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## Teacher notes

A couple of exercises that can be used together or one at a time.

### Simultaneous equations

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This is a cipher challenge. Solve the equations and match the numbers with letters.

Students will need to complete their working in their exercise books.

**Question:** *Why was the broom late?*

**Answer:** *Because it overswept!*

### Indices

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This is a loop cards activity. Start with the letter W. Solving  $2^3$  gives 8 which is found on the H card. Continue until all cards have been used.

Students should complete the loop to arrive at the question:

*What did the zero say to the eight?*

They can then be given the answer: *Nice belt!*

### Extension task:

Students could make their own sets of indices loop cards with their own jokes.

Solve these simultaneous equations in your exercise books then fill in the answers in the spaces below.

1)  $2A + C = 7$   
 $A + C = 4$

6)  $J + 2H = 67$   
 $J + H = 42$

11)  $2U - T = 31$   
 $U - T = 10$

2)  $2B - 8 = N$   
 $B + 8 = N$

7)  $2K - 2L = 20$   
 $K - 2L = 2$

12)  $V + 4W = 29$   
 $V + W = 11$

3)  $D + 2S = 19$   
 $D + S = 17$

8)  $2M + O = 30$   
 $M + O = 17$

13)  $2Y - X = 29$   
 $Y - X = 3$

4)  $3E - I = 13$   
 $E - I = -5$

9)  $2Q - P = 21$   
 $Q - P = 1$

5)  $F + 3G = 31$   
 $F + G = 17$

10)  $R + 2Z = 56$   
 $R + Z = 34$

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	

Question																									?
	6	25	26		6	3	2		11	25	9		16	12	4	4	13		8	3	11	9			

Answer																									!
	16	9	1	3	21	2	9		14	11		4	5	9	12	2	6	9	19	11					

Cut along the dotted lines then match the calculation on the bottom right of each card with the answer on the bottom left of another card.

When finished, you will have a question but what is the answer?!

<b>A</b>		<b>H</b>		<b>E</b>		<b>T</b>		<b>H</b>		<b>T</b>	
25	$1^7$	64	$5^3$	125	$\sqrt{100}$	6	$\sqrt{144}$	13	$10^3$	9	$8^2$
<b>T</b>		<b>R</b>		<b>E</b>		<b>Z</b>		<b>W</b>		<b>E</b>	
16	End	81	$\sqrt{121}$	1000	$0^3$	10	$4^2$	Start	$2^3$	0	$8^3$
<b>H</b>		<b>O</b>		<b>D</b>		<b>O</b>		<b>A</b>		<b>Y</b>	
8	$5^2$	11	$12^2$	27	$\sqrt{81}$	12	$6^3$	5	$7^2$	49	$\sqrt{36}$
<b>I</b>		<b>D</b>		<b>T</b>		<b>H</b>		<b>G</b>		<b>E</b>	
36	$3^3$	4	$6^2$	216	$\sqrt{169}$	32	$4^2$	3	$2^5$	16	$9^2$
<b>T</b>		<b>S</b>		<b>I</b>							
1	$\sqrt{16}$	144	$\sqrt{25}$	512	$\sqrt[3]{27}$						

