



Year 4 Mathematics

Key Instant Recall Facts

KIRFs

To develop your child's fluency and mental maths skills, we have introduced KIRFs (Key Instant Recall Facts) 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 and measures 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.

For your child to become more efficient in recalling them easily, they need to be practised frequently and for short periods of time. Each half term, children will focus on a Key Instant Recall Fact (KIRF) to practise and learn at school and at home for the half term. They are available on our school website under the maths section and each child will receive a copy to keep at home.

The KIRFs include practical ideas to assist your child in grasping the key facts and contain helpful suggestions of ways in which you could make this learning interesting and relevant. 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.



Key Instant Recall Facts

Year 4 – Autumn 1

I know the multiplication and division facts for the 6 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**.

They should be able to answer these questions in any order, including missing number questions e.g.

$$6 \times \square = 72 \text{ or } \square \div 6 = 4$$

$6 \times 0 = 0$

$0 \times 6 = 0$

$0 \div 6 = 0$

$6 \div 1 = 6$

$6 \times 1 = 6$

$1 \times 6 = 6$

$6 \div 6 = 1$

$12 \div 2 = 6$

$6 \times 2 = 12$

$2 \times 6 = 12$

$12 \div 6 = 2$

$18 \div 3 = 6$

$6 \times 3 = 18$

$3 \times 6 = 18$

$18 \div 6 = 3$

$24 \div 4 = 6$

$6 \times 4 = 24$

$4 \times 6 = 24$

$24 \div 6 = 4$

$30 \div 5 = 6$

$6 \times 5 = 30$

$5 \times 6 = 30$

$30 \div 6 = 5$

$36 \div 6 = 6$

$6 \times 6 = 36$

$6 \times 6 = 36$

$36 \div 6 = 6$

$42 \div 7 = 6$

$6 \times 7 = 42$

$7 \times 6 = 42$

$42 \div 6 = 7$

$48 \div 8 = 6$

$6 \times 8 = 48$

$8 \times 6 = 48$

$48 \div 6 = 8$

$54 \div 9 = 6$

$6 \times 9 = 54$

$9 \times 6 = 54$

$54 \div 6 = 9$

$60 \div 10 = 6$

$6 \times 10 = 60$

$10 \times 6 = 60$

$60 \div 6 = 10$

$66 \div 11 = 6$

$6 \times 11 = 66$

$11 \times 6 = 66$

$66 \div 6 = 11$

$72 \div 12 = 6$

$6 \times 12 = 72$

$12 \times 6 = 72$

$72 \div 6 = 12$

What is 8 **multiplied** by 6? What is 6 **times** 8? What is 24 **divided** by 6?

Top Tips

These number facts can be learned by rote with regular chanting. The secret to success is practising **little** and **often**. Say the number sentence in full (e.g. one 6 is 6, two 6's are 12...)

Double your threes - Multiplying a number by 6 is the same as multiplying by 3 then doubling your answer. $7 \times 3 = 21$ and double 21 is 42, so $7 \times 6 = 42$.

Buy one get three free - If your child knows one fact (e.g. $3 \times 6 = 18$), can they tell you the 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. $6 \times 12 = 72$. The answer to the multiplication is 72, so $72 \div 6 = 12$ and $72 \div 12 = 6$



Key Instant Recall Facts

Year 4 – Autumn 2

I know the multiplication and division facts for the 9 and 11 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**.

They should be able to answer these questions in any order, including missing number questions e.g.

$$9 \times \square = 54 \text{ or } \square \div 11 = 6$$

$9 \times 0 = 0$

$0 \times 11 = 0$

$0 \div 9 = 0$

$11 \div 1 = 11$

$9 \times 1 = 9$

$1 \times 11 = 11$

$9 \div 9 = 1$

$22 \div 2 = 11$

$9 \times 2 = 18$

$2 \times 11 = 22$

$18 \div 9 = 2$

$33 \div 3 = 11$

$9 \times 3 = 27$

$3 \times 11 = 33$

$27 \div 9 = 3$

$44 \div 4 = 11$

$9 \times 4 = 36$

$4 \times 11 = 44$

$36 \div 9 = 4$

$55 \div 5 = 11$

$9 \times 5 = 45$

$5 \times 11 = 55$

$45 \div 9 = 5$

$66 \div 6 = 11$

$9 \times 6 = 54$

$6 \times 11 = 66$

$54 \div 9 = 6$

$77 \div 7 = 11$

$9 \times 7 = 63$

$7 \times 11 = 77$

$63 \div 9 = 7$

$88 \div 8 = 11$

$9 \times 8 = 72$

$8 \times 11 = 88$

$72 \div 9 = 8$

$99 \div 9 = 11$

$9 \times 9 = 81$

$9 \times 11 = 99$

$81 \div 9 = 9$

$110 \div 10 = 11$

$9 \times 10 = 90$

$10 \times 11 = 110$

$90 \div 9 = 10$

$121 \div 11 = 11$

$9 \times 11 = 99$

$11 \times 11 = 121$

$99 \div 9 = 11$

$132 \div 12 = 11$

$9 \times 12 = 108$

$12 \times 11 = 132$

$108 \div 9 = 12$

What is 9 **multiplied** by 7? What is 11 **times** 8? What is 72 **divided** by 9?

Top Tips

These number facts can be learned by rote with regular chanting. The secret to success is practising **little** and **often**. Say the number sentence in full (e.g. one 9 is 9, two 9's are 18...)

Look for patterns - Multiples of 9 add up to 9. e.g. 18: $1 + 8 = 9$, 27: $2 + 7 = 9$. Discuss the pattern in the first nine multiples of 11.

Buy one get three free - If your child knows one fact (e.g. $3 \times 9 = 27$), can they tell you the three facts in the same fact family? ($9 \times 3 = 27$, $27 \div 9 = 3$, $27 \div 3 = 9$).

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. $9 \times 12 = 108$. The answer to the multiplication is 108, so $108 \div 9 = 12$ and $108 \div 12 = 9$



Key Instant Recall Facts

Year 4 – Spring 1

I know the multiplication and division facts for the 7 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**.

They should be able to answer these questions in any order, including missing number questions e.g.

$$7 \times \square = 28 \text{ or } \square \div 7 = 4$$

$$7 \times 0 = 0$$

$$0 \times 7 = 0$$

$$0 \div 7 = 0$$

$$7 \times 1 = 7$$

$$1 \times 7 = 7$$

$$7 \div 7 = 1$$

$$7 \div 1 = 7$$

$$7 \times 2 = 14$$

$$2 \times 7 = 14$$

$$14 \div 7 = 2$$

$$14 \div 2 = 7$$

$$7 \times 3 = 21$$

$$3 \times 7 = 21$$

$$21 \div 7 = 3$$

$$21 \div 3 = 7$$

$$7 \times 4 = 28$$

$$4 \times 7 = 28$$

$$28 \div 7 = 4$$

$$28 \div 4 = 7$$

$$7 \times 5 = 35$$

$$5 \times 7 = 35$$

$$35 \div 7 = 5$$

$$35 \div 5 = 7$$

$$7 \times 6 = 42$$

$$6 \times 7 = 42$$

$$42 \div 7 = 6$$

$$42 \div 6 = 7$$

$$7 \times 7 = 49$$

$$7 \times 7 = 49$$

$$49 \div 7 = 7$$

$$49 \div 7 = 7$$

$$7 \times 8 = 56$$

$$8 \times 7 = 56$$

$$56 \div 7 = 8$$

$$56 \div 8 = 7$$

$$7 \times 9 = 63$$

$$9 \times 7 = 63$$

$$63 \div 7 = 9$$

$$63 \div 9 = 7$$

$$7 \times 10 = 70$$

$$10 \times 7 = 70$$

$$70 \div 7 = 10$$

$$70 \div 10 = 7$$

$$7 \times 11 = 77$$

$$11 \times 7 = 77$$

$$77 \div 7 = 11$$

$$77 \div 11 = 7$$

$$7 \times 12 = 84$$

$$12 \times 7 = 84$$

$$84 \div 7 = 12$$

$$84 \div 12 = 7$$

What is 7 **multiplied** by 5? What is 7 **times** 8? What is 84 **divided** by 7?

Top Tips

Chanting - These number facts can be learned by rote with regular chanting. The secret to success is practising **little** and **often**. Say the number sentence in full (e.g. one 9 is 9, two 9's are 18...)

Buy one get three free - If your child knows one fact (e.g. $3 \times 7 = 21$), can they tell you the three facts in the same fact family? ($7 \times 3 = 21$, $21 \div 7 = 3$, $21 \div 3 = 7$).

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. $7 \times 12 = 84$. The answer to the multiplication is 84, so $84 \div 7 = 12$ and

$$84 \div 12 = 7$$



Key Instant Recall Facts

Year 4 – Spring 2

I know the multiplication and division facts for the 12 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**.

They should be able to answer these questions in any order, including missing number questions e.g.

$$12 \times \square = 48 \text{ or } \square \div 6 = 12$$

| | | | |
|----------------------|----------------------|--------------------|--------------------|
| $12 \times 0 = 0$ | $0 \times 12 = 0$ | $0 \div 12 = 0$ | |
| $12 \times 1 = 12$ | $1 \times 12 = 12$ | $12 \div 12 = 1$ | $12 \div 1 = 12$ |
| $12 \times 2 = 24$ | $2 \times 12 = 24$ | $24 \div 12 = 2$ | $24 \div 2 = 12$ |
| $12 \times 3 = 36$ | $3 \times 12 = 36$ | $36 \div 12 = 3$ | $36 \div 3 = 12$ |
| $12 \times 4 = 48$ | $4 \times 12 = 48$ | $48 \div 12 = 4$ | $48 \div 4 = 12$ |
| $12 \times 5 = 60$ | $5 \times 12 = 60$ | $60 \div 12 = 5$ | $60 \div 5 = 12$ |
| $12 \times 6 = 72$ | $6 \times 12 = 72$ | $72 \div 12 = 6$ | $72 \div 6 = 12$ |
| $12 \times 7 = 84$ | $7 \times 12 = 84$ | $84 \div 12 = 7$ | $84 \div 7 = 12$ |
| $12 \times 8 = 96$ | $8 \times 12 = 96$ | $96 \div 12 = 8$ | $96 \div 8 = 12$ |
| $12 \times 9 = 108$ | $9 \times 12 = 108$ | $108 \div 12 = 9$ | $108 \div 9 = 12$ |
| $12 \times 10 = 120$ | $10 \times 12 = 120$ | $120 \div 12 = 10$ | $120 \div 10 = 12$ |
| $12 \times 11 = 132$ | $11 \times 12 = 132$ | $132 \div 12 = 11$ | $132 \div 11 = 12$ |
| $12 \times 12 = 144$ | $12 \times 12 = 144$ | $144 \div 12 = 12$ | $144 \div 12 = 12$ |

What is 12 **multiplied** by 4? What is 12 **times** 9? What is 96 **divided** by 12?

Top Tips

Chanting - These number facts can be learned by rote with regular chanting. The secret to success is practising **little** and **often**. Say the number sentence in full (e.g. one 12 is 12, two 12's are 24...)

Buy one get three free - If your child knows one fact (e.g. $3 \times 12 = 36$), can they tell you the three facts in the same fact family? ($12 \times 3 = 36$, $36 \div 12 = 3$, $36 \div 3 = 12$).

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. $7 \times 12 = 84$. The answer to the multiplication is 84, so $84 \div 7 = 12$ and

$$84 \div 12 = 7$$



Key Instant Recall Facts

Year 4 – Summer 1

I can multiply and divide single digit numbers by 10 and 100.

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

$7 \times 10 = 70$

$30 \times 10 = 300$

$0.8 \times 10 = 8$

$10 \times 7 = 70$

$10 \times 30 = 300$

$10 \times 0.8 = 8$

$70 \div 7 = 10$

$300 \div 30 = 10$

$8 \div 0.8 = 10$

$70 \div 10 = 7$

$300 \div 10 = 30$

$8 \div 10 = 0.8$

$6 \times 100 = 600$

$40 \times 100 = 4000$

$0.2 \times 10 = 2$

$100 \times 6 = 600$

$100 \times 40 = 4000$

$10 \times 0.2 = 2$

$600 \div 6 = 100$

$4000 \div 40 = 100$

$2 \div 0.2 = 10$

$600 \div 100 = 6$

$4000 \div 100 = 40$

$2 \div 10 = 0.2$

Key Vocabulary

What is 5 **multiplied by** 10?

What is 10 **times** 0.8?

What is 700 **divided by** 70?

Thousands, hundreds, tens, ones, tenths, hundredths

These are just examples of the facts for this term. Children should be able to answer these questions in any order, including missing number questions. E.g.

$10 \times \square = 5 \text{ or } \square \div 10 = 60$

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.

WARNING! It is tempting to tell children that to multiply by ten or one hundred it is just a case of adding zeros to the end of a number. This way of thinking, however, can cause problems when they are trying to multiply and divide decimal numbers as the rule does not work for these numbers.

The best way to understand the process for multiplying by ten or one hundred is to show each digit moving in the place value columns. This rule also works for decimals.

Buy one get one 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 – Summer 2

I can recall decimal equivalents of fractions.

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

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

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

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

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

$$\frac{2}{10} = 0.2$$

$$\frac{5}{10} = 0.5$$

$$\frac{6}{10} = 0.6$$

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

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

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

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

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

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

Key Vocabulary

How many **tenths** is 0.6?

How many **hundredths** is 0.23?

Write 0.75 as a **fraction**.

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

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 do not need to practise them all at once; perhaps you could have a fact of the day.

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.