



# Maths

## Key Instant Recall Facts

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

We expect children to practise their KIRFs at least 3 times a week.

These lists of KIRFs align with the new curriculum. They are intended to be challenging and it is intended that children will be taught the necessary maths in lessons beforehand.



# Key Instant Recall Facts

## Year 1 - Spring 1

### I know number bonds to 10.

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

$0 + 10 = 10$	$2 + 8 = 10$	$4 + 6 = 10$	$0 + 10 = 10$
$10 + 0 = 10$	$8 + 2 = 10$	$6 + 4 = 10$	$10 + 0 = 10$
$10 - 10 = 0$	$10 - 8 = 2$	$10 - 6 = 4$	$10 - 10 = 0$
$10 - 0 = 10$	$10 - 2 = 8$	$10 - 4 = 6$	$10 - 0 = 10$
$1 + 9 = 10$	$3 + 7 = 10$	$5 + 5 = 10$	$1 + 9 = 10$
$9 + 1 = 10$	$7 + 3 = 10$	$10 - 5 = 5$	$9 + 1 = 10$
$10 - 9 = 1$	$10 - 7 = 3$		$10 - 9 = 1$
$10 - 1 = 9$	$10 - 3 = 7$		$10 - 1 = 9$

#### Key Vocabulary

What is 8 **add** 2?

What is 6 **plus** 4?

What is 10 **take away** 5?

What is 3 **less than** 10?

I have 9, how many **more** do I need to make 10?

They should be able to answer these questions in any order, including missing number questions e.g.  $6 + \bigcirc = 10$  or  $10 - \bigcirc = 3$ .

#### 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 practical resources - Your child has seven potatoes on their plate and you give them three more. Can they predict how many they will have now?

Make a poster - We use Numicon at school. You can find pictures of the Numicon shapes here: [bit.ly/NumiconPictures](http://bit.ly/NumiconPictures) - your child could make a poster showing the different ways of making 10.

Play games - You can play number bond pairs online at [www.conkermaths.com](http://www.conkermaths.com) and then see how many questions you can answer in just one minute.



# Key Instant Recall Facts

## Year 2 - Spring 1

I know the multiplication and division facts for the 2 times tables.

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

$1 \times 2 = 2$	$2 \times 1 = 2$	$2 \div 2 = 1$
$2 \times 2 = 4$	$2 \times 2 = 4$	$4 \div 2 = 2$
$3 \times 2 = 6$	$2 \times 3 = 6$	$6 \div 2 = 3$
$4 \times 2 = 8$	$2 \times 4 = 8$	$8 \div 2 = 4$
$5 \times 2 = 10$	$2 \times 5 = 10$	$10 \div 2 = 5$
$6 \times 2 = 12$	$2 \times 6 = 12$	$12 \div 2 = 6$
$7 \times 2 = 14$	$2 \times 7 = 14$	$14 \div 2 = 7$
$8 \times 2 = 16$	$2 \times 8 = 16$	$16 \div 2 = 8$
$9 \times 2 = 18$	$2 \times 9 = 18$	$18 \div 2 = 9$
$10 \times 2 = 20$	$2 \times 10 = 20$	$20 \div 2 = 10$
$11 \times 2 = 22$	$2 \times 11 = 22$	$22 \div 2 = 11$
$12 \times 2 = 24$	$2 \times 12 = 24$	$24 \div 2 = 12$

### Key Vocabulary

What is 2 multiplied by 7?

What is 2 times 9?

What is 12 divided by 2?

They should be able to answer these questions in any order, including missing number questions e.g.  $2 \times \bigcirc = 8$  or  $\bigcirc \div 2 = 6$ .

### 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.

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.

Use what you already know - If your child knows that  $5 \times 2 = 10$ , they can use this fact to work out that  $6 \times 2 = 12$ .

Test the Parent - Your child can make up their own tricky division questions for you e.g. *What is 18 divided by 2?* They need to be able to multiply to create these questions.

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.



# 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**.

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

### Key Vocabulary

What is 4 multiplied by 6?

What is 8 times 4?

What is 24 divided by 4?

This list includes the most challenging facts but children will need to learn **all** number. They should be able to answer these questions in any order, including missing number questions e.g.  $4 \times \bigcirc = 16$  or  $\bigcirc \div 4 = 7$ .

### 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 4 - Spring 1

I know the multiplication and division facts for the 9 and 11 times tables.

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

$9 \times 1 = 9$	$9 \div 9 = 1$	$11 \times 1 = 11$	$11 \div 11 = 1$
$9 \times 2 = 18$	$18 \div 9 = 2$	$11 \times 2 = 22$	$22 \div 11 = 2$
$9 \times 3 = 27$	$27 \div 9 = 3$	$11 \times 3 = 33$	$33 \div 11 = 3$
$9 \times 4 = 36$	$36 \div 9 = 4$	$11 \times 4 = 44$	$44 \div 11 = 4$
$9 \times 5 = 45$	$45 \div 9 = 5$	$11 \times 5 = 55$	$55 \div 11 = 5$
$9 \times 6 = 54$	$54 \div 9 = 6$	$11 \times 6 = 66$	$66 \div 11 = 6$
$9 \times 7 = 63$	$63 \div 9 = 7$	$11 \times 7 = 77$	$77 \div 11 = 7$
$9 \times 8 = 72$	$72 \div 9 = 8$	$11 \times 8 = 88$	$88 \div 11 = 8$
$9 \times 9 = 81$	$81 \div 9 = 9$	$11 \times 9 = 99$	$99 \div 11 = 9$
$9 \times 10 = 90$	$90 \div 9 = 10$	$11 \times 10 = 110$	$110 \div 11 = 10$
$9 \times 11 = 99$	$99 \div 9 = 11$	$11 \times 11 = 121$	$121 \div 11 = 11$
$9 \times 12 = 108$	$108 \div 9 = 12$	$11 \times 12 = 132$	$132 \div 11 = 12$

### Key Vocabulary

What is 8 **multiplied by** 6?

What is 6 **times** 8?

What is 24 **divided by** 6?

They should be able to answer these questions in any order, including missing number Questions e.g.  $9 \times ( ) = 54$      $( ) \div 9 = 11$

### 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.

Look for patterns - These times tables are full of patterns for your child to find. How many can they spot?

Use your ten times table - Multiply a number by 10 and subtract the original number (e.g.  $7 \times 10 - 7 = 70 - 7 = 63$ ). What do you notice? What happens if you add your original number instead? (e.g.  $7 \times 10 + 7 = 70 + 7 = 77$ )

What do you already know? - Your child will already know many of these facts from the 2, 3, 4, 5, 6, 8 and 10 times tables. It might be worth practising these again!



# Key Instant Recall Facts

## Year 5 - Spring 1

**I can recall square numbers up to 144 and their square roots.**

By the end of this half term, children should know the following facts. The aim is for them

to recall these facts **instantly**.

$1^2 = 1 \times 1 = 1$	$\sqrt{1} = 1$
$2^2 = 2 \times 2 = 4$	$\sqrt{4} = 2$
$3^2 = 3 \times 3 = 9$	$\sqrt{9} = 3$
$4^2 = 4 \times 4 = 16$	$\sqrt{16} = 4$
$5^2 = 5 \times 5 = 25$	$\sqrt{25} = 5$
$6^2 = 6 \times 6 = 36$	$\sqrt{36} = 6$
$7^2 = 7 \times 7 = 49$	$\sqrt{49} = 7$
$8^2 = 8 \times 8 = 64$	$\sqrt{64} = 8$
$9^2 = 9 \times 9 = 81$	$\sqrt{81} = 9$
$10^2 = 10 \times 10 = 100$	$\sqrt{100} = 10$
$11^2 = 11 \times 11 = 121$	$\sqrt{121} = 11$
$12^2 = 12 \times 12 = 144$	$\sqrt{144} = 12$

### Key Vocabulary

What is 8 squared?

What is 7 multiplied by itself?

What is the square root of 144?

Is 81 a square number?

Children should also be able to recognise whether a number below 150 is a square number or not.

### 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.

Cycling Squares - At <http://nrich.maths.org/1151> there is a challenge involving square numbers. Can you complete the challenge and then create your own examples?

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.



# Key Instant Recall Facts

## Year 6 - Spring 1

**I can identify prime numbers up to 50.**

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

*A prime number is a number with no factors other than itself and one.*

*The following numbers are prime*

*numbers: 2, 3, 5, 7, 11, 13,  
17, 19, 23,  
29, 31, 37, 41, 43, 47*

*A composite number is divisible by a number other than 1 or itself.*

*The following numbers are composite numbers:*

*4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20  
22, 24, 25, 26, 27, 28, 30, 32, 34, 35, 36,  
38, 39, 40, 42, 44, 45, 46, 48, 49, 50*

Children should be able to explain how they know that a number is composite.

E.g. 39 is composite because it is a multiple of 3 and 13.

### 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.

It's really important that your child uses mathematical vocabulary accurately. Choose a number between 2 and 50. How many correct statements can your child make about this number using the vocabulary above?

Make a set of cards for the numbers from 2 to 50. How quickly can your child sort these into prime and composite numbers? How many even prime numbers can they find? How many odd composite numbers?

### Key Vocabulary

prime number

composite number

factor

multiple



# Key Instant Recall Facts