

Key Instant Recall Facts

This half term your children are working towards achieving their individual KIRF targets, indicated below.
The ultimate aim is for your child to be able to recall these facts **instantly!**

Know all previous number bonds (including decimals)

Key vocabulary

how many more to make altogether make sum total how much more is...than... difference between

Examples of number bonds:

$$54 + 46 = 100$$

$$39 + 61 = 100$$

$$100 - 77 = 23$$

$$4.5 + 5.5 = 10$$

$$8.1 + 1.9 = 10$$

$$10 - 6.4 = 3.6$$

$$10 - 5.2 = 4.8$$

$$0.62 + 0.38 = 1$$

$$0.76 + 0.24 = 1$$

$$1 - 0.35 = 0.65$$

Example of decimal bonds for 10:

$$6.2 + 3.8 = 10; 3.8 + 6.2 = 10$$

so

$$10 - 6.2 = 3.8; 10 - 3.8 = 6.2$$

$$4.9 + 5.1 = 10; 5.1 + 4.9 = 10$$

so

$$10 - 4.9 = 5.1; 10 - 5.1 = 4.9$$

Call out!

Play number ping pong!
Start off saying 'ping',
child replies with 'pong'.
Repeat and then convert to
numbers i.e. say '0.3' and
they reply '0.7' (decimal
bonds for 1)

Helpful hints for parents

- *Create regular, short opportunities for rapid-fire questions where an instant correct answer is required.*
- *Use objects to consider the bonds in a practical way.*
- *Look at the patterns with both objects and numbers e.g. as one number increases the other one decreases.*
- *Practise with the numbers in order AND chosen randomly - remember the aim is for the child to be able to respond immediately.*



Key Instant Recall Facts

Year 6 Autumn Term 2

This half term your children are working towards achieving their individual KIRF targets, indicated below.
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Derive multiplication and division facts using decimal numbers

Helpful hints for parents

- Create regular opportunities for rapid-fire questions where an instant correct answer is required.
- Encourage children to use what they already know, for example the $6 \times 3 = 18$, so $0.6 \times 3 = 1.8$.
- Chanting tables really does help. Make it fun by adding actions too or singing!
- Don't forget to chant those division facts too; they are often much harder to recall.

Key vocabulary times multiplied by lots of groups of multiple of divided by shared
product divisible by factor square number

$$8 \times 7 = 56; 8 \times 0.7 = 5.6; 0.8 \times 7 = 5.6;$$
$$80 \times 7 = 560; 8 \times 70 = 560; 80 \times 70 = 5600$$

$$56 \div 8 = 7; 56 \div 7 = 8; 5.6 \div 8 = 0.7; 5.6 \div 7 = 0.8$$
$$560 \div 8 = 70; 560 \div 80 = 7; 5600 \div 70 = 80$$

A carpenter needs to cut a plank of wood that is 4.8 m long into 8 pieces. How long will each piece of wood be?

A piece of ribbon measure 5.6m in total. 8 cm are needed to make a bow. How many bows can we make?

A single paper clip is 9 cm long. What is the greatest number of paper clips that can be made from 6.3 metres of wire?

Play Fizz Buzz. To practice the 0.5 and 0.8 times tables together take it in turns to count in steps of 0.1. If a number is in the 0.5 x table say 'Fizz' instead of the number. Say 'Buzz' if it's in the 0.8's and 'Fizz Buzz' if it's in both.

Pick a domino, add the number of dots together then multiply by a decimal number to 0.9. To extend, pick two dominoes: if each spot represents 0.1, what is the answer when I multiply them together?

Remove picture cards from a pack of cards. Pick a card and treat the number as tenths. State the multiplication and division fact that the child is working on.
e.g. Pick the '8' card
so $7 \times 0.8 = 5.6$ and 5.6 divided by 7 is 0.8



Key Instant Recall Facts

Year 6 Spring Term 2

This half term your children are working towards achieving their individual KIRF targets, indicated below.
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Know the doubles and halves of all two-digit decimals

Helpful hints for parents

- Create regular opportunities for rapid fire questions where an instant correct answer is required
- Encourage children to use what they already know, for example the 6x table is double the 3x table!
- When children are confident with doubles ask them to find the corresponding halves
- Practise halving at least as often as doubling. This will help children with subtraction at a later date

Key vocabulary

multiply product times by lots of share group divide double near double
twice 2 lots of 2 times half halved divided by 2 shared between 2 group in pairs

Double

$3.4 \rightarrow 6.8$

$3.5 \rightarrow 7.0$

$3.6 \rightarrow 7.2$

What is $1/2$ of 0.38?



$1/2 \text{ of } 0.3 = 0.15$



$1/2 \text{ of } 0.08 = 0.04$



Two tickets cost £67, how much would one ticket cost?

£33.50

How do you know?

I know because half of 60 is 30 and half of 7 is 3.5

Halves

$8.4 \rightarrow 4.2$

$8.5 \rightarrow 4.25$

$8.6 \rightarrow 4.3$

$8.7 \rightarrow 4.35$

So $1/2$ of 0.38 must be 0.19!

Play number ping pong!

Start of saying 'ping', child replies with 'pong'.

Repeat and then convert to numbers i.e. say '3.9' and they reply '7.8' (double 2 digit decimal) Or say, '7.8' and they say '3.9'

The swimming pool is 3.7km away. How far will we travel there and back?

7.4km

Can you explain?

Well, double 3 is 6 and double 0.7 is 1.4 which makes 7.4 altogether

Timed Games:

How well are you doing? How many questions can you answer in 2 minutes. Can you beat your own record?



Key Instant Recall Facts

Year 6 Spring Term 2

This half term your children are working towards achieving their individual KIRF targets, indicated below. The ultimate aim is for your child to be able to recall these facts **instantly!**

Know all the square numbers to 12×12

Helpful hints for parents

- *Create regular opportunities for rapid fire questions where an instant correct answer is required*
- *Encourage children to use what they already know, for example the $6x$ table is double the $3x$ table!*

Remember: A square number is a number multiplied by itself.

- 1) Write out the numbers from 1 to 100 in ten rows of 10.
- 2) Colour in 1×1 , 2×2 , 3×3 , etc. up to 10×10
- 3) Is there a pattern? Can you explain it?
- 4) Examine the differences between each square number.
- 5) Can you predict the next two square numbers and beyond?
- 6) If you have completed the exercise correctly, you should have shaded 1, 4, 9, 16, 25, 36, 49, 64, 81 and 100, and established that the next two numbers are 121 and 144.
- 7) **Now learn them and the corresponding square roots (e.g. the square root of 81 is 9)**
- 8) Can you write some word problems of your own involving square numbers and square roots.
e.g. 8 people paid £8 each for theatre tickets. How much did they pay altogether?
e.g. If 12 people paid £144 for tickets altogether, how much was each ticket?

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 Instant Recall Facts

Year 6 Summer Term 1

This half term your children are working towards achieving their individual KIRF targets, indicated below. The ultimate aim is for your child to be able to recall these facts *instantly!*

Know the tests for divisibility for numbers up to 10

Helpful hints for parents

- *Select a random number (2-digit to start with) and ask whether the number is divisible by 2, 3, 5, 6, 9. How do you know?*
- *Encourage children to know these really well as a means of developing more efficient number strategies.*

Key vocabulary *Divisible by, factor, shared, divided by, groups of*
Divisibility, prime number, square number
Multiple, factor, digits

The Divisibility Rules

Dividing by 2

All even numbers are divisible by 2.

e.g., all numbers ending in 0, 2, 4, 6 or 8.

Dividing by 3

Add up all the digits in the number.

Find out what the sum is. If the sum is divisible by 3, so is the number

For example: 12123 ($1+2+1+2+3=9$) 9 is divisible by 3, therefore 12123 is too!

Dividing by 4

Are the last two digits in your number divisible by 4?

If so, the number is too!

For example: 358912 ends in 12 which is divisible by 4, thus so is 358912.

Dividing by 5

Numbers ending in a 5 or a 0 are always divisible by 5.

Dividing by 6

If the number is divisible by 2 and 3 it is divisible by 6 also.

Dividing by 7

Take the last digit in a number.

Double and subtract the last digit in your number from the rest of the digits.

Repeat the process for larger numbers.

Example: 357 (Double the 7 to get 14.

Subtract 14 from 35 to get 21 which is divisible by 7 and we can now say that 357 is divisible by 7.

Dividing by 8

This one's not as easy, but if the last 3 digits are divisible by 8, so is the entire number.

Example: 6008 - The last 3 digits are divisible by 8, therefore, so is 6008.

Dividing by 9

Almost the same rule and dividing by 3. Add up all the digits in the number.

Find out what the sum is. If the sum is divisible by 9, so is the number.

For example: 43785 ($4+3+7+8+5=27$) 27 is divisible by 9, therefore 43785 is too!

Dividing by 10

If the number ends in a 0, it is divisible by 10.



Key Instant Recall Facts

Year 6 Summer Term 2

This half term your child is working towards achieving their individual KIRF target, indicated below. The ultimate aim is for your child to be able to recall these facts **instantly!**

Know the square roots of square numbers to 15 x 15

Helpful hints for parents

- There is a clear link to the Spring 2 KIRF, but re-visiting will provide consolidation and better prepare your child for mental arithmetic at high school
- Create regular opportunities for rapid fire questions where an instant correct answer is required
- Encourage children to use what they already know, for example the 6x table is double the 3x table
- Children might be extended further by learning the triangular numbers to 91.

Square Numbers	Square Roots
1	1
4	2
9	3
16	4
25	5
36	6
49	7
64	8
81	9
100	10
121	11
144	12
169	13
196	14
225	15

What are the next numbers in these sequences:

2536 49 64 -- -- -- ?

6481 100 121 -- --- --- ?

If you square any number ending in '5'

-Multiply the first digit by 1 more than itself, then add the digits 25 onto the end:

e.g. $35 \times 35 \rightarrow 3 \times 4 = 12$
so, 1225

$65 \times 65 \rightarrow 6 \times 7 = 42$
so, 4225

This extension will increase confidence and develop understanding.

