Steps to Success

Lockdown	
Date	<u>20.01.21</u>
Subject/s	<u>Maths</u>
Learning Objective	To increase and decrease amounts with percentages

		SA	TA

Success Criteria			
	I can find a percentage of an amount		
	I can add the amount for increase and subtract for decrease		
	I can show my working using a bar model		
Support	Independent Adult Support ( ) Group Work		

Pre-task

The price of houses has decreased by 10% in the last year.
Use a bar model to represent the percentage decrease and
to complete the table.

House	Original Cost	10% decrease	New cost
A	£235, 650		
B	£145, 950		
C		£32, 760	

To increase a number by 10%, find 10% and add this to the number.

Increase 80 by 10%

100%	10%
80	8

10% of 80 = 8.   80 + 8 = 88   80 increased by 10% = 88

To decrease a number by 10%, find 10% and subtract this from the number.

Decrease 80 by 10%.

								10%
								8

10% of 80 = 8   80 - 8 = 72   80 decreased by 10% = 72

Fluency

Increase the following numbers by 10%.

170

280

Increase 408 by 25%

Decrease the following numbers by 10%.

140

60

Decrease 472 by 25%

Increase 80 by 20% =

Increase 90 by 50% =

Decrease 180 by 15% =

Decrease 75 by 30% =

Decrease 160 by 65% =

Answers

170

170	17

10% of 170 = 17   **170 + 17 = 187**   **170 increased by 10% = 187**

280

280	28

10% of 280 = 28   **280 + 28 = 308**   **280 increased by 10% = 308**

Increase 408 by 25%

510

140

									14

10% of 140 = 14   **140 - 14 = 126**   **140 decreased by 10% = 126**

60

									6

10% of 60 = 14   **60 - 6 = 54**   **60 decreased by 10% = 54**

Decrease 472 by 25%

354

Increase 80 by 20% = 10% is 8 so 20% = 16 80+16 = **96**

Increase 90 by 50% = 90 divided by 2 = 45 90 + 45 = **135**

Decrease 180 by 15% = 10% is 18 so 5% = 9 18 + 9 = 27 180 -27 = **153**

Decrease 75 by 30% = 10% is 7.5 7.5 x 3 = 22.5 75 – 22.5 = **52.5**

Decrease 160 by 65% = 10% = 16 5% = 8 16 x 6 = 96 96 + 8 = 104 160 – 104 = **56**

Problem Solving and Reasoning

Use it!

Explain it!

Football tickets cost £46.80 after a 20% decrease.

Cindy says,

The original tickets cost £56.16

Can you explain her mistake?

Explain it!

James says,

Decreasing a number by 13% is the same as finding 87% of that number.

Do you agree?

Explain it!

Tamzin has an amount of money saved.
The amount is increased by 25%
The new amount is then decreased by 25%

Does Tamzin have the same amount of money as she started with?

Explain your answer.

Prove it!

Then prove it with your answer

Answers
Cindy has found 20% of the reduced price rather than realising the reduced price is worth 80%
James is correct as the whole number would be worth 100% and 100 take away 17 is 83.

Children might calculate both and see that they are the same. |
| No she would not as the two 25%s are not of the same value so therefore they will be worth different things. |

Further Challenge

Create a revision mat that shows everything you know about fractions, decimals and percentages. It must have explanations and examples for each part. Imagine you are explaining it to an alien, everything must be as clear as possible.