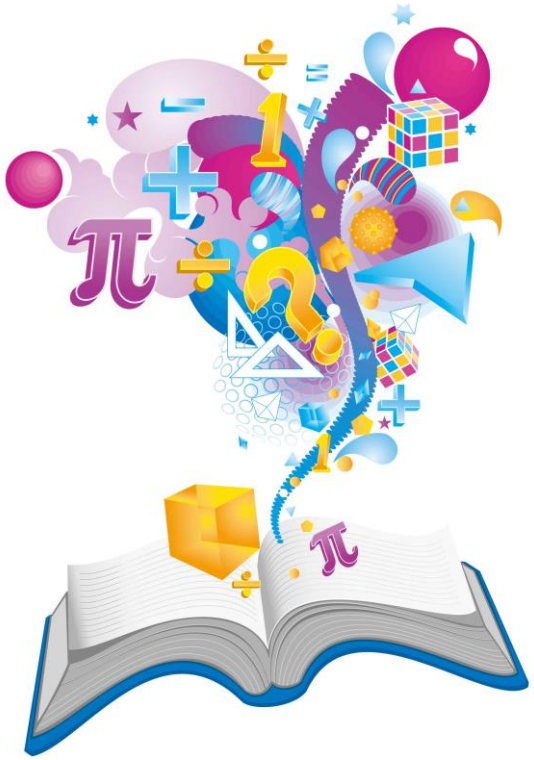
Maths Parent Workshop



Year 2

Aims for today

- To show you how we teach your child a variety of strategies to solve calculations and word problems.
- To give you the opportunity to use some of the equipment your child uses every day.
- To give you ideas and ways to help your child at home.
- To provide you with the chance to ask questions and chat with other parents and the teachers.

Progression from Year 1 to Year 2

- Explore topics in more depth through using national curriculum links.
- Moving from pictorial to abstract
- Focus on pupils applying the skills learnt to reasoning and problem-solving questions.

Each term pupils are expected to learn and know the following recall facts.

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
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?

They should be able to answer these questions in any order, including missing number questions e.g. 19 + ◯ = 20 or 20 – ◯ = 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 – your child could make a poster showing the different ways of making 20.

Play games – You can play number bond pairs online at www.conkermaths.com and then see how many questions you can answer in just one minute.

Key Instant Recall Facts

Year 2 – Autumn 2

I know the multiplication and division facts for the 2 times table.

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

2 × 1 = 2	2 ÷ 2 = 1
2 × 2 = 4	4 ÷ 2 = 2
2 × 3 = 6	6 ÷ 2 = 3
2 × 4 = 8	8 ÷ 2 = 4
2 × 5 = 10	10 ÷ 2 = 5
2 × 6 = 12	12 ÷ 2 = 6
2 × 7 = 14	14 ÷ 2 = 7
2 × 8 = 16	16 ÷ 2 = 8
2 × 9 = 18	18 ÷ 2 = 9
2 × 10 = 20	20 ÷ 2 = 10
2 × 11 = 22	22 ÷ 2 = 11
2 × 12 = 24	24 ÷ 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 × ◯ = 8 or ◯ ÷ 2 = 6.

Top Tips

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

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

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

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

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

Each term pupils are expected to learn and know the following recall facts.

Key Instant Recall Facts

Year 2 – Spring 1

I know doubles and halves of numbers to 20.

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

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

Key Vocabulary

What is **double** 9?

What is **half** of 14?

Top Tips

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

Use what you already know – Encourage your child to find the connection between the 2 times table and double facts.

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

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

Key Instant Recall Facts

Year 2 – Spring 2

I know the multiplication and division facts for the 10 times table.

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

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

Top Tips

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

Pronunciation – Make sure that your child is pronouncing the numbers correctly and not getting confused between thir**teen** and thir**ty.**

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?

Each term pupils are expected to learn and know the following recall facts.

Key Instant Recall Facts

Year 2 – Summer 1

I can tell the time.

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

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

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

Key Vocabulary

Twelve **o'clock**

Half past two

Quarter past three

Quarter to nine

Five **past** one

Twenty-five **to** ten

Top Tips

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

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

Ask your child the time regularly – You could also give your child some responsibility for watching the clock :
"The cakes need to come out of the oven at quarter past four."
"We need to leave the house at half past eight."

Key Instant Recall Facts

Year 2 – Summer 2

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

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

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

Top Tips

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

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

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

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

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

99 Club

- Children practice this every Friday during their Maths lesson.
- The club children are on represents how long they have to complete that club:
  - 11 Club – 1 minute
  - 22 Club – 2 minutes
  - 33 Club – 3 minutes
  - 44 Club – 4 minutes ….
- At the end of Year 2 children are expected to be on the 44 club.

Maths at Dilkes

- Dilke's Calculation Policy develops pupils understanding of a variety of methods building on their prior knowledge. A Maths lesson at Dilkes follows the following structure:
  - Starter – Focused on instant recall facts (QQT, Decisions, Decisions, Numbered heads together, spoof)
  - Fluency – Practicing the skill taught.
  - Reasoning – Application of skill learnt.
  - Problem solving – Including word problems to apply the skill in different contexts and scenarios (these include links to real life).
  - Plenary – Consolidation of learning, spoof to address misconceptions that have arisen. Higher order thinking question to further develop pupils understanding of taught topics.

Working at the expected standard

Working at the expected standard.

· Can partition two-digit numbers into tens and units (e.g. 23 = 20 + 3)

· Add 2 two-digit numbers within 100 (e.g. 48 + 35) and can demonstrate their method

· Use estimation to check that their answer is reasonable (knowing that e.g. 48 + 35 will be less than 100)

· Subtract mentally a two-digit number from another two-digit number when there is no regrouping required (e.g. 74-33).

Working at the expected standard

- Recognise the inverse relationships between addition and subtraction and use this to check calculations and out missing number problems (e.g. ___ - 14 =28)
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables to solve simple problems)
- Identify 1/3, ¼, ½, 2/4, ¾
- Use different coins to make the same amount (pupils can work out how many £2 coins are needed to exchange for a £20 note)

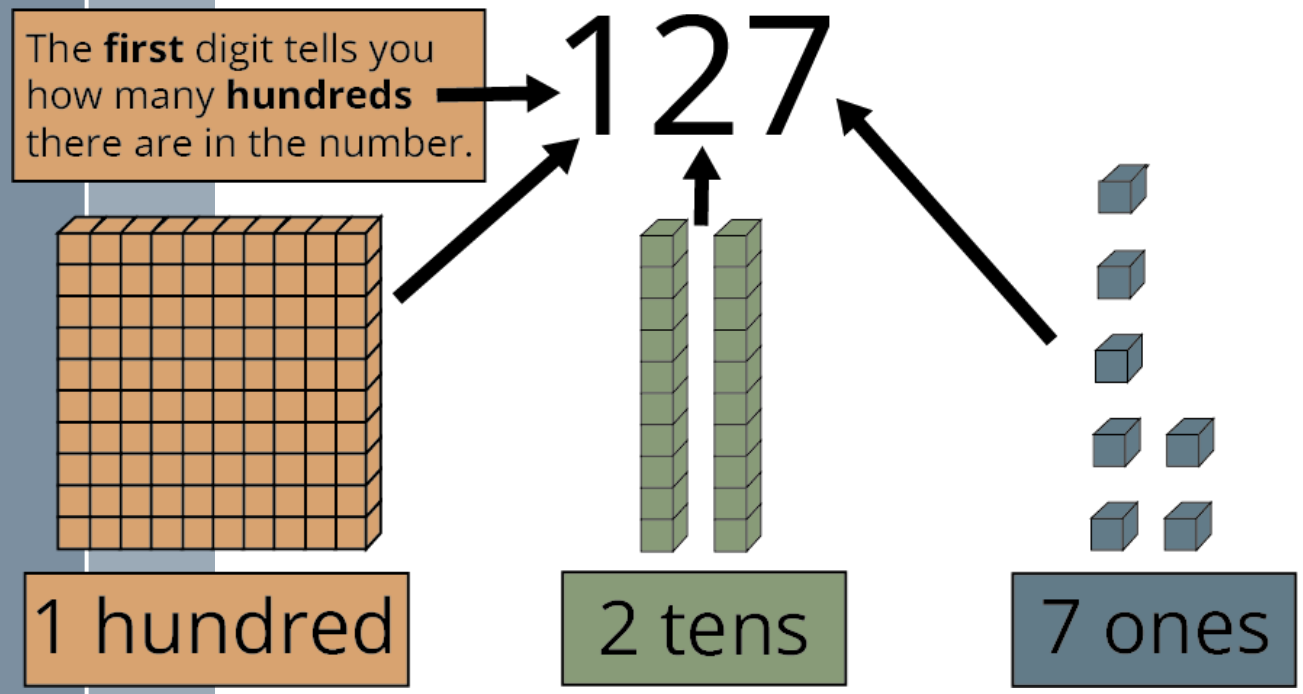
Working at the expected standard

- Read scales in divisions of ones, twos, fives and tens where all the numbers on a scale is given (e.g. reading the temperature on a thermometer or measuring capacities using a measuring jug)
- Read the time on the clock to the nearest 15 minutes
- Describe the properties of 2-D and 3-D shapes

Working at greater depth

- Reason about addition (e.g. the sum of 3 odd numbers will always be odd)
- Solve more complex missing number problems (e.g.14 + ___ -3 =17)
- Determine remainders given known facts (16÷5 will have a remainder of 1)
- Two step word problems
- Time-5 minute intervals
- Read scales where not all numbers on the scale are give

Place Value



Place Value is a vital skill for pupils to have a secure understanding of addition and subtraction. This is always taught / revisited prior to any addition / subtraction lesson.

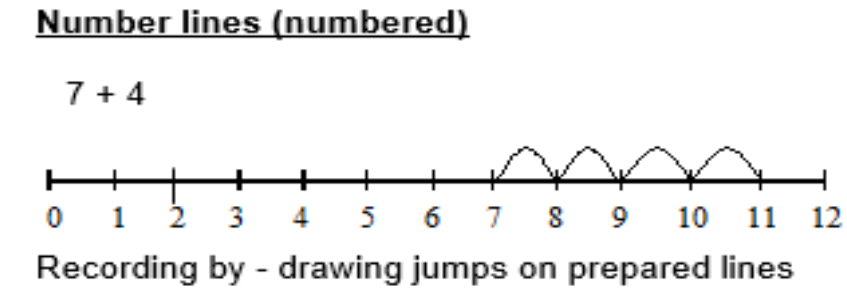
Pupils use concrete tens and ones to represent the numbers and then move onto pictorial representations.

When discussing place value, language is key. 27 = 2 tens which is the same as 20, 7 is 7 ones.

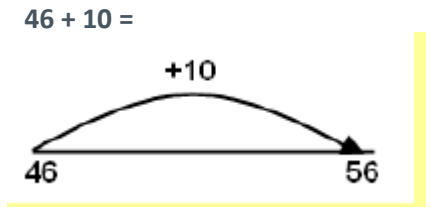
Addition

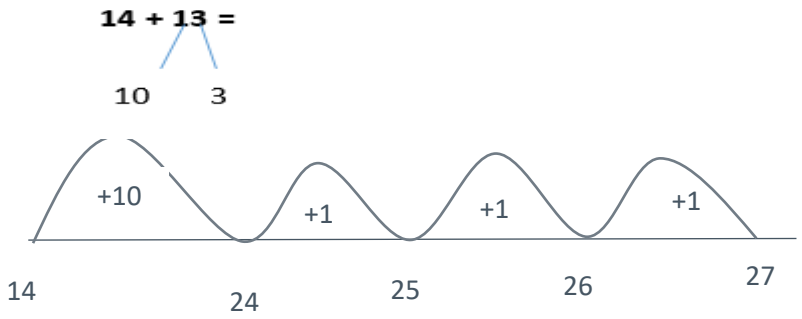
Numberline

Children may begin using a prepared numberline but will move on to drawing their own lines. Children add U + U and TU + U and three single digit numbers.



Adding ten- and 2-digit numbers on a numberline. Before the numberline is introduced, we look at the numbers visually using place value cards and denies.





Partition

The next formal method. Children partition the numbers into tens and ones and then recombine.

14 + 13 =

Tens	10 + 10 = 20
Ones	4 + 3 = 7
	20 + 7 = 27

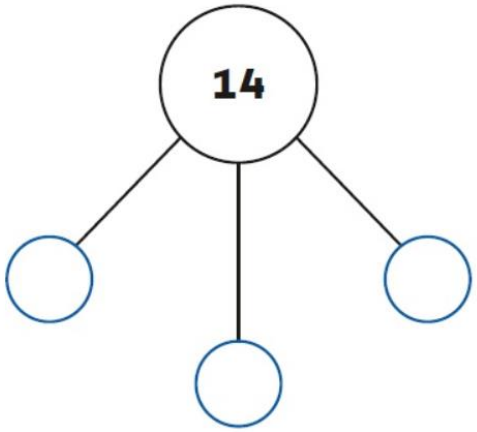
Addition Reasoning and Problem Solving

Katie has 12 marbles.

Jim has 13 marbles more than Katie.

How many marbles do they have altogether?

Write a number in each empty circle so that all three numbers total **14**



One calculation does **not** equal 17

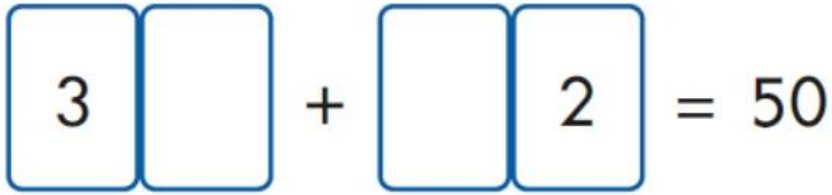
Cross it out.

9 + 8	8 + 9
20 − 3	3 − 20

Tick **all** the calculations that total **100**

50 + 50	80 + 30
75 + 15	35 + 65

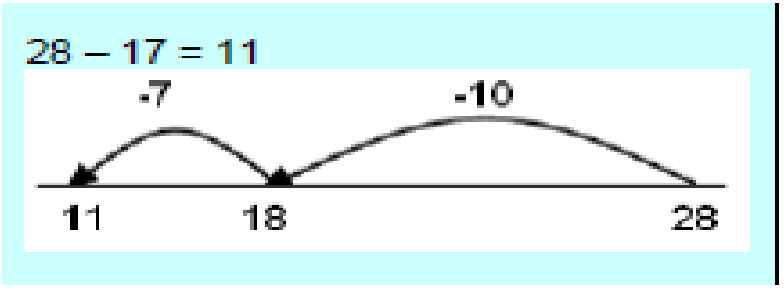
Write a digit in each box to complete this number sentence.



Subtraction

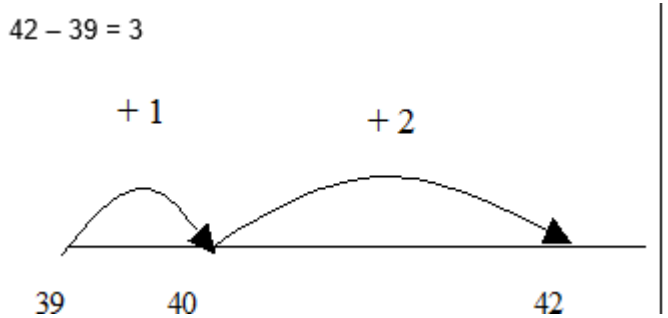
Numberline

To begin with, we use the same method of counting back as the children were taught in year 1. Similar to addition but we start at the opposite end of the numberline.



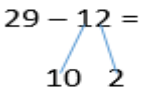
Counting on to find a small difference

This term the children will look at a quicker and more efficient way to subtract (by counting up). Examples of small differences are 23-21, 18 – 14, 35 – 31. The gap between these numbers are small enough to count up rather than partition and count back several times.



Partitioning Method (slight difference to adding)

Mainly to help with mental strategies. Children partition the second number only. Then they take away the tens and then the units.



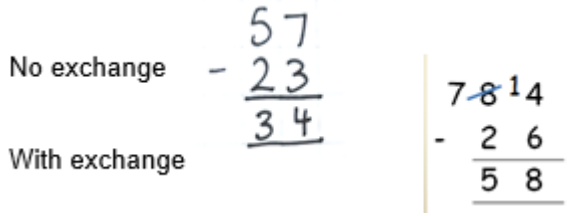
29 – 10 – 2 =

29 – 10 = 19

19 – 2 = 17

Column Method

Some children may move onto this method by the end of the year. (Summer term)



Subtraction Reasoning and Problem Solving

These four calculations have the same answer.

7 – 3 – 2 2 – 3 – 7

3 – 2 – 7 7 – 2 – 3

Is James correct? Explain how you know.

SALE

15p 22p 35p 68p

The cost of each piece of fruit is reduced by 10p.

What are the new prices?

Jasmine has 33 stickers.

Ollie has 54 stickers.

How many more stickers does Ollie have?

What method did you use to solve the problem?

This is Ben's money.

This is Sita's money.

How much **more** money does Ben have than Sita?

Multiplication

For all these methods we encourage children to count in the number that is being multiplied (eg, 2s, 3s, 5s, or 10s). Key vocab – lots of, groups of, multiply, times.

Repeated Addition

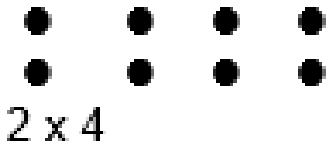
Children will write multiplication calculations for given repeated addition calculations and vice versa.

Repeated addition - 2 + 2 + 2 + 2 = 8

Multiplication 4 x 2 = 8

Arrays

A useful way to also explore that order in multiplication does not matter.



2 x 4

Grouping/Pictures and Symbols

- **Pictures and symbols**

There are 3 sweets in one bag.

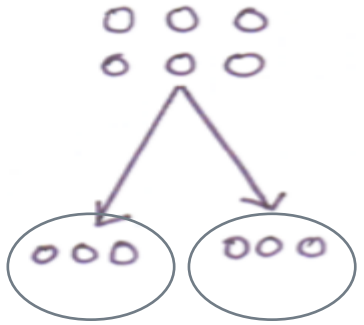
How many sweets are there in 5 bags?

Division

Understand division as sharing and grouping. They learn this first through visuals and we tend to relate division to share of sweets or objects to help with the concept.

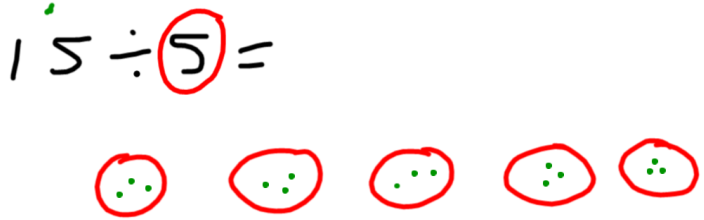
Ideas modelled through pictures, drawings and by using counters, etc.

$6 \div 2 = 3$



Grouping

Children are then taught to draw their own groups and share out the dots (number) equally into each group. It is important children understand that each group must equal.



Multiplication and Division Reasoning and Problem Solving

Match the equal groups together.

Three 5s

Two 10s

Two 3s

There are three dolls in each basket.

There are four baskets.

How many dolls are there altogether?

Draw an image and write a calculation to represent the problem.

True or False?

$5 + 5 = 2 + 2 + 2 + 2 + 2$

Draw an image or use cubes to help you explain your answer.

Missing numbers

$10 = 5 \times \square$

What number could be written in the box?

Making links

I have 30p in my pocket in 5p coins. How many coins do I have?

On sports day, Tom runs 10 metres, 7 times.

Which of the calculations do not describe the word problem?

$10 + 7$

7×10

$7 + 7 + 7 + 7 + 7 + 7 + 7$

$10 + 10 + 10 + 10 + 10 + 10 + 10$

Support with homework

- Practise number bonds to 10, 20 and 50 - play games such as pairs, dominoes, online games
- Times tables – learn 2, 3, 4, 5 and 10 times tables in and out of order
- Practicing 99 club (this is available on school website)
- Support with resources such as a number line, hundred square, coins to practice adding money
- Ask your child to explain how they have solved a problem, as this will demonstrate they have really understood the method used
- Talking about maths in real life situations – language is key!

TTRockstars and Numbots

- Children also have full access to Times Table Rock stars and Numbots
- Numbots is a platform where children can recall their addition and subtraction skills.
- TTRockstars is a platform where children can practice their recall of timetables and compete with their peers.