

I know addition and subtraction facts for all numbers to 20.

The list below gives some examples, but they should know all the number bonds for each number. The aim is for instant recall for each fact in the fact family.

11 = 11 + 0	19 = 19 + 0	16 = 16 + 0	<u>Example of a fact family:</u>
11 = 10 + 1	19 = 18 + 1	16 = 15 + 1	17 = 13 + 4
11 = 9 + 2	19 = 17 + 2	16 = 14 + 2	17 = 4 + 13
11 = 8 + 3	19 = 16 + 3	16 = 13 + 3	17 - 13 = 4
11 = 7 + 4	19 = 15 + 4	16 = 12 + 4	17 - 4 = 13
11 = 6 + 5	19 = 14 + 5	16 = 11 + 5	
	19 = 13 + 6	16 = 10 + 6	
	19 = 12 + 7	16 = 9 + 7	
	19 = 11 + 8	16 = 8 + 8	
	19 = 10 + 9		

Children should be able to answer the questions in any order, including with the calculations written either side of the equals sign and missing number questions,

e.g. 15 - 8 = 7	15 = 8 + 7	7 + 🗌 = 15	8 = 15 -	16 - = 7 + 4
		<u>Useful Que</u>	<u>estions</u>	
What do I add to 5 to make 19?			What is 17 tak	e away 6??
What is 13 less than 15?			w many more than	8 is 11?
What is the di	fference betw	een 9 and 13?		

<u>Top Tips:</u>

Some of these facts will have already been learned in Year 2 and some of them are easily worked out by using other root facts (e.g. $12 + \boxed{} = 16$ can be worked out by using 2 + 4 = 6 so 12 + 4 = 16)

The secret to success is to practise little and often -could you practise on the way to school or during a car journey?

You don't need to practise them all at once - perhaps have a fact family of the day. If they can tell you one fact, can they say all the other facts in the family?

Use doubles and near doubles to help (If 6 + 6 = 12, 6 + 7 is one more and 6 + 5 is one less)

- Use practical resources Make collections of up to 20 objects. Show some and ask questions such as, "How many more would I need to make ?" Cover some objects and ask how many are hidden.
- http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html Game 3 number bonds for each number to 20
- <u>http://www.topmarks.co.uk/maths-games/hit-the-button</u> Addition or subtraction within 20
- http://www.primarygames.com/math/mathtilesaddition0to20/
- <u>http://www.wldps.com/gordons/Loop_cards.swf</u> interactive loop cards
- Timed Games: How well are you doing? How many questions can you answer in 2 minutes? Can you beat your own record?

Deepen and apply

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- Captain Conjecture says, 'If you add 6 to a number ending in 7 you will always get a number ending in 3.' Is he correct? Explain your answer.
- Is it always, sometimes or never true that a number less than 10 added to another number less than 10 = a number less than 10? How do you know?
- > 3 + = 7 how many ways can this be true using numbers less than 20?
- > <u>http://nrich.maths.org/11114</u> Totality
- > <u>http://nrich.maths.org/53</u> Roll those Dice
- <u>http://nrich.maths.org/10091</u> Strike it out
- > There are 12 cakes on a plate swimming in a lake. I eat 4, how many are left? How do you know? Can you explain it?
- > How many ways can you make 19 using 3 numbers? (example: 6 + 11 + 2)
- \rightarrow + = + What numbers could you put in here to make the sentences true?
 - + = What numbers could you put in here to make the sentences true?



Key Instant Recall Facts Year 3 - Autumn 2

I know the multiplication and division facts for the 4 times table.

By the end of this term, children should know these facts: the aim is for instant recall.

4 × 1 = 4	$4 = 1 \times 4$	4 ÷ 4 = 1	4 ÷ 1 = 4
4 × 2 = 8	8 = 2 × 4	8 ÷ 4 = 2	8 ÷ 2 = 4
4 × 3 = 12	12 = 3 × 4	12 ÷ 4 = 3	12 ÷ 3 = 4
4 × 4 = 16	16 = 4 × 4	$16 \div 4 = 4$	16 ÷ 4 = 4
4 × 5 = 20	20 = 5 × 4	20 ÷ 4 = 5	20 ÷ 5 = 4
4 × 6 = 24	24 = 6 × 4	24 ÷ 4 = 6	24 ÷ 6 = 4
4 × 7 = 28	28 = 7 × 4	28 ÷ 4 = 7	28 ÷ 7 = 4
4 × 8 = 32	32 = 8 × 4	32 ÷ 4 = 8	32 ÷ 8 = 4
4 × 9 = 36	36 = 9 × 4	36 ÷ 4 = 9	36 ÷ 9 = 4
4 × 10 = 40	40 = 10 × 4	40 ÷ 4 = 10	40 ÷ 10 = 4
4 × 11 = 44	44 = 11 × 4	44 ÷ 4 = 11	44 ÷ 11 = 4
4 × 12 = 48	48 = 12 × 4	48 ÷ 4 = 12	48 ÷ 12 = 4

Children should be able to answer the questions in any order, including with the calculations written either side of the equals sign and missing number questions,

e.g. $4 \times \square = 24$ $6 = \square \div 4$

Useful Questions				
What is 4 multiplied by 6?	What are 8 lots of 4?	What is 9 times 4?		
What is 36 divided by 4?	What do you get i	f you have 4, three		

<u>Top Tips:</u>

The secret to success is to practise little and often - could you practise on the way to school or during a car journey?

You don't need to practise them all at once - perhaps have a fact of the day, or a fact family of the day (see below).

Use what you already know: Your child will already know some of the facts from the x2, x5 and x10 tables.

Double and double again: 6 x 4 is the same as double 6 (=12) and double again (=24)

Use fact families: If I know that $4 \times 7 = 28$, then $7 \times 4 = 28$, $28 \div 4 = 7$ and $28 \div 7 = 4$. A common mistake with fact families is to write $7 \div 28 = 4$. Use pictures or practical resources to show children why this can't be true - you can't have 7 sweets shared between 28 people.

- Use practical resources lay out pebbles, buttons or other objects in arrays (rows and columns) to represent the facts (e.g. 5 x 4 = 20 can be represented by 4 rows of 5).
- Songs and Chants You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.
- <u>http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html</u> 4 x tables
- <u>http://www.topmarks.co.uk/maths-games/hit-the-button</u> × 4
- <u>http://www.snappymaths.com/multdiv/4xtable/interactive/4ximinute/4ximmm.htm</u>
- Play number ping pong! Start by saying 'ping', child replies with 'pong'. Repeat with times tables facts i.e. say '9' and they reply '36'
- Fest the Parent Your child can make up their own tricky division questions for you e.g. What is 32 divided by 4? They need to be able to multiply to create these questions.
- Timed Games: How well are you doing? How many questions can you answer in 2 minutes. Can you beat your own record?
- > Games at <u>www.multiplication.com</u> (You don't have to join to use it)
- Use memory tricks For those hard-to-remember facts, <u>www.multiplication.com</u> has some strange picture stories to help children remember.

- > Compare the 2 times and 4 times tables. What do you notice? Can you explain it?
- <u>http://www.snappymaths.com/multdiv/4xtable/4xtable.htm</u> Can you recognise the multiples of 4?
- <u>http://www.snappymaths.com/multdiv/4xtable/interactive/countin4shfcyg/countin4shfcyg/countin4shfcyg.htm</u> Counting in 4s (How far can you go? Can you spot any patterns in the ones digit? Is it true for all multiples of 4?)
- <u>https://www.bbc.co.uk/teach/skillswise/times-tables/z4gs7nb</u>
- 4 x 8 = 32. How many different number stories can you write to fit this equation (e.g. a train had 4 carriages, each with 8 passengers; how many passengers were there altogether?)
- - How many ways can you make this true?
- ≻ □ x 4 = □ x 2
- How many ways can you make this true?



Key Instant Recall Facts Year 3 - Spring 1

I know the multiplication and division facts for the 8 times table.

By the end of this term, children should know these facts: the aim is for instant recall.

8 × 1 = 8	8 = 1 × 8	8 ÷ 8 = 1	8 ÷ 1 = 8
8 × 2 = 16	$16 = 2 \times 8$	$16 \div 8 = 2$	16 ÷ 2 = 8
8 × 3 = 24	24 = 3 × 8	24 ÷ 8 = 3	24 ÷ 3 = 8
8 × 4 = 32	32 = 4 × 8	32 ÷ 8 = 4	32 ÷ 4 = 8
8 × 5 = 36	40 = 5 × 8	40 ÷ 8 = 5	40 ÷ 4 = 8
8 × 6 = 48	48 = 6 × 8	48 ÷ 8 = 6	48 ÷ 6 = 8
8 × 7 = 56	56 = 7 × 8	56 ÷ 8 = 7	56 ÷ 7 = 8
8 × 8 = 64	64 = 8 × 8	64 ÷ 8 = 8	64 ÷ 8 = 8
8 × 9 = 72	72 = 9 × 8	72 ÷ 8 = 9	72 ÷ 9 = 8
8 × 10 = 80	80 = 10 × 8	80 ÷ 8 = 10	80 ÷ 10 = 8
8 × 11 = 88	88 = 11 × 8	88 ÷ 8 = 11	88 ÷ 11 = 8
8 × 12 = 96	96 = 12 × 8	96 ÷ 8 = 12	96 ÷ 12 = 8

Children should be able to answer the questions in any order, including with the calculations written either side of the equals sign and missing number questions,

e.g. 8 × 🗌 = 24 3 = 🗌 ÷ 8

Useful Questions				
What is 8 multiplied by 6?	What are 8 lots of 8?	What is 9 times 8?		
What is 32 divided by 8?	What do you get i	f you have 8, three		

<u>Top Tips:</u>

The secret to success is to practise little and often - could you practise on the way to school or during a car journey? You don't need to practise them all at once - perhaps have a fact of the day, or a fact family of the day.

Use what you already know: Your child will already know some of the facts from the x2, x4, x5 and x10 tables.

Double your fours: 6×8 is the same as double 6×4 , so $6 \times 8 = 6 \times 4 \times 2 = 24 \times 2 = 48$

Use fact families: If I know that $3 \times 8 = 24$, then $8 \times 3 = 24$, $24 \div 3 = 8$ and $24 \div 8 = 3$. If your child becomes confused about the order of the numbers in the division calculation, use pictures or real-life examples to help: 8 children have 3 cakes each, giving 24 cakes. Therefore 24 cakes shared between 8 children gives 3 cakes each ($24 \div 8 = 3$)

- Use practical resources lay out pebbles, buttons or other objects in arrays (rows and columns) to represent the facts (e.g. 3 x 8 = 24 can be represented by 8 rows of 3).
- Songs and Chants You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.
- <u>http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html</u> 8 x tables
- <u>http://www.topmarks.co.uk/maths-games/hit-the-button</u> × 8
- <u>https://www.timestables.co.uk/8-times-table.html</u>
- <u>http://www.snappymaths.com/multdiv/8xtable/interactive/newlook/8xtableintd.htm</u>
- <u>http://www.snappymaths.com/multdiv/8xtable/interactive/newlook/8xmissintd.htm</u>
- Play number ping pong! Start by saying 'ping', child replies with 'pong'. Repeat with times tables facts i.e. say '9' and they reply '72'
- Fest the Parent Your child can make up their own tricky division questions for you e.g. What is 56 divided by 8? They need to be able to multiply to create these questions.
- Timed Games: How well are you doing? How many questions can you answer in 2 minutes? Can you beat your own record?
- > Games at <u>www.multiplication.com</u> (You don't have to join to use it)
- Use memory tricks For those hard-to-remember facts, <u>www.multiplication.com</u> has some strange picture stories to help children remember.

- > Compare the 2 times, 4 times and 8 times tables. What do you notice? Can you explain?
- <u>http://www.snappymaths.com/multdiv/8xtable/interactive/mult8imm/mult8imm.htm</u> Can you recognise the multiples of 8?
- <u>http://www.snappymaths.com/multdiv/8xtable/interactive/countin8shfcyg/countin8shfcyg.htm</u> Counting in 8's (How far can you go?)
- <u>https://www.bbc.co.uk/teach/skillswise/times-tables/z4gs7nb</u>
- 8 x 9 = 72. How many different number stories can you write to fit this equation (e.g. I had 8 bags of 9 sweets; how many sweets is that? I had 72 sweets in bags of 8; how many bags did I have?)
- X 8 = : ÷ 4 How many ways can you make this true?
- X 4 X 2 = X 8 How many ways can you make this true? What do you notice? Can you explain?



Key Instant Recall Facts Year 3 – Spring 2

I know the multiplication and division facts for the 3 times table.

By the end of this term, children should know these facts: the aim is for instant recall.

3 × 1 = 3	3 = 1 × 3	3 ÷ 3 = 1	3 ÷ 1 = 3
3 × 2 = 6	6 = 2 × 3	6 ÷ 3 = 2	6 ÷ 2 = 3
3 × 3 = 9	9 = 3 × 3	9 ÷ 3 = 3	9 ÷ 3 = 3
3 × 4 = 12	$12 = 4 \times 3$	12 ÷ 3 = 4	12 ÷ 4 = 3
3 × 5 = 15	15 = 5 × 3	15 ÷ 3 = 5	15 ÷ 5 = 3
3 × 6 = 18	$18 = 6 \times 3$	18 ÷ 3 = 6	18 ÷ 6 = 3
3 × 7 = 21	21 = 7 × 3	21 ÷ 3 = 7	21 ÷ 7 = 3
3 × 8 = 24	24 = 8 × 3	24 ÷ 3 = 8	24 ÷ 8 = 3
3 × 9 = 27	27 = 9 × 3	27 ÷ 3 = 9	27 ÷ 9 = 3
3 × 10 = 30	$30 = 10 \times 3$	30 ÷ 3 = 10	$30 \div 10 = 3$
3 × 11 = 33	33 = 11 × 3	33 ÷ 3 = 11	33 ÷ 11 = 3
3 × 12 = 36	36 = 12 × 3	36 ÷ 3 = 12	36 ÷ 12 = 3

Children should be able to answer the questions in any order, including with the calculations written either side of the equals sign and missing number questions,

e.g. $3 \times \square = 24$ $8 = \square \div 3$

Useful Questions				
What is 3 multiplied by 6?	What are 8 lots of 3?	What is 9 times 3?		
What is 32 divided by 3?	What do you get i	f you have 3, four		

Top Tips:

The secret to success is to practise little and often - could you practise on the way to school or during a car journey?

You don't need to practise them all at once - perhaps have a fact of the day, or a fact family of the day.

Use what you already know: Your child will already know some of the facts from the x^2 , x^4 , x^5 , x^8 and x^{10} tables.

Use fact families: If I know that $7 \times 3 = 21$, then $3 \times 7 = 21$, $21 \div 3 = 7$ and $21 \div 7 = 3$. If your child becomes confused about the order of the numbers in the division calculation, use pictures or real-life examples to help: 7 tricycles with 3 wheels gives 21 wheels so 21 wheels on tricycles gives 7 tricycles ($21 \div 3 = 7$)

- Use practical resources lay out pebbles, buttons or other objects in arrays (rows and columns) to represent the facts (e.g. 3 x 8 = 24 can be represented by 8 rows of 3).
- Songs and Chants You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.
- <u>http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html</u> 3 x tables
- <u>http://www.topmarks.co.uk/maths-games/hit-the-button</u> × 3
- <u>http://www.learnyourtables.co.uk/en/index2.htm</u> x3
- <u>http://www.snappymaths.com/multdiv/3xtable/interactive/newlook/3xtableintd.htm</u>
- <u>http://www.snappymaths.com/multdiv/3xtable/interactive/newlook/3xtablebtcd.htm</u>
- Play number ping pong! Start by saying 'ping', child replies with 'pong'. Repeat with times tables facts i.e. say '9' and they reply '27'
- Fest the Parent Your child can make up their own tricky division questions for you e.g. What is 36 divided by 3? They need to be able to multiply to create these questions.
- Timed Games: How well are you doing? How many questions can you answer in 2 minutes? Can you beat your own record?
- > Games at <u>www.multiplication.com</u> (You don't have to join to use it)
- Use memory tricks For those hard-to-remember facts, <u>www.multiplication.com</u> has some strange picture stories to help children remember.

- Are there any numbers which are in the 2x table and in the 3x table? Which ones are they? Is there a pattern with odd and even numbers? What to you notice? Can you explain?
- Write this addition statement as a multiplication statement: 3 + 3 + 3 + 2 + 4. Can you write any other multiplication statements as addition statements?
- > <u>http://nrich.maths.org/1252</u> Multiplication Tables matching cards
- > 🗌 x 3 = 🗌 How many different answers can you make?
- <u>http://www.wldps.com/gordons/Odd-one-out.swf</u> Which numbers are not multiples of 3?
- https://www.bbc.co.uk/teach/skillswise/times-tables/z4gs7nb
- > $3 \times 7 = 21$. How many different number stories can you write to fit this equation?
- > x = 2 How many ways can you make this true?



I know the multiplication and division facts for the 6- and 9-times tables.

By the end of this term, children should know all the facts from the 6x and 9x tables: the aim is for instant recall. Below are only the new facts to learn from these tables - the others should already be known from the 1, 2, 3, 4, 5, 8 and 10x tables.

36 ÷ 6 = 6	36 ÷ 6 = 6	36 = 6 × 6	6 × 6 = 36
42 ÷ 7 = 6	42 ÷ 6 = 7	42 = 7 × 6	6 × 7 = 42
54 ÷ 9 = 6	54 ÷ 6 = 9	54 = 9 × 6	6 × 9 = 54
66 ÷ 11 = 6	66 ÷ 6 = 11	66 = 11 × 6	6 × 11 = 66
72 ÷ 12 = 6	72 ÷ 6 = 12	72 = 12 × 6	6 × 12 = 72
63 ÷ 7 = 9	63 ÷ 9 = 7	63 = 7 × 9	9 × 7 = 63
81 ÷ 9 = 9	81 ÷ 9 = 9	81 = 9 × 9	9 × 9 = 81
99 ÷ 11 = 9	99 ÷ 9 = 11	99 = 11 × 9	9 × 11 = 99
108 ÷ 12 = 9	108 ÷ 9 = 12	108 = 12 × 9	9 × 12 - 108

Children should be able to answer the questions in any order, including with the calculations written either side of the equals sign and missing number questions,

e.g. $6 \times$ = 24 4 = $\div 6$ 108 = 9 12 = $\rightarrow 9$

Useful Questions				
What is 7 multiplied by 6?	What are 8 lots of 9?	What is 8 times 6?		
What is 54 divided by 9?	What is the product of 7 and 9?			

<u>Top Tips:</u>

The secret to success is to practise little and often - could you practise on the way to school or during a car journey? You don't need to practise them all at once - perhaps have a fact of the day, or a fact family of the day.

Use what you already know: Your child will already know some of the facts from the x2, $3x \times 4$, x5, x 8 and x10 tables.

Double your threes to get sixes: Multiplying a number by 6 is the same as multiplying by 3 and doubling it. $7 \times 3 = 21$ and double 21 is 42, so $7 \times 6 = 42$.

Use fact families: If I know that $7 \times 6 = 42$, then $6 \times 7 = 42$, $42 \div 6 = 7$ and $42 \div 7 = 6$. If your child becomes confused about the order of the numbers in the division calculation, use pictures or real-life examples to help: 7 boxes of 6 eggs gives 42 eggs ($6 \times 7 = 42$); 42 eggs in boxes of 6 gives 7 boxes ($42 \div 6 = 7$).

- Use practical resources lay out pebbles, buttons or other objects in arrays (rows and columns) to represent the facts (e.g. 3 x 8 = 24 can be represented by 8 rows of 3).
- Songs and Chants You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.
- <u>http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html</u> 6x and 9x
- <u>http://www.topmarks.co.uk/maths-games/hit-the-button</u> 6x and 9x
- <u>http://www.snappymaths.com/multdiv/multdiv.htm</u> 6x and 9x
- Play number ping pong! Start by saying 'ping', child replies with 'pong'. Repeat with times tables facts i.e. say '9' and they reply '54'
- Test the Parent Your child can make up their own tricky division questions for you e.g. What is 72 divided by 9? They need to be able to multiply to create these questions.
- Timed Games: How well are you doing? How many questions can you answer in 2 minutes? Can you beat your own record?
- > Games at <u>www.multiplication.com</u> (You don't have to join to use it)
- Use memory tricks For those hard-to-remember facts, <u>www.multiplication.com</u> has some strange picture stories to help children remember.

- Are there any numbers which are in the 2x table and in the 6x table? Are there any numbers in which are in the 3x table and the 6x table? Which ones are they? What to you notice? Can you explain?
- Are there any numbers which are in the 3x 6x and 9x table? Which ones are they? What do you notice?
- Can you find any patterns with odd and even numbers for the products of the 3-, 6- and 9-times tables? What do you notice? Can you explain it?
- True or false? 7 × 6 = 7 × 3 × 2
 7 × 6 = 7 × 3 + 3 Explain your reasoning.
- > Can you write the number 36 as the product of 3 numbers? Can you do it in different ways?
- > 6 x 7 = 42. How many different number stories can you write to fit this equation?
- > x = 2 How many ways can you make this true?
- X 6 = X 3 = X 9. How many ways can you make this true?



Key Instant Recall Facts Year 2 - Summer 2

I know the facts about time durations.

Children should be able to know and recall the following facts:

There are 60 seconds in a minute.	<u>Number of days in each month</u>			
There are 60 minutes in an hour.	January	31	July	31
There are 24 hours in a day.	February	28/29	August	31
There are 7 days in a week.	March	31	September	30
There are 12 months in a year.	April	30	October	31
There are 365 days in a year.	May	31	November	30
There are 366 days in a leap year.	June	30	December	31

Children also need to know the order of the months in a year.

<u>Useful Questions</u> What day comes after 30th April? What day comes before 1st February? Which months have 30 days? How many days from 27th June until the 5th July?



Top Tips:

- > The secret to success is to practise little and often could you practise on the way to school or during a car journey?
- This term is also an opportunity for your child to practise telling the time to the nearest minute. Make sure that you have an analogue clock (with hands) visible in your house or that your child wears a watch with hands.
- > Talk about the time and dates and discuss when things happen:
- > What time do you leave the house in the morning?
- > What time do you arrive home?
- > How many weeks is it since the beginning of term? How many days is that?
- > How long until your birthday?

- Use rhymes and memory games -Thirty days hath September, helps us remember the number of days in each month: <u>https://www.mamalisa.com/?t=es&p=1366</u>. The Months (Sara Coleridge) helps us remember the order of the months: <u>http://www.poetrybyheart.org.uk/poems/the-months-of-the-year/</u>
- > Use calendars If you have a calendar for the new year, your child could be responsible for recording the birthdays of friends and family members in it. Your child could even make their own calendar.
- How long is a minute? Ask your child to sit with their eyes closed for exactly one minute while you time them. Can they guess the length of a minute? Carry out different activities for one minute. How many times can they jump in sixty seconds?
- <u>http://www.snappymaths.com/other/measuring/time/interactive/monthaft ertotc.htm</u> (needs Flash) Which month comes after ...?
- <u>http://www.snappymaths.com/other/measuring/time/interactive/ordering</u> <u>months.htm/orderingmonths.htm</u> Order the months of the year
- <u>http://www.snappymaths.com/other/measuring/time/interactive/orderunitsoftime/order</u> <u>unitsoftime.htm</u> Order units of time
- <u>http://www.learnalberta.ca/content/me3us/flash/lessonLauncher.html?lesson=lessons/13</u> /m3_13_00_x.swf Explore the time tunnel
- <u>http://www.learnalberta.ca/content/me3usa/flash/index.html?goLesson=13</u> Mixed time resources

- How long is until?
- <u>http://www.snappymaths.com/other/measuring/time/time.htm</u> useful worksheets
- <u>http://nrich.maths.org/6071/note</u> Stop the clock problem
- > <u>http://nrich.maths.org/6609/note</u> Times of the day problem
- <u>http://nrich.maths.org/4807</u> Time Line