



Key Instant Recall Facts

KIRFs

To develop your child's fluency and mental maths skills, we are introducing KIRFs throughout school. **KIRFS are a way of helping your child to learn by heart, key facts and information which they need to have instant recall of.**

KIRFs are designed to support the development of mental maths skills that underpin much of the maths work in our school. They are particularly useful when calculating, adding, subtracting, multiplying or dividing. They contain number facts such as number bonds and times tables that need constant practise and rehearsal, so children can recall them quickly and accurately.

Instant recall of facts helps enormously with mental agility in maths lessons. When children move onto written calculations, knowing these key facts is very beneficial and if these facts can be recalled mentally, it frees up the working memory for them to unpick and solve more complex reasoning and problem solving questions. For your child to become more efficient in recalling facts easily, they need to be practised frequently and for short periods of time.

Each half term, children will focus on 1 or 2 Key Instant Recall Facts (KIRFs) to practise and learn at home for the half term. They will also be available on our school website under the maths section and will be sent to parents and carers alongside the curriculum newsletter each term. The KIRFs include links to online games, videos and resources that you may find useful when practising these KIRFs with your child at home. They are not designed to be a time-consuming task and can be practised anywhere – in the car, walking to school, etc. Regular practice - little and often – helps children to retain these facts and keep their skills sharp.

Throughout the half term, the KIRFs will also be practised in school and your child's teacher will assess whether they have been retained.

Over their time at primary school, we believe that - if the KIRFs are developed fully - children will be more confident with number work, understand its relevance, and be able to access the curriculum much more easily. They will be able to apply what they have learnt to a wide range of problems that confront us regularly, thus becoming efficient mathematicians.

An overview of the KIRFs for every year group across the whole year can be found on the maths section of our website.

**Maths is a journey
not a destination**



Key Instant Recall Facts

Year 6 Autumn A

Identify the common factors of a pair of numbers.

By the end of this half term, children should be able to name factors of numbers and use this to identify common factors of a pair of numbers.

Method - When working out factors of numbers, the children are taught to think about pairs of numbers that are multiplied together to create that number. This should be thought of in order so that no factors are missed. E.g. Factors of 12

1 and 12

2 and 6

3 and 4

Misconception! - Lots of children get factors and multiples confused. Make sure they understand the difference. Multiples are counting in multiples of that number e.g. multiples of 12 are 12, 24, 36, 48 and so on..

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.

Online games

[Multiples and Factors \(topmarks.co.uk\)](https://www.topmarks.co.uk/Multiples-and-Factors)

[Factor Trees \(transum.org\)](https://www.transum.org/FactorTrees)

[Connect 4 Factors \(transum.org\)](https://www.transum.org/Connect4Factors)

Know prime numbers within 100.

By the end of the half term, children should also be able to recite prime numbers within 100.

What is a prime number? A prime number is a whole number greater than 1 whose only factors are 1 and itself. The number can only be divided by 1 and itself.

A prime number has 2 factors.

Online games

[Number Ninja - Prime Numbers • ABCya!](https://www.numberninja.co.uk/prime-numbers)

Prime Number				
2	3	5	7	11
13	17	19	23	29
31	37	41	43	47
53	59	61	67	71
73	79	83	89	97



Key Instant Recall Facts

Year 6 Autumn B

Know all previous number bonds including decimals
Know the addition and subtraction facts for two place decimal complements of 1

Know doubles and halves of 1 digit decimals.

By the end of this half term, children should be able to use their knowledge of number bonds to 10 and bonds to 100 and apply this to find pairs of decimals that total 1 or 10.

E.g. $0.3 + 0.7 = 1$ $4.6 + 5.4 = 10$ They should also be able to answer missing number questions e.g. $0.2 + ? = 1$ $? + 3.7 = 10$.

They should make links with complements off 100 to find complements of 1 for 2 place decimal numbers e.g. $0.36 + 0.64 = 1$ $0.12 + 0.88 = 1$

Method - Children should use previous knowledge of bonds to 10 to help them recognise decimal bonds to 1 and 10. E.g. $0.3 + 0.7 = 1$ $4.6 + 5.4 = 10$. They should also be able to answer missing number questions e.g. $0.2 + ? = 1$ $? + 3.7 = 10$.

When totalling 10 using pairs of decimals, links can be made with number bonds to 100 e.g. $62 + 38 = 100$ therefore $6.2 + 3.8 = 10$

This knowledge is then also used to find complements to 1 with 2 decimal place numbers. E.g. $56 + 44 = 100$ therefore $0.56 + 0.44 = 1$

Online Resources

[Hit the Button - Quick fire maths practise for 6-11 year olds \(topmarks.co.uk\)](https://www.topmarks.co.uk) (select the decimal option in number bonds)

[I Can Recall Decimal Number Bonds To 10. | Interactive Game](#)
[| Lesson ID 147 | Studyzone.tv](#)

Key Vocabulary

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

What is 1 **take away** 0.6?

What is 1.3 **less than** 10?

How many more than 9.8 is 10?

What is the **difference** between 8.9 and 10?



Key Instant Recall Facts

Year 6 Spring A

Mentally find simple fractions of an amount by dividing by denominator and multiply by numerator. $\frac{3}{4}$, $\frac{1}{5}$, $\frac{2}{3}$ etc.

Mentally find 1, 10 and 50% of a number.

By the end of this half term, children should be able to mentally find simple fractions of amounts that use known times table facts.

They should also be able to mentally recall 1, 10 and 50% of a number by dividing by 100, 10 and 2.

Method - To find a fraction of an amount, children should mentally divide the number by the denominator (bottom number of the fraction) and then multiply by the numerator (top number of the fraction). E.g. $\frac{2}{3}$ of 36 would be 36 divided by 3 = 12 then $12 \times 2 = 24$. Therefore $\frac{2}{3}$ of 36 = 24.

The idea of this KIRF is for children to carry out these calculations in their head using known times tables, not to use a formal method. This would be used for more complicated fractions or larger numbers.

To find 1% of a number, divide by 100. To find 10%, divide by 10 and to find 50%, divide by 2. Children have previously learnt to divide by 10 and 100 by using the place value method of digits moving places on the place value chart. To find 50% they would simply half the number.

Online Resources

[Fractions of amounts * - Gameshow quiz \(wordwall.net\)](#)

[\(4\) Fractions of Amounts - Corbettmaths - YouTube](#)

Key Vocabulary

Denominator—The bottom number in a fraction. Shows the number of equal parts in the whole.

Numerator—The top number in a fraction. Shows how many parts we have.

Unit fraction—A fraction where the numerator is one.

Non unit fraction—A fraction where the numerator is not one.



Key Instant Recall Facts

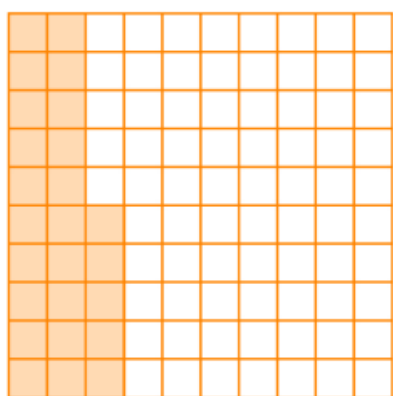
Year 6 Spring B

Convert between simple fractions, decimals and percentages.

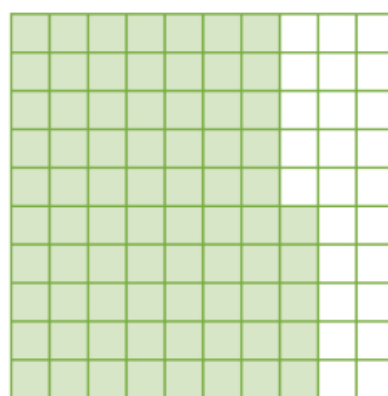
By the end of this half term, children should be able to use their knowledge of fractions, percentages and decimals to now make links between all 3 and be able to convert between them.

Method - Follow previous steps on KIRFS for how decimals link to fractions, ensure correct language of tenths and hundredths is used. Percentages should also be known as 'out of 100' The word percent means exactly this. Children need to get into the habit of showing percentages as a fraction over 100. This fraction should then be simplified where possible. E.g. $80\% = 80/100$ which simplifies to $4/5$.

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 do not need to practise them all at once; perhaps you could have a fact of the day. Play ping pong—adult calls out a percentage, child repeats back the equivalent decimal and/or fraction.



$$25\% = \frac{25}{100} = \frac{1}{4} = 0.25$$



$$75\% = \frac{75}{100} = \frac{3}{4} = 0.75$$



Key Instant Recall Facts

Year 6 Summer A

1. Recall metric conversions.
2. Know angles on a straight line and around a point.
3. Name parts of a circle

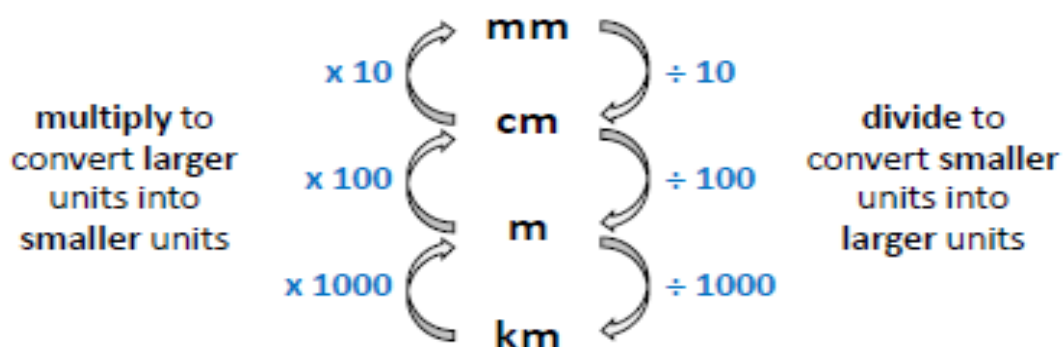
By the end of this half term, children should be able to remember that angles on a straight line add up to 180° and 360° around a point. They should be able to name radius, diameter and circumference on a circle. They should be able to recall metric conversions as below.

Measurement

Length

$$10 \text{ mm} = 1 \text{ cm} \quad 100 \text{ cm} = 1 \text{ m} \quad 1000 \text{ m} = 1 \text{ km}$$

Converting Length



Examples

$$3 \text{ m} = 300 \text{ cm}$$

$\times 100$

$$60 \text{ mm} = 6 \text{ cm}$$

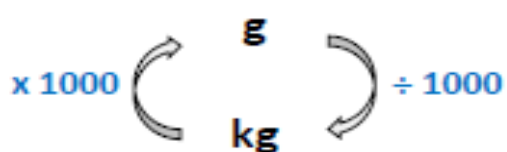
$\div 10$

$$5.6 \text{ km} = 5600 \text{ m}$$

$\times 1000$

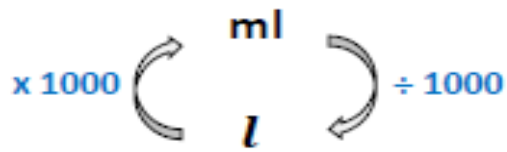
Mass

$$1000 \text{ g} = 1 \text{ kg}$$



Capacity

$$1000 \text{ ml} = 1 \text{ litre (l)}$$



Examples

$$4.5 \text{ kg} = 4500 \text{ g}$$

$\times 1000$

$$3800 \text{ g} = 3.8 \text{ kg}$$

$\div 1000$

$$6.5 \text{ l} = 6500 \text{ ml}$$

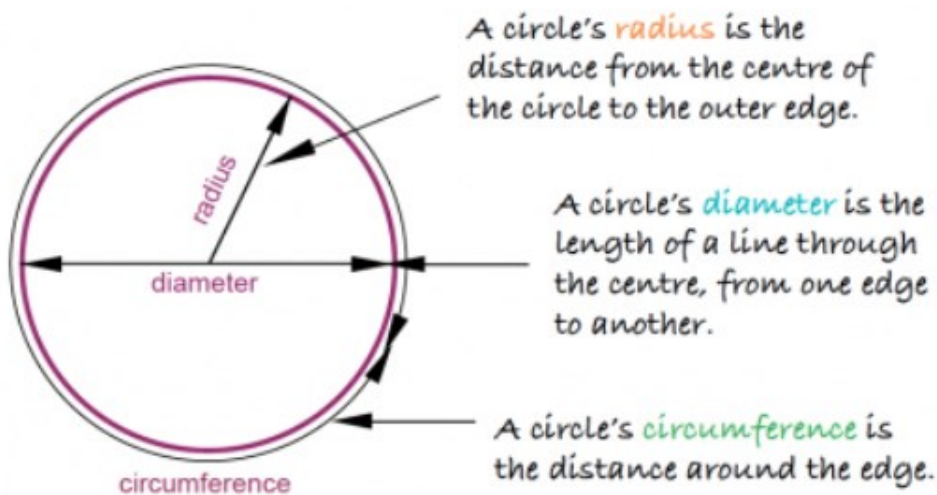
$\times 1000$

Parts of a circle

[What are the parts of a circle? - BBC Bitesize](#)

[3 parts of a circle you must know! - YouTube](#)

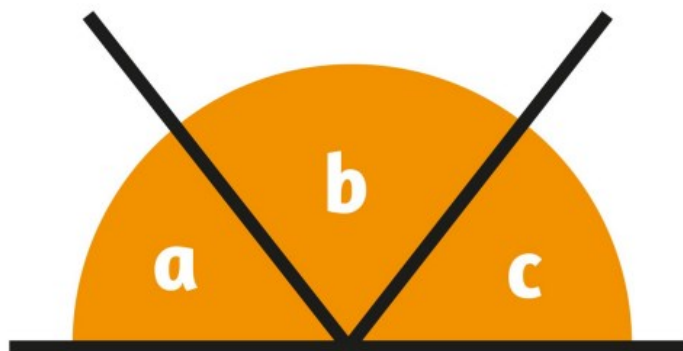
At the end of KS2, in Year 6, children will be asked to **illustrate and name parts of circles**, including radius, diameter and circumference.



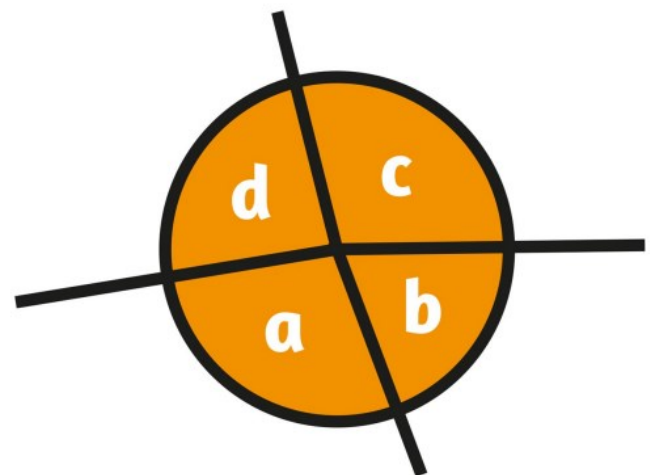
Angles around a point and on a straight line

[Calculate angles around a point - Maths - Catch Up Lessons - Learning with BBC Bitesize - BBC Bitesize](#)

[Artistic Angles \(educationcity.com\)](#)



Angles on a straight line add up to 180°



Angles around a point add up to 360°

Online Games

Metric conversions [Metric Units \(transum.org\)](#)

Angles [Angles Alien Attack - Mathsframe](#)

