

To help develop children's fluency in mathematics, we ask them to learn Key Instant Recall Facts each half term. We expect children to practise their KIRFs at least 3 times a week.

I have created these lists of KIRFs to align with the new curriculum. They are intended to be challenging and it is intended that children will be taught the necessary maths in lessons beforehand.

This is a first draft so is a long way from perfect. In particular, some 'top tips' are well-thought out and others are currently more-or-less empty.

Feel free to use this if it is helpful. Any suggestions for improvement, please email:  
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# Key Instant Recall Facts

## Year 1

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

- ▶ I know number bonds (+ and -) for each number to 10.
- ▶ I know doubles and halves of numbers to 10.
- ▶ I can tell read the time to o'clock and half past.

### Key Vocabulary

add

plus

take away

less than

more than

double

half

$\frac{1}{2}$

o'clock

half past

### 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.

Use practical resources - Your child has one potato on their plate and you give them three more. Can they predict how many they will have now?

Make a poster - Your child could make a poster showing the different ways of making 5, 7 etc

Play games - You can play number bond pairs online at [www.conkermaths.com](http://www.conkermaths.com) and then see how many questions you can answer in just one minute. Play "What's the time Mr Wolf?"

Ping Pong - In this game, the parent says, "Ping," and the child replies, "Pong." Then the parent says a number and the child doubles it. For a harder version, the adult can say, "Pong." The child replies, "Ping," and then halves the next number given.

Talk about time - Discuss what time things happen. When does your child wake up? What time do they eat breakfast? Make sure that you have an analogue clock visible in your house or that your child wears a watch with hands.

Adding 1 and 2

Bonds to 10

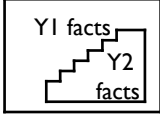
Adding 10

Bridging/  
compensating

Doubles

Adding 0

Near doubles



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





# Key Instant Recall Facts

## Year 2

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

- ▶ I know number bonds (+ and -) to 20 e.g.  $19 + 1 = 20$ ,  $20 - 8 = 12$
- ▶ I know multiplication and division facts for the 2, 5 and 10 times tables.
- ▶ I know doubles and halves of numbers to 20.
- ▶ I can tell the time
  - to the nearest hour
  - to the nearest half hour
  - to the nearest quarter hour
  - to the nearest 5 minutes

### Key Vocabulary

add

take away

subtract

How many more?

less than

more than

multiplied by

times

divided by

double

half

o'clock

half past

quarter past

quarter to

Five past one

Twenty-five to ten



# Key Instant Recall Facts

## Year 2

### 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.

Use what you already know - Use number bonds to 10 (e.g.  $7 + 3 = 10$ ) to work out related number bonds to 20 (e.g.  $17 + 3 = 20$ ). If your child knows that  $2 \times 5 = 10$ , they can use this fact to work out that  $2 \times 6 = 12$ .

Use practical resources - Make collections of 20 objects. Ask questions such as, "How many more conkers would I need to make 20?"

Make a poster - Your child could make a poster showing the different ways of making 20.

Play games - You can play number bond pairs online at [www.conkermaths.com](http://www.conkermaths.com) and then see how many questions you can answer in just one minute.

Songs and Chants - You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.

Test the Parent - Your child can make up their own tricky division questions for you e.g. What is 18 divided by 2? They need to be able to multiply to create these questions.

Talk about time - Discuss what time things happen. When does your child wake up? What time do they eat breakfast? Make sure that you have an analogue clock visible in your house or that your child wears a watch with hands.

Ask your child the time regularly - You could also give your child some responsibility for watching the clock:

"The cakes need to come out of the oven at quarter past four."

"We need to leave the house at half past eight."



# Key Instant Recall Facts

## Year 3

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

- ▶ I know number bonds (+ and -) for all numbers to 20.
- ▶ I know multiplication and division facts for the 3, 4 and 8 times tables.
- ▶ I can recall durations of time e.g. There are 60 seconds in a minute, there are 30 days in April.
- ▶ I can tell the time
  - to the nearest hour
  - to the nearest half hour
  - to the nearest quarter hour
  - to the nearest 5 minutes
  - to the nearest minute

### Key Vocabulary

add

subtract

difference

How many more?

less than

more than

multiplied by

times

divided by

o'clock

half past

quarter past

quarter to

Five past one

Twenty-five to ten



# Key Instant Recall Facts

## Year 3

### 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.  $8 + 5 = 13$ ;  $3 \times 5 = 15$ ), can they tell you the other three facts in the same fact family?

Use doubles and near doubles - If you know that  $6 + 6 = 12$ , how can you work out  $6 + 7$ ? What about  $5 + 7$ ? Multiplying a number by 4 is the same as doubling and doubling again. Double 6 is 12 and double 12 is 24, so  $6 \times 4 = 24$ .

Play games - There are missing number questions at [www.conkermaths.com](http://www.conkermaths.com). See how many questions you can answer in just one minute.

Songs and Chants - You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.

Warning! - When creating fact families, children sometimes get confused by the order of the numbers in the division number sentence. It is tempting to say that the biggest number goes first, but it is more helpful to say that the answer to the multiplication goes first, as this will help your child more in later years when they study fractions, decimals and algebra.

E.g.  $3 \times 12 = 36$ . The answer to the multiplication is 36, so  $36 \div 3 = 12$  and  $36 \div 12 = 3$

Use rhymes and memory games- The rhyme, *Thirty days hath September*, can help children remember which months have 30 days. There are poems describing the months of the year in order.

Use calendars - If you have a calendar for the new year, your child could be responsible for recording the birthdays of friends and family members in it. Your child could even make their own calendar.

How long is a minute? - Ask your child to sit with their eyes closed for exactly one minute while you time them. Can they guess the length of a minute? Carry out different activities for one minute. How many times can they jump in sixty seconds?

Talk about time - Discuss what time things happen. When does your child wake up? What time do they eat breakfast? Make sure that you have an analogue clock visible in your house or that your child wears a watch with hands. Once your child is confident telling the time, see if you can find more challenging clocks e.g. with Roman numerals or no numbers marked.

Ask your child the time regularly - You could also give your child some responsibility for watching the clock:

"The cakes need to come out of the oven at twenty-two minutes past four exactly."

"We need to leave the house at twenty-five to nine."



# Key Instant Recall Facts

## Year 4

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

- ▶ I know all number bonds to 100 e.g.  $40 + 60 = 100$ ,  $100 - 77 = 23$
- ▶ I know multiplication and division facts for the 6, 7, 9 and 11 times tables.
- ▶ I can multiply and divide single digit numbers by 10 and 100 e.g.  $6 \times 100 = 600$ ,  $600 \div 6 = 100$ .
- ▶ I can recognise decimal equivalents of fractions e.g.  $\frac{1}{2} = 0.5$ ,  $\frac{1}{10} = 0.1$ .

### Key Vocabulary

add

subtract

difference

multiplied by

times

divided by

tenths

hundredths

fraction

decimal

hundreds

tens

ones





# Key Instant Recall Facts

## Year 4

### 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.  $8 + 5 = 13$ ;  $3 \times 6 = 18$ ), 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](http://www.conkermaths.com). See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.

Songs and Chants - You can buy Times Tables CDs or find multiplication songs and chants online. If your child creates their own song, this can make the times tables even more memorable.

Double your threes - Multiplying a number by 6 is the same as multiplying by 3 and then doubling the answer.  $7 \times 3 = 21$  and double 21 is 42, so  $7 \times 6 = 42$ .

Warning! - When creating fact families, children sometimes get confused by the order of the numbers in the division number sentence. It is tempting to say that the biggest number goes first, but it is more helpful to say that the answer to the multiplication goes first, as this will help your child more in later years when they study fractions, decimals and algebra. E.g.  $6 \times 12 = 72$ . The answer to the multiplication is 72, so  $72 \div 6 = 12$  and  $72 \div 12 = 6$

Look for patterns - These times tables are full of patterns for your child to find. How many can they spot?

Use your ten times table - Multiply a number by 10 and subtract the original number (e.g.  $7 \times 10 - 7 = 70 - 7 = 63$ ). What do you notice? What happens if you add your original number instead? (e.g.  $7 \times 10 + 7 = 70 + 7 = 77$ )

What do you already know? - Your child will already know many of these facts from the 2, 3, 4, 5, 6, 8 and 10 times tables. It might be worth practising these again!

Play games - Make some cards with pairs of equivalent fractions and decimals. Use these to play the memory game or snap. Or make your own dominoes with fractions on one side and decimals on the other.

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 those hard-to-remember facts, [www.multiplication.com](http://www.multiplication.com) has some strange picture stories to help children remember.



# Key Instant Recall Facts

## Year 5

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

- ▶ I know decimal number bonds to 1 and 10 e.g.  $0.4 + 0.6 = 1$ ,  $10 - 6.3 = 3.7$ .
- ▶ I know the multiplication and division facts for all times tables up to  $12 \times 12$ .
- ▶ I can recall metric conversions e.g.  $1 \text{ kg} = 1000\text{g}$ .
- ▶ I can identify prime numbers up to 20
- ▶ I can recall square numbers up to  $12^2$  and their square roots e.g.  $6^2 = 6 \times 6 = 36$ .
- ▶ I can find factor pairs of a number e.g.  $24 = 4 \times 6$ ,  $8 \times 3 = 24$

### Key Vocabulary

add

subtract

less than

difference

How many more?

multiplied by

times

divided by

prime number

composite number

factor

multiple

squared

multiplied by itself

square root square

number

product



# Key Instant Recall Facts

## Year 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.

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, multiplication/division games and a factor pairs game at [www.conkermaths.com](http://www.conkermaths.com). See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.

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.

Use memory tricks - For those hard-to-remember facts, [www.multiplication.com](http://www.multiplication.com) has some strange picture stories to help children remember.

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?

Sorting - 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?

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?

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



# Key Instant Recall Facts

## Year 6

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

- ▶ I know the multiplication and division facts for all times tables up to  $12 \times 12$  (Children should consolidate their knowledge to increase their speed of recall).
- ▶ I can identify common factors of a pair of numbers e.g. *the common factors of 24 and 56 are 1, 2, 4 and 8.*
- ▶ I can convert between decimals, fractions and percentages e.g. Children should be able to convert between decimals and fractions for  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$  and any number of tenths and hundredths.
- ▶ I can identify prime numbers up to 50.
- ▶ I know the doubles and halves of one and two digit decimals, and doubles and halves of all multiples of 10 to 10,000.
- ▶ I can recall square numbers up to  $12^2$  and their square roots e.g.  $6^2 = 6 \times 6 = 36$ .

### Key Vocabulary

multiplied by  
times

divided by  
factor

common factor

multiple

tenths

hundredths

fraction

decimal

prime number

composite number

factor

Multiple

double

half



# Key Instant Recall Facts

## Year 6

### 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 family of the day. If you would like more ideas, please speak to your child's teacher.

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](http://www.conkermaths.org) is a good place to start.

Use memory tricks - For those hard-to-remember facts, [www.multiplication.com](http://www.multiplication.com) has some strange picture stories to help children remember.

Play games - Make some cards with pairs of equivalent fractions and decimals. Use these to play the memory game or snap. Or make your own dominoes with fractions on one side and decimals on the other.

Sorting - 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?

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?

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