



Key Instant Recall Facts

Year 5 – Autumn 1

I know decimal number bonds to 1 and 10.

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:

$$\begin{array}{ll} 0.6 + 0.4 = 1 & 3.7 + 6.3 = 10 \\ 0.4 + 0.6 = 1 & 6.3 + 3.7 = 10 \\ 1 - 0.4 = 0.6 & 10 - 6.3 = 3.7 \\ 1 - 0.6 = 0.4 & 10 - 3.7 = 6.3 \end{array}$$

$$\begin{array}{ll} 0.75 + 0.25 = 1 & 4.8 + 5.2 = 10 \\ 0.25 + 0.75 = 1 & 5.2 + 4.8 = 10 \\ 1 - 0.25 = 0.75 & 10 - 5.2 = 4.8 \\ 1 - 0.75 = 0.25 & 10 - 4.8 = 5.2 \end{array}$$

Key Vocabulary

What do I **add** to 0.8 to make 1?

What is 1 **take away** 0.06?

What is 1.3 **less than** 10?

How many more than 9.8 is 10?

What is the **difference** between 0.92 and 10?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions e.g. $0.49 + \bigcirc = 10$ or $7.2 + \bigcirc = 10$.

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

Buy one get three free - If your child knows one fact (e.g. $8 + 5 = 13$), can they tell you the other three facts in the same fact family?

Use number bonds to 10 - How can number bonds to 10 help you work out number bonds to 100?

Play games – There are missing number questions at www.conkermaths.com. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.



Key Instant Recall Facts

Year 5 – Autumn 2

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

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

Please see separate sheet for all times table facts.

Key Vocabulary

What is 12 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

They should be able to answer these questions in any order, including missing number questions e.g. $7 \times \bigcirc = 28$ or $\bigcirc \div 6 = 7$.

Top Tips

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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.

Online games – There are many games online which can help children practise their multiplication and division facts. www.conkermaths.org is a good place to start.

Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.



Key Instant Recall Facts

Year 5 – Spring 1

I can recall metric conversions.

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

1 kilogram = 1000 grams

1 kilometre = 1000 metres

1 metre = 100 centimetres

1 metre = 1000 millimetres

1 centimetre = 10 millimetres

1 litre = 1000 millilitres

They should also be able to apply these facts to answer questions.

e.g. How many metres in $1\frac{1}{2}$ km?

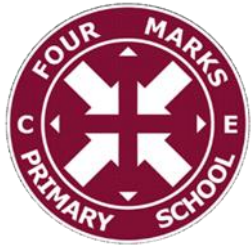
Top Tips

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Look at the prefixes – Can your child work out the meanings of *kilo-*, *centi-* and *milli-*? What other words begin with these prefixes?

Be practical – Do some baking and convert the measurements in the recipe.

How far? – Calculate some distances using unusual measurements. How tall is your child in mm? How far away is London in metres?



Key Instant Recall Facts

Year 5 – Spring 2

I can identify prime numbers up 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**.

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

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

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.

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

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?

Glossary

Array :



This way of drawing a multiplication/ division in rows and columns is called an **array**

Complement: A way of describing the missing number of number pairs that make a certain total.
e.g. For the total 100 the complement to 35 is 65, For the total 20 the complement to 18 is 2

Difference: The difference between two numbers is the distance between them.
e.g. $2007-1999=8$, *The difference between 1999 and 2007 equals 8*

Divisible By: If you divide one number by another the result is a whole number e.g. 14 is divisible by 7, because $14 \div 7 = 2$ **exactly**, but 15 is **not** divisible by 7, because $15 \div 7 = 2 \frac{1}{7}$ (i.e. the result is **not** a whole number).

Divisibility Tests: These rules let you test if one number can be evenly divided by another, without having to do too much calculation

Factors: The factors of a number are those that the number can be divided by to give a whole number answer. Another, perhaps easier way to think of them is as the pairs of numbers that can be multiplied to give the number

e.g. The factors of 20 are 20, 1 ($20 \times 1 = 20$)
2, 10 ($10 \times 2 = 20$)
4, 5 ($5 \times 4 = 20$)

Multiples: 10, 20, 30, 40, 50, 60, and 70 are multiples of ten as they can be divided exactly by ten.

Place Value: We use ten digits to record all our numbers, 0,1,2,3,4,5,6,7,8,9. The value of each digit depends on its place in a number. As a digit moves to the left it becomes ten times bigger.

				0	•	2	Two tenths
				2			Two
			2	0			Two tens
		2	0	0			Two hundred
	2	0	0	0			Two Thousands
2	0	0	0	0			Two lots of ten thousand

Product: the answer to a multiplication. *The product of 6 and 4 is 24*

Prime Factors: A factor tree can be used to help find the prime factors of a number. The tree is constructed for a particular number by looking for pairs of values which multiply together to give that number.

Prime Numbers:

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

The prime numbers are those whose only factors are the number and 1.

An easy way to find the prime numbers less than 100 is to draw a 1-100 grid and colour in all the multiples of 2, 3, 5, 7, and 9 except the first multiple of these numbers.

The unshaded numbers are the prime numbers. Because the shaded numbers are in a multiplication table you know that they must have a factor other than one or themselves so cannot be prime.

Square: the **square** of a number is that number multiplied by itself. e.g. $8 \times 8 = 64$.The square is 64



Key Instant Recall Facts

Year 5 – Summer 1

I can recall square numbers up to 12^2 and their square roots.

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

$1^2 = 1 \times 1 = 1$	$\sqrt{1} = 1$
$2^2 = 2 \times 2 = 4$	$\sqrt{4} = 2$
$3^2 = 3 \times 3 = 9$	$\sqrt{9} = 3$
$4^2 = 4 \times 4 = 16$	$\sqrt{16} = 4$
$5^2 = 5 \times 5 = 25$	$\sqrt{25} = 5$
$6^2 = 6 \times 6 = 36$	$\sqrt{36} = 6$
$7^2 = 7 \times 7 = 49$	$\sqrt{49} = 7$
$8^2 = 8 \times 8 = 64$	$\sqrt{64} = 8$
$9^2 = 9 \times 9 = 81$	$\sqrt{81} = 9$
$10^2 = 10 \times 10 = 100$	$\sqrt{100} = 10$
$11^2 = 11 \times 11 = 121$	$\sqrt{121} = 11$
$12^2 = 12 \times 12 = 144$	$\sqrt{144} = 12$

Key Vocabulary

What is 8 **squared**?

What is 7 **multiplied by itself**?

What is the **square root** of 144?

Is 81 a **square number**?

Children should also be able to recognise whether a number below 150 is a square number or not.

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

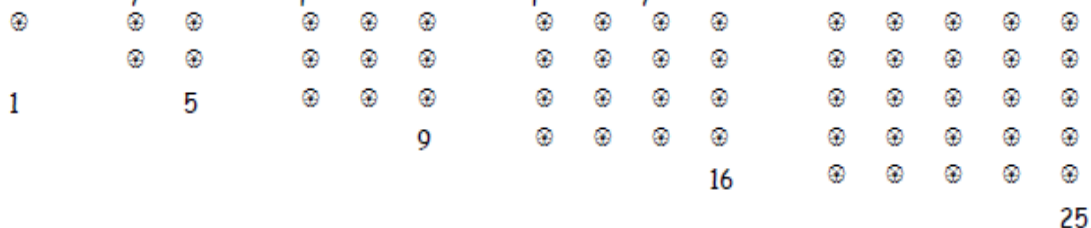
Cycling Squares – At <http://nrich.maths.org/1151> there is a challenge involving square numbers. Can you complete the challenge and then create your own examples?

Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.

Squares

A **square number**, sometimes also called a **perfect square**, is a whole number that can be written as the square of another whole number. e.g. 64 is a square number, because it is the square of 8, $8 \times 8 = 64$

- The first ten square numbers are -
1, 4, 9, 16, 25, 36, 49, 64, 81, 100 ...
- Each is the result of multiplying a number by itself -
 1×1 , 2×2 , 3×3 , 4×4 , 5×5 .
- As you can see a square number has a square array.

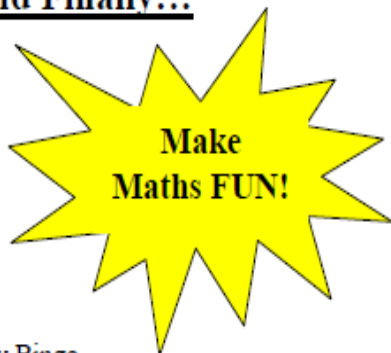


- Multiplying a number by itself can be written using ² -
 $1^2, 2^2, 3^2, 4^2, 5^2 \dots$
- where the small ² means 'squared'.
- The square of 7 is 49, and working backwards, we say the square root of 49 is 7.

Make learning about square numbers fun

- Ask your child to draw the arrays for the first ten square numbers. Or they could use stickers
- Ask your child to investigate what happens if you subtract a square number from the next square number (you get the odd numbers 3, 5, 7, 9 ...)

And Finally!!!



Play Bingo.

Each player chooses five answers.

Ask a question that is about the facts your child is learning

If a player has the answer, they can cross it off.

The winner is the first player to cross off all their answers.



Key Instant Recall Facts

Year 5 – Summer 2

I can find factor pairs of a number.

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

Children should now know all multiplication and division facts up to 12×12 . When given a number in one of these times tables, they should be able to state a factor pair which multiply to make this number. Below are some examples:

$$24 = 4 \times 6$$

$$24 = 8 \times 3$$

$$56 = 7 \times 8$$

$$54 = 9 \times 6$$

$$42 = 6 \times 7$$

$$25 = 5 \times 5$$

$$84 = 7 \times 12$$

$$15 = 5 \times 3$$

Key Vocabulary

Can you find a **factor** of 28?

Find two numbers whose **product** is 20.

I know that 6 is a factor of 72 because 6 multiplied by 12 equals 72.

Top Tips

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Play games - There is an activity at www.conkermaths.org to practise finding factor pairs

Think of the question – One player thinks of a times table question (e.g. 4×12) and states the answer. The other player has to guess the original question.

Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.

