

# Year 1



## Key Instant Recall Facts



### Number Bonds

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

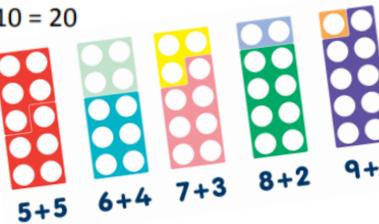
And then challenge yourself with missing number questions too eg

$$6 + \bigcirc = 10 \text{ or } 10 - \bigcirc = 3.$$

$$3 + \bigcirc = 5 \text{ or } 4 - \bigcirc = 2.$$

### Double and Half numbers to 10

$0+0=0$	$\frac{1}{2} \text{ of } 0 = 0$
$1+1=2$	$\frac{1}{2} \text{ of } 2 = 1$
$2+2=4$	$\frac{1}{2} \text{ of } 4 = 2$
$3+3=6$	$\frac{1}{2} \text{ of } 6 = 3$
$4+4=8$	$\frac{1}{2} \text{ of } 8 = 4$
$5+5=10$	$\frac{1}{2} \text{ of } 10 = 5$
$6+6=12$	
$7+7=14$	
$8+8=16$	
$9+9=18$	
$10+10=20$	



### Key Vocabulary

- + add, addition, plus, sum, more, total, altogether
- take away, subtract, less, minus, difference
- = equals, balance, same
- (1+1, 2 + 2...) double
- 1/2 half
- Clock face
- Minute hand/hour hand
- O'clock
- Half past
- Quarter to/past
- Hundreds, Tens and Ones

### Time



I know the days of the week/months of the year.

I know my birthday and other special days of the year.

I can tell the time by using a clock with hands.

I can tell the time to the nearest o'clock and half past.



### Count in 2's, 5's, and 10's...

0 2 4 6 8 10 12 14 16 18 20

0 5 10 15 20 25 30 35 40 45 50

0 10 20 30 40 50 60 70 80 90

When confident they should try counting backwards steps from any of the numbers above

### TOP TIPS:

The secret to success is practising little and often. You don't need to practise them all at once.

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?

Play games – You can play maths games [here](#) or at [ictgames.com](http://ictgames.com)

Have a calendar so you can see the months passing through the year and notice how the seasons change too!

# Year 2



1 2 3  
4 5 6 7  
8 9 10

## Number Bonds

$0 + 20 = 20$	$20 + 0 = 20$	$20 - 0 = 20$	$20 - 20 = 0$
$1 + 19 = 20$	$19 + 1 = 20$	$20 - 1 = 19$	$20 - 19 = 1$
$2 + 18 = 20$	$18 + 2 = 20$	$20 - 2 = 18$	$20 - 18 = 2$
$3 + 17 = 20$	$17 + 3 = 20$	$20 - 3 = 17$	$20 - 17 = 3$
$4 + 16 = 20$	$16 + 4 = 20$	$20 - 4 = 16$	$20 - 16 = 4$
$5 + 15 = 20$	$15 + 5 = 20$	$20 - 5 = 15$	$20 - 15 = 5$
$6 + 14 = 20$	$14 + 6 = 20$	$20 - 6 = 14$	$20 - 14 = 6$
$7 + 13 = 20$	$13 + 7 = 20$	$20 - 7 = 13$	$20 - 13 = 7$
$8 + 12 = 20$	$12 + 8 = 20$	$20 - 8 = 12$	$20 - 12 = 8$
$9 + 11 = 20$	$11 + 9 = 20$	$20 - 9 = 11$	$20 - 11 = 9$
$10 + 10 = 20$		$20 - 10 = 10$	

And then challenge yourself with missing number questions too eg

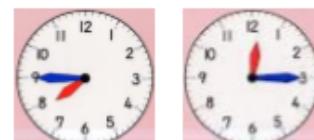
$$19 + \bigcirc = 20 \text{ or } 20 - \bigcirc = 8.$$

### Time



- I can tell the time to the nearest hour.
- I can tell the time to the nearest half hour.
- I can tell the time to the nearest quarter hour.

I can tell the time to the nearest five minutes.



### Time Vocabulary

Twelve o'clock

Half past two

Quarter past three

Quarter to nine

Five past one

## Double and Half numbers to 20



$0 + 0 = 0$	$\frac{1}{2} \text{ of } 0 = 0$
$1 + 1 = 2$	$\frac{1}{2} \text{ of } 2 = 1$
$2 + 2 = 4$	$\frac{1}{2} \text{ of } 4 = 2$
$3 + 3 = 6$	$\frac{1}{2} \text{ of } 6 = 3$
$4 + 4 = 8$	$\frac{1}{2} \text{ of } 8 = 4$
$5 + 5 = 10$	$\frac{1}{2} \text{ of } 10 = 5$
$6 + 6 = 12$	$\frac{1}{2} \text{ of } 12 = 6$
$7 + 7 = 14$	$\frac{1}{2} \text{ of } 14 = 7$
$8 + 8 = 16$	$\frac{1}{2} \text{ of } 16 = 8$
$9 + 9 = 18$	$\frac{1}{2} \text{ of } 18 = 9$
$10 + 10 = 20$	$\frac{1}{2} \text{ of } 20 = 10$

### Key Vocabulary

- What do I add to 5 to make 20?
- What is 20 take away 6?
- What is 3 less than 20?
- How many more than 16 is 20?
- What is double 9?
- What is half of 14?
- Hundreds, Tens and Ones
- Divided by
- Grouping / Sharing
- Fact Families

### I know multiplication and division facts for the 2, 5 and 10 times tables

What is 2 multiplied by 7?

What is 2 times 9?

What is 12 divided by 2?

What is 10 multiplied by 3?

What is 70 divided by 10?

### TOP TIPS:

The secret to success is practising little and often. You don't need to practise them all at once.

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

Play games – You can play maths games [here](#) or at [ictgames.com](#)

Discuss what time things happen. When does your child wake up? What time do they eat breakfast?



## Key Instant Recall Facts



### I know number bonds for all numbers to 20

$2 + 9 = 11$

$4 + 9 = 13$

Examples of other facts:

$3 + 8 = 11$

$5 + 8 = 13$

$13 + \underline{\quad} = 18$

$4 + 7 = 11$

$6 + 7 = 13$

$12 + \underline{\quad} = 19$

$5 + 6 = 11$

$4 + 10 = 14$

$11 + \underline{\quad} = 17$

$4 + 8 = 12$

$5 + 9 = 14$

$18 - \underline{\quad} = 10$

$5 + 7 = 12$

$6 + 8 = 14$

$20 - \underline{\quad} = 11$

$6 + 6 = 12$

$7 + 7 = 14$

$15 - \underline{\quad} = 7$

### Fact Families Challenges

Buy one get three free – If you are given one fact (e.g.  $3 \times 5 = 15$ ), can you say the other three facts in the same fact family?

### I know multiplication and division facts for the 3, 4 and 8 times tables

What is 3 multiplied by 8? What is 8 times 3? What is 24 divided by 3? I can answer these questions in any order, including missing number questions e.g.  $3 \times \bigcirc = 18$  or  $\bigcirc \div 3 = 11$ .

### Songs and Chants

You can buy Times Tables CDs or find multiplication songs and chants online. This may make your Times Tables even more memorable.

### Key Vocabulary

What do I add to 5 to make 19?

What is 17 take away 6?

What is 13 less than 15?

How many more than 8 is 11?

What is the difference between 9 and 13?

Multiplied by

Divided by

Grouping / Sharing

Fact Families

Time to the nearest 5 minutes



### Time

There are 60 seconds in a minute. There are 60 minutes in an hour. There are 24 hours in a day. There are 7 days in a week. There are 12 months in a year.

There are 365 days in a year. There are 366 days in a leap year. I can tell the time to the nearest hour. I can tell the time to the nearest half hour. I can tell the time to the nearest quarter hour. I can tell the time to the nearest five minutes. I can tell the time to the nearest minute.

### Time Vocabulary

Twelve o'clock

Half past two

Quarter past three

Quarter to nine

Five past one

### TOP TIPS:

The secret to success is practising little and often. You don't need to practise them all at once.

Use practical resources – Have counters/LEGO pieces/cubes/pens available to go through calculation strategies.

Play games – You can play maths games at [ictgames.com](http://ictgames.com) and many other platforms

Have a calendar so you can see the months passing through the year. Wear a watch to reinforce time learning!



# Year 4

## Key Instant Recall Facts



### I know number bonds for all numbers to 100

$60 + 40 = 100$	$37 + 63 = 100$
$40 + 60 = 100$	$63 + 37 = 100$
$100 - 40 = 60$	$100 - 63 = 37$
$100 - 60 = 40$	$100 - 37 = 63$
$75 + 25 = 100$	$48 + 52 = 100$
$25 + 75 = 100$	$52 + 48 = 100$
$100 - 25 = 75$	$100 - 52 = 48$
$100 - 75 = 25$	$100 - 48 = 52$

### Measure

- There are 60 seconds in a minute. There are 60 minutes in an hour. There are 24 hours in a day. There are 7 days in a week.
- There are 12 months in a year. There are 365 days in a year.
- There are 100cm in 1m
- There are 1000m in 1km
- There are 1000g in 1kg
- There are 1000ml in 1L



### I know my times tables up to 12x12

(see reverse)

Practice with Mr Demaio  
[\(click\)](#) // [TT Rock Stars](#) // [Hit the Button](#)

What is 3 multiplied by 8? What is 8 times 3?  
What is 24 divided by 3? I can answer these questions in any order, including missing number questions e.g.  $3 \times \bigcirc = 18$  or  $\bigcirc \div 3 = 11$ .

### Key Vocabulary

What do I **add** to 65 to make 100?

What is 100 **take away** 6?

What is 13 **less than** 100?

**How many more** than 98 is 100?

What is the **difference** between 89 and 100?

### 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](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.

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

# Key Instant Recall Facts for Year 5 Maths



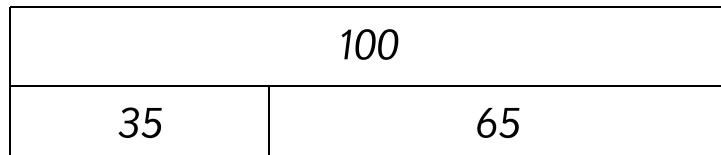
## Why KIRF?

When we are learning something new, we only have a limited amount of mental workspace in which to hold the information we need. If children are able to memorise key facts and are able to instantly recall them, it frees up their mental workspace to remember the new learning and makes learning easier.

## Number Bonds

Children in Year 5 should already know the number bonds to 10 and be able to recall these instantly. They should use this knowledge to help them learn all of their number bonds up to 100 and be able to generate the related fact. E.g.  $35 + 65 = 100$  so  $100 - 35 = 65$ . They should use these facts to help them to learn the decimal number bonds to 1.

$$\text{E.g. } 0.35 + 0.65 = 1.$$



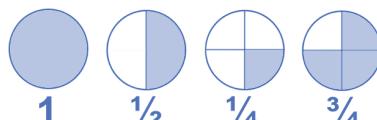
## Fractions and Decimal Equivalents

Children need to learn the fraction and decimal equivalents for one half, one quarter and three quarters.

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = 0.5$$

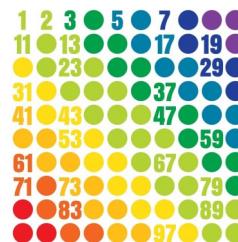
$$\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = 0.25$$

$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16} = 0.75$$



## Prime Numbers

Children need to learn the prime numbers up to 50:  
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47



## Times Tables Facts to 12 x 12

Children in Year 5 should know all of their times tables facts up to  $12 \times 12$  and should be able to recall all related facts.

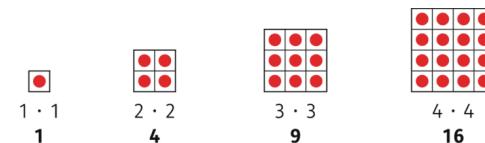
E.g. If you know that  $6 \times 7 = 42$ , you should also know that  $7 \times 6 = 42$ ,  $42 \div 7 = 6$  and  $42 \div 6 = 7$ .

## Square Numbers

Children in Year 5 should learn the square numbers and square roots up to  $12^2$

$$1^2 = 1, 2^2 = 4, 3^2 = 9, 4^2 = 16, 5^2 = 25\dots$$

$$\sqrt{1} = 1, \sqrt{4} = 2, \sqrt{9} = 3, \sqrt{16} = 4, \sqrt{25} = 5\dots$$



## Top Tips

Practise little and often: walking to school, getting dressed, getting ready for bed.

Chanting times tables and repeating key facts is a good strategy, especially if children are doing this from memory.

Frequently ask your child one or two questions- What is  $100 - 42$ ? What is  $5 \times 4$ ? What prime numbers can you remember between 10 and 20?

Make use of websites and apps to support practise—TT Rockstars, Hit the Button, Squeebles apps, mathszone and many more.

Make your own board games and flash cards to turn practise into a game. See the Homework folder on the Year 5 class page for ideas.



# Year 6

## Key Instant Recall Facts



Know doubles and halves of 2-digit decimals.

2.45 doubled is 4.90

Half of 3.82 is 1.91

Use known facts and jottings to support mental arithmetic.

Use all multiplication and division facts for the times tables up to 12x12, to derive x and ÷ of decimal numbers...

$$4 \times 5 = 20$$

$$40 \times 5 = 200$$

$$40 \times 50 = 2000$$

$$4 \times 0.5 = 2$$

Know the tests for divisibility for 4 and 6.

Divisible by 4- if the number formed by the last two digits in a number is divisible by 4, the original number is divisible by 4

Divisible by 6- add the digits in the number, if they are divisible by 3, and the number was even, then they are divisible by 6.

Recall factor pairs to 100 e.g.

Factors of 36:

1 x 36,

2 x 18,

3 x 12,

4 x 9,

6 x 6

Practise these skills at home...practise makes perfect!

percentage	fraction	decimal
30%	$\frac{3}{10}$	0.3
to go from a fraction to a percentage we can convert to a decimal first		
$3/5$	0.6	60%

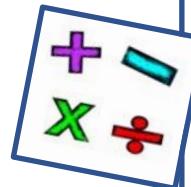
### VOCABULARY

- common factor, (factor of more than one number)
- common multiple, (multiple of more than one number)
- lowest common multiple (LCM),
- greatest common factor (GCF)

Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 16: 1, 2, 4, 8, 16

4 is the Greatest Common Factor



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