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	K Graspable Math https://graspable/math.com 副傳道保護員 :	
	Graspable Math Activities: Engaging Algebra Tasl	ks for 6-12th
	Graders	
	Students can probe dynamic math expressions like they would probe p	pulleys in a physics



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5x+4-2x-3y	5x+4=2x-3	* 5x+4 >	2x

Caracter Math 基本操作 Correction Math 基本操作 Correction Mathematical Activity Mathematica





Graspable Math 基本操作 (一)
Part Hand Bar And Son Bar
*記役式以開始編集式(上央功能) 5y + 4 - 2y - 3y $5y + 4 = 2y - 3$ $5y + 4 > 2y - 3$
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Graspable Math 基	本操作 (一)
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5x+4=2x-3	-1x+4 > 2x-3
5x = 2x - 7	-1x > 2x - 7
3x = -7	-3x > -7
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$x = -\frac{7}{3}$	$x < -\frac{7}{-3}$?
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Whiteboards 5 Factorization - Trial		Cat ASSIGN / COLLABORATE LIFE) 🕬	ICK CH
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$6x^2 + 8xy + 3x + 4y$	$x^2 - 2x - 8$	$4x^2 - y^2$		

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$ \begin{array}{c} \frac{44}{6x^2+8xy+3x+4y}\\ 2(3x^2+4xy)+3x+4y\\ 2x\cdot(3x+4y)+3x+4y\\ (2x+1)(3x+4y) \end{array} $	$x^2 - 2x - 8$	$4x^2 - y^2$				









Whiteboards > Factorization - Trial	(A ASSESS / COLLARDINATE LIVE) PATRICK CHING
b X B ≯ Z G ⊕ m m m b f X rester years hand was see over over on m m m bide later bleen	0 B B- B- International Control of Control o
$6x^2 + 8xy + 3x + 4y$ $x^2 - $	$2x-8 \qquad \qquad 4x^2-y^2$
$2(3x^2+4xy)+3x+4y$ (x+	$(x + 1)$ $(2x)^2 - y^2$
$2x \cdot (3x + 4y) + 3x + 4y$	((2x)+y)((2x)-y)
(2x+1)(3x+4y)	(2x+y)(2x-y)
	1996 (P T 94, 1941) T 963

Graspab	le Math 基	基本操作 (三	E)
指數律 Law of indices:	$\frac{\text{Multiply Powers}}{\text{tig the '*' or drag to multiply powers}}$ $2^{3} \cdot 2^{5} \text{ or } 2^{3} \cdot 2^{5}$ 2^{3+5}	Split Powers Drag an addent or of an exponent to split a gover. Thou muy to kingdal mode to realize an exponent with a sum that.) 2 ³ 454 2 ³ 25	Distribute Exponents Drag an exponent ima a product to distribute it. (20) ³ 2 ³ ·a ³
	$\begin{array}{c} \hline \textbf{Factor Exponents}\\ \hline \textbf{Prigram product in the index of the exponents}\\ \hline Constant of the exponent is the exponent$	Move Powers Across Fractions by a power across the relation in the neutrino the relevant. $\frac{2}{ab^{2}}$ $\frac{2b^{2}}{a}$	Negative Exponent -> Fraction Drag seem with negative exponent down and drap its owner sheaters.



Graspable Math 基本操作 (三)

分數/分式運算 Operation on fractions:	$\begin{array}{c c} \hline \text{Term Fraction Into Decimal} \\ \hline Term of the forminal law is compared, other result to all integration of the term of te$	Adding Fractions 1 for or either and behavior with summary $\frac{2}{5} \neq \frac{4}{5}$ or $\frac{2}{5} = \frac{4}{5}$ $\frac{6}{5}$	Adding Fraction 8 To each statute to the efficient of the first of the set
	$\begin{array}{c} \textbf{Canceling Fractions}\\ Croger multiple terms, or they of add above to satisfield terms or the out, and the output of the o$	Nested Fractions Drug & handron and of the demonstrator to $\frac{a}{b}$ $\frac{a}{c}$ $a^{+}\frac{c}{b}$	$\frac{3+65}{3} \rightarrow \frac{3+5}{3}$







Graspable	Math 設定	
於 "Rewriting Equations vi 類項 ・即以移項法展示結 類項 ・即以移項法展示結 ² Weisens * grand Ser ⁺ ¹⁰ ² モニュー <i>6(8*) = 9^{x+1}</i>	a Dragging" 設定可選擇 "Dragging 果) 或 "Dragging and Simplify" (伊 果) 。 Document Settings There exists a second to be set as a second to be a seco	2 [*] (把放符號後不會仁簡同 放符號後GM會自動化簡同













































	$2-3\left[2-\left(\frac{x}{2}+1\right)\right] = \frac{x}{3}+1$	$2-3\left[2-\left(\frac{x}{2}+1\right)\right] = \frac{x}{3}+1$
	$2 - 3\left[2 - \frac{x+2}{2}\right] = \frac{x+3}{3}$	$2 - 3\left[2 - \frac{x}{2} - 1\right] = \frac{x}{3} + 1$
教師可於堂上分享	$2 - \frac{3(4 - (x + 2))}{2} = \frac{x + 3}{3}$	$2 - \left[6 - \frac{3x}{2} - 3\right] = \frac{x}{3} + 1$
不同學生之習作,	$\frac{4-3(4-(x+2))}{2} = \frac{x+3}{3}$	$2 - 6 + \frac{3x}{2} + 3 = \frac{x}{3} + 1$
並鼓勵學生討論 不同解題等較之	$\frac{4-3(2-x)}{2} = \frac{x+3}{3}$	$\frac{3x}{2} - 1 = \frac{x}{3} + 1$
優點。	$\frac{4-6+3x}{2} = \frac{x+3}{3}$	$\frac{3x}{2} - \frac{x}{3} = 1 + 1$
	$\frac{3x-2}{2} = \frac{x+3}{3}$	$\frac{1}{6} = 2$ $7x = 12$
100 C	3(3x-2) = 2(x+3)	$x = \frac{12}{7}$
	9x-6 = 2x+6	
	9x - 2x = 6 + 6	
	7x = 12	
	$x = \frac{12}{7}$	





















