Key Instant Recall Facts

At St Mary Magdalene Primary our aim is to develop children's fluency in mathematics in order to create competent and confident mathematicians.

To achieve this, we will be focusing on children learning Key Instant Recall Facts (KIRFs). These are a set of key objectives for each year group which align with the National Curriculum and help form a solid foundation for children to be successful.

How will we teach the Key Instant Recall Facts (KIRFs)?

At the beginning of each half term, a new KIRF will be introduced to every year group. The teacher will teach this in an initial lesson and revisit the objective weekly.

How to support your child at home

Once the initial lesson has been taught, the KIRF for that half term will be sent home. This will also include some ideas on how to support your child and activities for them to practise and build fluency.

How will you know your child is progressing?

As the KIRFs are quick recall facts, each week your child will be given a set amount of time to answer as many questions as they can, linked to the objective. The aim is for your child to beat their individual score each week, thus improving their core mathematical skills. This will be done in a fun way to enthuse the children.

Year 5 – Summer 2

I can add and subtract increasingly large numbers mentally.

Children should practise mental calculations to aid fluency. The ability to choose the most efficient method is also important. Below are some examples of calculations which would be solved mentally (as opposed to using a written method):

12,462 - 2,300 = 10,162

9,550 + 3,250 = 12,600

14,189 + 3,700 =17,889

11,327 - 5,300 = 6,027

26,923 + 2,077 = 29,000

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.

Speed challenge - How many calculations can your child solve in 2 minutes? Can they beat your top score? Can they beat you in a race?
Discussion - Talk about different strategies to solve the calculation. Is there a more efficient method?

Year 5 – Summer 1

I can find factor pairs of a number.

Children should now know all multiplication and division facts up to 12 × 12. When given a number in one of these times tables, they should be able to state a factor pair which multiply to make this number. Below are some examples:

24 = 4 × 6	42 = 6 × 7
24 = 8 × 3	25 = 5 × 5
56 = 7 × 8	84 = 7 × 12
54 = 9 × 6	15 = 5 × 3

Key Vocabulary

Can you find a **factor** of 28?

Find two numbers which have a **product** of 20.

I know that 6 is a factor of 72 because 6 multiplied by 12 equals 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 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.

Play games - There is an activity at www.conkermaths.org to practise finding factor pairs. Encourage your child to explore Mathletics too!
Think of the question – One player thinks of a times table question (e.g. 4 × 12) and states the answer (48). The other player has to guess the original question.
Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some short picture stories to help children remember.

Year 5 – Spring 2

I can recall square numbers up to 12^2 and their square roots.

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

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

Key Vocabulary

What is 8 **squared**?

What is 7 **multiplied by itself**?

What is the **square root** of 144?

Is 99 a **square number**? (No)

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

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.

Cycling Squares – At http://nrich.maths.org/1151 there is a challenge involving square numbers. Can your complete the challenge and then create their own examples?
Play Games – Check out 'Hit the Button' and see how many questions you and your child can answer in one minute. This online can be found at https://www.topmarks.co.uk/maths-games/hit-the-button.
Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some short picture stories to help children remember.

Year 5 – Spring 1

I can identify prime numbers up to 20.

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

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

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.

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 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?

Year 5 – Autumn 2

I can recall and use metric conversions.

Facts to learn

1 kilogram = 1000 grams
1 kilometre = 1000 metres
1 metre = 100 centimetres
1 metre = 1000 millimetres
1 centimetre = 10 millimetres
1 litre = 1000 millilitres

Your child should also practise applying these facts to answer a range of questions.

e.g. How many metres in 1½ km?

How many millilitres in 3.5 litres?

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.

Look at the 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 Big Ben in metres?
Work out the distance you have travelled in the car, on the train, by foot, in different units.

Year 5 – Autumn 1

I know decimal number bonds to 1 and 10.

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 **take away** 0.06?

What is 1.3 **less than** 10?

How many more than 9.8 is 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

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.

Buy one get three free - If your child knows one fact (e.g. 10 – 2.8 = 7.2), can they tell you the other three facts in the same fact family (e.g. 10 – 7.2 = 2.8, 7.2 + 2.8 = 10 and 2.8 + 7.2 = 10)?

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

Play games – There is a number bonds pairs game and missing number questions at www.conkermaths.com. See how many questions your child can answer in just 90 seconds!