



# Maths

## Key Instant Recall Facts

To help develop children's fluency in Mathematics, each half term we ask them to learn Key Instant Recall Facts (KIRFs).

The lists of KIRFs have been created to align with the National Curriculum and the end of year expectations for each year group. Children will be taught the foundations and necessary Maths in lessons beforehand, introducing them to specific visual models to support their understanding.

We expect the majority of children within a year group to be working towards these targets. Children should know these thoroughly and be able to recall the facts instantly for their year group. By helping to develop these skills, your child will be more able to access other areas of the Maths curriculum such as calculation methods, problem solving and reasoning. If your child is struggling to recall facts, please concentrate on a smaller number and practise more frequently.

Thank you for your support,  
Miss Cole

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Headteacher and Maths Leader



# Key Instant Recall Facts

## Year 3 – Autumn 1

### I know number bonds for all numbers to 20.

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

$2 + 9 = 11$

$3 + 8 = 11$

$4 + 7 = 11$

$5 + 6 = 11$

$3 + 9 = 12$

$4 + 8 = 12$

$5 + 7 = 12$

$6 + 6 = 12$

$4 + 9 = 13$

$5 + 8 = 13$

$6 + 7 = 13$

$5 + 9 = 14$

$6 + 8 = 14$

$7 + 7 = 14$

$6 + 9 = 15$

$7 + 8 = 15$

$7 + 9 = 16$

$8 + 8 = 16$

$8 + 9 = 17$

$9 + 9 = 18$

#### Example of a fact family

$6 + 9 = 15$

$9 + 6 = 15$

$15 - 9 = 6$

$15 - 6 = 9$

#### Examples of other facts

$4 + 5 = 9$

$13 + 5 = 18$

$19 - 7 = 12$

$10 - 6 = 4$

This list includes the most challenging facts but children will need to learn **all** number bonds for each number to 20 (e.g.  $15 + 2 = 17$ ). This includes related subtraction facts (e.g.  $17 - 2 = 15$ ).

#### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.

Buy one get three free - If your child knows one fact (e.g.  $8 + 5 = 13$ ), can they tell you the other three facts in the same fact family?

Use doubles and near doubles - If you know that  $6 + 6 = 12$ , how can you work out  $6 + 7$ ? What about  $5 + 7$ ?

Play games - There are missing number questions at [www.conkermaths.org](http://www.conkermaths.org) See how many questions you can answer in just one minute.

#### Key Vocabulary

What do I **add** to 5 to make 19?

What is 17 **take away** 6?

What is 13 **less than** 15?

**How many more** than 8 is 11?

What is the **difference** between 9 and 13?

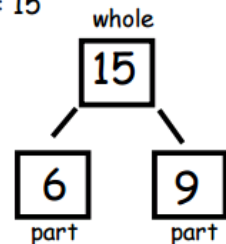
What is the **whole**?

What are the **parts**?

#### Key Imagery:

Prove using whole/part model:

Eg-  $6 + 9 = 15$





# Key Instant Recall Facts

## Year 3 – Autumn 2

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

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

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

#### Key Vocabulary

What is 3 **multiplied by** 8?

What is 8 **times** 3?

What is 24 **divided by** 3?

How many **lots of** 3 are in the number 12?

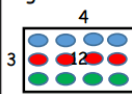
What is the **whole**?

What are the **parts**?

#### Key Imagery:

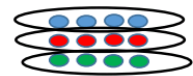
Prove using array:

Eg-  $4 \times 3 = 12$



(the parts are 4 and 3 and the whole is 12)

Prove using array using grouping  $12 \div 3 = 4$



They should be able to answer these questions in any order, including missing number questions e.g.  $3 \times \bigcirc = 18$  or  $\bigcirc \div 3 = 11$ .

#### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact family of the day. If you would like more ideas, please speak to your child's teacher.

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.

Buy one get three free – If your child knows one fact (e.g.  $3 \times 5 = 15$ ), can they tell you the other three facts in the same fact family?

Warning! – When creating fact families, children sometimes get confused by the order of the numbers in the division number sentence. It is tempting to say that the biggest number goes first, but it is more helpful to say that the answer to the multiplication goes first, as this will help your child more in later years when they study fractions, decimals and algebra.

E.g.  $3 \times 12 = 36$ . The answer to the multiplication is 36, so  $36 \div 3 = 12$  and  $36 \div 12 = 3$



# Key Instant Recall Facts

## Year 3 – Spring 1

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

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

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

They should be able to answer these questions in any order, including missing number questions e.g.  $4 \times \bigcirc = 16$  or  $\bigcirc \div 4 = 7$ .

#### Key Vocabulary

What is 4 **multiplied by** 6?

What is 8 **times** 4?

What is 24 **divided by** 4?

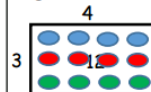
How many **lots of** 4 are in the number 12?

What is the **whole**? What are the parts?

#### Key Imagery:

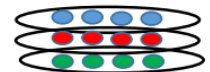
Prove using array:

Eg-  $3 \times 4 = 12$



(the parts are 3 and 4 and the whole is 12)

Prove using array using grouping  $12 \div 3 = 4$



### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact family of the day. If you would like more ideas, please speak to your child's teacher.

What do you already know? – Your child will already know many of these facts from the 2, 3, 5 and 10 times tables.

Double and double again – Multiplying a number by 4 is the same as doubling and doubling again. Double 6 is 12 and double 12 is 24, so  $6 \times 4 = 24$ .

Buy one get three free – If your child knows one fact (e.g.  $12 \times 4 = 48$ ), can they tell you the other three facts in the same fact family?



# Key Instant Recall Facts

## Year 3 – Spring 2

### I can recall facts about durations of time.

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

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

Children also need to know the order of the months in a year. They should be able to apply these facts to answer questions, such as:

What day comes after 30<sup>th</sup> April?

What day comes before 1<sup>st</sup> February?

What is the 8<sup>th</sup> month?

What month is 2 months before November?

### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.

Use rhymes and memory games– The rhyme, *Thirty days hath September*, can help children remember which months have 30 days. There are poems describing the months of the year in order.

#### Thirty days hath September (Adapted Version)

There are 30 days in September, April, June and November.  
All the rest have 31, except February which only has 28 days.  
And 29 days in each leap year.

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?



# Key Instant Recall Facts

## Year 3 – Summer 1

### I can tell the time to the nearest 5 minutes.

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

Children need to be able to tell the time using a clock with hands. This target can be broken down into several steps.

- ▶ I can tell the time to the nearest hour.
- ▶ I can tell the time to the nearest half hour.
- ▶ I can tell the time to the nearest quarter hour.
- ▶ I can tell the time to the nearest five minutes.
- ▶ I can tell the time to the nearest minute.

#### Key Vocabulary

Twelve **o'clock**

**Half past** two

**Quarter past** three

**Quarter to** nine

Five **past** one

Twenty-five **to** ten



#### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. If you would like more ideas, please speak to your child's teacher.

Talk about time - Discuss what time things happen. When does your child wake up? What time do they eat breakfast? Make sure that you have an analogue clock visible in your house or that your child wears a watch with hands. Once your child is confident telling the time, see if you can find more challenging clocks e.g. with Roman numerals or no numbers marked.

Ask your child the time regularly – You could also give your child some responsibility for watching the clock :

“The cakes need to come out of the oven at twenty-two minutes past four exactly.”

“We need to leave the house at twenty-five to nine.”



# Key Instant Recall Facts

## Year 3 – Summer 2

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

By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

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

#### Key Vocabulary

What is 8 **multiplied by** 6?

What is 8 **times** 8?

What is 24 **divided by** 8?

How many **lots of** 8 are there in 16?

What is the **whole**?

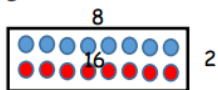
What are the **parts**?

They should be able to answer these questions in any order, including missing number questions e.g.  $8 \times \bigcirc = 16$  or  $\bigcirc \div 8 = 7$ .

#### Key Imagery:

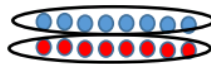
Prove using array:

Eg-  $2 \times 8 = 16$



(the **parts** are 2 and 8 and the **whole** is 16)

Prove using array using grouping  $16 \div 2 = 8$



#### Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact family of the day. If you would like more ideas, please speak to your child's teacher.

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.

Double your fours – Multiplying a number by 8 is the same as multiply by 4 and then doubling the answer.  $8 \times 4 = 32$  and double 32 is 64, so  $8 \times 8 = 64$ .

Five six seven eight – fifty-six is seven times eight ( $56 = 7 \times 8$ ).

Use memory tricks – For those hard-to-remember facts, [www.multiplication.com](http://www.multiplication.com) has some strange picture stories to help children remember.