



**Bassingbourn**  
Community Primary School

## **Bassingbourn Key Instant Recall** **Facts (KIRF's)**

To help develop children's fluency in Mathematics, we ask them to learn Key Instant Recall Facts each half term. They will be assessed on how well they achieve each fact at the end of the half term. Children should aim to practise their KIRFs at least 3 times a week. Please see attached lists of KIRFs which are aligned to the new Maths curriculum. They are intended to be challenging and where possible children will be taught the necessary Maths in lessons beforehand.

Year 1 Autumn 1 KIRF

Numbers 1 to 10 in numerals and words

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

1 = One

2 = Two

3 = Three

4 = Four

5 = Five

6 = Six

7 = Seven

8 = Eight

9 = Nine

10 = Ten

Game-

Match numerals to word like pairs or dominoes cards.

Year 1 Autumn 2 KIRF  
Number bonds for each number to 6

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

|             |             |             |
|-------------|-------------|-------------|
| $0 + 1 = 1$ | $0 + 4 = 4$ | $0 + 6 = 6$ |
| $1 + 0 = 1$ | $1 + 3 = 4$ | $1 + 5 = 6$ |
|             | $2 + 2 = 4$ | $2 + 4 = 6$ |
| $0 + 2 = 2$ | $3 + 1 = 4$ | $3 + 3 = 6$ |
| $1 + 1 = 2$ | $4 + 0 = 4$ | $4 + 2 = 6$ |
| $2 + 0 = 2$ |             | $5 + 1 = 6$ |
|             | $0 + 5 = 5$ | $6 + 0 = 6$ |
| $0 + 3 = 3$ | $1 + 4 = 5$ |             |
| $1 + 2 = 3$ | $2 + 3 = 5$ |             |
| $2 + 1 = 3$ | $3 + 2 = 5$ |             |
| $3 + 0 = 3$ | $4 + 1 = 5$ |             |
|             | $5 + 0 = 5$ |             |

Key Vocabulary

What is 3 **add** 2?

What is 2 **plus** 2?

What is 5 **take away** 2?

What is 1 **less than** 4?

They should be able to answer these questions in any order, including missing number questions e.g.  $3 + \bigcirc = 5$  or  $4 - \bigcirc = 2$ .

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 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 – We use Numicon at school. You can find pictures of the Numicon shapes here: [bit.ly/NumiconPictures](http://bit.ly/NumiconPictures) – your child could make a poster showing the different ways of making 5.

## Year 1 Spring 1 KIRF

### Doubles and halves of numbers to 10

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

$0 + 0 = 0$

$\frac{1}{2} \text{ of } 0 = 0$

$1 + 1 = 2$

$\frac{1}{2} \text{ of } 2 = 1$

$2 + 2 = 4$

$\frac{1}{2} \text{ of } 4 = 2$

$3 + 3 = 6$

$\frac{1}{2} \text{ of } 6 = 3$

$4 + 4 = 8$

$\frac{1}{2} \text{ of } 8 = 4$

$5 + 5 = 10$

$\frac{1}{2} \text{ of } 10 = 5$

$6 + 6 = 12$

$7 + 7 = 14$

$8 + 8 = 16$

$9 + 9 = 18$

$10 + 10 = 20$

#### Key Vocabulary

What is **double** 9?

What is **half** of 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.

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.

Year 1 Spring 2 KIRF  
Number bonds to 10 and each number to 10

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

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

**Key Vocabulary**

What do I **add** to 5 to make 10?

What is 10 **take away** 6?

What is 3 **less than** 10?

**How many more** than 2 is 10?

They should be able to answer these questions in any order, including missing number questions e.g.  $6 + \bigcirc = 10$  or  $10 - \bigcirc = 3$ .

**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.

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

**Make a poster** – We use Numicon at school. You can find pictures of the Numicon shapes here: [bit.ly/NumiconPictures](http://bit.ly/NumiconPictures) – your child could make a poster showing the different ways of making 5.

Year 1 Summer 1 KIRF

Numbers 1 to 20 in numerals and words

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

11 = eleven

12 = twelve

13 = thirteen

14 = fourteen

15 = fifteen

16 = sixteen

17 = seventeen

18 = eighteen

19 = nineteen

20 = twenty

Game-

Match numerals to words like pairs or dominoes cards.

Year 1 Summer 2 KIRF  
Numbers bonds to 20

By the end of this half term, children should know the following facts. The aim is

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

**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?

for them to recall these facts instantly.

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

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 – 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](http://bit.ly/NumiconPictures) – your child could make a poster showing the different ways of making 20.

## Year 2 Autumn 1 KIRF

### Number bonds for each number to 20

By the end of this half term, children should know the following facts. The aim is

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

#### 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?

for them to recall these facts instantly.

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

#### 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 – 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](http://bit.ly/NumiconPictures) – your child could make a poster showing the different ways of making 20.



Year 2 Autumn 2 KIRF Progress Check  
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.

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

**Key Vocabulary**

What is 2 **multiplied by** 7?

What is 2 **times** 9?

What is 12 **divided by** 2?

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  $2 \times 5 = 10$ , they can use this fact to work out that  $2 \times 6 = 12$  and  $6 \times 2 = 12$  (commutative law).

**Test the Parent** – Your child can make up their own tricky division question 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](http://www.multiplication.com) has some strange picture stories to help children remember.

Year 2 Spring 1 KIRF Progress Check  
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.

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

Key Vocabulary

What is **double** 9?

What is **half** of 14?

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.

Year 2 Spring 2 KIRF Progress Check  
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.

|                      |                    |
|----------------------|--------------------|
| $10 \times 1 = 10$   | $10 \div 10 = 1$   |
| $10 \times 2 = 20$   | $20 \div 10 = 2$   |
| $10 \times 3 = 30$   | $30 \div 10 = 3$   |
| $10 \times 4 = 40$   | $40 \div 10 = 4$   |
| $10 \times 5 = 50$   | $50 \div 10 = 5$   |
| $10 \times 6 = 60$   | $60 \div 10 = 6$   |
| $10 \times 7 = 70$   | $70 \div 10 = 7$   |
| $10 \times 8 = 80$   | $80 \div 10 = 8$   |
| $10 \times 9 = 90$   | $90 \div 10 = 9$   |
| $10 \times 10 = 100$ | $100 \div 10 = 10$ |
| $10 \times 11 = 110$ | $110 \div 10 = 11$ |
| $10 \times 12 = 120$ | $120 \div 10 = 12$ |

Key Vocabulary

What is 10 **multiplied by** 3?

What is 10 **times** 9?

What is 70 **divided by** 10?

They should be able to answer these questions in any order, including missing number questions e.g.  $10 \times \bigcirc = 80$  or  $\bigcirc \div 10 = 6$ .

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 thirteen and thirty.

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 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?

## Year 2 Summer 1 KIRF Progress Check

Count, read and write numbers to 100 in numerals

Children need to be able to count, read and write all the numbers from 1-100.

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 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 |

### 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.

Games- Play a game of snakes and ladders. Cover up numbers on the 100 square and ask them to work out what number it is. Talk to them about what number is before and next. If I jump on 4 what number will I be on? If I jump back 6 what number will I be on?

Use number splat online- shout numbers out for children to splat.

## Year 2 Summer 2 KIRF

### 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.

$5 \times 1 = 5$

$5 \times 2 = 10$

$5 \times 3 = 15$

$5 \times 4 = 20$

$5 \times 5 = 25$

$5 \times 6 = 30$

$5 \times 7 = 35$

$5 \times 8 = 40$

$5 \times 9 = 45$

$5 \times 10 = 50$

$5 \times 11 = 55$

$5 \times 12 = 60$

$5 \div 5 = 1$

$10 \div 5 = 2$

$15 \div 5 = 3$

$20 \div 5 = 4$

$25 \div 5 = 5$

$30 \div 5 = 6$

$35 \div 5 = 7$

$40 \div 5 = 8$

$45 \div 5 = 9$

$50 \div 5 = 10$

$55 \div 5 = 11$

$60 \div 5 = 12$

#### Key Vocabulary

What is 5 **multiplied by** 7?

What is 5 **times** 9?

What is 60 **divided by** 5?

They should be able to answer these questions in any order, including missing number questions e.g.  $5 \times \bigcirc = 40$  or  $\bigcirc \div 5 = 9$ .

#### 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](http://www.multiplication.com) has some strange picture stories to help children remember.

### Year 3 Autumn 1 KIRF

I know all my facts for each number up 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    | 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 |

They should also be able to work out missing number/symbol problems involving this.

For example

$$\underline{\quad} + 1 = 9$$

$$4 + \underline{\quad} = 13$$

Children also need to know the inverse of these e.g

$$4 + 9 = 13 \text{ so } 13 - 9 = 4 \text{ or } 13 - 4 = 9$$

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

Flash Cards- Hold up flash cards with the facts on them.

Matching pairs- Find all the pairs that make a given number

Year 3 Autumn 2 KIRF  
Number bonds to 100

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

Some examples:

|                 |                 |
|-----------------|-----------------|
| $60 + 40 = 100$ | $37 + 63 = 100$ |
| $40 + 60 = 100$ | $63 + 37 = 100$ |
| $100 - 40 = 60$ | $100 - 63 = 37$ |
| $100 - 60 = 40$ | $100 - 37 = 63$ |
| <br>            |                 |
| $75 + 25 = 100$ | $48 + 52 = 100$ |
| $25 + 75 = 100$ | $52 + 48 = 100$ |
| $100 - 25 = 75$ | $100 - 52 = 48$ |
| $100 - 75 = 25$ | $100 - 48 = 52$ |

**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?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions e.g.  $49 + \bigcirc = 100$  or  $100 - \bigcirc = 72$ .

**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?

## Year 3 Spring 1 KIRF

### Multiplication and division facts for the 3 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**.

|                    |                    |                  |                  |
|--------------------|--------------------|------------------|------------------|
| $3 \times 1 = 3$   | $1 \times 3 = 3$   | $3 \div 3 = 1$   | $3 \div 1 = 3$   |
| $3 \times 2 = 6$   | $2 \times 3 = 6$   | $6 \div 3 = 2$   | $6 \div 2 = 3$   |
| $3 \times 3 = 9$   | $3 \times 3 = 9$   | $9 \div 3 = 3$   | $9 \div 3 = 3$   |
| $3 \times 4 = 12$  | $4 \times 3 = 12$  | $12 \div 3 = 4$  | $12 \div 4 = 3$  |
| $3 \times 5 = 15$  | $5 \times 3 = 15$  | $15 \div 3 = 5$  | $15 \div 5 = 3$  |
| $3 \times 6 = 18$  | $6 \times 3 = 18$  | $18 \div 3 = 6$  | $18 \div 6 = 3$  |
| $3 \times 7 = 21$  | $7 \times 3 = 21$  | $21 \div 3 = 7$  | $21 \div 7 = 3$  |
| $3 \times 8 = 24$  | $8 \times 3 = 24$  | $24 \div 3 = 8$  | $24 \div 8 = 3$  |
| $3 \times 9 = 27$  | $9 \times 3 = 27$  | $27 \div 3 = 9$  | $27 \div 9 = 3$  |
| $3 \times 10 = 30$ | $10 \times 3 = 30$ | $30 \div 3 = 10$ | $30 \div 10 = 3$ |
| $3 \times 11 = 33$ | $11 \times 3 = 33$ | $33 \div 3 = 11$ | $33 \div 11 = 3$ |
| $3 \times 12 = 36$ | $12 \times 3 = 36$ | $36 \div 3 = 12$ | $36 \div 12 = 3$ |

#### Key Vocabulary

What is 3 **multiplied by** 8?

What is 8 **times** 3?

What is 24 **divided by** 3?

They should be able to answer these questions in any order, including missing number questions e.g.  $3 \times \bigcirc = 18$  or  $\bigcirc \div 3 = 11$ .

#### 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.

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.

Buy one get three free – If your child knows one fact (e.g.  $3 \times 5 = 15$ ), can they tell you the other three facts in the same factfamily? 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  $36 \div 12 = 3$



## Year 3 Spring 2 KIRF

### Multiplication and division facts for the 4 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**.

|                    |                    |                  |                  |
|--------------------|--------------------|------------------|------------------|
| $4 \times 1 = 4$   | $1 \times 4 = 4$   | $4 \div 4 = 1$   | $4 \div 1 = 4$   |
| $4 \times 2 = 8$   | $2 \times 4 = 8$   | $8 \div 4 = 2$   | $8 \div 2 = 4$   |
| $4 \times 3 = 12$  | $3 \times 4 = 12$  | $12 \div 4 = 3$  | $12 \div 3 = 4$  |
| $4 \times 4 = 16$  | $4 \times 4 = 16$  | $16 \div 4 = 4$  | $16 \div 4 = 4$  |
| $4 \times 5 = 20$  | $5 \times 4 = 20$  | $20 \div 4 = 5$  | $20 \div 5 = 4$  |
| $4 \times 6 = 24$  | $6 \times 4 = 24$  | $24 \div 4 = 6$  | $24 \div 6 = 4$  |
| $4 \times 7 = 28$  | $7 \times 4 = 28$  | $28 \div 4 = 7$  | $28 \div 7 = 4$  |
| $4 \times 8 = 32$  | $8 \times 4 = 32$  | $32 \div 4 = 8$  | $32 \div 8 = 4$  |
| $4 \times 9 = 36$  | $9 \times 4 = 36$  | $36 \div 4 = 9$  | $36 \div 9 = 4$  |
| $4 \times 10 = 40$ | $10 \times 4 = 40$ | $40 \div 4 = 10$ | $40 \div 10 = 4$ |
| $4 \times 11 = 44$ | $11 \times 4 = 44$ | $44 \div 4 = 11$ | $44 \div 11 = 4$ |
| $4 \times 12 = 48$ | $12 \times 4 = 48$ | $48 \div 4 = 12$ | $48 \div 12 = 4$ |

#### Key Vocabulary

What is 4 **multiplied by** 6?

What is 8 **times** 4?

What is 24 **divided by** 4?

They should be able to answer these questions in any order, including missing number questions e.g.  $4 \times \bigcirc = 16$  or  $\bigcirc \div 4 = 7$ .

#### 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.

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.

What do you already know? – Your child will already know many of these facts from the 2, 3, 5 and 10 times tables.

Double and double again – Multiplying a number by 4 is the same as doubling and doubling again. Double 6 is 12 and double 12 is 24, so  $6 \times 4 = 24$ .

Buy one get three free – If your child knows one fact (e.g.  $4 \times 5 = 20$ ), can they tell you the other three facts in the same factfamily? 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.  $4 \times 12 = 48$ . The answer to the multiplication is 48, so  $48 \div 4 = 12$  and  $48 \div 12 = 4$

Year 3 Summer 1 KIRF  
Multiples of 50 and 100

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 count in 50s

|                      |                    |
|----------------------|--------------------|
| $1 \times 50 = 50$   | $50 \div 50 = 1$   |
| $2 \times 50 = 100$  | $100 \div 50 = 2$  |
| $3 \times 50 = 150$  | $150 \div 50 = 3$  |
| $4 \times 50 = 200$  | $200 \div 50 = 4$  |
| $5 \times 50 = 250$  | $250 \div 50 = 5$  |
| $6 \times 50 = 300$  | $300 \div 50 = 6$  |
| $7 \times 50 = 350$  | $350 \div 50 = 7$  |
| $8 \times 50 = 400$  | $400 \div 50 = 8$  |
| $9 \times 50 = 450$  | $450 \div 50 = 9$  |
| $10 \times 50 = 500$ | $500 \div 50 = 10$ |

**Key Vocabulary**

How many 50s make 300?

Multiply 50 by 6?

What are 4 lots of 50?

They should be able to answer these questions in any order, including missing number questions e.g.  $50 \times \bigcirc = 150$  or  $\bigcirc \div 50 = 7$ .

They should also be able to count in 50s in sequences e.g.  
150, 200, \_\_\_\_\_, \_\_\_\_\_, 350

Children need to be able to count in 100s

|                        |
|------------------------|
| $1 \times 100 = 100$   |
| $2 \times 100 = 200$   |
| $3 \times 100 = 300$   |
| $4 \times 100 = 400$   |
| $5 \times 100 = 500$   |
| $6 \times 100 = 600$   |
| $7 \times 100 = 700$   |
| $8 \times 100 = 800$   |
| $9 \times 100 = 900$   |
| $10 \times 100 = 1000$ |

They should be able to count in 100s in sequences e.g.  
100, \_\_\_\_\_, 300, \_\_\_\_\_, 500, \_\_\_\_\_, 700

**Top Tips**

Try counting on in 50s from 0 or any multiple of 50. Can your child use their 5x table to help with counting in 50s?

**Buy one get three free** – If your child knows one fact (e.g.  $3 \times 50 = 150$ ), can they tell you the other three facts in the same fact family?

## Year 3 Spring 2 KIRF

### Multiplication and division facts for the 8 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**.

|                    |                    |                  |                  |
|--------------------|--------------------|------------------|------------------|
| $8 \times 1 = 8$   | $1 \times 8 = 8$   | $8 \div 8 = 1$   | $8 \div 1 = 8$   |
| $8 \times 2 = 16$  | $2 \times 8 = 16$  | $16 \div 8 = 2$  | $16 \div 2 = 8$  |
| $8 \times 3 = 24$  | $3 \times 8 = 24$  | $24 \div 8 = 3$  | $24 \div 3 = 8$  |
| $8 \times 4 = 32$  | $4 \times 8 = 32$  | $32 \div 8 = 4$  | $32 \div 4 = 8$  |
| $8 \times 5 = 40$  | $5 \times 8 = 40$  | $40 \div 8 = 5$  | $40 \div 5 = 8$  |
| $8 \times 6 = 48$  | $6 \times 8 = 48$  | $48 \div 8 = 6$  | $48 \div 6 = 8$  |
| $8 \times 7 = 56$  | $7 \times 8 = 56$  | $56 \div 8 = 7$  | $56 \div 7 = 8$  |
| $8 \times 8 = 64$  | $8 \times 8 = 64$  | $64 \div 8 = 8$  | $64 \div 8 = 8$  |
| $8 \times 9 = 72$  | $9 \times 8 = 72$  | $72 \div 8 = 9$  | $72 \div 9 = 8$  |
| $8 \times 10 = 80$ | $10 \times 8 = 80$ | $80 \div 8 = 10$ | $80 \div 10 = 8$ |
| $8 \times 11 = 88$ | $11 \times 8 = 88$ | $88 \div 8 = 11$ | $88 \div 11 = 8$ |
| $8 \times 12 = 96$ | $12 \times 8 = 96$ | $96 \div 8 = 12$ | $96 \div 12 = 8$ |

#### Key Vocabulary

What is 8 **multiplied by** 6?

What is 8 **times** 8?

What is 24 **divided by** 8?

They should be able to answer these questions in any order, including missing number questions e.g.  $8 \times \bigcirc = 16$  or  $\bigcirc \div 8 = 7$ .

#### 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.

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 fours – Multiplying a number by 8 is the same as multiply by 4 and then doubling the answer.  $8 \times 4 = 32$  and double 32 is 64, so  $8 \times 8 = 64$ .

Five six seven eight – fifty-six is seven times eight ( $56 = 7 \times 8$ ).

Buy one get three free – If your child knows one fact (e.g.  $8 \times 5 = 40$ ), can they tell you the other three facts in the same factfamily? 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.  $8 \times 12 = 96$ . The answer to the multiplication is 96, so  $96 \div 8 = 12$  and  $96 \div 12 = 8$

Year 4 Autumn 1 KIRF  
Multiples of 1000 and 25

Children need to be able to know the multiples for 1000 and 25 and count in sequences involving these.

e.g

$$1 \times 1000 = 1000$$

$$2 \times 1000 = 2000$$

$$3 \times 1000 = 3000$$

$$4 \times 1000 = 4000$$

$$5 \times 1000 = 5000$$

$$6 \times 1000 = 6000$$

$$7 \times 1000 = 7000$$

$$8 \times 1000 = 8000$$

$$9 \times 1000 = 9000$$

$$10 \times 1000 = 10,000$$

They should be able to count in 1000s in sequences e.g

1000, \_\_\_\_, 3000, \_\_\_\_, 5000, \_\_\_\_, 7000

$$1 \times 25 = 25$$

$$2 \times 25 = 50$$

$$3 \times 25 = 75$$

$$4 \times 25 = 100$$

$$5 \times 25 = 125$$

$$6 \times 25 = 150$$

$$7 \times 25 = 175$$

$$8 \times 25 = 200$$

$$9 \times 25 = 225$$

$$10 \times 25 = 250$$

They should be able to count in 1000s in sequences e.g

1000, \_\_\_\_, 3000, \_\_\_\_, 5000, \_\_\_\_, 7000

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.

## Year 4 Autumn 2 KIRF

### Multiplication and division facts for the 6 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**.

|                    |                    |                  |                  |
|--------------------|--------------------|------------------|------------------|
| $6 \times 1 = 6$   | $1 \times 6 = 6$   | $6 \div 6 = 1$   | $6 \div 1 = 6$   |
| $6 \times 2 = 12$  | $2 \times 6 = 12$  | $12 \div 6 = 2$  | $12 \div 2 = 6$  |
| $6 \times 3 = 18$  | $3 \times 6 = 18$  | $18 \div 6 = 3$  | $18 \div 3 = 6$  |
| $6 \times 4 = 24$  | $4 \times 6 = 24$  | $24 \div 6 = 4$  | $24 \div 4 = 6$  |
| $6 \times 5 = 30$  | $5 \times 6 = 30$  | $30 \div 6 = 5$  | $30 \div 5 = 6$  |
| $6 \times 6 = 36$  | $6 \times 6 = 36$  | $36 \div 6 = 6$  | $36 \div 6 = 6$  |
| $6 \times 7 = 42$  | $7 \times 6 = 42$  | $42 \div 6 = 7$  | $42 \div 7 = 6$  |
| $6 \times 8 = 48$  | $8 \times 6 = 48$  | $48 \div 6 = 8$  | $48 \div 8 = 6$  |
| $6 \times 9 = 54$  | $9 \times 6 = 54$  | $54 \div 6 = 9$  | $54 \div 9 = 6$  |
| $6 \times 10 = 60$ | $10 \times 6 = 60$ | $60 \div 6 = 10$ | $60 \div 10 = 6$ |
| $6 \times 11 = 66$ | $11 \times 6 = 66$ | $66 \div 6 = 11$ | $66 \div 11 = 6$ |
| $6 \times 12 = 72$ | $12 \times 6 = 72$ | $72 \div 6 = 12$ | $72 \div 12 = 6$ |

#### Key Vocabulary

What is 8 **multiplied by** 6?

What is 6 **times** 8?

What is 24 **divided by** 6?

They should be able to answer these questions in any order, including missing number questions e.g.  $6 \times \bigcirc = 72$  or  $\bigcirc \div 6 = 7$ .

#### 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.

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  $7 \times 6 = 42$ .

Buy one get three free – If your child knows one fact (e.g.  $3 \times 6 = 18$ ), can they tell you the other three facts in the same factfamily? 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  $72 \div 12 = 6$

## Year 4 Spring 1 KIRF

### Multiplication and division facts for the 9 and 11 times table

#### I know the multiplication and division facts for the 9 and 11 times tables.

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

|                     |                |                      |                 |
|---------------------|----------------|----------------------|-----------------|
| $9 \times 1 = 9$    | $9 + 9 = 1$    | $11 \times 1 = 11$   | $11 + 11 = 1$   |
| $9 \times 2 = 18$   | $18 + 9 = 2$   | $11 \times 2 = 22$   | $22 + 11 = 2$   |
| $9 \times 3 = 27$   | $27 + 9 = 3$   | $11 \times 3 = 33$   | $33 + 11 = 3$   |
| $9 \times 4 = 36$   | $36 + 9 = 4$   | $11 \times 4 = 44$   | $44 + 11 = 4$   |
| $9 \times 5 = 45$   | $45 + 9 = 5$   | $11 \times 5 = 55$   | $55 + 11 = 5$   |
| $9 \times 6 = 54$   | $54 + 9 = 6$   | $11 \times 6 = 66$   | $66 + 11 = 6$   |
| $9 \times 7 = 63$   | $63 + 9 = 7$   | $11 \times 7 = 77$   | $77 + 11 = 7$   |
| $9 \times 8 = 72$   | $72 + 9 = 8$   | $11 \times 8 = 88$   | $88 + 11 = 8$   |
| $9 \times 9 = 81$   | $81 + 9 = 9$   | $11 \times 9 = 99$   | $99 + 11 = 9$   |
| $9 \times 10 = 90$  | $90 + 9 = 10$  | $11 \times 10 = 110$ | $110 + 11 = 10$ |
| $9 \times 11 = 99$  | $99 + 9 = 11$  | $11 \times 11 = 121$ | $121 + 11 = 11$ |
| $9 \times 12 = 108$ | $108 + 9 = 12$ | $11 \times 12 = 132$ | $132 + 11 = 12$ |

#### Key Vocabulary

What is 8 **multiplied by** 6?

What is 6 **times** 8?

What is 24 **divided by** 6?

They should be able to answer these questions in any order, including missing number questions e.g.  $9 \times \bigcirc = 54$  or  $\bigcirc \div 9 = 11$ .

#### 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.

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!

Year 4 Spring 2 KIRF  
Decimal equivalents to fractions

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

|                      |                      |                         |
|----------------------|----------------------|-------------------------|
| $\frac{1}{2} = 0.5$  | $\frac{1}{10} = 0.1$ | $\frac{1}{100} = 0.01$  |
| $\frac{1}{4} = 0.25$ | $\frac{2}{10} = 0.2$ | $\frac{7}{100} = 0.07$  |
| $\frac{3}{4} = 0.75$ | $\frac{5}{10} = 0.5$ | $\frac{21}{100} = 0.21$ |
|                      | $\frac{6}{10} = 0.6$ | $\frac{75}{100} = 0.75$ |
|                      | $\frac{9}{10} = 0.9$ | $\frac{99}{100} = 0.99$ |

**Key Vocabulary**

How many **tenths** is 0.8?

How many **hundredths** is 0.12?

Write 0.75 as a **fraction**?

Write  $\frac{1}{4}$  as a **decimal**?

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.

**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: start with tenths before moving on to hundredths. If you would like more ideas, please speak to your child's teacher.

**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.

## Year 4 Summer 1 KIRF

### Multiplication and division facts for the 7 and 12 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**.

|                     |                |                      |                 |
|---------------------|----------------|----------------------|-----------------|
| $9 \times 1 = 9$    | $9 + 9 = 1$    | $11 \times 1 = 11$   | $11 + 11 = 1$   |
| $9 \times 2 = 18$   | $18 + 9 = 2$   | $11 \times 2 = 22$   | $22 + 11 = 2$   |
| $9 \times 3 = 27$   | $27 + 9 = 3$   | $11 \times 3 = 33$   | $33 + 11 = 3$   |
| $9 \times 4 = 36$   | $36 + 9 = 4$   | $11 \times 4 = 44$   | $44 + 11 = 4$   |
| $9 \times 5 = 45$   | $45 + 9 = 5$   | $11 \times 5 = 55$   | $55 + 11 = 5$   |
| $9 \times 6 = 54$   | $54 + 9 = 6$   | $11 \times 6 = 66$   | $66 + 11 = 6$   |
| $9 \times 7 = 63$   | $63 + 9 = 7$   | $11 \times 7 = 77$   | $77 + 11 = 7$   |
| $9 \times 8 = 72$   | $72 + 9 = 8$   | $11 \times 8 = 88$   | $88 + 11 = 8$   |
| $9 \times 9 = 81$   | $81 + 9 = 9$   | $11 \times 9 = 99$   | $99 + 11 = 9$   |
| $9 \times 10 = 90$  | $90 + 9 = 10$  | $11 \times 10 = 110$ | $110 + 11 = 10$ |
| $9 \times 11 = 99$  | $99 + 9 = 11$  | $11 \times 11 = 121$ | $121 + 11 = 11$ |
| $9 \times 12 = 108$ | $108 + 9 = 12$ | $11 \times 12 = 132$ | $132 + 11 = 12$ |

#### Key Vocabulary

What is 8 **multiplied by** 6?

What is 6 **times** 8?

What is 24 **divided by** 6?

They should be able to answer these questions in any order, including missing number questions e.g.  $9 \times \bigcirc = 54$  or  $\bigcirc \div 9 = 11$ .

#### 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.

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!



Year 4 Summer 2 KIRF  
I can Scale number facts by 10

Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example:

$$8 + 6 = 14 \text{ and } 14 - 6 = 8 \text{ so } 80 + 60 = 140 \text{ and } 140 - 60 = 80$$

$$3 \times 4 = 12 \text{ and } 12 \div 4 = 3 \text{ so } 30 \times 4 = 120 \text{ and } 120 \div 40 = 3$$

Children need to apply this knowledge to number facts within 20 and multiplication facts up to  $12 \times 12$ . Look at previous fact sheets for facts within 20 and multiplication facts for  $12 \times 12$ .

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.

Games: Play fact tennis. For example, I say  $7 + 5 = 12$  and the partner then says the fact scaled by 10 so  $70 + 50 = 120$  and repeat with different facts.

## Year 5 Autumn 1 KIRF

1 and 2-place decimal number bonds for numbers between 1 and 10  
Multiply and divide single-digit numbers by 10 and 100

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

Some examples:

$0.6 + 0.4 = 1$

$3.7 + 6.3 = 10$

$0.4 + 0.6 = 1$

$6.3 + 3.7 = 10$

$1 - 0.4 = 0.6$

$10 - 6.3 = 3.7$

$1 - 0.6 = 0.4$

$10 - 3.7 = 6.3$

$0.75 + 0.25 = 1$

$4.8 + 5.2 = 10$

$0.25 + 0.75 = 1$

$5.2 + 4.8 = 10$

$1 - 0.25 = 0.75$

$10 - 5.2 = 4.8$

$1 - 0.75 = 0.25$

$10 - 4.8 = 5.2$

### Key Vocabulary

What do I **add** to 0.8 to make 1?

What is 1 **take away** 0.06?

What is 1.3 **less than** 10?

**How many more** than 9.8 is 10?

What is the **difference** between 0.92 and 10?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions e.g.  $0.49 + \bigcirc = 10$  or  $7.2 + \bigcirc = 10$ .

### 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?

Year 5 Autumn 2 KIRF  
Know all the facts for every times table up to 12x12

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

Please see separate sheet for all times table facts.

Key Vocabulary

What is 12 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

They should be able to answer these questions in any order, including missing number questions e.g.  $7 \times \bigcirc = 28$  or  $\bigcirc + 6 = 7$ .

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.

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

Year 5 Spring 1 KIRF  
Find factor pairs of a number

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

Children should now know all multiplication and division facts up to  $12 \times 12$ . When given a number in one of these times tables, they should be able to state a factor pair which multiply to make this number. Below are some examples:

$$24 = 4 \times 6$$

$$24 = 8 \times 3$$

$$56 = 7 \times 8$$

$$54 = 9 \times 6$$

$$42 = 6 \times 7$$

$$25 = 5 \times 5$$

$$84 = 7 \times 12$$

$$15 = 5 \times 3$$

Key Vocabulary

Can you find a **factor** of 28?

Find two numbers whose **product** is 20.

I know that 6 is a factor of 72 because 6 multiplied by 12 equals 72.

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.

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.

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.

Year 5 Spring 2 KIRF  
Identify prime numbers up to 50

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

*A prime number is a number with no factors other than itself and one.*

*The following numbers are prime numbers:*

2, 3, 5, 7, 11, 13, 17, 19, 23,  
29, 31, 37, 41, 43, 47

*A composite number is divisible by a number other than 1 or itself.*

*The following numbers are composite numbers:*

4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20,  
22, 24, 25, 26, 27, 28, 30, 32, 34, 35, 36,  
38, 39, 40, 42, 44, 45, 46, 48, 49, 50

Key Vocabulary

**prime number**

**composite number**

**factor**

**multiple**

Children should be able to explain how they know that a number is composite.

E.g. 39 is composite because it is a multiple of 3 and 13.

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.

It's really important that your child uses mathematical vocabulary accurately. Choose a number between 2 and 50. How many correct statements can your child make about this number using the vocabulary above?

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?

Year 5 Summer 1 KIRF  
Recall square numbers up to  $12^2$  and their square roots

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

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

Key Vocabulary

What is 8 squared?

What is 7 multiplied by itself?

What is the square root of 144?

Is 81 a square number?

Children should also be able to recognise whether a number below 150 is a square number or not.

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.

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?

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.

Year 5 Summer 2 KIRF

Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

**Counting forwards in steps of powers of 10**

Counting on in powers of ten just means adding on **10, 100 or 1000**, or any other **power of 10**, each time.

**For Example...**

From **53 197** count on in steps of **10 000**

| Ten thousands | Thousands | Hundreds | Tens | Ones |
|---------------|-----------|----------|------|------|
| 5             | 3         | 1        | 9    | 7    |

Add **1** to the ten thousands digit each time...

**63 197   73 197   83 197** and so on.

**Counting backwards in steps of powers of 10**

Counting backwards in powers of ten just means subtracting **10, 100 or 1000**, or any other **power of 10**, each time.

**For Example...**

From **93 197** count backwards in steps of **10 000**

| Ten thousands | Thousands | Hundreds | Tens | Ones |
|---------------|-----------|----------|------|------|
| 9             | 3         | 1        | 9    | 7    |

Subtract **1** from the ten thousands digit each time...

**83 197   73 197   63 197** and so on.

## Year 6 Autumn 1 KIRF

Derive multiplication and division facts using decimal numbers (e.g.  $8 \times 0.7 = 5.6$ )

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

Please see separate sheet for all times table facts.

This is a chance for Year 6 children to consolidate their knowledge of multiplication and division facts and to increase their speed of recall.

### Key Vocabulary

What is 12 **multiplied by** 6?

What is 7 **times** 8?

What is 84 **divided by** 7?

They should be able to answer these questions in any order, including missing number questions e.g.  $7 \times \bigcirc = 28$  or  $\bigcirc + 6 = 7$ .

Children who have already mastered their times tables should apply this knowledge to answer questions including decimals e.g.  $0.7 \times \bigcirc = 4.2$  or  $\bigcirc + 60 = 0.7$

### 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.

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.



## Year 6 Autumn2 KIRF

### Identify common factors of a pair of numbers

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

*The factors of a number are all numbers which divide it with no remainder.*

*E.g. the factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.*

*The factors of 56 are 1, 2, 4, 7, 8, 14, 28 and 56.*

*The common factors of two numbers are the factors they share.*

*E.g. the common factors of 24 and 56 are 1, 2, 4 and 8.*

*The greatest common factor of 24 and 56 is 8.*

#### Key Vocabulary

factor

common factor

multiple

greatest common factor

Children should be able to explain how they know that a number is a common factor.

E.g. 8 is a common factor of 24 and 56 because  $24 = 8 \times 3$  and  $56 = 8 \times 7$ .

### 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? If your child is not yet confident with identifying factor pairs of a number, you may want to refer to the Year 5 Summer 2 sheet to practise this first. If you would like more ideas, please speak to your child's teacher.

There are many online games to practise finding the greatest common factor, for example: <http://www.fun4thebrain.com/beyondfacts/gcfsketch.html>

Choose two numbers. Take it in turns to name factors. Who can find the most?

## Year 6 Spring 1 KIRF

Identify common fraction, decimal and percentage equivalences

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

$$\frac{1}{2} = 0.5$$

$$\frac{1}{4} = 0.25$$

$$\frac{3}{4} = 0.75$$

$$\frac{1}{10} = 0.1$$

$$\frac{1}{5} = 0.2$$

$$\frac{3}{5} = 0.6$$

$$\frac{9}{10} = 0.9$$

$$\frac{1}{100} = 0.01$$

$$\frac{7}{100} = 0.07$$

$$\frac{21}{100} = 0.21$$

$$\frac{75}{100} = 0.75$$

$$\frac{99}{100} = 0.99$$

### Key Vocabulary

How many **tenths** is 0.8?

How many **hundredths** is 0.12?

Write 0.75 as a **fraction**?

Write % as a **decimal**?

actions for  $\frac{1}{10}$ ,  $\frac{1}{100}$ , % and any

### 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: start with tenths before moving on to hundredths. If you would like more ideas, please speak to your child's teacher.

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.

Year 6 Spring 2 KIRF  
Know the first 5 cube numbers

Cube numbers

A cube number is a number multiplied by itself 3 times. This can also be called 'a number cubed'. The symbol for cubed is  $^3$ .

$$2^3 = 2 \times 2 \times 2 = 8.$$

$$3^3 = 3 \times 3 \times 3 = 27.$$

$$4^3 = 4 \times 4 \times 4 = 64.$$

$$5^3 = 5 \times 5 \times 5 = 125.$$

The cube numbers up to 100 are: 1, 8, 27, 64.

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.

Year 6 Summer 1 KIRF  
Double and half decimals

Children need to be able to half and double decimals using place value knowledge.

e.g I know double 4.4 is 8.8 because double 44 is 88.

Or use partitioning

Double each part

4. 4

8 . 8

| Half | Decimal | Double |
|------|---------|--------|
| 2.2  | 4.4     | 8.8    |
| 3.3  | 6.6     | 13.2   |
| 2.24 | 4.48    | 8.96   |

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.

### Year 6 Summer 2 KIRF

Know and use the formula for area

You need to know each of the formulae below and then use them to work out the area.

| <u>Formulae</u>         |  |
|-------------------------|--|
| Area of a square        | Length x width                         |
| Area of a rectangle     | Length x width                         |
| Area of a triangle      | (Base x Height )<br>Divided by 2       |
| Area of a parallelogram | Length x Width                         |
| Area of a trapezium     | <u>( A+b) x Height</u><br>Divided by 2 |
| Area of a rhombus       | Length x height<br>Divide by 2         |
| Area of a circle        | $\pi r^2$                              |

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