



## **Key Instant Recall Facts KIRFs**

To help develop children's fluency in mathematics, we ask them to learn Key Instant Recall Facts each half term. Children should aim to practise their KIRFs at least 3 times a week.

Please see attached lists of KIRFs which align to the new maths curriculum. They are intended to be challenging and where possible that children will be taught the necessary maths in lessons beforehand.

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# Key Instant Recall Facts

## Year 5 – Autumn 1

### I know decimal number bonds to 1 and 10.

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

Some examples:

$$0.6 + 0.4 = 1 \qquad 3.7 + 6.3 = 10$$

$$0.4 + 0.6 = 1 \qquad 6.3 + 3.7 = 10$$

$$1 - 0.4 = 0.6 \qquad 10 - 6.3 = 3.7$$

$$1 - 0.6 = 0.4 \qquad 10 - 3.7 = 6.3$$

$$0.75 + 0.25 = 1 \qquad 4.8 + 5.2 = 10$$

$$0.25 + 0.75 = 1 \qquad 5.2 + 4.8 = 10$$

$$1 - 0.25 = 0.75 \qquad 10 - 5.2 = 4.8$$

$$1 - 0.75 = 0.25 \qquad 10 - 4.8 = 5.2$$

#### Key Vocabulary

What do I **add** to 0.8 to make 1?

What is 1 **take away** 0.06?

What is 1.3 **less than** 10?

**How many more** than 9.8 is 10?

What is the **difference** between 0.92 and 10?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions e.g.  $0.49 \oplus = 10$  or  $7.2 \oplus = 10$ .

### 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 number bonds to 10 - How can number bonds to 10 help you work out number bonds to 100?

Play games – There are missing number questions at [www.conkermaths.com](http://www.conkermaths.com). See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.



# Key Instant Recall Facts

## Year 5 – Autumn 2

**I know the multiplication and division facts for all times tables up to  $12 \times 12$**

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

Please see separate sheet for all times table facts.

### Key Vocabulary

What is 12 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

They should be able to answer these questions in any order, including missing number questions e.g.  $7(\otimes) = 28$  or  $(\oplus) \div 6 = 7$ .

### 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.

Speed Challenge – Take two packs of playing cards and remove the kings. Turn over two cards and ask your child to multiply the numbers together (Ace = 1, Jack = 11, Queen = 12). How many questions can they answer correctly in 2 minutes? Practise regularly and see if they can beat their high score.

Online games – There are many games online which can help children practise their multiplication and division facts. [www.conkermaths.org](http://www.conkermaths.org) is a good place to start.

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 5 – Spring 1

### I can recall metric conversions.

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

1 kilogram = 1000 grams

1 kilometre = 1000 metres

1 metre = 100 centimetres

1 metre = 1000 millimetres

1 centimetre = 10 millimetres

1 litre = 1000 millilitres

They should also be able to apply these facts to answer questions.

e.g. How many metres in  $1\frac{1}{2}$  km?

### 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.

Look at the prefixes – Can your child work out the meanings of *kilo-*, *centi-* and *milli-*? What other words begin with these prefixes?

Be practical – Do some baking and convert the measurements in the recipe.

How far? – Calculate some distances using unusual measurements. How tall is your child in mm? How far away is London in metres?



# Key Instant Recall Facts

## Year 5 – Spring 2

### I can identify prime numbers up 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**.

*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

*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

#### Key

**Vocabulary prime**

**number composite**

**number factor**

**multiple**

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

E.g. 15 is composite because it is a multiple of 3 and 5.

#### 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 20. 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 20. 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 Instant Recall Facts

## Year 5 – Summer 1

### I can recall square numbers up to $12^2$ 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**.

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

#### 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 5 – Summer 2

### I can find factor pairs of a number.

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

Children should now know all multiplication and division facts up to  $12 \times 12$ . When given a number in one of these times tables, they should be able to state a factor pair which multiply to make this number. Below are some examples:

$$24 = 4 \times 6$$

$$24 = 8 \times 3$$

$$56 = 7 \times 8$$

$$54 = 9 \times 6$$

$$42 = 6 \times 7$$

$$25 = 5 \times 5$$

$$84 = 7 \times 12$$

$$15 = 5 \times 3$$

### Key Vocabulary

Can you find a **factor** of 28? Find two numbers whose **product** is 20.

I know that 6 is a factor of 72 because 6 multiplied by 12 equals 72.

### Top Tips

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Play games - There is an activity at [www.conkermaths.org](http://www.conkermaths.org) to practise finding factor pairs

Think of the question – One player thinks of a times table question (e.g.  $4 \times 12$ ) and states the answer. The other player has to guess the original question.

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.