

## 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.

## Reception:

<https://play.numbots.com/#/intro>

Objective: I can count forwards or backwards to 10 (20)

- Counting objects around the home, making piles of 0, 1, 2, 3, 4 and 5, and then counting them in order to 5 and back...use sweets, Lego, fruit, stones, leaves etc.
- Looking for numbers up to 5 around the home and when you are out and about...can they count on or back from that number?
- Singing number songs where the numbers are going backwards, e.g. Five little speckled frogs, five little monkeys jumping on the bed etc.
- Counting objects around the home, making piles of 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, and then counting them in order to 10 and back...use sweets, Lego, fruit, stones, leaves etc
- Looking for numbers up to 10 around the home and when you are out and about... can they count on or back from that number?
- What can they do in 10 seconds? Take it in turns with your child to count while the other performs the task, e.g. star jumps, building a Lego tower etc.
- Counting objects around the home finding methods of counting accurately, e.g moving each object as it is counted.....use sweets, Lego, fruit, stones, leaves etc
- Looking for numbers up to 20 around the home and when you are out and about.
- Count objects around the home and then write the correct numeral to match the quantity counted. Repeat with other numbers. Discuss which number is the biggest/smallest or is more/less than the other. How do you know?

Objective: I can say one more and one less than a number

- A number track is very useful to practise counting on and back.
- Your child has ten pieces of carrot on their plate. What would one more / one less be?
- Play with building blocks or multilink cubes – count the blocks and practise adding 1 more or taking 1 away.

Objective: I know addition number bonds to 10

- Using items around the house to find different ways of making 5, e.g. one blue teddy and four red teddies. One and four make five.
- Making up stories with items around the home, e.g. there are 2 cars in the car park and 3 more cars arrive, how many cars altogether? Two and three make five.
- Asking questions during daily routines, e.g. you have 1 sausage on your plate and I have 4 sausages on my plate, how many sausages altogether? One and four make five.
- Using items around the house to find different ways of making 10, e.g. one blue teddy and nine red teddies. One and nine make ten.
- Making up stories with items around the home, e.g. there are 2 cars in the car park and 8 more cars arrive, how many cars altogether? Two and eight make ten.
- Asking questions during daily routines, e.g. you have 4 sausages on your plate and I have 6 sausages on my plate, how many sausages altogether? Four and six make ten.
- Jack Hartmann Number bonds to 10 singing and moving you tube clip!
- <https://www.youtube.com/watch?v=ID9tjBUiXs0> Number bonds to 10
- <https://www.youtube.com/watch?v=ch7KzI3n2Zk> Number pairs to 10

Objective: I know addition and subtraction number bonds to 10

- Making up stories with items around the home, e.g. there are 2 cars in the car park and 8 more cars arrive, how many cars altogether? Count on from the 2 to find the answer.
- Asking questions during daily routines, e.g. you have 10 chips on your plate and I steal 2, how many are left? Count back from 10 to find the answer.

Objective: I know doubles to 10

- Use toys or building blocks etc. – make a group of 4 blocks and ask your child to make an identical group. How many are there now? Double 4 is 8.
- Ping Pong – In this game, the parent says 'Ping' and the child replies 'Pong'. Then the parent says a number and the child doubles it. For the harder version, the adult can say 'Pong' and the child replies 'Ping' then halves the number.
- Practise online – Go to [www.conkermaths.org](http://www.conkermaths.org) and then see how many questions you can answer in just 90 seconds.

Objective: I know halves to 10

- Have an even number of toys or building blocks etc. – share equally into 2 groups e.g. 8 shared equally into 2 groups is 4. Half of 8 is 4.
- Ping Pong – In this game, the parent says 'Ping' and the child replies 'Pong'. Then the parent says a number and the child doubles it. For the harder version, the adult can say 'Pong' and the child replies 'Ping' then halves the number.
- Practise online – Go to [www.conkermaths.org](http://www.conkermaths.org) and then see how many questions you can answer in just 90 seconds.

## RECEPTION

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Reception	I can count forwards and backwards to 10 (20)	I can say one more and one less than a number	I know addition number bonds to 10	I know addition and subtraction bonds to 10	I know doubles to 10	I know halves to 10

