

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 1

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

Objective: I know number bonds to 10

- Use practical resources
- Make a poster – We use Numicon at school. You can find pictures of the Numicon shapes here: www.bit.ly/NumiconPictures – your child could make a poster showing the different ways of making numbers.
- Play Games – You can play number bond pairs online at www.conkermaths.org and then see how many questions you can answer in just one minute.

Objective: I know fact families to 10

- Use practical resources
- Play Games – You can play number bond pairs online at www.conkermaths.org and then see how many questions you can answer in just one minute.

Objective: I know number bonds to 20

- Use practical resources
- Make a poster – We use Numicon at school. You can find pictures of the Numicon shapes here: www.bit.ly/NumiconPictures – your child could make a poster showing the different ways of making numbers.
- Play Games – You can play number bond pairs online at www.conkermaths.org and then see how many questions you can answer in just one minute.

Objective: I know doubles and halves of numbers 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. For halves, group items into two equal groups.
- 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 and then see how many questions you can answer in just 90 seconds.

Objective: I can count forwards and backwards to 50 from any given number

- <https://www.youtube.com/watch?v=JPdDbzwi5iQ>
- <https://www.youtube.com/watch?v=bGetqbqDVaA>
- <https://www.youtube.com/watch?v=MIE2OPEHYLE>
- Pronunciation – Make sure that your child is pronouncing the numbers correctly and not getting confused between thirteen and thirty

Objective: I can count in 2s, 5s and 10s

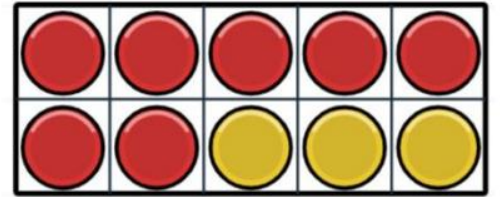
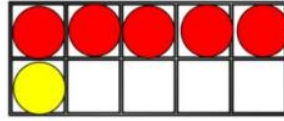
- Practise counting on in 2s, 5s and 10s.
- For counting in 2s, use toys or counters and group into 2s and have children count them in 2s.
- Watch songs on YouTube: <https://www.youtube.com/watch?v=GvTcpfSnOMQ>
<https://www.youtube.com/watch?v=Ftati8iGQcs>
<https://www.youtube.com/watch?v=amxVL9KUmq8>

YEAR 1

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Year 1	I know number bonds to 10	I know Fact Families to 10	I know number bonds to 20	I can count forwards and backwards to 50 from any given number.	I know doubles and halves of numbers to 10.	I can count in 2s, 5s and 10s



The concept of '5 and a bit' structure



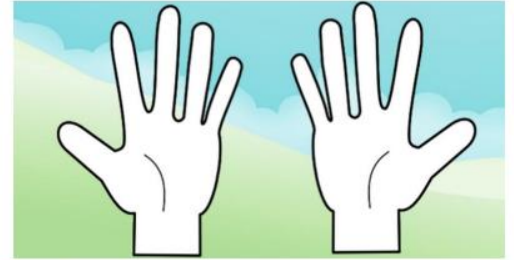
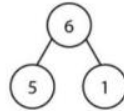
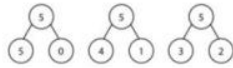
	Blue	Red
0	5	0
1	4	1
2	3	2
3	2	3
4	1	4
5	0	5



These resources, there are two numbers in my open hand. How many fingers do I have in my closed hand?



- 'Six is five and one more.'
- 'Six is the whole; five is a part; one is a part.'



ncetm.org.uk/classroom-resources/primm-1-03-composition-of-numbers-0-5/
Number Blocks

			$9 - 2 = \square$
			$\square - 2 = \square$
			$\square - 2 = \square$

$$2 = 1 + 1$$

half of 2 is

$$4 = 2 + \square$$

half of is

$$8 = \square + \square$$

of is

••
4