Key concepts and questions

Which operation should be used?
- There will be key words within the question to help you. For addition, *add, altogether, combined, total, how many, sum, and increase.* For subtraction, *difference, decrease, how many more, how many left, less than, minus, subtract, reduce, remove, take away.*

Why must column addition and subtraction always begin from the ones column?
- In addition, you may need to carry by exchanging. For example, 10 ones for 1 ten or 10 tens for 1 hundred.
- In subtraction, you may need to borrow by exchanging. For example, 1 hundred for 10 tens, 1 ten for 10 ones.

What is bridging?
Bridging is adding or subtracting across a multiple of 10, 100, 1 000, 10 000, 100 000 or 1 000 000 e.g. 137+6. 7+6 is > 10 so it will bridge the next multiple of 10.

Key Vocabulary
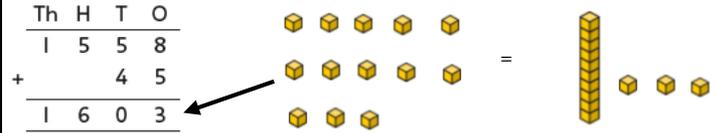
column addition	
column subtraction	
inverse	12+10=22 so 22-10=12
carry	Exchange in addition e.g. 10 ones for 1 ten
borrow	Exchange in subtraction e.g. 1 ten for 10 ones
total	The whole
finding the difference	The difference between two numbers
commutative	Addition can be done either way round
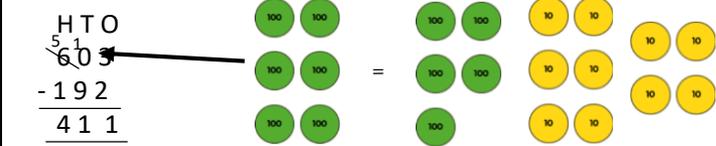
Making connections

Place value	Both column addition and subtraction use place value, it is important that the columns are lined up correctly. If there is a 0 in a number, this is a placeholder, it needs to be put in the correct column, e.g. 603, the 0 tells us there are no tens.
Efficient methods	Use mental methods and known facts to choose the quickest and most accurate method for addition and subtraction.

Representations

Bar models
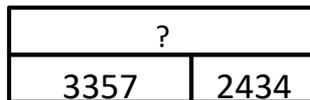
3357 + 2434 = ?
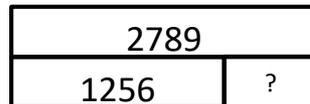
2789 – 1256 = ?

Numberlines
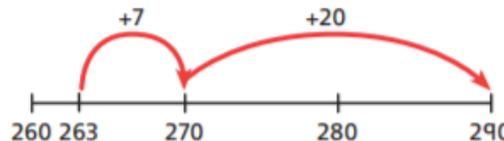
Part whole models – mental calculations
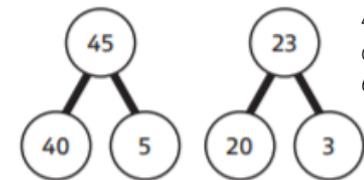
45 + 23
40 + 20 = 60
and 5+3 = 8
60 + 8 = 68

Help with counting on and back, and are useful for visualising bridging multiples of 10, 100, 1 000, 10 000, 100 000 and 1 000 000