Integration

Initial Instruction (I do)

#	Prompt	Transformation	Response
1	$5x^7$	→	$\frac{5x^8}{8}+C$
2	$5x^8$	→	$\frac{5x^9}{9}+C$

Initial Testing (We do)

#	Prompt	Transformation	Response
3	$15x^8$	→	$\frac{15x^9}{9}+C$
4	$15x^{11}$	→	$\frac{15x^{12}}{12}+C$
5	$715x^{11}$	→	$\frac{715x^{12}}{12}+C$

Expansion (We do)

#	Prompt	Transformation	Response
6	$715x^{11}+5x^7$	→	$\frac{715x^{12}}{12}+\frac{5x^8}{8}+C$
7	$715x^{11}+5x^7+3x^{10}$	→	$\frac{715x^{12}}{12}+\frac{5x^8}{8}+\frac{3x^{11}}{11}+C$
8	$7x^2+5x^1+3x^0$	→	$\frac{7x^3}{3}+\frac{5x^2}{2}+\frac{3x^1}{1}+C$
9	$7x^2+9x+3x^0$	→	$\frac{7x^3}{3}+\frac{9x^2}{2}+\frac{3x^1}{1}+C$
10	$7x^2+9x+4$	→	$\frac{7x^3}{3}+\frac{9x^2}{2}+\frac{4x^1}{1}+C$
11	ax^2+bx+c	→	$\frac{ax^3}{3}+\frac{bx^2}{2}+\frac{cx^1}{1}+C$
12	ax^n+bx+c	→	$\frac{ax^{n+1}}{n+1}+\frac{bx^2}{2}+\frac{cx^1}{1}+C$

Substitution into linear expressions – Teaching sequence

Prompt (1)	Prompt (2)	Transformation	Response
$10x - 7y + 11$	$x = 3$	→	$10(3) - 7y + 11$
$10x - 7y + 11$	$x = 38$	→	$10(38) - 7y + 11$
$10x - 7y + 11$	$y = 19a$	→	$10(38) - 7(19a) + 11$

Breaking up double brackets – Teaching sequence

$$(3x + 2)(4x - 5) \equiv 3x(4x - 5) + 2(4x - 5)$$

$$(3x - 2)(4x - 5) \equiv 3x(4x - 5) - 2(4x - 5)$$

$$(3x - 1)(4x - 5) \equiv 3x(4x - 5) - (4x - 5)$$

Equation of horizontal lines – Teaching sequence