Treeton Church of England Primary School

YEAR 4 Mathematics

Key Instant Recall Facts

KIRFs

To develop your child's fluency and mental maths skills, we are introducing 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 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 home for the half term. They will also be 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 number bonds to 100

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:

60 + 40 = 100	37 + 63 = 100
40 + 60 = 100	63 + 37 = 100
100 – 40 = 60	100 – 37 = 63
100 – 60 = 40	100 – 63 = 37
75 + 25 = 100	48 + 52 = 100
25 + 75 = 100	52 + 48 = 100
100 – 25 = 75	100 – 52 = 48
100 – 75 = 25	100 – 48 = 52

Key Vocabulary

What do I **add** to 65 to make 100?

What is 100 **take away** 6?

What is 13 **less than** 100?

How many more than 98 is 100?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions. e.g. 49 + = 100 or 100 - = 72

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.

Buy one get three free – If your child knows one fact (e.g. 85 + 15 = 100), can they tell you the other three facts in the same fact family?

Use number bonds to 10 – How can your number bonds to 10 help you work out number bonds to 100?

Play Games – There are missing number questions at www.conkermaths.org See how many questions you can answer in 90 seconds. There is also a number bond pair game to play.

Key Instant Recall Facts

YEAR 4 – Autumn 2

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**.

6 x 1 = 6	1 x 6 = 6	6 ÷ 6 = 1	6 ÷ 1 = 6
6 x 2 = 12	2 x 6 = 12	12 ÷ 6 = 2	12 ÷ 2 = 6
6 x 3 = 18	3 x 6 = 18	18 ÷ 6 = 3	18 ÷ 3 = 6
6 x 4 = 24	4 x 6 = 24	24 ÷ 6 = 4	24 ÷ 4 = 6
6 x 5 = 30	5 x 6 = 30	30 ÷ 6 = 5	30 ÷ 5 = 6
6 x 6 = 36	6 x 6 = 36	36 ÷ 6 = 6	36 ÷ 6 = 6
6 x 7 = 42	7 x 6 = 42	42 ÷ 6 = 7	42 ÷ 7 = 6
6 x 8 = 48	8 x 6 = 48	48 ÷ 6 = 8	48 ÷ 8 = 6
6 x 9 = 54	9 x 6 = 54	54 ÷ 6 = 9	54 ÷ 9 = 6
6 x 10 = 60	10 x 6 = 60	60 ÷ 6 = 10	60 ÷ 10 = 6
6 x 11 = 66	11 x 6 = 66	66 ÷ 6 = 11	66 ÷ 11 = 6
6 x 12 = 72	12 x 6 = 72	72 ÷ 6 = 12	72 ÷ 12 = 6

They should be able to answer these questions in any order, including missing number questions e.g. 6 x = 72 or ÷ 6 = 4

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

Songs and Chants – You can buy Times Tables CDs or find multiplication songs and chants online. You can also use Education City songs and websites www.timestables.co.uk and www.timestables.me.uk

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

Buy one get three free – If your child knows one fact (e.g. 3 x 6 = 18), can they tell you the other 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 x 12 = 72. The answer to the multiplication is 72, so 72 ÷ 6 = 12 and 72 ÷ 12 = 6

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**.

7 x 1 = 7	1 x 7 = 7	7 ÷ 7 = 1	7 ÷ 1 = 7
7 x 2 = 14	2 x 7 = 14	14 ÷ 7 = 2	14 ÷ 2 = 7
7 x 3 = 21	3 x 7 = 21	21 ÷ 7 = 3	21 ÷ 3 = 7
7 x 4 = 28	4 x 7 = 28	28 ÷ 7 = 4	28 ÷ 4 = 7
7 x 5 = 35	5 x 7 = 35	35 ÷ 7 = 5	35 ÷ 5 = 7
7 x 6 = 42	6 x 7 = 42	42 ÷ 7 = 6	42 ÷ 6 = 7
7 x 7 = 49	7 x 7 = 49	49 ÷ 7 = 7	49 ÷ 7 = 7
7 x 8 = 56	8 x 7 = 56	56 ÷ 7 = 8	56 ÷ 8 = 7
7 x 9 = 63	9 x 7 = 63	63 ÷ 7 = 9	63 ÷ 9 = 7
7 x 10 = 70	10 x 7 = 70	70 ÷ 7 = 10	70 ÷ 10 = 7
7 x 11 = 77	11 x 7 = 77	77 ÷ 7 = 11	77 ÷ 11 = 7
7 x 12 = 84	12 x 7 = 84	84 ÷ 7 = 12	84 ÷ 12 = 7

They should be able to answer these questions in any order, including missing number questions e.g. 7 x = 28 or ÷ 6 = 7

What is 7 **multiplied** by 6? What is 7 **times** 8? What is 84 **divided** by 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 do not need to practise them all at once; perhaps you could have a fact of the day.

Songs and Chants – You can buy Times Tables CDs or find multiplication songs and chants online. You can also use Education City songs and websites www.timestables.co.uk and www.timestables.me.uk

Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.

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 x 6 = 42. The answer to the multiplication is 42, so 42 ÷ 6 = 7 and 42 ÷ 7 = 6

Key Instant Recall Facts

YEAR 4 – Spring 2

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 x 1 = 9	9 ÷ 9 = 1	11 x 1 = 11	11 ÷ 11 = 1
9 x 2 = 18	18 ÷ 9 = 2	11 x 2 = 22	22 ÷ 11 = 2
9 x 3 = 27	27 ÷ 9 = 3	11 x 3 = 33	33 ÷ 11 = 3
9 x 4 = 36	36 ÷ 9 = 4	11 x 4 = 44	44 ÷ 11 = 4
9 x 5 = 45	45 ÷ 9 = 5	11 x 5 = 55	55 ÷ 11 = 5
9 x 6 = 54	54 ÷ 9 = 6	11 x 6 = 66	66 ÷ 11 = 6
9 x 7 = 63	63 ÷ 9 = 7	11 x 7 = 77	77 ÷ 11 = 7
9 x 8 = 72	72 ÷ 9 = 8	11 x 8 = 88	88 ÷ 11 = 8
9 x 9 = 81	81 ÷ 9 = 9	11 x 9 = 99	99 ÷ 11 = 9
9 x 10 = 90	90 ÷ 9 = 10	11 x10 = 110	110 ÷ 11 = 10
9 x 11 = 99	99 ÷ 9 = 11	11 x 11 =121	121 ÷ 11 = 11
9 x 12 = 108	108 ÷ 9 = 12	11 x 12 =132	132 ÷ 11 = 12

They should be able to answer these questions in any order, including missing number questions e.g. 9 x = 54 or ÷ 11 = 7

What is 9 **multiplied** by 6? What is 11 **times** 8? What is 81 **divided** by 9?

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.

Songs and Chants – You can buy Times Tables CDs or find multiplication songs and chants online. You can also use Education City songs and websites www.timestables.co.uk and www.timestables.me.uk

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 x 10 – 7 = 70 – 7 = 63) What do you notice? What happens if you add your original number instead? (e.g. 7 x 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 may be worth practising these again!

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 x 10 = 70	30 x 10 = 300	0.8 x 10 = 8
10 x 7 = 70	10 x 30 = 300	10 x 0.8 = 8
70 ÷ 7 = 10	300 ÷ 30 = 10	8 ÷ 0.8 = 10
70 ÷ 10 = 7	300 ÷ 10 = 30	8 ÷ 10 = 0.8
6 x 100 = 600	40 x 100 = 4000	0.2 x 10 = 2
100 x 6 = 600	100 x 40 = 4000	10 x 0.2 = 2
600 ÷ 6 = 100	4000 ÷ 40 = 100	2 ÷ 0.2 = 10
600 ÷ 100 = 6	4000 ÷ 100 = 40	2 ÷ 10 = 0.2

These are just examples of the facts for this term. They should be able to answer these questions in any order, including missing number questions e.g. 10 x = 5 or ☐ ÷ 10 = 60

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

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.

It is tempting to tell children that to multiply by ten or one hundred it is just a case of adding zeroes 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 table (place value shift). This rule also works for decimals.

Buy one get three free – If your child knows one fact (e.g. 12 x 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**.

1/2 = 0.5	1/10 = 0.1	1/100 = 0.01
1/4 = 0.25	2/10 = 0.2	7/100 = 0.07
3/4 = 0.75	5/10 = 0.5	21/100 = 0.21
	6/10 = 0.6	75/100 = 0.75
	9/10 = 0.9	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 ¼ as a **decimal**.

Children should be able to convert between decimals and fractions for ½ , ¼ , ¾ 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. 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.