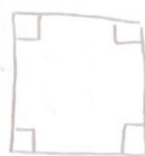
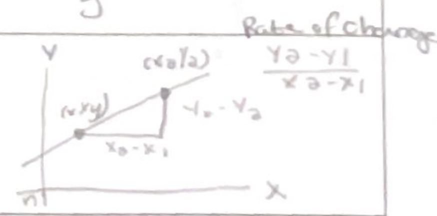
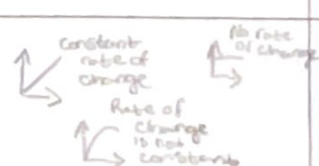
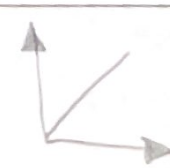
monomial	A polynomial with just one term	$3x^2$ $5xy^2 - 3x + 5y^3 - 3$ $3xy^2$ – Monomial (1 term) $5x - 1$ – Binomial (2 Terms) $3x + 5y^2 - 3$ – Trinomial (3 Terms)
polynomial	A polynomial can have constants (like 4) variables (like x or y) and exponents (like the 2 in y^2), that can be combined using addition, subtraction, multiplication and division, but:	• No division by a variable • a variable's exponent can only be 0, 1, 2, 3, ... etc. • not an infinite number of terms. $5xy^2 - 3x + 8y^3 - 5$ Polynomial $2xy^{-2}$ $\frac{2}{\sqrt{x+2}}$ Not Polynomials
Distributive property	Multiplying the sum of two or more addends by a number produces the same result as when each addend is multiplied individually by the number and the products are added together.	$5(x+2) = 5 \cdot x + 5 \cdot 2$
Closure Property	A set is closed under an operation when we perform that operation on members of the set, and we always get a set member	$\Rightarrow a + b = R$ $\Rightarrow a - b \neq R$ $\Rightarrow a \times b = R$ $\Rightarrow a \div b \neq R$
square	A flat shape with 4 straight sides where all side have equal length and every interior angle is a right angle (90°)	
Square root	A square root of a number is a value that, when multiplied by itself, gives the number	$4 \times 4 = 16$ so a square root of 16 is 4 $(-4) \times (-4) = 16$ too, so -4 is also a square root of 16. The symbol $\sqrt{\ }$ which means the positive square root. $\sqrt{36} = 6$ (because $6 \times 6 = 36$)
Rational numbers	A number that can be made as a fraction of two integers (an integer itself has no fractional part).	A/b is a rational number when a and b are numbers like −2 or 7 or 123. But be careful: b cannot be zero. • 1/2 is a rational number • 0.75 is a rational number (3/4) • 1 is a rational number (1/1) • 2 is a rational number (2/1) • 2.12 is a rational number (212/100) • −6.6 is a rational number (−66/10)
Irrational numbers	All the real numbers that are not rational numbers. Irrational numbers cannot be expressed as the ratio of two integers.	Rational: $\frac{3}{5}$, 1.375, 21.6, $3.\overline{56}$ Integers: −3, −22, −562 Whole Numbers: 0, 72, 431 Irrational: $\sqrt{2}$, $\sqrt{72}$, $\sqrt{\frac{5}{23}}$, π
Product Property of Radicals	The square root of a product is equal to the product of the square roots of each of the factors.	$\sqrt{72} = \sqrt{36 \cdot 2} = \sqrt{36} \cdot \sqrt{2}$ $= \boxed{6\sqrt{2}}$ $\sqrt{48} = \sqrt{16 \cdot 3} = \sqrt{16} \cdot \sqrt{3}$ $= \boxed{4\sqrt{3}}$

maryjane woody

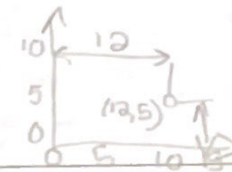
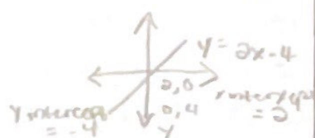
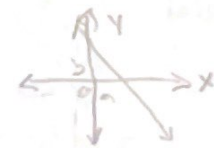
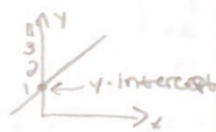
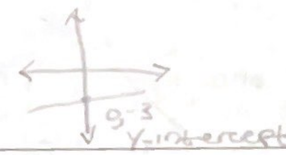
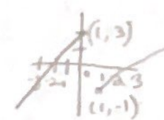
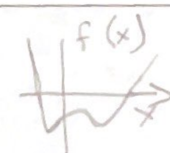
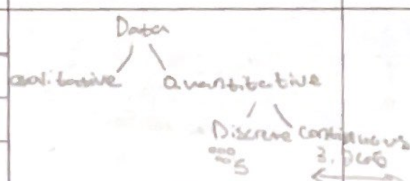
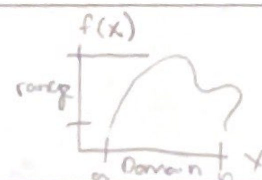
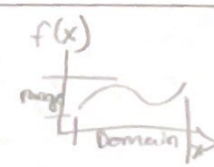
Term	Definition	Notation	Diagram/Visual
Ratio	A ratio shows the relative sizes of two or more values.	If there is 1 boy and 3 girls you could write the ratio as,	1:3 (for every one boy there are 3 girls) 1/4 are boys and 3/4 are girls 0.25 are boys (by dividing 1 by 4) 25% are boys (0.25 as a percentage)
Proportion	Proportion says that two ratios (or fractions) are equal	$1/3 = 2/6$	$\frac{1}{3} = \frac{2}{6}$
Scale	The ratio of the length in a drawing (or model) to the length of the real thing.	in a drawing anything with the size of "1" would have a size of "10" in the real world, so a measurement of 150mm on the drawing would be 1500mm on the real horse.	
Dimensional Analysis	A problem-solving method that uses the fact that any number or expression can be multiplied by one without changing its value		1 mile = 1.60934 Km 60 mins = 1 hour $50 \frac{\cancel{km}}{hr} \times \frac{1 mile}{1.60934 km} \times \frac{1 hr}{60 mins} = 0.5 \frac{miles}{minute}$
Expression	Numbers, symbols and operators (such as + and ×) grouped together that show the value of something.	• 2 + 3 is an expression • 3 − x/2 is also an expression	$\overbrace{4x - 7}^{\text{Expression}} = 5$ Terms
Term	In Algebra a term is either a single number or variable or numbers and variables multiplied together	• Terms are separated by + or − signs, or sometimes by divide	$\overbrace{4x - 7}^{\text{Expression}} = 5$ Terms
Coefficient	A number used to multiply a variable.	• Variable with no number have a coefficient of 1 • x is really 1x Sometimes the letter stands in for the number	coefficient Variable $4x - 7 = 5$ operator Constants
	In $ax^2 + bx + c$, "x" is a variable, and "a" and "b" are coefficients		
Factor	Numbers we can multiply together to get another number A number can have many factors	2 and 3 are factors of 6, because 2×3 = 6 Factors of 12 • 3×4=12 3, 4 • 2×6=12 2, 6 • 1×12=12 1, 12 All factors of 12	$2 \times 3 = 6$ factor factor In Algebra factors can be expressions like "4x+3" etc. (x+3) and (x+1) are factors of $x^2 + 4x + 3$: $(x+3)(x+1) = x^2 + 4x + 3$ factors

A1.U2.A.01.**Unit Vocabulary**

Mary Jane Woolly

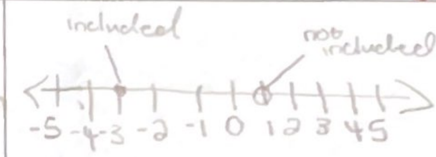
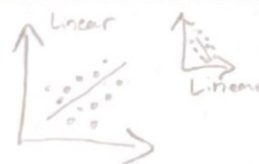
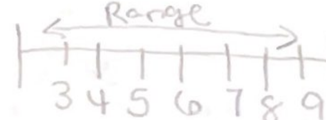
Symmetric Property	We can interchange the sides of an equation and the equation is still a true statement	a=b, then b=a	If X=Y the Y=X
Substitution Property	Putting values where the letters are	X+X/2 when x=5? Put "5" where "x" is 5+5/2 = 5+2.5 = 7.5	$x+\frac{x}{2}$ X=5 $5+\frac{5}{2}$
Inequality	An inequality compares two values, showing if one is less than, greater than, or simply not equal to another value	a≠b says that a is not equal to b; a<b says that a is less than b; a>b says that a is greater than b; a≤b means that a is less than or equal to b; a≥b means that a is greater than or equal to b.	= equal; ≠ not equal; ≤ less than or equal; > greater than; ≥ greater than or equal; < less than
Solution Set	The set of values that satisfy a given set of equations or inequalities.	y = 2x − 2 {(0,-2), (3,4), (-3,-8), (2,2)}	x+5<20 {5,10,15,20} {5,10
Literal Equation	When equation primarly consists of letters	$A=\frac{1}{2}h(a+b)$ $2A=h(a+b)$ $\frac{2A}{h}=a+b$ $a=\frac{2A}{h}-b$	$A=\frac{1}{2}bh$
Linear Function	Those whose graph is a straight line.	F(x)=mx+b or Y=mx+b	 C=2xπr
Slope	How steep a line is	3/5 = 0.6	
Average Rate of Change	A measure of how much the function changed per unit, on average, over that interval	$A(x)=\frac{f(b)-f(a)}{b-a}$	
Constant Rate of Change	When the radio of the output to the input stays the same at any given point on the function		

A1.U2.A.01.**Unit Vocabulary**

Ordered Pairs	Two numbers written in a certain order	(12,5) which can be used to show the position on a graph, where the x value is first and y is second	
X-Intercept	The x-intercept is where a line crosses the x-axis		
Y-Intercept	The y intercept is the point where the line crosses the y-axis		
Arithmetic Sequence	A sequence made by adding the same value each time	1, 4, 7, 10	13, 16, 19, 22, 25
Continuous	A function that does not have discontinuities that means any unexpected changes in value.		
Discrete	Data that can only take certain values		
Domain	A set of all possible inputs for the function		
End Behaviors	Describes the behavior of the graph of the function at the ends of the x axis		
Explicit Formula	The explicit formula for L functions are relations between sums over the complex number zeros of an L-function and sums over the prime powers.	$f(n)=\underbrace{f(1)}_{\text{first term}}+\overbrace{d}^{\text{common difference}}\underbrace{(n-1)}_{\text{one less than the term number}}$	$A_n=a+(n-1)d$

A1.U2.A.01.Unit Vocabulary

Mary Jane Woody

Interval Notation	A method to represent an interval on a number line	(A set of real numbers that contains all real numbers lying between any two numbers of the set.	
Linear Model	An equation that describes a relationship between two quantities that show a constant rate of change		
Parameter	A value that is more "built in" to a function it is similar to a variable, but stays fixed while we	In this function for the height of a tree the "20" is a Parameter: $h(year) = 20 \times year$ we can change the use the function Parameter	Argument Variable $h(year) = 20 \times year$ function Parameter for every year Tree height is 20cm
Range	The distance between the lowest and highest values	In {4, 6, 9, 3, 7} the lowest value is 3, and the highest is 9, so the range is $9 - 3 = 6$	$9 - 3 = 6$ Range 
Recursive Formula	A formula that defines any term of a sequence in terms of its preceding terms	4, 9, 14, 19, 24, 29 +5 +5 +5 +5 +5 Arithmetic: $a_n = a_{n-1} + d$ $a_n = a_{n-1} + 5$, $a_0 = 4$	$a_{n+1} = 3a_n + 2$ $a_1 = 1$ $a_2 = 3a_1 + 2 = \boxed{5}$ $a_3 = 3a_2 + 2 = \boxed{17}$ $a_4 = 3a_3 + 2 = \boxed{53}$
Substitution	Putting values where the letters are	What is $x + x/2$ when $= 5$? Put "5" where "x" is: $5 + 5/2 = 5 + 2.25 = 7.5$	$x + \frac{x}{2}$ $x = 5$ $5 + \frac{5}{2}$

A1.U2.A.01.**Unit Vocabulary**

Mary Jane Wooly

Term	Definition	Notation	Diagram/Visual
Equation	An equation says that two things are equal	It will have equal an sign "=" Like that	$1+1=2$ so an equation is a statement "This equals that" Expression $7+2=10-1$ The equation says: what is on the left $(7+2)$ is equal to what is one the right $(10-1)$ $4x-7=5$ Terms
Commutative Property	In addition and multiplication you can change the order of the numbers in the problem and it won't affect the answer	$a+b=b+a$	$A+b=b+a$ $a \times b = b \times a$
Associative Property	The way in which factors are grouped in a multiplication problem doesn't change the product.	$(6+3)+4=6+(3+4)$ $9+4=6+7=13$ $(2\times4)\times3=2\times(4\times3)$ $8\times3=2\times12=24$	 $(6+3)+4$ $=$ $6+(3+4)$
Distributive Property	Multiplying a number by a group of numbers added together is the same as doing each multiplication separately.	$3\times(2+4)=3\times2+3\times4$ The "3" can be "Distributed" across the "2+4" into 2 times 2 and 3 times 4	 $3\times(2+4)$ $=$ $3\times2+3\times4$
Addition Property of Equality	If you add the same number to both sides of an equation the sides remain equal	$A=B$ $\rightarrow A+n=B+n$	a, b and c If $a=b$ Then $a+c=b+c$
Subtraction Property of Equality	The property that allows the subtraction of the same quantity from each side of an equation while maintaining the equality	$a=b$ $a-c=b-c$	$x+2=3$ $x+2-2=3-2$ $x=1$
Multiplication Property of Equality	When we multiply both sides of an equation by the same number, the two sides remain equal	$a=b$ $a\times c=b\times c$	$\frac{x}{2}=3$ $\frac{x}{2}\cdot2=3\cdot2$ $x=6$
Division Property of Equality	Both sides of the equation are divided by a common real number that is not equal to 0, the quotients remain equal.	$a=b$ $c\neq0$ $ac=bc$	$a=b$ $\frac{a}{c}=\frac{b}{c}$

Quotient Property of Radicals	The square root of a quotient is equal to the quotient of the square roots of the dividend and divisor	$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$ $\sqrt{\frac{5}{2}} = \frac{\sqrt{5}}{\sqrt{2}}$