Key Instant Recall Facts

Parents' Information

KIRF's (Key Instant Recall Facts) are pieces of mathematical knowledge that we want the children to learn off-by-heart or be able to work out very quickly (within 3 seconds).

They are designed to support the development of the mental skills that underpin mathematics. They are particularly useful when calculating, be it adding, subtracting, multiplying or dividing. They will include facts such as number bonds, counting on, back, times tables, equivalence of units of measure, and square numbers.

Each year group is allocated key facts to focus on throughout the year, in line with age related expectations. These should be practised for rapid recall.

Why are they important?

Research shows that:

- Learning key facts 'by heart' enables children to concentrate on the calculation, which helps them to develop calculation strategies.

- Using and applying strategies to work out answers helps children to acquire and so remember more facts.

- Many children who are not able to recall key facts often treat each calculation as a new one and have to return to first principles to work out the answer again.

- Once they have a secure knowledge of some key facts, and by selecting problems carefully, you can help children to appreciate that from the answer to one problem, other answers can be generated.

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.

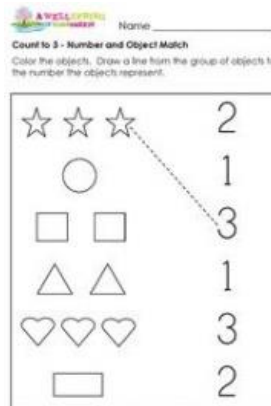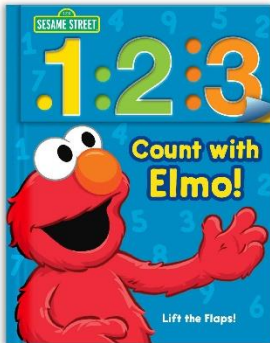If you would like more ideas, please speak to your child's teacher.

Key Instant Recall Facts

Nursery – Autumn 2

I can name and order numbers to 3.

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

Scan above to be taken to a 'Ladybird Spots' online game…

Top Tips

Around the house/out and about - Create opportunities for them to use number language. How many balls do you think it will take to fill the bucket? How many shells can you hold in your hand?

- Use every opportunity to count - pieces of fruit at snack time, cars that go past, when putting away toys/books, going up and down stairs etc.

- Play action games, using hands and feet, as much as possible. Jump three times, then clap your hands.

Reading – There are lots of number picture books available (including at the library)

Internet activities, including free printables - 20+ Preschool Counting Activities for School and Home (teaching2and3yearolds.com)

Online songs and videos - Count 1 2 3 | Counting Song for Kids | Pancake Manor – YouTube

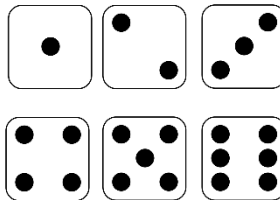How To Count To 3 - Let's Count To 3 - Counting 123 - Count 123 - YouTube

<mark>Mastering Number Parent Project:</mark>

I can recognise and subitise numbers to 5.

Key Vocabulary

One, two, three, four, five

Show me 4…

How many more will make 5?

Scan these QR codes to take you to some online games…

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Top Tips

<u>Songs and rhymes</u> – 'One, two, three, four, five, once I caught a fish alive' and 'One man went to mow'. <u>Five Little Ducks | Kids Songs | Super Simple Songs - YouTube</u>

<mark>Play games together (found in your packs)</mark>–
<mark>Frogs on a log</mark>
<mark>Subitising snap</mark>
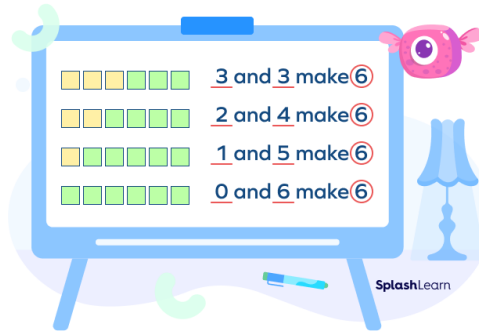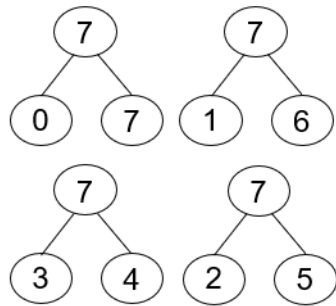<mark>3 or NOT 3 game</mark>
<mark>Part-part whole game</mark>

Mastering Number Parent Project:

I can decompose the numbers 6 and 7.

What number pairs make SIX?

6		6		6		6	
0	6	1	5	2	4	3	3

Key Vocabulary

What is 3 **add** 3?

What is 2 **plus** 4?

What is 7 **take away** 2?

What is 1 **less than** 6?

Part

Whole

3 and 3 make ⑥
2 and 4 make ⑥
1 and 5 make ⑥
0 and 6 make ⑥

SplashLearn

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Top Tips

Get outside– Make groups of 6 or 7 with things found in nature e.g. acorns, leaves, sticks, pebbles etc.

Play games together (found in your packs)–
Drop the counters
Egg box 6
Find pairs to 6 and 7
Copy my 7
Make it 7

Mastering Number Parent Project:

I can decompose the numbers 7, 8, 9 and 10.

Ten Ways to Break 9

$9-0=9$
$9-1=8$
$9-2=7$
$9-3=6$
$9-4=5$
$9-5=4$
$9-6=3$
$9-7=2$
$9-8=1$
$9-9=0$

Friends of Ten!

0 and 10	3 and 7
1 and 9	4 and 6
2 and 8	5 and 5

0 1 2 3 4 5   5 6 7 8 9 10

Key Vocabulary

What is 3 **add** 4?

What is 4 **plus** 4?

What is 9 **take away** 2?

What is 1 **less than** 10?

Part

Whole

Number Bonds & Ten Frames

8
5   3

matholia
Number Bonds of 7
4
3   7

1   8   7

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Top Tips

Get outside– Look out for 'odds and evens' in nature e.g. spot an odd number of birds or an even number of cars in the car park.

Play games together (found in your packs)–
Copy my number
7 or NOT 7
Explore odd and even numbers
How many more to make 10?
Make 10 bingo

I know halves and doubles of whole numbers to 20.

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

1 x 2 = 2	11 x 2 = 22	20 ÷ 2 = 10	10 ÷ 2 = 5
2 x 2 = 4	12 x 2 = 24	19 ÷ 2 = 9 ½	9 ÷ 2 = 4 ½
3 x 2 = 6	13 x 2 = 26	18 ÷ 2 = 9	8 ÷ 2 = 4
4 x 2 = 8	14 x 2 = 28	17 ÷ 2 = 8 ½	7 ÷ 2 = 3 ½
5 x 2 = 10	15 x 2 = 30	16 ÷ 2 = 8	6 ÷ 2 = 3
6 x 2 = 12	16 x 2 = 32	15 ÷ 2 = 7 ½	5 ÷ 2 = 2 ½
7 x 2 = 14	17 x 2 = 34	14 ÷ 2 = 7	4 ÷ 2 = 2
8 x 2 =16	18 x 2 = 36	13 ÷ 2 = 6 ½	3 ÷ 2 = 1 ½
9 x 2 = 18	19 x 2 = 38	12 ÷ 2 = 6	2 ÷ 2 = 1
10 x 2 = 20	20 x 2 = 40	11 ÷ 2 = 5 ½	1 ÷ 2 = ½

Key Vocabulary

Double means multiplied by 2 (x2).

Half means divided by 2 (÷2)
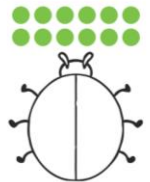
What is **double** 3?

What is **half** of 19?

Scan the QR code to be taken to 'Hit the Button' – an online game, in which you can select to practise doubling and halving
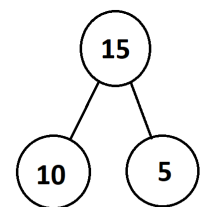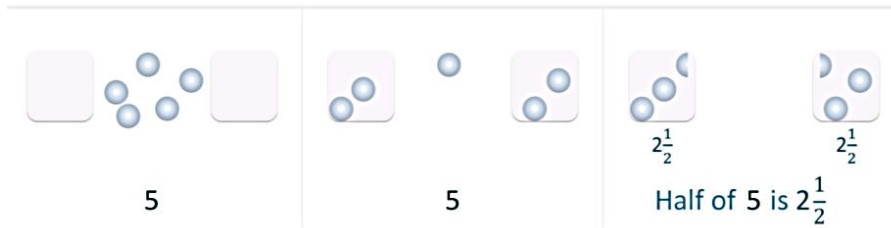
Ladybird Halving to 20

Half of 10 is _____

Half of 12 is _____

5   5   Half of 5 is $2\frac{1}{2}$

15 — 10, 5

Partitioning helps!

Top Tips

Use Previous Knowledge – Year 2 KIRFs included writing half of odd numbers as a fraction e.g. 1, 3, 5, 7, 9. Use this when thinking about the numbers 11, 13, 15, 17, 19. For example, partition into 10 and 1, therefore 5 ½ etc.

Play games - Doubling and Halving Practice Zone (math-salamanders.com)
https://www.ictgames.com/mobilePage/archeryDoubles/index.html

Draw it – use symmetrical ladybirds or butterflies to draw out doubling or halving 'spots'.

Key Instant Recall Facts

Year 4 – Autumn 2

I know the multiplication and division facts for the 7 times table.

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

7 × 1 = 7	1 × 7 = 7	7 ÷ 7 = 1	7 ÷ 1 = 7
7 × 2 = 14	2 × 7 = 14	14 ÷ 7 = 2	14 ÷ 2 = 7
7 × 3 = 21	3 × 7 = 21	21 ÷ 7 = 3	21 ÷ 3 = 7
7 × 4 = 28	4 × 7 = 28	28 ÷ 7 = 4	28 ÷ 4 = 7
7 × 5 = 35	5 × 7 = 35	35 ÷ 7 = 5	35 ÷ 5 = 7
7 × 6 = 42	6 × 7 = 42	42 ÷ 7 = 6	42 ÷ 6 = 7
7 × 7 = 49	7 × 7 = 49	49 ÷ 7 = 7	49 ÷ 7 = 7
7 × 8 = 56	8 × 7 = 56	56 ÷ 7 = 8	56 ÷ 8 = 7
7 × 9 = 63	9 × 7 = 63	63 ÷ 7 = 9	63 ÷ 9 = 7
7 × 10 = 70	10 × 7 = 70	70 ÷ 7 = 10	70 ÷ 10 = 7
7 × 11 = 77	11 × 7 = 77	77 ÷ 7 = 11	77 ÷ 11 = 7
7 × 12 = 84	12 × 7 = 84	84 ÷ 7 = 12	84 ÷ 12 =7

They should be able to answer these questions in any order, including missing number questions e.g. 7 × ◯ = 28 or ◯ ÷ 6 = 7.

Key Vocabulary

What is 7 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

Scan the QR code to be taken to 'Coconut Multiples' – an online game

Top Tips

Songs and Chants – You can find many multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.
https://www.youtube.com/watch?v=t4xU4CiaGvg

Order of difficulty – Ask your child to order these facts from the easiest to the most challenging. Can they explain why some facts are easier to remember? Then focus on practising the most challenging facts.

Use memory tricks – For this multiplication table there is a handy trick to learn…
https://www.youtube.com/watch?v=6TWuOvN-4jk

Flashcards – Make flashcards with questions on one side and answers on the back, to whizz through regularly e.g. whilst having breakfast, before going to bed, whilst waiting for a bus etc.

Play online games - https://www.timestables.co.uk/7-times-table.html
https://www.topmarks.co.uk/maths-games/hit-the-button

I know all prime numbers within 100.

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

A prime number is a number with no factors other than itself and one.

e.g. 2, 3, 5, 7, 11, 13, 17, 19

All prime numbers to 100 are marked in yellow in the hundred square.

A composite number is divisible by a number other than 1 or itself.

e.g. 4, 6, 8, 9, 10, 12, 14, 15

| 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Key Vocabulary
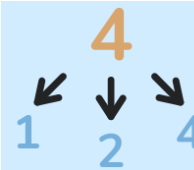
prime number

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.
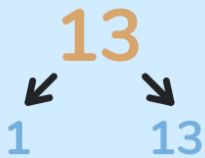
13
1   13
13 has **only two factors - itself and 1**. So it is a prime number.

4
1   2   4
4 has **three factors - itself, 1 and 2**. So it is NOT a prime number.

Top Tips

Brush up on your multiplication tables! Knowing your tables and divisibility rules will help you to identify prime numbers.

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?

Online Practise - https://www.youtube.com/watch?v=FBbHzy7v2Kg
https://www.transum.org/Maths/Game/Primes/Pick.asp?Level=1
https://www.abcya.com/games/number_ninja_factors

I know halves and doubles of two digit decimals.

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

Some examples:

0.22 x 2 = 0.44
0.43 x 2 = 0.86
0.27 x 2 = 0.54
1.31 x 2 = 2.62

0.84 ÷ 2 = 0.42
0.68 ÷ 2 = 0.34
0.92 ÷ 2 = 0.46
4.48 ÷ 2 = 2.24

What is 1/2 of 0.38?

3 8

1/2 of 0.3 = 0.15

1/2 of 0.08 = 0.04

So 1/2 of 0.38 must be 0.19!

Partitioning helps!

$0.47 = \dfrac{4}{10} + \dfrac{7}{100} = \boxed{0.4 + 0.07}$

Key Vocabulary

What is **half** of 0.64?

What is **double** 0.26?

Partition

Tenths

Hundredths

0.75	1.5	1.35	8	9
2.7	1.45	2.9	3	4

Top Tips

Use past learning Knowledge of doubling and halving whole numbers can be transferred to decimal places. i.e. If you know that 23 X 2 = 46, then 0.23 x 2 = 0.46

Play doubling and halving games (whole numbers) to help speed up:
Online games –
Dartboard Double and Half - 6-11 year olds – Topmarks (Includes doubling up to 2 d.p.)
Dartboard Calculator - 5-11 year olds – Topmarks
Archery Arithmetic - Multiplication – Mathsframe
Loop Cards - 5-11 year olds - Topmarks
I Can Halve Two Digit Numbers. | Interactive Game | Lesson ID 042 | Studyzone.tv

Use Mental Strategies
Partitioning the number into tenths and hundredths can help to break down the calculation into manageable chunks (see diagrams above).

Play card games – make a set of cards which you could then play snap or pairs with.