



# 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 6 – Autumn 1

**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.**

This is a chance for Year 6 children to consolidate their knowledge of multiplication and division facts and to increase their speed of recall.

### Key Vocabulary

What is 12 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

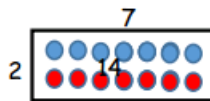
What is the **whole**?

What are the **parts**?

### Key Imagery:

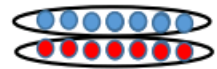
Prove using array:

Eg-  $7 \times 2 = 14$



(the **parts** are 7 and 2 and the **whole** is 14)

Prove using array using grouping  $14 \div 2 = 7$



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

Children who have already mastered their times tables should apply this knowledge to answer questions including decimals e.g.  $0.7 \times \bigcirc = 4.2$  or  $\bigcirc \div 60 = 0.7$

### 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 6 – Autumn 2

### I can identify common factors of a pair of numbers.

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

***The factors of a number are all numbers which divide it with no remainder.***

*E.g. the factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.*

*The factors of 56 are 1, 2, 4, 7, 8, 14, 28 and 56.*

***The common factors of two numbers are the factors they share.***

*E.g. the common factors of 24 and 56 are 1, 2, 4 and 8.*

***The greatest common factor of 24 and 56 is 8.***

#### Key Vocabulary

factor

common factor

multiple

greatest common factor

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

E.g. 8 is a common factor of 24 and 56 because  $24 = 8 \times 3$  and  $56 = 8 \times 7$ .

#### 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? If your child is not yet confident with identifying factor pairs of a number, you may want to refer to the Year 5 Summer 2 sheet to practise this first. If you would like more ideas, please speak to your child's teacher.

There are many online games to practise finding the greatest common factor, for example:

[Fun4theBrain BeyondFacts Games](#) and

<http://www.conkermaths.org/cmweb.nsf/products/conkerkirfs.html>

Choose two numbers. Take it in turns to name factors. Who can find the most?



# 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,  
27, 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

#### Key Vocabulary

prime number

composite number

factor

multiple

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 Instant Recall Facts

## Year 6 – Spring 2

### I can convert between decimals, fractions and percentages.

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

$$\frac{1}{2} = 0.5$$

$$\frac{1}{4} = 0.25$$

$$\frac{3}{4} = 0.75$$

$$\frac{1}{10} = 0.1$$

$$\frac{1}{5} = 0.2$$

$$\frac{3}{5} = 0.6$$

$$\frac{9}{10} = 0.9$$

$$\frac{1}{100} = 0.01$$

$$\frac{7}{100} = 0.07$$

$$\frac{21}{100} = 0.21$$

$$\frac{75}{100} = 0.75$$

$$\frac{99}{100} = 0.99$$

#### Key Vocabulary

How many **tenths** is 0.8?

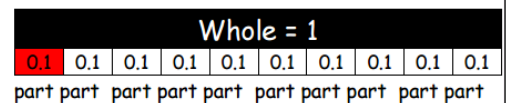
How many **hundredths** is 0.12?

Write 0.75 as a **fraction**?

Write  $\frac{1}{4}$  as a **decimal**?

#### Key Imagery:

Prove using bar model:



(Each part represents 1/10 of the whole)

Children should be able to convert between decimals and fractions for  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$  and any number of tenths and hundredths.

### 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: start with tenths before moving on to hundredths. If you would like more ideas, please speak to your child's teacher.

Play games - Make some cards with pairs of equivalent fractions and decimals. Use these to play the memory game or snap. Or make your own dominoes with fractions on one side and decimals on the other.

Equivalent posters- Using the bar model to make equivalent fraction, showing different decimals as a fraction, posters for tenths and hundredths.



# Key Instant Recall Facts

## Year 6 – Summer 1

### I can identify Roman Numerals.

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

*Roman numerals are still used today in the United Kingdom.*

I = 1	I
V = 5	value
X = 10	Xylophones
L = 50	Like
C = 100	Cows
D = 500	Do
M = 1000	Milk

#### Key Vocabulary

Roman  
Arabic  
numerals  
letter

Children should be able to recall what each of these letters stand for and use them to work out the rules.

Left means take away, right means add.

$$IV = 5 - 1 = 4$$

$$VI = 5 + 1 = 6$$

#### 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.

Make a set of cards for the letters of roman numerals – can they match them up quickly? How quickly can your child make dates using letters?



# Key Instant Recall Facts

## Year 6 – Summer 2

### I know the first 5 cube numbers.

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

A cube number is any number multiplied by itself three times.

E.g.  $n \times n \times n$ . It can be written as  $n^3$

The first five cube numbers are:

$$1 \times 1 \times 1 = 1$$

$$2 \times 2 \times 2 = 8$$

$$3 \times 3 \times 3 = 27$$

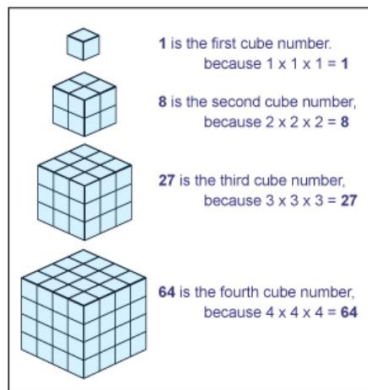
$$4 \times 4 \times 4 = 64$$

$$5 \times 5 \times 5 = 125$$

Children should be able to explain what a cube number is and recall the first five cube numbers quickly.

### 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 do not 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 visual images to help children understand what a cube number is.