Year 1 Maths Workshop
30.11.18/ 5.12.18

Maths in Year 1

**Welcome to the Year 1 Maths workshop.
Thank you for coming!**

Please begin by having a look at the general information here as well as some of the resources your children use in class.

Then please make your way around the hall looking
at the 3 stations;
(place value, addition and subtraction, multiplication and division)

Mrs Fisher, Miss Travis and Mrs Leaf are available if you would like anything explaining in more detail,
demonstrating or if have any questions.

What children learn in Maths in Y1

Autumn Term	Spring Term	Summer Term
Place Value (within 10)	Addition and Subtraction (within 20)	Multiplication and Division
Addition and Subtraction (within 10)	Place Value (within 50)	Fractions
Shape		Position and Direction
Place Value (within 20)	Length and Height	Place Value (within 100)
		Money
		Time

Aim of today

Today will hopefully help you to understand how your child is learning maths and allow you to support your child at home in a way which is consistent with how they are learning at school.

Maths language

Hundreds, tens and ones

This makes up the place value of a number. We refer to these as columns.

Digit

All numbers are made up of the digits 0-9.

Value

What is the digit worth- this will depend on which column the digit is in.

Partition

To partition a number means to split it into Hundreds, tens and ones.

1 digit number/ 2 digit number

A 1 digit number only has a digit in the ones column, a 2 digit number has digits in the tens and ones columns.

Steps of learning

The children are taught to have a deep understanding of maths concepts and apply their understanding to different contexts.

Fluency

We want the children to first gain a deep understanding of the area of maths they are learning.

Through learning a new concept and then practicing the skill in different ways we teach the children to be accurate, efficient and flexible.

Reasoning and Problem solving

Once the children have developed fluency they will move onto apply their skills in different contexts. They will learn to make links and explain how they solve maths problems. The problems may have multiple answers or steps to them.

Steps of learning

The children are introduced to new concepts in a three stage approach (C-P-A) to help scaffold their learning. The children may go back a forth in this process.

| **Concrete**	**Pictorial**	**Abstract**
'doing'	'seeing'	'symbolic'
The children begin by using objects to help them learn in a more familiar way.	The children then use models and images to help them make links.	Finally the children move onto use just numbers and abstract symbols.

To find out more about this approach take a look at ; https://www.theschoolrun.com/what-is-the-concrete-pictorial-abstract-approach-in-maths
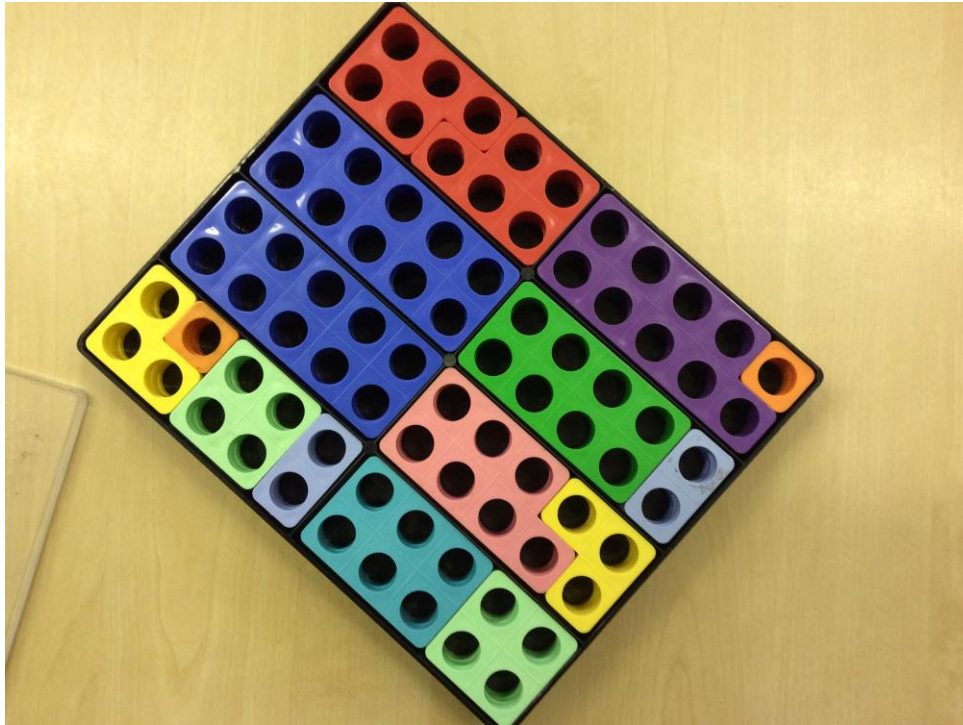
Equipment- Cubes and counters

Equipment- Number lines
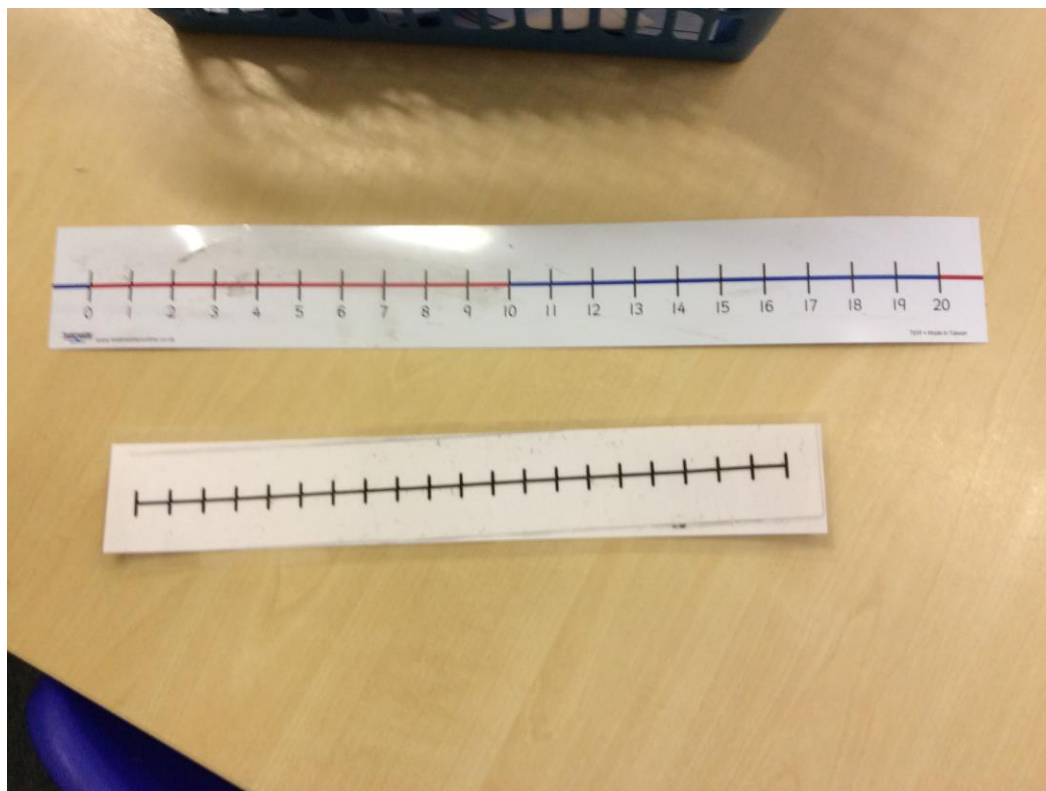
Equipment- Dienes/ base ten
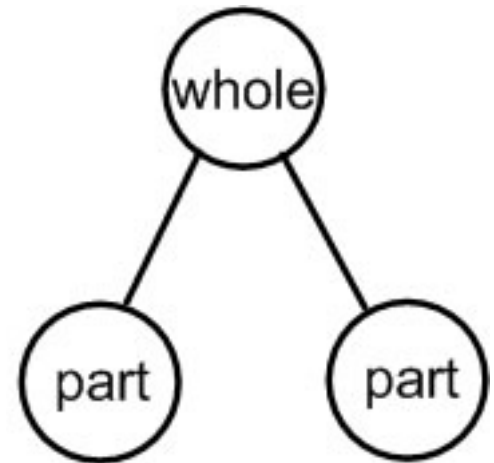
Equipment- Numicon

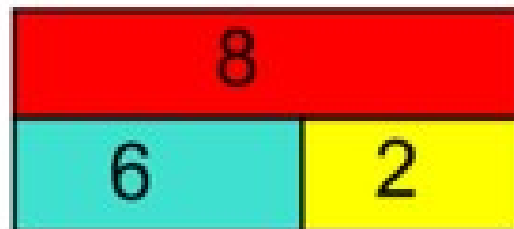# Equipment- Cuisenaire rods

Equipment- Models/ Pictures

Place value frame

Tens	Ones

Part part whole

whole

part   part

Bar model

8	
6	2

Equipment- Hundred squares

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

Equipment- Arrow cards

Place Value

Place Value- key learning

- Count to 100 (forwards and backwards starting at any number)

- Read an write numbers to 100 in numerals (to 20 in words)

- Count amounts to 100

- Find 1 more and 1 less than a number (to 100)

- Represent numbers to 100 (i.e. find on a number line, say which is larger/ more)

Place value

Counting

The children learn to count up to 100.

Fluency

Use the hundred square to:
- Count forwards from 80 to 92
- Count backwards from 73 to 65
- Write down the numbers between 68 and 81
- Find what number comes between 76 and 78

Reasoning

Circle the mistake in each sequence.

- 34, 35, 36, 38, 39

- 98, 97, 96, 95, 93

Place value

Partitioning

The children partition numbers to 100 into tens and ones.

Fluency

Use Base 10 to make these numbers then complete the stem sentences.

70   96   64   81   92   66   99

70 has 7 tens and 0 ones.

Reasoning

Use Base 10 to make a number.

With 5 tens and less than 8 ones

How many possible numbers are there?

Place value

Comparing numbers

The children learn to say whether a number is larger, smaller or equal to another number.

Fluency

Make these numbers on place value charts

78 and 61   90 and 89

Tens	Ones

Tens	Ones

Reasoning

How many ways can you complete the part whole models to make the calculation correct?
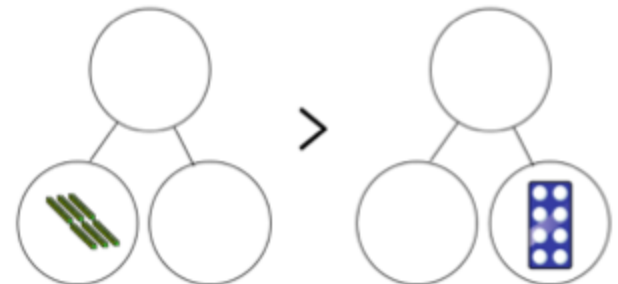
Place value

Ordering numbers

The children order a series of numbers from largest to smallest and vice versa using there knowledge of place value.

Fluency

Put these objects in the correct place in the table.

Most		Least

Reasoning

How have these numbers been ordered?

18, 39, 52, 64, 65, 80

Explain how you know.

Place value

Finding one more and one less

The children learn to add or subtract one from any number to 100.

Fluency

Show one more and one less than the numbers given.

One less		One more

Reasoning

Always, Sometimes, Never

When finding 1 less the tens digit stays the same.

Place value

Representing numbers

The children practice locating numbers.

Fluency

On the number line
- Circle the number 7
- Underline a number greater than seven
- Draw an arrow to the number that is one less than five.
- Put a box around the smallest number.

0 1 2 3 4 5 6 7 8 9 10

Reasoning

Jules points to a number on the number line.

↓

0

Which of the following **do not** represent this number?
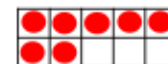
A   B   C

Addition
and Subtraction

+   -

Addition and Subtraction- Key learning

- **Read, write and interpret statements**

i.e. understand what + - and = symbols mean

- **Know and use number bonds to 20**

i.e. 11 + 9 = 20 but also that 20 − 9 = 11

- **Add and subtract numbers to 20**

i.e.

1 digit + 1 digit 5 + 4 = 9   1 digit - 1 digit 6 - 4 = 2

2 digit + 1 digit 12 + 7 = 19   2 digit - 1 digit 15 - 7 = 8

2 digit + 2 digit 14 + 11 = 25   2 digit - 2 digit 18 - 12 = 6

- **Use this knowledge to solve problems**
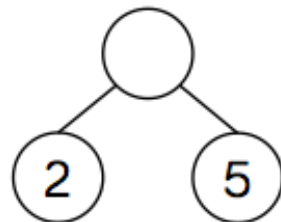
i.e. missing number 14 − ? = 9

Addition

- Children may start by making both parts and combining them to make the whole.

They may use the part-part whole or bar model to support them here) When adding 2 digit numbers the children begin to use base 10.

Complete the part whole models by drawing the counters then writing the numerals.
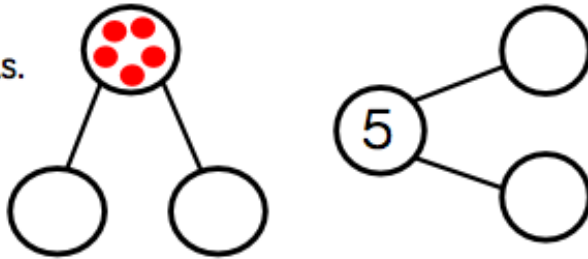
If 2 is a part and 5 is a part, what is the whole?
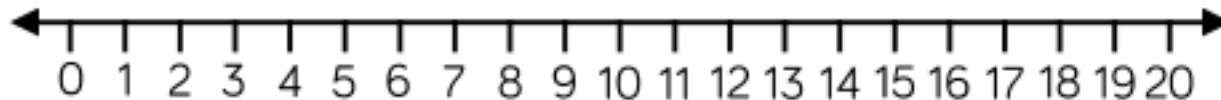
$$\square + \square = \square$$

Addition

- They will move onto starting at the larger number and counting on to add the smaller amount.

Jo has 13 prize tokens.
She wins 5 more.
How many prize tokens does Jo have now?
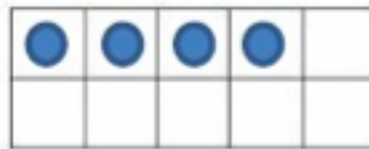Show your calculation on the number line.

Addition cont.

- The children do lots of practice to recall and using number bonds to 10 and 20.

Sam shows a number on his fingers.

How many fingers are needed to make 10?

Use the ten frames to complete the number bonds to 10.

$4 + \boxed{} = 10$ $5 + \boxed{} = 10$

Addition cont.

- They also learn number bonds for other numbers to 10 such as different ways of making 5 or 7. This is an important skill that will support them with their addition and subtraction.

Complete the next beads strings in the sequence.

$6 = 6 + 0$
$6 = 5 + 1$
$6 = 4 + 2$

Have you found all of the number bonds?

Complete the number sentences.

$5 = 5 + 0$

$4 = 4 + 1$

$\ldots = \ldots + \ldots$

$\ldots = \ldots + \ldots$

$\ldots = \ldots + \ldots$

$\ldots = \ldots + \ldots$

Addition cont.

- To improve their approach, children will then be taught to use facts they already know to support them (i.e. drawing on number bond knowledge.)

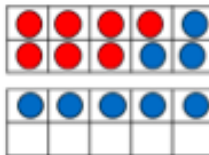What number bond is represented in the picture?

There are ___ red counters.
There are ___ blue counters.
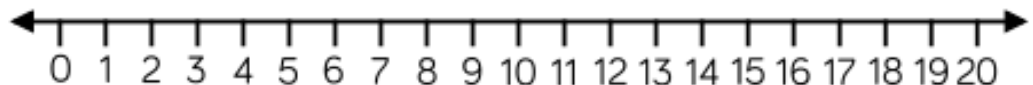Altogether there are ___ counters.

___ + ___ = ___   ___ + ___ = ___

Write a number sentence to describe what has happened on the ten frames.
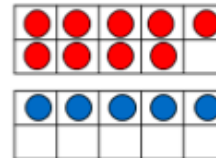
☐ + ☐ = ☐

Use a number line to find the answer.

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

Addition reasoning and problem solving

🔵 + 🔺 = 4   🔺 + 🔵 = 4

4 = 🔺 + 🔵   4 = 🔵 + 🔺

What could the 🔵 and the 🔺 be worth?

Sam represents a number bond to 20 in the part whole model.

Can you spot his mistake?

Mark uses ten frames to find the calculate nine plus five.

He says,

$9 + 5 = 15$

Do you agree?
Explain why.
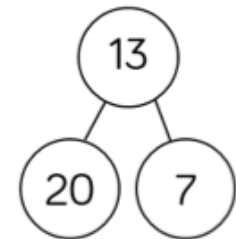
Addition

Your turn…

1 digit + 1 digit

8 + 7 =

2 digit + 1 digit

15 + 2 =

2 digit + 2 digit

14 + 12 =

Subtraction

- Children may start by making the whole and removing part of it. They may use the part-part whole or bar model to support them here)
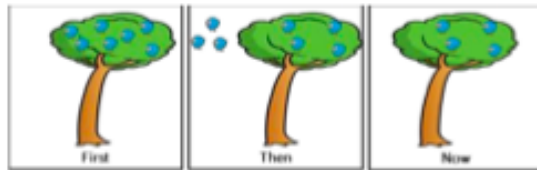
When subtracting 2 digit numbers the children begin to use base 10 to make the larger number.

Complete the number sentence

$7 - 2 = \boxed{}$

Create a story to represent the calculation.

There were 7 birds in a tree and 3 fly away.

First   Then   Now

At first there were____ birds in the tree. Then____ flew away. Now there are____ birds in the tree.

Subtraction cont.

- They will move onto making or finding the larger number and count back to take away.

Complete:

$6 - 3 = \square$

$4 - 4 = \square$
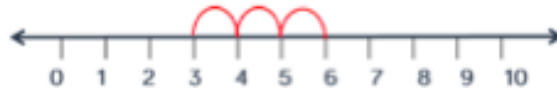
Subtraction cont.

- They will be encouraged to find the difference if the numbers are close together
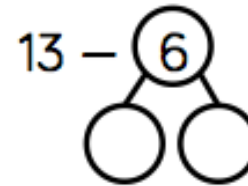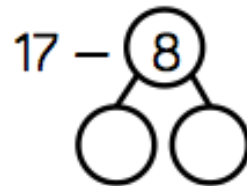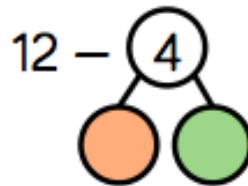
What's the difference between 10 and 6?

The difference between 10 and 6 is ___

10 – 6 =

Subtraction cont.

- To up level their approach children will then be taught to use facts they already know to support them (i.e. drawing on number bond knowledge.)

Complete the following calculations using base ten and a number line.

$15 - 7$

$15 - 5 = 10$ $10 - 2 =$ $10 - 2 = 8$

$10 - 2 = 8$ $15 - 5 = 10$

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

$13 - 5$ $15 - 9$ $12 - 4$ $17 - 8$ $13 - 6$
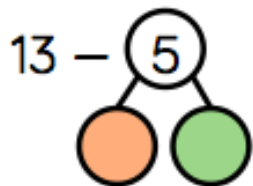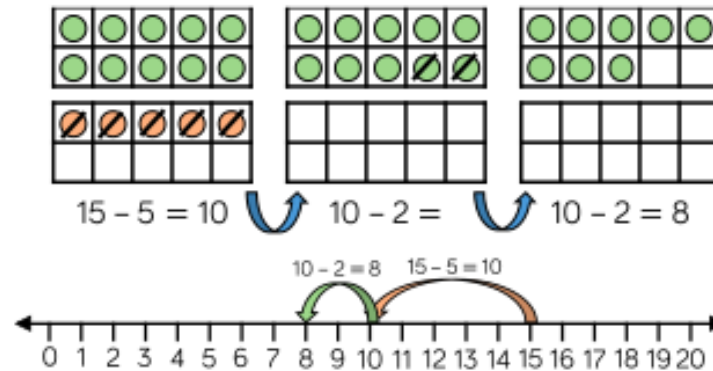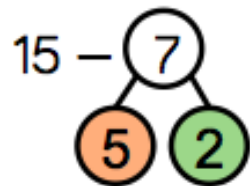
Subtraction reasoning and problem solving

Tia is working out 12 − 4 by counting back on a number line.
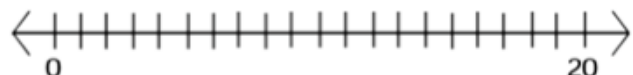
Her answer is 9

What has Tia done wrong?

Some cakes have been eaten.

There are 2 cakes left.

How many cakes could there have been, and how many could have been eaten to be left with 2?

Explain your reasons.

CHEW 1p

6p

4p

6p

4p

I spend 10p on a chocolate bar and something else. What else could I have bought? Explain how you know.

Subtraction

Your turn...

1 digit – 1 digit

9 - 3 =

2 digit – 1 digit

14 - 6 =

2 digit – 2 digit

19 - 13 =

Multiplication and Division

X   ÷

Multiplication and Division

- **Count in multiples of 2s, 5s and 10s**

i.e. 2…4…6…8…10…12…

- **Solve problems involving making equal groups**

Multiplication

A key skill we practice regularly in class in counting

in steps of 1, 2, 5 and 10 starting at 0.

The children may learn songs, use objects or a hundred square to support their understanding.

This is essential to supporting the children's ongoing understanding of multiplication.

Multiplication and Division

Count in 10s

Children count in tens from 0 and look for patterns.

Fluency

How many flowers are there altogether?

There are _____ flowers in each bunch.
There are _____ bunches.
There are _____ flowers altogether.

Reasoning

Jemima is counting in 10s on a hundred square.

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

She starts at 10

- Shade in all the numbers Jemima will say.
- What is the same about the numbers she says?

Multiplication and Division

Make equal groups

Children begin to recognise what equal means and recognise when groups are equal.

Fluency

Are the groups equal or unequal? Write a label for each.

Reasoning

Use concrete materials or pictures to complete the questions.

Jemima has 4 equal groups.
Show me what Jemima's groups could look like.

Multiplication and Division

Add equal groups

Children then move onto see that by repeatedly adding equal groups they can multiply.

Fluency

How many wheels altogether?

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

How many fingers altogether?

$5+5+5=$

Reasoning

Gavin is counting bananas.

$3+5=8$

Can you spot his mistake?

Multiplication and Division

Make arrays

Children begin to use practical objects to organise their equal groups into columns and rows.

Fluency

Build the array shown with counters.
Complete the sentences.

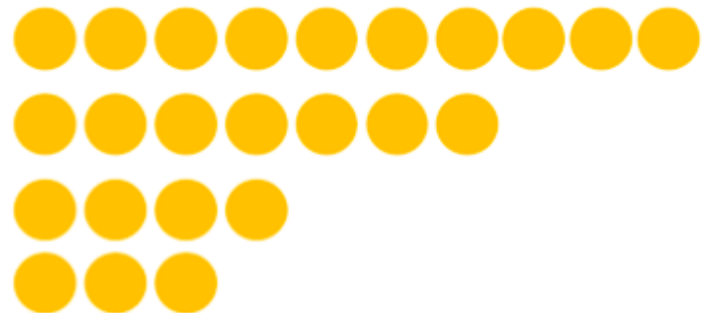There are ____ apples in each row.
There are ____ rows.
____ + ____ + ____ = ____
There are ____ apples altogether.

Reasoning

Jenny makes an array but stops.
She has finished her first row.
Can you complete her array?

Multiplication and Division

Doubling

The children double numbers to 20 using lots of practical resources.

Fluency

Take a number piece and double it.

Double ____ is ____

Reasoning

Work out:

Double 3 =
Double 4 =
Double 5 =

What do you notice? What's the same?
What's different?

Multiplication and Division

Grouping or Sharing

The children start to make the link between multiplication and division by being given an amount and sharing it out or making equal groups

Grouping

How many equal groups of 2 can you make with the mittens?

There are ___ groups of 2 mitten
If you had 10 mittens, how many equal groups of 2 mittens could you make?

Sharing

Share the muffins equally between the two plates. Complete the sentence
___ cakes shared equally between 2 is ___