Year 5 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 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	**3.7 + 6.3 = 10**
0.4 + 0.6 = 1	**6.3 + 3.7 = 10**
1 - 0.4 = 0.6	**10 - 6.3 = 3.7**
1- 0.6 = 0.4	**10 - 3.7 = 6.3**
0.75 + 0.25 = 1	**4.8 + 5.2 = 10**
0.25 + 0.75 = 1	**5.2 + 4.8 = 10**
1 - 0.25 = 0.75	**10 - 5.2 = 4.8**
1 - 0.75 = 0.25	**10 - 4.8 = 5.2**

Key Vocabulary

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

What is 1 **subtract** 0.06?

What is 1.3 **less than** 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 + ◯ = 10 or 7.2 + ◯ = 10.

Top Tips

These number facts can be learned by rote. 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.

Use what you already know (Buy one get one free) - If your child knows one fact (e.g. 3.7 + 6.3 = 1), can they tell you the other three facts in the same fact family?

Use number bonds to 10 and 100 - How can your number bonds to 10 help you work out the answer?

Key Instant Recall Facts

Year 5 – Autumn 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 only **two** factors - itself and one.

The following numbers are the prime numbers below 20:

2, 3, 5, 7, 11, 13, 17, 19

(1 is not a prime number because it only has one factor - itself).

A **composite number** is divisible by a number other than 1 and itself:

E.g. 4, 6, ,8 , 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 (in addition to 1 and itself).

Top Tips

These number facts can be learned by rote. 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.

It is 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 – Spring 1

I can recall square numbers up to 144 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.**

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

Key Vocabulary

What is 6 squared?
What is 8 multiplied by itself?
What is the square root of 144?
Is 30 a square number?

Children should also be able to recognise whether a number below 150 is a square number or not.

Top Tips

These number facts can be learned by rote. 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. Rehearse these facts in order going forwards and backwards and in a random order too.

Cycling squares - At http://nrich.maths.org/1151 there is a challenge involving square numbers.. Can you complete the challenge then complete your own examples?

Key Instant Recall Facts

Year 5 – Spring 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 know all multiplication and division facts up to 12 x 12. When given a number in one of those times tables, they should be able to state a factor pair which multiply together to make this number. We call the answer to a multiplication question the **product.**

Some examples:

28 = 4 x 7

4 and 7 are a factor pair of the product 28

56 = 8 x 7

8 and 7 are a factor pair of the

Key Vocabulary

Can you find a factor of 56?

Find 2 numbers whose product is 24.

I know that 6 is a factor of 42 because 6 multiplied by 7 is 42.

Top Tips

These number facts can be learned by rote. 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.

Think of a question: One player thinks of a times table question (e.g. 4 x 6) and states the

Answer (24). The other player has to guess the original question / factor pair (4 x 6)

Use memory tricks: For those hard to remember facts, keep repeating and chanting the fact aloud 8 times in a row. Try this a few times and facts will stick. Seven 8's are 56, seven 8's are 56, seven 8's are 56 … etc

Key Instant Recall Facts

Year 5 – Summer 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.**

They should also be able to apply these facts to answer questions. E.g. How many metres in 1 1/2 km?

1 kilogram = 1000 grams

2 kilograms = 2000 grams

3 kilograms = 3000 grams

1 kilometre = 100 metres

1 metre = 100 centimetres

1 metre = 1000 millimetres

1 centimetre = 10 millimetres

1 litre = 1000 millilitres

2 litres = 2000 millilitres etc...

Top Tips

These number facts can be learned by rote. 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.

Look at 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 – Summer 2

I can count in powers of 10, forwards and backwards with numbers to 1 million.

Children should be able to count forwards and backwards in powers of 10 (10, 100, 1000, 10,000, 100,000) up to 1 million.

Some examples:

Count forwards in steps of 10, starting from 10,000:

10,000, 10,010, 10,020, 10,030, 10,040, 10,050, 10,060, etc

Key Vocabulary

multiples

powers of 10

ten, hundred, thousand, ten thousand, hundred thousand, million

Top Tips

These number facts can be learned by rote. 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.

<u>Practical resources and ideas:</u>
Focus on counting forwards and backwards where your child needs to cross a 10, 100, 1,000, 10,000 0r 100,000 boundary.

For example, count backwards in steps of 100 from 4,100:

4,100, 4,000, 3,900 etc