, 2, -3, -8, ... 3.2, 3.8, 4.4, 5, 5.6, ...	4, 5, 7, 10, 14, ... 1, 1, 2, 3, 5, 8, 13, ... 9, 6, 9, 6, 9, 6, ...	1, 2, 3, 4, 5, ... -10, -6, -2, 2, 6, ... 1, 1, 2, 3, 5, 8, 13, ... 1, 4, 7, 10, 12, 16, 18, 22, ...	(6, 4) 5 $\begin{pmatrix} 3 \\ 7 \end{pmatrix}$