# Maths

Key Instant Recall Facts

To help develop children's fluency in Mathematics, each half term we ask them to learn Key Instant Recall Facts (KIRFs).

The lists of KIRFs have been created to align with the National Curriculum and the end of year expectations for each year group. Children will be taught the foundations and necessary Maths in lessons beforehand, introducing them to specific visual models to support their understanding.

We expect the majority of children within a year group to be working towards these targets. Children should know these thoroughly and be able to recall the facts instantly for their year group. By helping to develop these skills, your child will be more able to access other areas of the Maths curriculum such as calculation methods, problem solving and reasoning. If your child is struggling to recall facts, please concentrate on a smaller number and practise more frequently.

Thank you for your support,
Miss Cole
Headteacher and Maths Leader
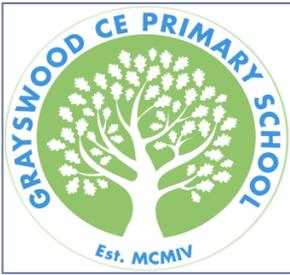
Key Instant Recall Facts

Year 2 – Autumn 1

I know number bonds for each number 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**.

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	

Key Vocabulary

What do I **add** to 5 to make 20?

What is 20 **take away** 6?

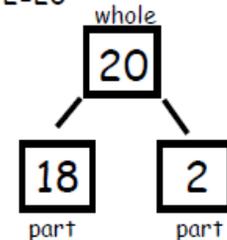What is 3 **less than** 20?
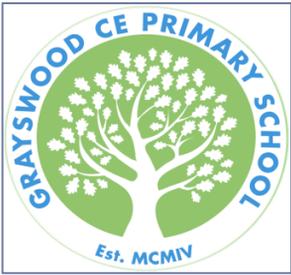
How many more than 16 is 20?

What is the **whole**?

What are the **parts**?

They should be able to answer these questions in any order, including missing number questions e.g. 19 + ◯ = 20 or 20 − ◯ = 8.

Key Imagery:
Prove using whole/part model:
Eg- 18+2=20

whole
20
18 2
part   part

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).

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 – We use Numicon at school. You can find pictures of the Numicon shapes here: bit.ly/NumiconPictures – 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.org and then see how many questions you can answer in just one minute.

I know doubles and halves of numbers 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**.

0 + 0 = 0	½ of 0 = 0	
1 + 1 = 2	½ of 2 = 1	11 + 11 = 22
2 + 2 = 4	½ of 4 = 2	12 + 12 = 24
3 + 3 = 6	½ of 6 = 3	13 + 13 = 26
4 + 4 = 8	½ of 8 = 4	14 + 14 = 28
5 + 5 = 10	½ of 10 = 5	15 + 15 = 30
6 + 6 = 12	½ of 12 = 6	16 + 16 = 32
7 + 7 = 14	½ of 14 = 7	17 + 17 = 34
8 + 8 = 16	½ of 16 = 8	18 + 18 = 36
9 + 9 = 18	½ of 18 = 9	19 + 19 = 38
10 + 10 = 20	½ of 20 = 10	20 + 20 = 40

Key Vocabulary

What is **double** 9?
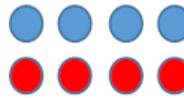
What is **half** of 14?

What is the **whole**? What are the **parts**?
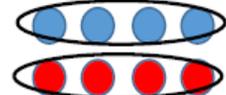
Key Imagery:

Prove using array:
Eg- 4 + 4 = 8

Prove using array using grouping:
½ of 8 = 4

(the **parts** are 4 and 4 and the **whole** is 8)

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 – Encourage your child to find the connection between the 2 times table and double facts.

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.

Practise online – Go to www.conkermaths.org and see how many questions you can answer in just 90 seconds.
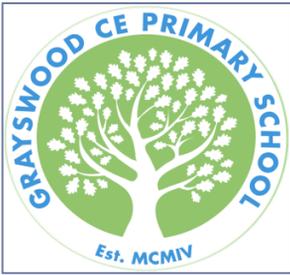
I know the multiplication and division facts for the 2 times table.

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

$1 \times 2 = 2$	$2 \div 2 = 1$
$2 \times 2 = 4$	$4 \div 2 = 2$
$3 \times 2 = 6$	$6 \div 2 = 3$
$4 \times 2 = 8$	$8 \div 2 = 4$
$5 \times 2 = 10$	$10 \div 2 = 5$
$6 \times 2 = 12$	$12 \div 2 = 6$
$7 \times 2 = 14$	$14 \div 2 = 7$
$8 \times 2 = 16$	$16 \div 2 = 8$
$9 \times 2 = 18$	$18 \div 2 = 9$
$10 \times 2 = 20$	$20 \div 2 = 10$
$11 \times 2 = 22$	$22 \div 2 = 11$
$12 \times 2 = 24$	$24 \div 2 = 12$

Key Vocabulary

What is 2 **multiplied by** 7?

What is 2 **times** 9?

What is 12 **divided by** 2?
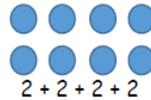
How many **lots of** 2 are in the number 12?

What is the **whole**?

What are the **parts**?
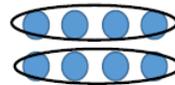
Key Imagery:

Prove using array:
Eg- 2 x 4 = 8

2 + 2 + 2 + 2

Prove using array using grouping
8 ÷ 2 = 4

(the **parts** are 2 and 4 and the **whole** is 8)

They should be able to answer these questions in any order, including missing number questions e.g. $2 \times \bigcirc = 8$ or $\bigcirc \div 2 = 6$.

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

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.

Use what you already know – If your child knows that 2 × 5 = 10, they can use this fact to work out that 2 × 6 = 12.

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.

Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.
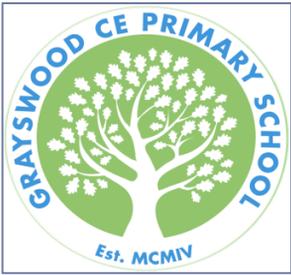
I know the multiplication and division facts for the 10 times table.

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

1 × 10 = 10	10 ÷ 10 = 1
2 × 10 = 20	20 ÷ 10 = 2
3 × 10 = 30	30 ÷ 10 = 3
4 × 10 = 40	40 ÷ 10 = 4
5 × 10 = 50	50 ÷ 10 = 5
6 × 10 = 60	60 ÷ 10 = 6
7 × 10 = 70	70 ÷ 10 = 7
8 × 10 = 80	80 ÷ 10 = 8
9 × 10 = 90	90 ÷ 10 = 9
10 × 10 = 100	100 ÷ 10 = 10
11 × 10 = 110	110 ÷ 10 = 11
12 × 10 = 120	120 ÷ 10 = 12

Key Vocabulary

What is 10 **multiplied by** 3?

What is 10 **times** 9?

What is 70 **divided by** 10?
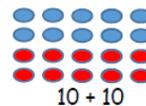
How many **lots of** 10 are in the number 20?

What is the **whole**?
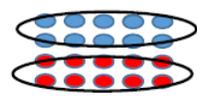
What are the **parts**?

Key Imagery:

Prove using array: Prove using array using
Eg- 2 x 10 = 20   grouping 20 ÷ 2 = 10

10 + 10
(the **parts** are 2 and 10 and the **whole** is 20)

They should be able to answer these questions in any order, including missing number questions e.g. 10 × ◯ = 80 or ◯ ÷ 10 = 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 of the day. If you would like more ideas, please speak to your child's teacher.

Pronunciation – Make sure that your child is pronouncing the numbers correctly and not getting confused between thirt**een** and thirt**y.**

Songs and Chants – You can buy Times Tables CDs or find multiplication songs and chants online. Percy Parker online is one children to love and we use this in school too.

Test the Parent – Your child can make up their own tricky division questions for you e.g. *What is 70 divided by 7?* They need to be able to multiply to create these questions.

Apply these facts to real life situations – How many toes are in your house? What other multiplication and division questions can your child make up?
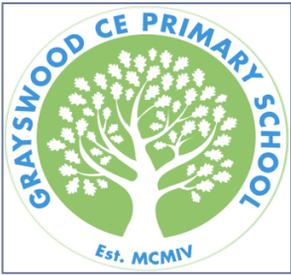
Key Instant Recall Facts

Year 2 – Summer 1

I can tell the time using quarter past and quarter to.

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

Children need to be able to tell the time using a clock with hands. This target can be broken down into several steps.

▸ 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.

Key Vocabulary

Twelve **o'clock**

Half past two

Quarter past three

Quarter to nine

Top Tips

The secret to success is practising **little** and **often**. If you would like more ideas, please speak to your child's teacher.

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.
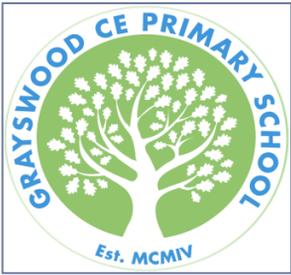
Ask your child the time regularly – You could also give your child some responsibility for watching the clock :
"The cakes need to come out of the oven at quarter past four."
"We need to leave the house at half past eight."
Making times on a clock face - Why not have a go at making your own clocks and then practice making a O'clock or half past time or make times using the program at
http://mathsframe.co.uk/en/resources/resource/90/itp_clock

I know the multiplication and division facts for the 5 times table.

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

1 × 5 = 5	5 ÷ 5 = 1
2 × 5 = 10	10 ÷ 5 = 2
3 × 5 = 15	15 ÷ 5 = 3
4 × 5 = 20	20 ÷ 5 = 4
5 × 5 = 25	25 ÷ 5 = 5
6 × 5 = 30	30 ÷ 5 = 6
7 × 5 = 35	35 ÷ 5 = 7
8 × 5 = 40	40 ÷ 5 = 8
9 × 5 = 45	45 ÷ 5 = 9
10 × 5 = 50	50 ÷ 5 = 10
11 × 5 = 55	55 ÷ 5 = 11
12 × 5 = 60	60 ÷ 5 = 12

Key Vocabulary

What is 5 **multiplied by** 7?

What is 5 **times** 9?

What is 60 **divided by** 5?

How many **lots of** 5 are in the number 15?

What is the **whole**?

What are the **parts**?
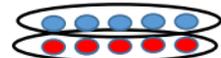
Key Imagery:

Prove using array:
Eg- 5 x 2 = 10

Prove using array using grouping 10 ÷ 2 = 5

5 + 5
(the **parts** are 5 and 2 and the **whole** is 10)

They should be able to answer these questions in any order, including missing number questions e.g. 5 × ◯ = 40 or ◯ ÷ 5 = 9.

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.

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.

Spot patterns – What patterns can your child spot in the 5 times table? Are there any similarities with the 10 times table?

Test the Parent – Your child can make up their own tricky division questions for you e.g. *What is 45 divided by 5?* They need to be able to multiply to create these questions.

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