



Key Instant Recall Facts

KIRFs

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

These lists of KIRFs align with the new curriculum.

They are designed to be challenging and it is intended that children will be taught the necessary maths in lessons beforehand.

YEA R	AUTUMN	SPRING	SUMMER
FS	I can identify when a set can be subitised and when counting is needed.	I understand that two equal groups can be called a 'double' , can connect this to finger patterns and recall some double facts up to 10.	I know number bonds to 5 .
1	I know number bonds for each number to 6 . I can count forward and backward in steps of 2, 5 and 10 .	I know doubles and halves of numbers to 10 . I know number bonds to 10 .	I know days of the week, months of the year and seasons . I know number bonds for each number to 10 .
2	I know number bonds to 20 . I know doubles and halves of numbers to 20 .	I know how to partition numbers up to 20 effectively (number bonds). I know addition and subtraction facts for multiples of 10 to 100 .	I know the place value of any digit in numbers up to 100 . I know which numbers are odd and even .
3	I know number bonds for all numbers to 20 . I can count in 50s .	I know unit fractions, a whole and can use these to find fractions of shapes and numbers . I can add and subtract a 'near multiple of 10' to or from a 2 digit number.	I can count back in 1s, 10s and 100s from any 2 or 3 digit number. I can recall facts about durations of time .
4	I know number bonds to 100 . I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers. (1)	I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers. (2) I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers. (3)	I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers. (4) I can recognise decimal equivalents of fractions .
5	I know decimal number bonds to 1 and 10 . I can multiply and divide single-digit numbers by 10 and 100 .	I can recall metric conversions . I can identify prime numbers up to 20 .	I can recall square numbers up to 122 and their square roots . I can find factor pairs of a number .
6	I can use x table facts to multiply and divide decimals . I can identify common factors of a pair of numbers .	I can convert between decimals, fractions and percentages . I can identify prime numbers up to 50 .	



Key Instant Recall Facts

FOUNDATION – Autumn

I can identify when a set can be subitised and when counting is needed.

By the end of this term, children should be able to subitise successfully in a range of different ways but also identify when they cannot subitise and must therefore count.

Subitizing is the ability to know how many objects are in a small group without counting them, while counting is the act of counting each item in a set.

Both subitizing and counting can help answer the question "how many?", but subitizing is different because it involves knowing the answer without counting each item.

Here are some examples of subitizing:

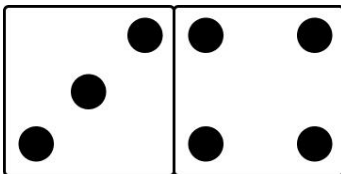
Being able to tell how many dots are on a die without counting them

Being able to link the image of six dots on a dice to the number 6 without counting

Seeing an arrangement of objects and immediately knowing how many there are.

Children in the early years can work through to develop their number sense. Working in small groups can expose children to other children's thought processes.

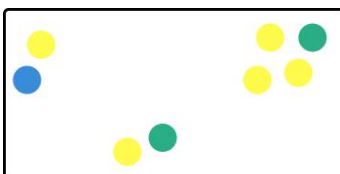
Question 1. Dominoes



Ask: What numbers can you see? Can you see any other numbers inside the number?

Answers may range from 7 to 3 and 4. You can encourage children to think deeper by asking them to spot pairs of 2 within the number, for example.

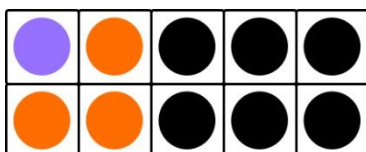
Question 2. Coloured number patterns



Ask: How many numbers can you see in this whole number?

Children may give different answers. For example, 'I see 5 yellow, 2 green and 1 blue. There are 8 altogether'. Alternatively they may group them by position ($2 + 2 + 4 = 8$).

Question 3. Subitising to 10



Ask: How many numbers can you find in 10?

Using a 10 frame, you can ask children to show what numbers they can see. They may give different answers that begin to embed number bonds. You can challenge them to find as many numbers inside 10 as possible.



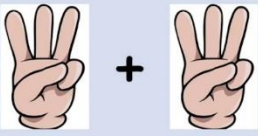
Key Instant Recall Facts

FOUNDATION – Spring

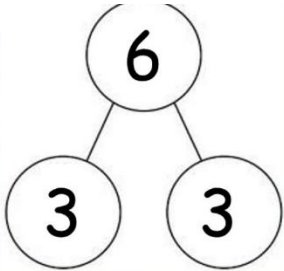
I understand that two equal groups can be called a 'double', can connect this to finger patterns and recall some double facts up to 10.

By the end of this term, children will be able to explain doubling and/or doubles and be able to demonstrate this in various ways.

What is double 3?



Double 3 is 6 $3 + 3 = 6$



$$\begin{aligned}0 + 0 &= 0 \\1 + 1 &= 2 \\2 + 2 &= 4 \\3 + 3 &= 6 \\4 + 4 &= 8 \\5 + 5 &= 10 \\6 + 6 &= 12 \\7 + 7 &= 14 \\8 + 8 &= 16 \\9 + 9 &= 18 \\10 + 10 &= 20\end{aligned}$$

Doubling is a math concept taught to children in Early Years Foundation Stage (EYFS) that involves adding two groups of the same number together to get the total.

TOP TIPS:

Mirror doubles: Have children hold up a finger and count how many fingers they see in the mirror. Repeat with different numbers of fingers, and then have children place objects in front of the mirror and count the doubles.

Magic doubles: Create "magic doubles" by waving a wand over a set of objects and placing the same number next to it.

Doubling machine: Use a doubling machine with balls or beanbags.

Doubles butterflies: Paint on one side of a piece of paper, then fold it in half to create symmetrical butterflies.

Dominos: Use dominos to find doubles.

Doubling cut and stick: Complete a doubling cut and stick activity.

Double song: Sing a double song and double the beat e.g. teacher plays three beats and pupils repeat back with three beats – how many in total?

Children can eventually learn to record doubling as a number sentence, such as $1 + 1 = 2$, $2 + 2 = 4$, or $3 + 3 = 6$.

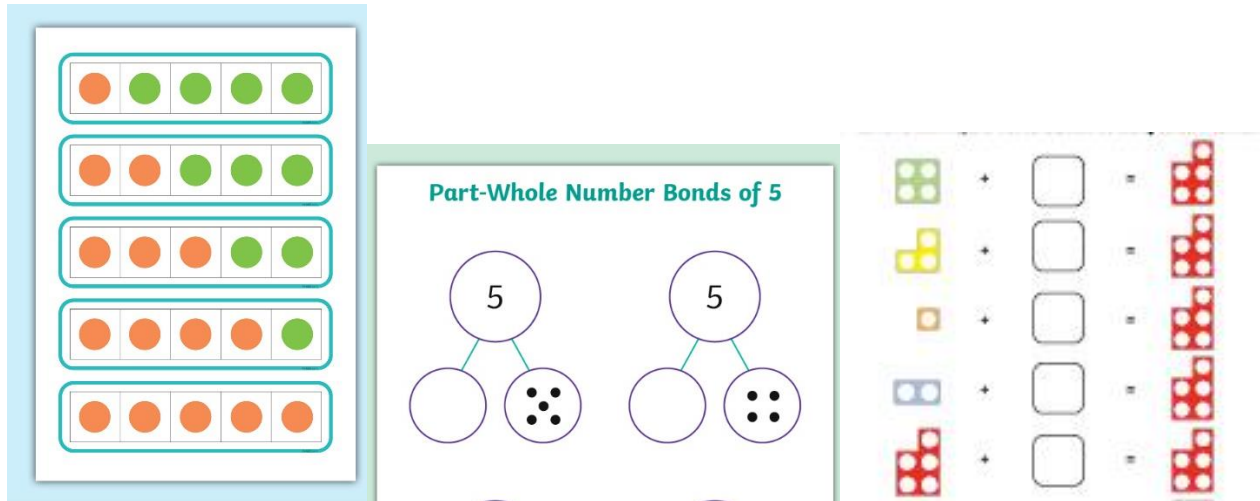


Key Instant Recall Facts

FOUNDATION – SUMMER

I know number bonds to 5.

By the end of this term, children will be able to give all of the number bonds to 5.



TOP TIPS:

Start with real-world objects

Children can start by counting objects they can interact with, and then use counters to represent them.

Group counters

Children can learn how to make five by putting five counters into two groups.

Use hands

Children can use their hands to see how many more fingers they need to make five.

Use songs

A song can be a fun way to teach number bonds to 5.

Use role play

Children can role play in a toy shop, for example, and arrange ten toys onto three shelves.

Use games

Children can play games like "Posh Ducks" where they roll a dice and make one group match the amount shown.

The goal is for children to be able to automatically recall number bonds to 5, including subtraction facts, without needing to count or use other aids. This knowledge will help children work through addition and subtraction with more confidence further in the educational journey.



Key Instant Recall Facts

Year 1 – Autumn 1

I know 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 online – your child could make a poster showing the different ways of making 5.

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.



Key Instant Recall Facts



Year 1 - Autumn 2

I can count forward and backward in steps of 2, 5 and 10

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 be able to start at zero and then count on:

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

Key Vocabulary

How many tens can you count?

How many 2s do we count to make 10?

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

Top tips

The key is to make learning fun! Try taking it in turns to SHOUT the times tables e.g. for the 2x table, one person shouts 2, another shouts 4

Use fingers to count each step so children see they have counted six lots of two to make 12.



2 4 6 8 10

12



Key Instant Recall Facts

Year 1 – Spring 1

I know 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**.

$0 + 0 = 0$	$\frac{1}{2}$ of 0 = 0
$1 + 1 = 1$	$\frac{1}{2}$ of 2 = 1
$2 + 2 = 4$	$\frac{1}{2}$ of 4 = 2
$3 + 3 = 6$	$\frac{1}{2}$ of 6 = 3
$4 + 4 = 8$	$\frac{1}{2}$ of 8 = 4
$5 + 5 = 10$	$\frac{1}{2}$ 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.

Practise online – Go to www.conkermaths.org and see how many questions you can answer in just 90 seconds.



Key Instant Recall Facts

Year 1 – Spring 2

I know number bonds 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**.

$0 + 10 = 10$

$2 + 8 = 10$

$4 + 6 = 10$

$10 + 0 = 10$

$8 + 2 = 10$

$6 + 4 = 10$

$10 - 10 = 0$

$10 - 8 = 2$

$10 - 6 = 4$

$10 - 0 = 10$

$10 - 2 = 8$

$10 - 4 = 6$

$1 + 9 = 10$

$3 + 7 = 10$

$5 + 5 = 10$

$9 + 1 = 10$

$7 + 3 = 10$

$10 - 5 = 5$

$10 - 9 = 1$

$10 - 7 = 3$

$10 - 1 = 9$

$10 - 3 = 7$

Key Vocabulary

What is 3 **add** 7 ?

What is 8 **plus** 2?

What is 10 **take away** 2?

What is 5 **less than** 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 online – your child could make a poster showing the different ways of making 5.

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.



Key Instant Recall Facts

Year 1 – Summer 1

I know days of the week, months of the year and seasons.

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 know the months of the year in order and also talk about the seasons of the year and the order they happen.

January	July
February	August
March	September
April	October
May	November
June	December

Key Vocabulary

12 months in one year

Four seasons

Spring **Summer** **Autumn** **Winter**

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 in the year things happen. When does your child have their birthday? When is Christmas? When do we celebrate Harvest? When does blossom appear on the trees?

Calendars - Make sure that you have a calendar to see the months pass during the year. You could also give your child some responsibility for marking off or turning over to a new month on a home calendar

Read books about time Many storybooks have opportunities to talk about the seasons and predict the time of year the events take place.



Key Instant Recall Facts

Year 1 – Summer 2

I know number bonds for 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**.

$0 + 7 = 7$

$1 + 6 = 7$

$2 + 5 = 7$

$3 + 4 = 7$

$4 + 3 = 7$

$5 + 2 = 7$

$6 + 2 = 8$

$7 + 1 = 8$

$8 + 0 = 8$

$0 + 8 = 8$

$1 + 7 = 8$

$2 + 6 = 8$

$3 + 5 = 8$

$4 + 4 = 8$

$5 + 3 = 8$

$6 + 2 = 8$

$7 + 1 = 8$

$8 + 0 = 8$

$0 + 9 = 9$

$1 + 8 = 9$

$2 + 7 = 9$

$3 + 6 = 9$

$4 + 5 = 9$

$5 + 4 = 9$

$6 + 3 = 9$

$7 + 2 = 9$

$8 + 1 = 9$

$9 + 0 = 9$

$0 + 10 = 10$

$1 + 9 = 10$

$2 + 8 = 10$

$3 + 7 = 10$

$4 + 6 = 10$

$5 + 5 = 10$

$6 + 4 = 10$

$7 + 3 = 10$

$8 + 2 = 10$

$9 + 1 = 10$

$10 + 0 = 10$

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. $1 + \bigcirc = 10$ or $9 - \bigcirc = 8$.

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.



Key Instant Recall Facts

Year 2 – Autumn 1

I know number bonds 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**.

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

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?

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 online – 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.



Key Instant Recall Facts

Year 2 – Autumn 2

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**.

$0 + 0 = 0$	$\frac{1}{2}$ of 0 = 0	
$1 + 1 = 1$	$\frac{1}{2}$ 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	$17 + 17 = 34$

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 KIRF 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.



Key Instant Recall Facts

Year 2 – Spring 1

I know how to partition numbers up to 20 effectively (number bonds).

By the end of this half term, children should know how to partition **any number up to 20** effectively.

Partitioning 7	Partitioning 11	Partitioning 15
0+7	0+11	0+15
1+6	1+10	1+14
2+5	2+9	2+13
3+4	3+8	3+12
4+3	4+7	4+11
5+2	5+6	5+10
6+1	6+5	6+9
0+7	7+4	7+8
	8+3	8+7
	9+2	9+6
	10+1	10+5
	11+0	11+4
		12+3
		13+4
		14+1
		15+0

And the corresponding subtractions.

TOP TIPS - Partitioning for addition and subtraction

Partitioning strategies teach children how to break up larger numbers into smaller ones.

It is important that children are aware that numbers can be partitioned – both along the place value boundaries ($15 = 10+5$) and in other ways ($15 = 7+8$).

They can then use their partitioning to help them calculate addition and subtraction calculations.

Calculations with whole numbers which do not involve crossing place value boundaries.

E.g. $23 + 45 = ?$ by $40 + 5 + 20 + 3$ or $40 + 23 + 5$

$35 - 23 = ?$ by $30 + 5 - 20 + 3$ becomes $30 - 20$ and $5 - 3$ or $35 - 3 = 32 - 20$

Counting on

E.g. $23 + 9 = 23 + 7 + 2 = 32$

Use part whole models.

Allow children to group objects in various ways.

Use ten and twenty frames to sort objects.

Draw bond bugs (body in number and each leg represents a different addition or subtraction that's makes that number)



Key Instant Recall Facts

Year 2 – Spring 2

I know addition and subtraction facts for multiples of 10 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:

- ▶ $30+20=50$
- ▶ $20+30=50$
- ▶ $50-30=20$
- ▶ $50-20=30$
- ▶ $60 + 40 = 100$
- ▶ $40 + 60 = 100$
- ▶ $100 - 40 = 60$
- ▶ $100 - 60 = 40$

Key Vocabulary

What do I **add** to 60 to make 100?

What is 100 **take away** 60?

What is 20 **less than** 50?

How many more than 60 is 100?

What is the **difference**?

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. $30+40=70$), 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.org. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play. Don't forget TTRockstars too!



Key Instant Recall Facts

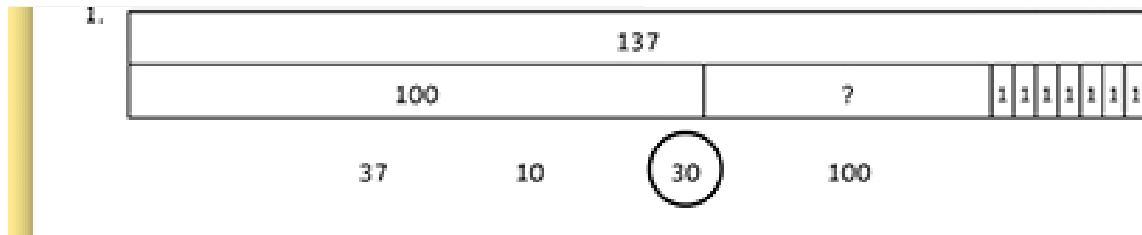
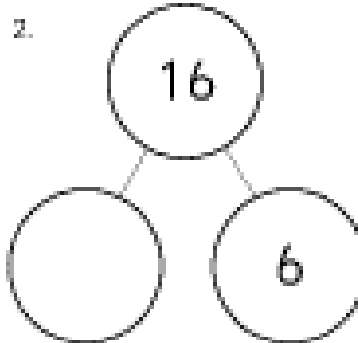
Year 2 – Summer 1

I know the place value of any digit in numbers up to 100.

By the end of the half term, pupils will be able to state how many hundreds, tens and ones a 3 digit number has by partitioning.

They may even be able to partition unevenly e.g. $121 = 50 + 70 + 1$

Hundreds	Tens	Ones
		
Expanded Form + + =		



TOP TIPS

Use various methods to ensure children can see the building blocks of the numbers, e.g. bar models, part whole, place value grids, base 10 etc.

Once children are secure, begin to look at different ways to partition (not always in HTO).



Key Instant Recall Facts

Year 2 – Summer 2

I know which numbers are odd and even.

By the end of this half term, children should know what numbers between 0-9 are odd and even and use these to identify if bigger numbers are odd or even.

Even and Odd Numbers

Even Numbers end in	Odd Numbers end in
0 2 4 6 8 Examples: 4, 56, 730	1 3 5 7 9 Examples: 9, 83, 641

odd numbers

Cannot be partitioned into two equal whole numbers.

odd numbers

even numbers

Can be partitioned into two equal whole numbers.

even numbers

TOP TIPS:

Use a rule

Odd numbers end in 1, 3, 5, 7, or 9, while even numbers end in 2, 4, 6, 8, or 0.

Use pairing

Even numbers can be paired in groups of two without any leftovers, while odd numbers can be paired in groups of two with one left over.

Use real-life situations

For example, you can ask a child if they can share three apples equally with a friend. Since one apple is left over, three is an odd number.

Use flashcards

Create flashcards with numbers ending in each digit from 0 to 9, and have a child sort them into odd and even piles.

Use writing prompts

Writing prompts can help assess how well a child understands the concepts and vocabulary they've learned.

Use a calendar

Use elements from a child's daily routine, like the calendar, to teach odd and even numbers.

Count by twos

Tell children that the numbers used when counting by twos are even numbers.



Key Instant Recall Facts

Year 3 – Autumn 1

I know number bonds for all 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**.

$2 + 9 = 11$

$3 + 8 = 11$

$4 + 7 = 11$

$5 + 6 = 11$

$3 + 9 = 12$

$4 + 8 = 12$

$5 + 7 = 12$

$6 + 6 = 12$

$4 + 9 = 13$

$5 + 8 = 13$

$6 + 7 = 13$

$5 + 9 = 14$

$6 + 8 = 14$

$7 + 7 = 14$

$6 + 9 = 15$

$7 + 8 = 15$

$7 + 9 = 16$

$8 + 8 = 16$

$8 + 9 = 17$

$9 + 9 = 18$

Example of a fact family

$6 + 9 = 15$

$9 + 6 = 15$

$15 - 9 = 6$

$15 - 6 = 9$

Examples of other facts

$4 + 5 = 9$

$13 + 5 = 18$

$19 - 7 = 12$

$10 - 6 = 4$

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

This list includes the most challenging facts but children will need to learn **all** number bonds for each number to 20 (e.g. $15 + 2 = 17$). This includes related subtraction facts (e.g. $17 - 2 = 15$).

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 doubles and near doubles – If you know that $6 + 6 = 12$, how can you work out $6 + 7$? What about $5 + 7$?

Play games – There are missing number questions at www.conkermaths.org. See how many questions you can answer in just one minute.



Key Instant Recall Facts

Year 3 – Autumn 2

I can count in 50s.

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 $\bigcirc \div 50 = 7$.

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?



Key Instant Recall Facts

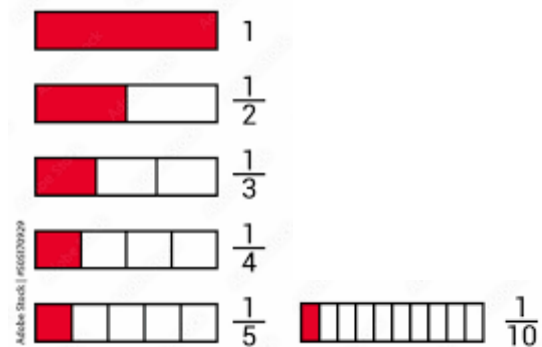
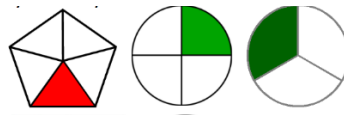
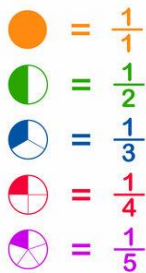
Year 3 – Spring 1



I know unit fractions, a whole and can use these to find fractions of shapes and numbers.

By the end of this half term, children can identify the meaning of a whole, unit fractions $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{10}$ and begin to find unit fractions of shapes and numbers.

Unit Fraction



TOP TIPS:

Play games where halving and quartering is involved – half and half again!

Focus on link to times tables and dividing by bottom (denominator).

Use concrete and pictorial aids to find unit fractions of numbers.

Give unit fractions and ask how to make a whole, how many more do I need?

E.g. one whole = $\frac{1}{2}$ + ____ ???

Key Instant Recall Facts

Year 3 – Spring 2

I can add and subtract a 'near multiple of 10' to or from a 2-digit number.

By the end of this half term, children can add or subtract a multiple of ten and compensate effectively.

Mental Maths Strategies

Compensation for 8 or 9

For adding or subtracting where a number has 8 or 9 in ones.

Add 9 - add 10 and subtract 1
Subtract 8 - subtract 10 and add 2

Use strategy for:

Add 39 - add 40 and subtract 1
Subtract 79 - subtract 80 and add 1

$$\begin{aligned} 34 + 9 &= \\ 34 + 10 &= 44 \\ 44 - 1 &= 43 \end{aligned}$$

or

$$\begin{aligned} 83 - 38 &= \\ 83 - 40 &= 43 \\ 43 + 2 &= 45 \end{aligned}$$

e.g. $37 + 9$
becomes $37 + 10 = 47$
then $47 - 1 = 46$

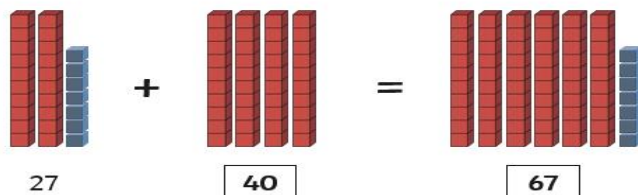
Children must be clear on the fact that they are adding 'too much' and therefore must subtract at end.

e.g. $37 - 9$
becomes $37 - 10 = 27$
then $27 + 1 = 28$

Children must be clear that they are subtracting 'too much' and therefore must add at end.

$$27 + 41 = \boxed{68}$$

41 rounded to the nearest multiple of 10 is $\boxed{40}$ so we add $\boxed{40}$.



The difference between $\boxed{40}$ and 41 is $\boxed{1}$ so we adjust by $\boxed{1}$.

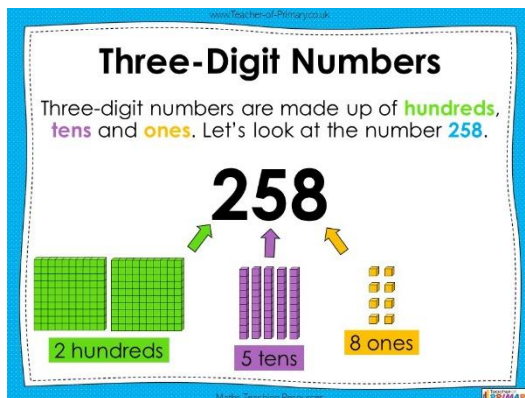
$$\boxed{67} + \boxed{1} = \boxed{68}$$

Key Instant Recall Facts

Year 3 – Summer 1

I can count back in 1s, 10s and 100s from any 2 or 3 digit number.

By the end of this half term, children should be able to be given a 2 or 3-digit number and count in 1s, 10s or 100s from it both up and down.



Reminding children of place value and how numbers change when you add/subtract 1, 10 or 100.

Complete the following sequences:

- a) 5 15 25 — 45 —
 b) 64 54 — 34 — 14
 c) — 21 31 41 — 61
 d) 76 — — 46 36 26
 e) 13 — 33 43 — 63

Complete the following sequences:

- a) 100 200 300 — 500 —
 b) 700 600 — 400 — 200
 c) — 900 1000 1100 — 1300
 d) 1100 — — 800 700 600
 e) 900 — 1100 1200 — 1400

TOP TIPS:-

Visualize with objects

Have children group objects into sets of ten and count them as 10, 20, 30, and so on. This helps children understand the concept of counting by 10s.

Use a number line

Children can use their knowledge of the 0–10 number line to estimate the position of multiples of ten on a 0–100 number line.

Add and subtract in multiples of ten

Children can use known facts for the numbers within ten to add and subtract in multiples of ten.

Teach doubling and halving

Children can find the doubles and halves of any two-digit number and any multiple of 10 or 100.

Teach multiplying by 50

Children can multiply by 50 by multiplying by 100 and then halving.



Key Instant Recall Facts

Year 3 – Summer 2

I can recall facts about durations of time.

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

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.

Number of days in each month

January	31	July	31
February	28/29	August	31
March	31	September	30
April	30	October	31
May	31	November	30
June	30	December	31

Children also need to know the order of the months in a year. They should be able to apply these facts to answer questions, such as:

What day comes after 30th April? What day comes before 1st February?

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

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

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



Key Instant Recall Facts

Year 4 – Autumn 1

I know 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:

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

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?

Play games – There are missing number questions at www.conkermaths.org. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.

Key Instant Recall Facts

Year 4 – Autumn 2

I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers.

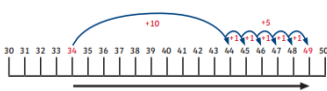
By the end of this half term, children will be utilising the following strategies as part of their daily maths work.

Mental Maths Strategies

Counting On

For adding and subtracting numbers close to each other. This strategy works well with a number line or square. You can even do it mentally!

$$34 + 15 =$$



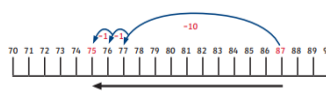
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Mental Maths Strategies

Counting Back

For subtracting smaller numbers. This strategy works well with a number line or square. You can even do it mentally!

$$87 - 12 =$$



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

COUNTING ON AND BACK (NUMBERLINES AND 100 SQUARE)

For smaller differences counting in ones.

For larger differences counting in partitioned chunks.

e.g. $65 + 32$

$$65 + 10 + 10 + 10 + 2 =$$

Or $65 + 30 + 2 =$

e.g. $95 - 32$

$$95 - 10 - 10 - 10 - 2 =$$

$$95 - 30 - 2 =$$

Mental Maths Strategies

Common Zeros

For adding or subtracting with the same number of zeros.

$$60 + 130 =$$

$$6 \text{ tens} + 13 \text{ tens} = 19 \text{ tens}$$

$$60 + 130 = 190$$

or

$$1500 - 200$$

$$15 \text{ hundreds} - 2 \text{ hundreds} = 13 \text{ hundred}$$

$$1500 - 200 = 1300$$

Mental Maths Strategies

Trailing Zeros

For multiplying numbers ending in zero.

$$40 \times 8 =$$

$$4 \text{ tens} \times 8 = 32 \text{ tens}$$

$$40 \times 8 = 320$$

or

$$70 \times 60$$

$$7 \text{ tens} \times 6 \text{ tens} = 42 \text{ hundreds}$$

$$70 \times 60 = 4200$$

COMMON ZEROS

Using understanding of place value to add in hundreds, tens and ones.

Beginning to understanding that:-

$$4 \times 8 \text{ is } 32$$

$$\text{Therefore } 40 \times 8 = 320$$

$$6 \times 6 = 36$$

$$\text{Therefore } 60 \times 6 = 360$$

All strategies are aimed at being built up to being done mentally.



Key Instant Recall Facts

Year 4 – Spring 1

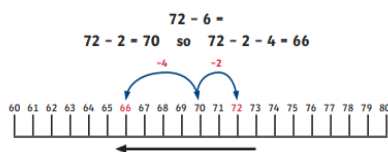
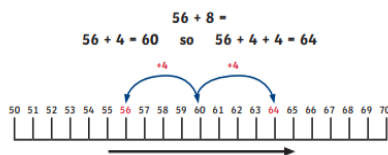
I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers.

By the end of this half term, children will be utilising the following strategies as part of their daily maths work.

Mental Maths Strategies

Make Ten and Then Some

Add or subtract past tens.



Mental Maths Strategies

Front-end Adding

For addition.

$$\begin{array}{r} 69 + 37 = \\ \downarrow \quad \downarrow \\ 60 + 30 = 90 \\ \downarrow \quad \downarrow \\ 9 + 7 = 16 \\ \hline 90 + 16 = 106 \end{array}$$

Use number bonds to any number to aid crossing boundaries.

Partition to cross boundaries (tens first and then ones)

Mental Maths Strategies

Using Pairs to Ten

For adding where numbers add to 10, or ends with a 0.

$$23 + 67 =$$

I know $3 + 7 = 10$

$$23 + 67 = 20 + 60 + 10 = 90$$

$$160 - 37 =$$

I know $10 - 7 = 3$

$$160 - 37 = 160 - 30 - 7 = 123$$

Mental Maths Strategies

Part, Part, Whole

Use known facts to add and subtract.

$$17 - 8 =$$

I know $8 + 9 = 17$

so

$$17 - 8 = 9$$

Use number bonds to ten to understand that multiples of ten/hundred will be made or to predict the final digit of my answer.

Use knowledge of part part whole to help answer subtraction sums.



Key Instant Recall Facts

Year 4 – Spring 2

I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers.

By the end of this half term, children will be utilising the following strategies as part of their daily maths work.

Mental Maths Strategies

Near Doubles

For adding similar numbers.

Double one of the numbers and adjust by adding or subtracting the difference.

$$26 + 25 =$$

I know double 25 is 50

$$26 + 25 =$$

1 more than double 25 = 51

Mental Maths Strategies

Near Halves

For subtracting when the number is a near half

$$25 - 12 =$$

I know half of 24 = 12

$$25 - 12 = 13$$

(25 is more than 24, so answer is 1 more than 12 = 13)

Understand that you can double and compensate and halve and recompensate.



Key Instant Recall Facts



Year 4 – Summer 1

I can use known number facts and place value to add and subtract mentally any pair of 2 digit numbers.

By the end of this half term, children will be utilising the following strategies as part of their daily maths work.

Mental Maths Strategies

Compensation for 8 or 9

For adding or subtracting where a number has 8 or 9 in ones.

Add 9 - add 10 and subtract 1
Subtract 8 - subtract 10 and add 2

Use strategy for:

Add 39 - add 40 and subtract 1
Subtract 79 - subtract 80 and add 1

$$\begin{aligned} 34 + 9 &= \\ 34 + 10 &= 44 \\ 44 - 1 &= 43 \end{aligned}$$

or

$$\begin{aligned} 83 - 38 &= \\ 83 - 40 &= 43 \\ 43 + 2 &= 45 \end{aligned}$$

Mental Maths Strategies

Use Multiples of 25

For adding or subtracting when numbers are near multiple of 25.

Add or subtract and compensate.

$$\begin{aligned} 76 + 48 &= \\ 75 + 50 &= 125 \\ 125 + 1 - 2 &= 124 \end{aligned}$$

or

$$\begin{aligned} 174 - 128 &= \\ 175 - 125 &= 50 \\ 50 - 1 - 3 &= 46 \end{aligned}$$

Use knowledge of multiples of hundred/ten to add and subtract near multiples and compensate.

Compensation

$$\begin{aligned} 74 - 38 &= \\ +2 \quad +2 & \\ \swarrow \quad \searrow & \\ 76 - 40 &= 36 \end{aligned}$$

$$312 + 498$$

$$(498 + 2) + (312 - 2)$$

$$500 + 310 = 810$$



Key Instant Recall Facts

Year 4 – Summer 2

I can recognise decimal equivalents of 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.



Key Instant Recall Facts

Year 5 – Autumn 1

I know decimal number bonds to 1 and 10.

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:

$$0.6 + 0.4 = 1 \quad 3.7 + 6.3 = 10$$

$$0.4 + 0.6 = 1 \quad 6.3 + 3.7 = 10$$

$$1 - 0.4 = 0.6 \quad 10 - 6.3 = 3.7$$

$$1 - 0.6 = 0.4 \quad 10 - 3.7 = 6.3$$

$$0.75 + 0.25 = 1 \quad 4.8 + 5.2 = 10$$

$$0.25 + 0.75 = 1 \quad 5.2 + 4.8 = 10$$

$$1 - 0.25 = 0.75 \quad 10 - 5.2 = 4.8$$

$$1 - 0.75 = 0.25 \quad 10 - 4.8 = 5.2$$

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

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?

Play games – There are missing number questions at www.conkermaths.org. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.



Key Instant Recall Facts

Year 5 – Autumn 2

I can 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**.

$7 \times 10 = 70$

$10 \times 7 = 70$

$70 \div 7 = 10$

$70 \div 10 = 7$

$30 \times 10 = 300$

$10 \times 30 = 300$

$300 \div 30 = 10$

$300 \div 10 = 30$

$0.8 \times 10 = 8$

$10 \times 0.8 = 8$

$8 \div 0.8 = 10$

$8 \div 10 = 0.8$

$6 \times 100 = 600$

$100 \times 6 = 600$

$600 \div 6 = 100$

$600 \div 100 = 6$

$40 \times 100 = 4000$

$100 \times 40 = 4000$

$4000 \div 40 = 100$

$4000 \div 100 = 40$

$0.2 \times 10 = 2$

$10 \times 0.2 = 2$

$2 \div 0.2 = 10$

$2 \div 10 = 0.2$

Key Vocabulary

What is 5 **multiplied by** 10?

What is 10 **times** 0.9?

What is 700 **divided by** 70?

hundreds, tens, units

tenths, hundredths

These are just examples of the facts for this term. Children should be able to answer these questions in any order, including missing number questions e.g. $10 \times \bigcirc = 5$ or $\bigcirc \div 10 = 60$.

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.

Use a place value grid to look at what is happening to the number as it is multiplied.

M	HTH	TTH	Th	H	T	O ●	1/10	1/100



Key Instant Recall Facts

Year 5 – Spring 1

I can recall metric conversions.

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

1 kilogram = 1000 grams

1 kilometre = 1000 metres

1 metre = 100 centimetres

1 metre = 1000 millimetres

1 centimetre = 10 millimetres

1 litre = 1000 millilitres

They should also be able to apply these facts to answer questions.

e.g. How many metres in $1\frac{1}{2}$ km?

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.

Look at the prefixes – Can your child work out the meanings of *kilo-*, *centi-* and *milli-*? What other words begin with these prefixes?

Be practical – Do some baking and convert the measurements in the recipe.

How far? – Calculate some distances using unusual measurements. How tall is your child in mm? How far away is London in metres?



Key Instant Recall Facts

Year 5 – Spring 2

I can identify prime numbers 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**.

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

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

Key Vocabulary

prime number

composite number

factor

multiple

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

E.g. 15 is composite because it is a multiple of 3 and 5.

Top Tips

The secret to success is practising **little** and **often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.

It's really important that your child uses mathematical vocabulary accurately. Choose a number between 2 and 20. 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 20. How quickly can your child sort these into prime and composite numbers? How many even prime numbers can they find? How many odd composite numbers?



Key Instant Recall Facts

Year 5 – Summer 1

I can recall square numbers up to 122 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**.

$$1^2 = 1 \times 1 = 1$$

$$2^2 = 2 \times 2 = 4$$

$$3^2 = 3 \times 3 = 9$$

$$4^2 = 4 \times 4 = 16$$

$$5^2 = 5 \times 5 = 25$$

$$6^2 = 6 \times 6 = 36$$

$$7^2 = 7 \times 7 = 49$$

$$8^2 = 8 \times 8 = 64$$

$$9^2 = 9 \times 9 = 81$$

$$10^2 = 10 \times 10 = 100$$

$$11^2 = 11 \times 11 = 121$$

$$12^2 = 12 \times 12 = 144$$

$$\sqrt{1} = 1$$

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

$$\sqrt{25} = 5$$

$$\sqrt{36} = 6$$

$$\sqrt{49} = 7$$

$$\sqrt{64} = 8$$

$$\sqrt{81} = 9$$

$$\sqrt{100} = 10$$

$$\sqrt{121} = 11$$

$$\sqrt{144} = 12$$

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 has some strange picture stories to help children remember.



Key Instant Recall Facts

Year 5 – Summer 2

I can 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 12×12 . 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.

Play games - There is an activity at www.conkermaths.org to practise finding factor pairs

Think of the question – One player thinks of a times table question (e.g. 4×12) 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 has some strange picture stories to help children remember.

Don't forget TTRockstars for this too!

Key Instant Recall Facts

Year 6 – Autumn 1

I can use x table facts to multiply and divide decimals.

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

My Multiplication Chart 1-12

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

Key Vocabulary

What is 1.2 **multiplied by** 6?

What is 7 **times** 0.8?

What is 8.4 **divided by** 7?

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

They should be able to answer these questions in any order, including missing number questions

e.g. $7 \times \bigcirc = 28$ or $\bigcirc \div 6 = 7$.

Children should apply this knowledge to answer questions including decimals

e.g. $0.7 \times \bigcirc = 4.2$ or $\bigcirc \div 60 = 0.7$

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.

Online games – There are many games online which can help children practise their multiplication and division facts. www.conkermaths.org is a good place to start.

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



Key Instant Recall Facts

Year 6 – Autumn 2

I can 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?



Key Instant Recall Facts



Year 6 – Spring 1

I can convert between decimals, fractions and percentages.

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

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.

Money – Use this to help with tenths and hundredths as links to 10p and 1p coins in a pound.
E.g 75 pennies = £0.75 50p = £0.50



Key Instant Recall Facts

Year 6 – Spring 2

I can 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?