Key Instant Recall Facts (KIRFs)

To develop your child's fluency and mental maths skills, we are introducing KIRFs 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 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 home for the half term. They will also be 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 6 – Autumn 1

I know the multiplication and division facts for all times tables up to 12 x 12.

The Year 6 children should already know ALL the times tables up to 12x12. The aim is for them to recall these facts instantly. This half term is a chance for Year 6 children to consolidate their knowledge of multiplication and division facts and to increase their speed of recall.

1x table	2x table	3x table	4x table	5x table	6x table
1 × 1 = 1	1 × 2 = 2	1 × 3 = 3	1 × 4 = 4	1 × 5 = 5	1 × 6 = 6
2 × 1 = 2	2 × 2 = 4	2 × 3 = 6	2 × 4 = 8	2 × 5 = 10	2 × 6 = 12
3 × 1 = 3	3 × 2 = 6	3 × 3 = 9	3 × 4 = 12	3 × 5 = 15	3 × 6 = 18
4 × 1 = 4	4 × 2 = 8	4 × 3 = 12	4 × 4 = 16	4 × 5 = 20	4 × 6 = 24
5 × 1 = 5	5 × 2 = 10	5 × 3 = 15	5 × 4 = 20	5 × 5 = 25	5 × 6 = 30
6 × 1 = 6	6 × 2 = 12	6 × 3 = 18	6 × 4 = 24	6 × 5 = 30	6 × 6 = 36
7 × 1 = 7	7 × 2 = 14	7 × 3 = 21	7 × 4 = 28	7 × 5 = 35	7 × 6 = 42
8 × 1 = 8	8 × 2 = 16	8 × 3 = 24	8 × 4 = 32	8 × 5 = 40	8 × 6 = 48
9 × 1 = 9	9 × 2 = 18	9 × 3 = 27	9 × 4 = 36	9 × 5 = 45	9 × 6 = 54
10 × 1 = 10	10 × 2 = 20	10 × 3 = 30	10 × 4 = 40	10 × 5 = 50	10 × 6 = 60
11 × 1 = 11	11 × 2 = 22	11 × 3 = 33	11 × 4 = 44	11 × 5 = 55	11 × 6 = 66
12 × 1 = 12	12 × 2 = 24	12 × 3 = 36	12 × 4 = 48	12 × 5 = 60	12 × 6 = 72

7x table	8x table	9x table	10x table	11x table	12x table
1 × 7 = 7	1 × 8 = 8	1 × 9 = 9	1 × 10 = 10	1 × 11 = 11	1 × 12 = 12
2 × 7 = 14	2 × 8 = 16	2 × 9 = 18	2 × 10 = 20	2 × 11 = 22	2 × 12 = 24
3 × 7 = 21	3 × 8 = 24	3 × 9 = 27	3 × 10 = 30	3 × 11 = 33	3 × 12 = 36
4 × 7 = 28	4 × 8 = 32	4 × 9 = 36	4 × 10 = 40	4 × 11 = 44	4 × 12 = 48
5 × 7 = 35	5 × 8 = 40	5 × 9 = 45	5 × 10 = 50	5 × 11 = 55	5 × 12 = 60
6 × 7 = 42	6 × 8 = 48	6 × 9 = 54	6 × 10 = 60	6 × 11 = 66	6 × 12 = 72
7 × 7 = 49	7 × 8 = 56	7 × 9 = 63	7 × 10 = 70	7 × 11 = 77	7 × 12 = 84
8 × 7 = 56	8 × 8 = 64	8 × 9 = 72	8 × 10 = 80	8 × 11 = 88	8 × 12 = 96
9 × 7 = 63	9 × 8 = 72	9 × 9 = 81	9 × 10 = 90	9 × 11 = 99	9 × 12 = 108
10 × 7 = 70	10 × 8 = 80	10 × 9 = 90	10 × 10 = 100	10 × 11 = 110	10 × 12 = 120
11 × 7 = 77	11 × 8 = 88	11 × 9 = 99	11 × 10 = 110	11 × 11 = 121	11 × 12 = 132
12 × 7 = 84	12 × 8 = 96	12 × 9 = 108	12 × 10 = 120	12 × 11 = 132	12 × 12 = 144

Key Vocabulary
Times
Multiplied by
Lots of
Groups of
Divided by
Shared
Shared
Product

They should be able to answer these questions in any order, including missing number questions e.g. 7 × ◯ = 28 or ◯ ÷ 6 = 7. Children who have already mastered their times tables should apply this knowledge to answer questions including decimals e.g. 0.7 × ◯ = 4.2 or ◯ ÷ 60 = 0.7

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 start with one particular times tables and ensure they know all of them before moving onto another times table.

Speed Challenge – Take two packs of playing cards and remove the kings. Turn over two cards and ask your child to multiply the numbers together (Ace = 1, Jack = 11, Queen = 12). How many questions can they answer correctly in 2 minutes? Practise regularly and see if they can beat their high score.

I can identify common factors of a pair of numbers.

By the end of this half term, children should know the following facts. The aim is for them to recall these facts instantly.

The factors of a number are all numbers which divide it with no remainder. E.g. the factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24. The factors of 56 are 1, 2, 4, 7, 8, 14, 28 and 56. The common factors of two numbers are the factors they share. E.g. the common factors of 24 and 56 are 1, 2, 4 and 8. The greatest common factor of 24 and 56 is 8.
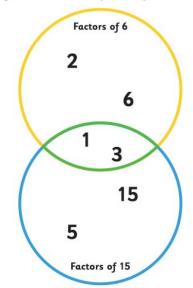
Children should be able to explain how they know that a number is a common factor. E.g. 8 is a common factor of 24 and 56 because 24 = 8 × 3 and 56 = 8 × 7.

Key Vocabulary
- factor
- common factor
- multiple
- greatest common factor

A common factor is a factor of 2 or more numbers.

e.g. 3 is a common factor of 6 and 15.

Factors of 6

2

6

1

3

15

5

Factors of 15

Top Tips…

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? If your child is not yet confident with identifying factor pairs of a number, you may want to refer to the Year 5 Summer 2 sheet to practise this first.

If you would like more ideas, please speak to your child's teacher. There are many online games to practise finding the greatest common factor, for example:

http://www.fun4thebrain.com/beyondfacts/gcfsketch.html

Choose two numbers. Take it in turns to name factors. Who can find the most?

Highfield Primary School

I can identify prime numbers up to 50. I know the root of square numbers to 15 x 15.

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 , 23, 29, 31, 37, 41, 43, 47

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, 22, 24, 25, 26, 27, 28, 30, 32, 34, 35, 36, 38, 39, 40, 42, 44, 45, 46, 48, 49, 50

Key Vocabulary
- prime number
- composite
- factor
- multiple

Perfect Squares	Perfect Squares
$1^2 = 1$	$11^2 = 121$
$2^2 = 4$	$12^2 = 144$
$3^2 = 9$	$13^2 = 169$
$4^2 = 16$	$14^2 = 196$
$5^2 = 25$	$15^2 = 225$
$6^2 = 36$	$16^2 = 256$
$7^2 = 49$	$17^2 = 289$
$8^2 = 64$	$18^2 = 324$
$9^2 = 81$	$19^2 = 361$
$10^2 = 100$	$20^2 = 400$

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. It's really important that your child uses mathematical vocabulary accurately. Choose a number between 2 and 50. 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 50. 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 6 – Spring 2

I know the decimal and percentage equivalents of the fractions ½, ¼, ¾ tenths and fifths.

By the end of this half term, children should know the following facts. The aim is for them to recall these facts instantly.

$\frac{1}{2}$ 0.5 = 50%	$\frac{5}{5}$ = 1 = 100%	$\frac{7}{10}$ = 0.7 = 70%	$\frac{10}{100}$ = 0.1 = 10%
$\frac{1}{4}$ = 0.25 = 25%	$\frac{1}{10}$ = 0.1 = 10%	$\frac{8}{10}$ = 0.8 = 80%	$\frac{50}{100}$ = 0.5 = 50%
$\frac{3}{4}$ = 0.75 = 75%	$\frac{2}{10}$ = 0.2 = 20%	$\frac{9}{10}$ = 0.9 = 90%	$\frac{99}{100}$ = 0.99 = 99%
$\frac{1}{5}$ 0.2 = 20%	$\frac{3}{10}$ = 0.3 = 30%	$\frac{10}{10}$ = 1 = 100%	$\frac{100}{100}$ = 1 = 100%
$\frac{2}{5}$ 0.4 = 40%	$\frac{4}{10}$ = 0.4 = 40%	$\frac{1}{100}$ = 0.01 = 1%	
$\frac{3}{5}$ 0.6 = 60%	$\frac{5}{10}$ = 0.5 = 50%	$\frac{5}{100}$ = 0.05 = 5%	
$\frac{4}{5}$ 0.8 = 80%	$\frac{6}{10}$ = 0.6 = 60%	$\frac{45}{100}$ = 0.45 = 45%	

Key Vocabulary
- fractions
- decimals
- percentages
- half
- quarter
- convert
- equivalent

Percentages are just another way of expressing hundredths, so 15 hundredths is the same as 15%. A common mistake is to confuse 0.1 as 1% (or 0.2 as 2% etc.). This is incorrect: 0.1 is 1 tenth, or 10 hundredths so it is equivalent to 10%. The correct decimal for 1% is 0.01.

Top Tips…

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 do not need to practise them all at once; perhaps you could have a fact of the day.

- Count up and down in tenths and hundredths, counting out loud, then change between fractions and percentages as well.
- Make some cards with pairs of equivalent fractions, decimals and percentages. Use these to play the memory game or snap. Or make your own dominoes with fractions or decimals one side and percentages on the other.

If you would like more ideas, please speak to your child's teacher.