Key Instant Recall Facts (KIRFs)

What are KIRFs?

Our KIRFs have been designed to support the development of the core declarative knowledge that underpins much of the maths work in schools. Each objective has been carefully selected based on the National curriculum. Key instant recall facts help enormously with mental agility within Maths lessons and when children move onto written calculations, knowing these facts is very beneficial. These facts are particularly useful when calculating, be it adding, subtracting, multiplying or dividing.

The rote learning of certain numeracy facts, such as times tables, has always been a crucial part of maths development. However, alongside the times tables there are many other key number facts that are needed to make complex reasoning and problem solving much more accessible.

Each half term children will be given a different KIRF objective to practise and learn in school and at home. They will be given the opportunity to recall these at the start of every maths lesson. For your children to become more efficient in recalling them easily, they need to be practiced frequently and for short periods of time. **Little and often is key!**

Over the course of primary school - 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.

Why practise the KIRFs?

Working memory plays an essential role in children's mathematical learning (De Smedt et al., 2009) but it is a system with limited capacity. When a mathematical task requires processing, or actively maintaining, too much information in the working memory, it can lead to cognitive overload.

The repetition needed to learn the KIRFs by heart should allow children to store this knowledge into their long-term memories, helping them to free up their working memories more in their lessons. If a child knows their key facts by heart, they can focus on learning new steps or procedures, and then develop their reasoning and problem-solving skills. Once these facts are committed to long term memory it becomes a matter of retrieval.

How to practise KIRFS:

This KIRFs handbook includes practical ideas to assist your child in grasping the key facts and contains helpful suggestions of ways in which you could make this learning interesting and relevant. KIRFs 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. However, please note that the practise of KIRFs should be viewed as a tool for retrieval, not a formal assessment.

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.

Year 3

https://ttrockstars.com/

Objective: I know all number bonds to 20 and can use number bonds to derive pairs of numbers that total 100 e.g. 64 + 36 = 100

- Play Games – There are missing number questions at www.conkermaths.org and see how many questions you can answer in just one minute.

Objective: I know multiplication and division facts for the 2,5 and 10 x tables

- 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 what you already know – If your child knows that 2 x 5 = 10, they can use this fact to work out that 2 x 6 = 12
- Test the Parent – Your child can make up their own tricky division questions for you e.g. What is 18 divided by 2? They need to be able to multiply to create these questions.
- Test the Parent – Your child can make up their own tricky division questions for you e.g. What is 70 divided by 10? They need to be able to multiply to create these questions.
- Apply these facts to real-life situations – How many toes are in your house? What other multiplication and division questions can your child make up?
- Spot patterns – What patterns can your child spot in the 5 times table? Are there any similarities with the 10 times table?
- Test the Parent – Your child can make up their own tricky division questions for you e.g. What is 45 divided by 5? They need to be able to multiply to create these questions.

Objective: I know the multiplication and division facts for the 3 times tables

- 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
- Buy one get three free – If your child knows one fact (e.g. 3 x 5 = 15), 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. 3 x 12 = 36. The answer to the multiplication is 36, so 36 ÷ 3 = 12 and 36 ÷ 12 = 3

Objective: I know multiplication and division facts for the 4 times tables

- What do you already know? – Your child will already know many of these facts from the 2 times tables.
- 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 and double again – Multiplying a number by 4 is the same as doubling and doubling again. Double 6 is 12 and double 12 is 24, so 6 x 4 = 24.
- 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? 4 x 12 = 48, 48/12=4 and 48/4=12.

Objective: I know multiplication and division facts for the 8 times tables

- 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 fours – Multiplying a number by 8 is the same as multiply by 4 and then doubling the answer. 8 x 3 = 24 and double 24 is 48, so 8 x 3 = 24. Five six seven eight – fifty-six is seven times eight (56 = 7 x 8) I ate and ate until I was sick on the floor – eight times eight is sixty-four (8 x 8 = 64)
- Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.

Objective: I can tell the time to the nearest minute (analogue & digital) on 12- and 24-hour clocks

- Talk about time – Discuss what time things happen. When does your child wake up? What time do they eat breakfast?
- Make sure that you have an analogue clock visible in your house or that your child wears a watch with hands.
- Once your child is confident telling the time, see if you can find more challenging clocks e.g. with Roman numerals or no numbers marked.
- Ask your child the time regularly – You could also give your child some responsibility for watching the clock: 'The cakes need to come out of the oven at twenty-five minutes past four exactly.' 'We need to leave the house at twenty-five to nine.'

YEAR 3

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Year 3	I know all number bonds to 20 and can use number bonds to derive pairs of numbers that total 100 e.g. 64 + 36 = 100	I know multiplication and division facts for the 2,5 and 10 x tables	I know the multiplication and division facts for the 3 times tables	I know multiplication and division facts for the 4 times tables	I know multiplication and division facts for the 8 times tables	I can tell the time to the nearest minute (analogue & digital) on 12 and 24 hour clocks