




'Bank statements'

The Knowledge for Progression:

- To know that a balance is the amount in your bank account.
- To know that a credit is money going into an account.
- To know that a debit is money going out of an account.

Speak Like a Mathematician

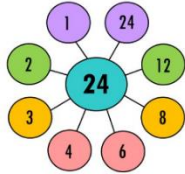
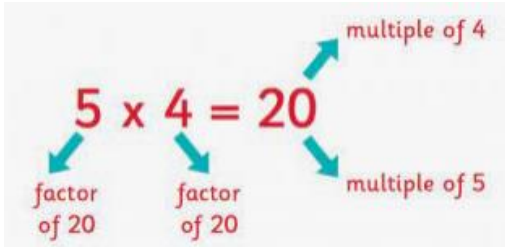
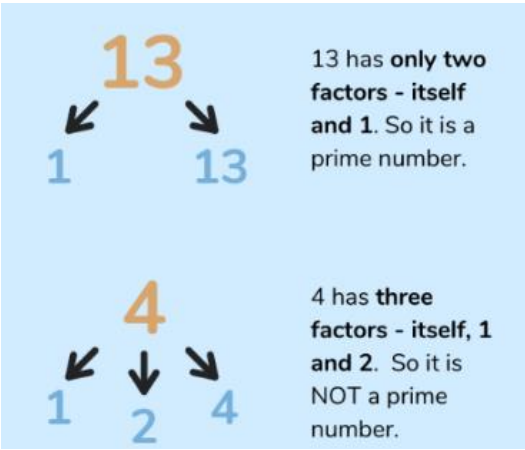
Key Word	Dual Coding	Definition
Balance		The amount of money in your bank account
Credit		Money going into your bank account
Debit		Money going out of your bank account

'Factors, multiples, and primes'

The Knowledge for Progression:

- To know that a factor is a value that divides without remainder.
- To know that a multiple is the repeated multiplication of a number.
- To know that a prime number is an integer with only 2 factors, 1 and itself.
- To know that the highest common factor (HCF) is calculated by multiplying the values in the intersection of the Venn diagram.
- To know that the lowest common multiple (LCM) is calculated by multiplying all the values in the Venn diagram.

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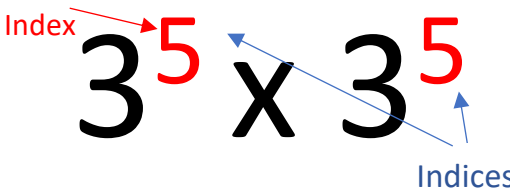
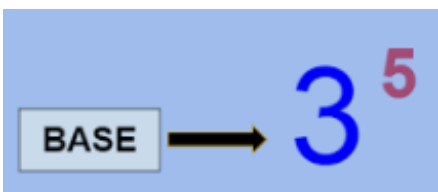
Key Word	Dual Coding	Definition
Factor		A value that divides without remainder
Multiple		Repeated multiplication of a value
Prime		An integer with only two factors, one and itself

'Laws of indices'

The Knowledge for Progression:

- To know that anything to the power of zero equals 1.
- To know that anything to the power of 1 is itself.
- To know that to simplify is to reduce to lowest form.
- To know that the base value is the value that is being raised to a power.
- To know that an index (indices plural) is the value that tells you how many times to multiply the base by itself.

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Key Word	Dual Coding	Definition
Simplify		Reduce to lowest simplest form
Indices		Indices is plural for index. The number that tells you how many times to multiply the base by itself
Base		The value that is being raised to a power

'Standard form'

The Knowledge for Progression:

- To know that standard form is an alternative way to express large and small numbers.
- To know that standard form has a set notation ' $a \times 10^n$ ' where ' a ' is a number $1 \leq a < 10$ and ' n ' is an integer.

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Key Word	Dual Coding	Definition
Standard form	Standard form is written in the form $a \times 10^n$. Where a is $1 \leq a < 10$ and n is any positive or negative number	An alternative number system to express large and small numbers

'Rounding and estimating'

The Knowledge for Progression:

- To know that we round to make a number simpler whilst keeping its value close to what it was.
- To know that the first significant figure of a number is the first non-zero digit of that number.
- To know that an estimation uses rounded values to calculate the answer.

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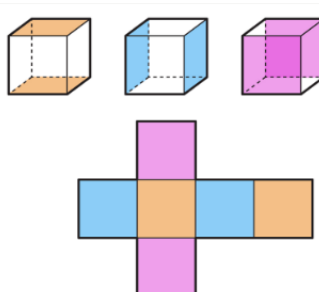
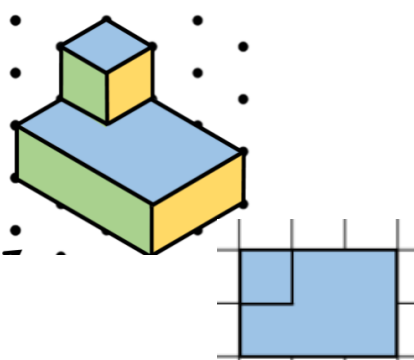
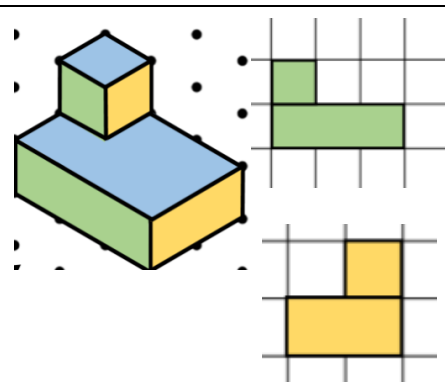
Key Word	Dual Coding	Definition
Round		Making a number simpler but keeping the value close to what it was
Significant Figure		The most important figures (digits) to signify the size of the number
Approximate		To estimate a number, amount or total by rounding

'Nets, plans and elevations'

The Knowledge for Progression:

- To know that the net of a 3D shape is what the shape would look like if unfolded. It is made up of the faces of the 3D shape.
- To know that the plan is the view of a 3D object from above.
- To know that the front and side elevations are the views of a 3D object from the front and side.

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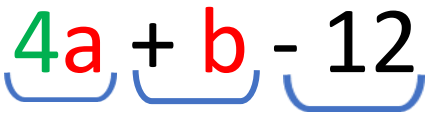

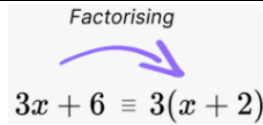
Key Word	Dual Coding	Definition
Net		A 2D representation of a 3D shape unfolded
Plan		The view of a 3D object from above
Elevation		The view of a 3D object from the front or the side

'Algebraic manipulation'

The Knowledge for Progression:

- To know that terms are a constant, variable or combination of both and can be positive or negative. The 4 operations can be applied in the same way as numerical operations.
- To know that an expression is made up of constants, variables, and mathematical operations, but does not include an = sign.
- To know that a formula describes a mathematical relationship between variables.
- To know that expanding means the removal of brackets by multiplication.
- To know that factorising is a way of writing an expression as the product of its factors using brackets.
- To know that a quadratic expression is in the form of $x^2 + bx + c$.

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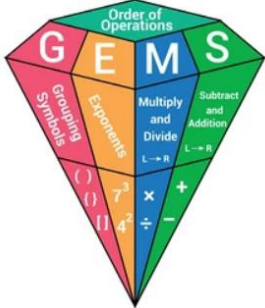
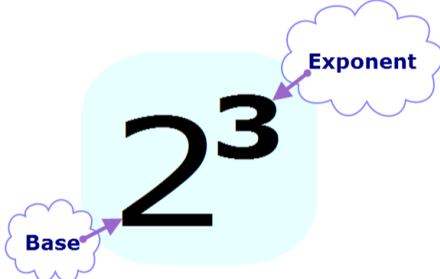
Key Word	Dual Coding	Definition
Variable		A letter or a symbol representing a numerical value
Coefficient		A numerical value that comes before a variable
Term		A constant, variable or combination of both
Expression	$4a + b - 12$	Made up of constants, variables, and mathematical operations
Linear Expression	$2y + 3$	A first order expression, it has no variable with an exponent higher than one
Quadratic Expression	$2y^2 + 3y + 8$	A second order expression, which is in the form $ax^2 + bx + c$
Equation	$4a + b - 12 = 32$	Two expressions connected by an equal symbol
Formula	$S = \frac{D}{T}$	Describes a mathematical relationship between variables
Expand		The removal of brackets by multiplying
Factorise		A way of writing an expression as the product of its factors using brackets

'Further order of operations'

The Knowledge for Progression:

- To know the order of the operations when completing multistep calculations.
- To know that division and multiplication hold the same value and you work them out in the order they appear.
- To know that addition and subtraction hold the same value and you work them out in the order they appear in the question.

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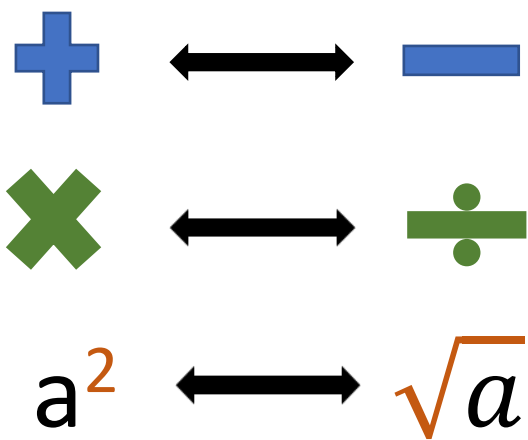
Key Word	Dual Coding	Definition
Order of operations		The order in which different mathematical operations are applied in a calculation
Exponents		A quantity representing the power to which a base has been raised.

'Solving equations and inequalities'

The Knowledge for Progression:

- To know that an equation contains an equals symbol, variable and constant.
- To know that an inequality contains an inequality symbol, variable and constant.
- To know that equation/inequality are formed from expressions.
- To know that solve means to find the value of the variable.
- To know that solving always requires performing the inverse operations.

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Key Word	Dual Coding	Definition
Equation	$4a + b - 12 = 32$	Two expressions connected by an equal symbol
Inequality	$4a + b - 12 > 32$	Two expressions connected by an inequality symbol
Solve	$x = 6$ $x = 30$	Find the value of the variable
Inverse		Opposite operations that reverse the effect of the other operation

'Surface area of prisms'

The Knowledge for Progression:

- To know that surface area is the sum of the area of the faces of a 3D shape.
- To know that a face is a 2D side that makes up a 3D shape.
- To know that a prism is a 3D shape with a uniform cross section. The cross section is a polygon.
- To know that the cross-section is a surface or shape exposed by making a straight cut through something, especially at right angles to an axis.

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Key Word	Dual Coding	Definition
Area		The amount of square units inside a 2D shape
Surface Area		The sum of the area of the faces of a 3D shape
Prism		A solid shape that is bound on all its sides by plane faces with a uniform cross section
Uniform cross-section		The same surface or shape exposed by making a straight cut through something