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!

> •I know all previous number bonds including decimals.
>
> •I know the test of divisibility for 4 and 6.

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)

Divisible by 4:

Rule: If the last two digits are a multiple of 4
(or if the last two digits are 00)

4 6 2 4

Look at the last two digits
What number do you see? 24
24 is a multiple of 4
So 4624 is divisible by 4

Divisible by 6:

Rule: If it is divisible by 2 and by 3

6 2 9 4

Is it a multiple of 2 and a multiple of 3?
The last digit is 4 so it is a multiple of 2
What do the digits add up to?
$6 + 2 + 9 + 4 = 21$
21 is a multiple of 3
So 6294 is divisible by 6

Building confidence in mathematics is crucial so be pleased with their efforts and always encourage with praise

Key Instant Recall Facts

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I know and can use all multiplication and division facts up to 12 x 12.

I know square numbers to 12 x 12.

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 x 1, 2 x 2, 3 x 3, etc. up to 10 x 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?

MULTIPLICATION TABLE

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Remember the related division facts!

Building confidence in mathematics is crucial so be pleased with their efforts and always encourage with praise. Make sure these practice sessions are enjoyable - if your child is really not in the mood it is the wrong time to be practising!

Key Instant Recall Facts

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Know doubles and halves of all 2 digit decimals
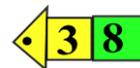## Convert between decimals, fractions and percentages

Double

$3.4 \rightarrow 6.8$

$3.5 \rightarrow 7.0$

$3.6 \rightarrow 7.2$

Halves

$8.4 \rightarrow 4.2$

$8.5 \rightarrow 4.25$

$8.6 \rightarrow 4.3$

$8.7 \rightarrow 4.35$

What is 1/2 of 0.38?   ·38

1/2 of 0.3 =0.15   ·3

1/2 of 0.08 = 0.04   ·08

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'

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

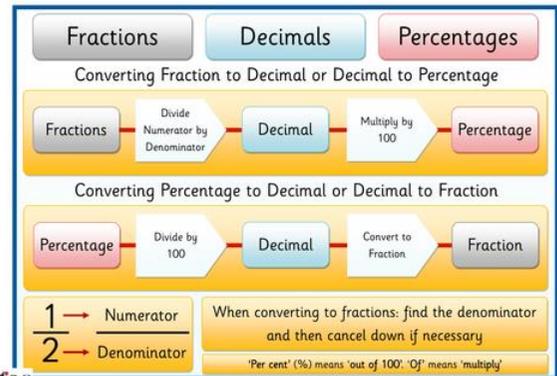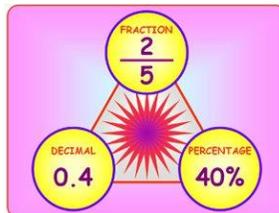£33.50
I know because half of 60 is 30 and half of 7 is 3.5

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

7.4km
Double 3 is 6 and double 0.7 is 1.4 which makes 7.4 altogether

percentage	fraction	decimal
30%	$\frac{3}{10}$	0.3

to go from a fraction to a percentage we can **convert to a decimal** first
$3/5 \longrightarrow 0.6 \longrightarrow 60\%$

FRACTION $\frac{2}{5}$

DECIMAL 0.4

PERCENTAGE 40%

Fractions | Decimals | Percentages

Converting Fraction to Decimal or Decimal to Percentage

Fractions — Divide Numerator by Denominator → Decimal — Multiply by 100 → Percentage

Converting Percentage to Decimal or Decimal to Fraction

Percentage — Divide by 100 → Decimal — Convert to Fraction → Fraction

$\frac{1}{2}$ — Numerator / Denominator

When converting to fractions: find the denominator and then cancel down if necessary

'Per cent' (%) means 'out of 100'. 'Of' means 'multiply'.

tes

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Key Instant Recall Facts

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> I can derive multiplication and division facts using decimal numbers.
>
> I know and can use conversion facts for measures.

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

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

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?

Jeff has saved up £7.20 over the last 8 weeks. If he saves the same amount each week, how much does he save each week?

Think back to the metric conversion work you did in Year 5, now remember your imperial conversions!

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

Customary Measurements		
Length	**Weight**	**Capacity**
1 foot = 12 inches 1 yard = 3 feet 1 mile = 1,760 yards	1 pound = 16 ounces 1 ton = 2,000 pounds	1 cup = 8 fluid ounces 1 pint = 2 cups 1 quart = 2 pints 1 gallon = 4 quarts
Metric Measurements		
Length	**Mass**	**Capacity**
1 kilometer = 1,000 meters 1 meter = 100 centimeters 1 centimeter = 10 millimeters	1 kilogram = 1,000 grams 1 gram = 1,000 milligrams	1 liter = 1,000 milliliters

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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 prime numbers up to 100

Revise and consolidate all KIRFs

PRIME NUMBERS

A PRIME NUMBER IS A NUMBER WHOSE ONLY FACTORS ARE 1 AND ITSELF.

1 - 100

2, 3, 5, 7, 11, 13, 17, 19, 23,

29, 31, 37, 41, 43, 47, 53, 59,

61, 67, 71, 73, 79, 83, 89, 97

Our Lonely 1

It is not prime because it does not have exactly two different factors.

It is not composite because it does not have more than 2 factors.

Special Note:
One is not a prime nor a composite number.

Spend the rest of your time in Year 6 look back at all the KIRFs you have learnt. Spend time making sure you are really secure with these and can recall these instantly reading for your journey through secondary school!

Key Instant Recall Facts

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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:

25 36 49 64 __ __ __ ?

64 81 100 121 __ ___ ___ ?

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 x 35 $\longrightarrow$ 3 x 4 =12
so, 1225

65 x 65 $\longrightarrow$ 6 x 7 = 42
so, 4225

This extension will increase confidence and develop understanding.