

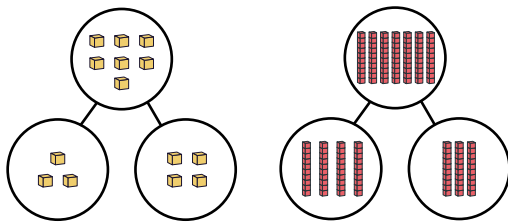
Key Vocabulary

number bonds, whole, part, number facts, add, subtract, multiply, divide, digit, column, exchange, plus, minus, value, ones, tens, hundreds, increase, decrease, inverse, operation, calculation, multiple, partition, efficient, represent, base 10, written method, estimate, commutative, method, strategy

Number bonds within 10

Knowing your number bonds for numbers within 10 is useful as you can also apply this knowledge to learning number bonds within 100.

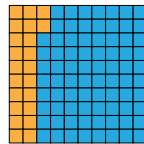
For example, if you know that 4 ones + 3 ones = 7 ones, then you also know that 4 tens + 3 tens = 7 tens. The numbers are 10 times the size.



Complements to 100

When finding the complement to 100, we are looking for a number that completes the bond to 100. Hundred squares are useful tools to find these.

$$\begin{array}{l} 22 + 78 = 100 \\ \swarrow \quad \searrow \\ 20 \quad 2 + 8 \quad 70 \\ \quad \quad 10 \quad \quad \\ 20 + 70 = 90 \end{array}$$

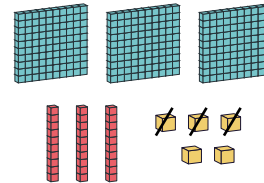


It is important to remember that the ones digit bond equals 10 and the tens digit bond equals 90 so that when they are added together, they equal 100.

Add and subtract 1s, 10s, 100s No exchanges

When adding to a number that has a number bond to 9, only the column you are adding or subtracting will change. When adding or subtracting 1s to or from a number, the ones column always changes.

$$335 - 3 = 332$$



When adding or subtracting 10s to or from a number, the tens column always changes.

$$123 + 2 \text{ tens} = 143$$

hundreds	tens	ones
1 purple circle	2 purple circles, 2 green circles	3 purple circles

When adding or subtracting 100s to or from a number, the hundreds column always changes.

$$223 + 300 = 523$$

hundreds	tens	ones
2 green circles, 3 blue circles	2 orange circles	3 red circles

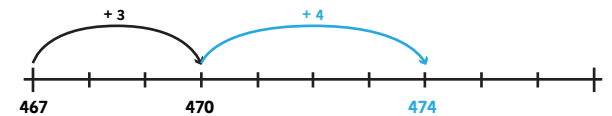
Adding 1s and 10s Exchanging

When adding to a number with a number bond greater than 9, you have to make an exchange.

Adding 1s across a 10

The tens column will change because you have to cross a 10.

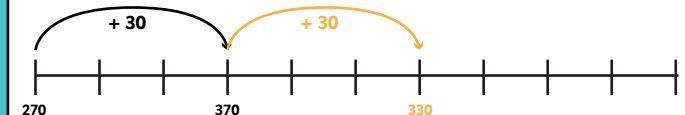
$$467 + 7 = 474$$



Adding 10s across 100

When adding 10s, we can partition the number we are adding to help us.

$$\boxed{270} + \boxed{60} \quad \begin{array}{c} 30 \quad 30 \end{array}$$



Partitioning numbers when adding makes calculations quicker.

Addition and Subtraction

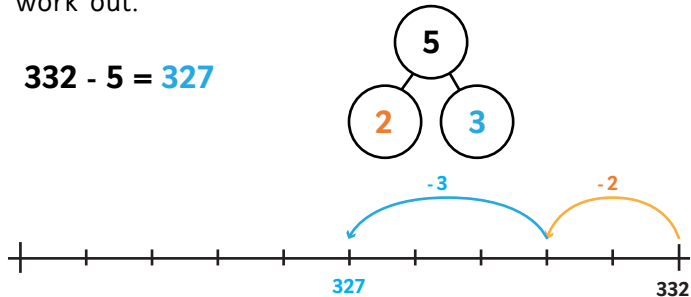
Maths

Y3

Subtracting 1s and 10s Exchanging subtracts 1s across a 10

Partitioning is also useful when subtracting from a number as you can make the calculation easier to work out.

$$332 - 5 = 327$$

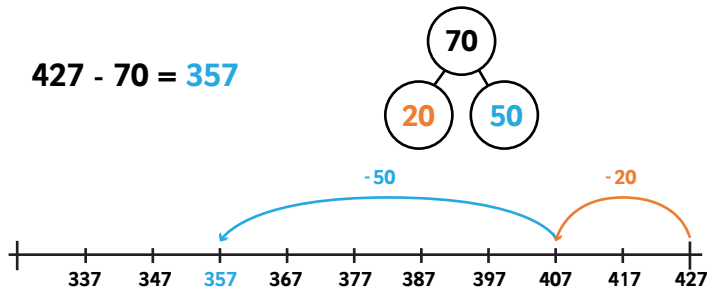


Number lines will help keep track of what you have subtracted.

Subtract 10s across 100

You can use the same method with subtracts 10s.

$$427 - 70 = 357$$



Make connections

Always think about your number bond knowledge to make links when adding or subtracting. If you know one fact, what else do you know using this fact?

9	
4	5

$$\begin{array}{l} 4 + 5 = 9 \quad 9 - 4 = 5 \\ 5 + 4 = 9 \quad 9 - 5 = 4 \end{array}$$

Add and subtract two numbers No exchanges

You can use the column method to add or subtract numbers that do not need an exchange. Always start with the ones column first.

hundreds	tens	ones
3	3	2
0	0	0
0	0	0

H	T	O
2	2	3
+	1	2
3	4	5

hundreds	tens	ones
3	3	2
0	0	0
0	0	0

H	T	O
3	6	8
-	2	3
1	3	5

Adding two numbers with an exchange

Sometimes, you will need to make an exchange. You can exchange 10 ones for 1 ten, and 10 tens for 1 hundred.

Across 10

hundreds	tens	ones
2	2	5
+	2	3
4	6	1

H	T	O
2	2	5
+	2	3
4	6	1

Across 100

hundreds	tens	ones
2	2	5
+	2	3
4	6	1

H	T	O
2	7	3
+	3	6
5	3	9

Subtracting two numbers with an exchange

When you do not have enough to subtract, you have to make an exchange. You can exchange 1 ten for 10 ones, and 1 hundred for 10 tens.

hundreds	tens	ones
3	3	2
-	1	1
2	2	1

H	T	O
3	3	2
-	1	1
2	2	1

hundreds	tens	ones
3	3	2
-	1	1
2	2	1

H	T	O
3	3	2
-	1	1
2	2	1

Don't forget to always start with the ones column.

Addition and Subtraction

Maths

Y3

Add and subtract 2-digit and 3-digit numbers

When adding numbers that have a different number of digits, it is important to remember the place value of each digit to solve it correctly. The column method is useful to help line up all the digits. Don't forget to always start with the ones column.

Adding 2-digit and 3-digit numbers

	H	T	O	
	3	4	7	
+		3	5	
	3	8	2	
		1		

Once you have lined up the digits, you can start from the ones and complete the addition. Any exchanges can be tracked underneath, don't forget to add them as you work through the columns.

Subtracting a 2-digit number from a 3-digit number

	H	T	O	
	3	4	6	
-		2	8	
	3	2	8	

Once you have lined up the digits, you can start from the ones and complete the subtraction. Any exchanges can be tracked above, don't forget to subtract from these numbers as you work through the columns.

Making decisions

Read questions carefully so that you know what operation to do to get the answer you need. If you are finding out how many of something there is altogether or in total, you need to add.

If you are finding the difference or how much more, you need to subtract.

Checking your answers

It is always a good idea to check your answers to make sure you have done them correctly. You can use different tools for this including estimating your answer and using the inverse.

Estimate answers

When you estimate, you are making a guess to check roughly what the actual answer will be. When we estimate answers, we round them to the nearest 10 or 100 and complete the calculation. For example: $203 + 495$ can be rounded to $200 + 500$.



We can estimate the answer by adding $200 + 500$ first and see that the answer will be about 700. We can then add the numbers together and see how close the estimate was.

	H	T	O	
	4	9	5	
+	2	0	3	
	6	9	8	

Using the inverse

When you have a missing number problem or want to check an answer, you can use the inverse operation. 'Inverse' means 'opposite'.

The inverse of addition is subtraction.

The inverse of subtraction is addition.

$$\underline{\quad} + 20 = 60$$

$$60 - 20 = 40$$

$$90 - 35 = 55$$

$$\text{Does } 35 + 55 = 90 ?$$

Yes!

	H	T	O	
		5	5	
+		3	5	
		9	0	
		1		

Addition is commutative, this means that it does not matter in which order you add the numbers. However, subtraction is not commutative – you must subtract the smallest number from the greatest number.