Jeavons Wood
Primary School

Year 2

Key Mathematical Concepts and representations

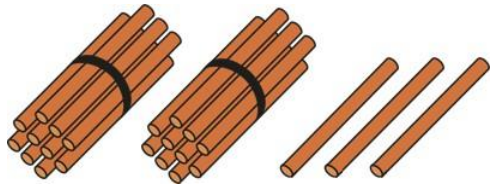
Number and Place Value

Year 2

Place Value in 2-digit numbers (1)

Vocabulary:

Ones Tens Digit Represents Place Value Gattegno Chart Column Model Part Whole Addend Sum Minuend Subtrahend Difference Plus Minus Equals Combine Partition



2 3
23 ones
2 tens and 3 ones

10s	1s

Recognise 2-digit numbers are composed of tens and ones.

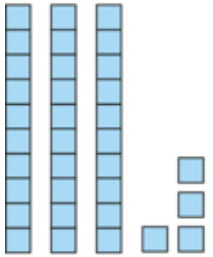
1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

Tap out 2-digit numbers on the Gattegno Chart.

Make connections to how we write the number.

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

Locate the position of two-digit numbers on a 100 square and make connections with other 2-digit numbers.



10s	1s
3	4

Create 2-digit numbers using Dienes and record the number numerically.

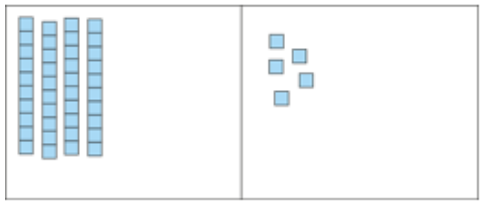
Number and Place Value

Year 2

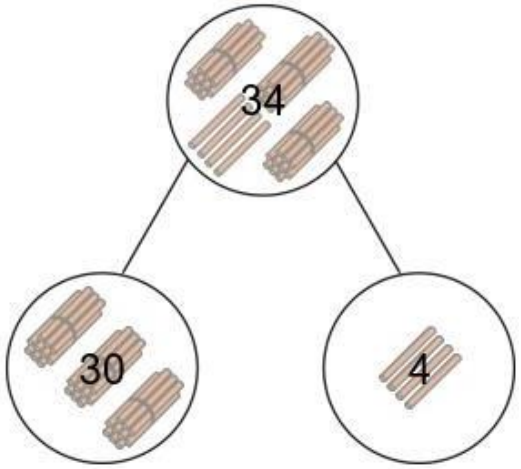
Place Value in 2-digit numbers (2)

Vocabulary:

Ones Tens Digit Represents Place Value Gattegno Chart Column
Model Part Whole Addend Sum Minuend Subtrahend Difference
Plus Minus Equals Combine Partition

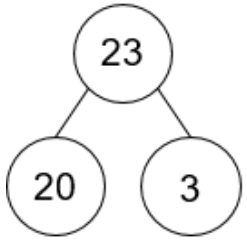


Make connections between the Dienes and 100 square.



Partition 2-digit numbers into tens and ones.

2 tens and 3 ones



23	
20	3

20 + 3 = 23
3 + 20 = 23

23 = 20 + 3
23 = 3 + 20

23 – 20 = 3
23 – 3 = 20

3 = 23 – 20
20 = 23 – 3

Partition 2-digit numbers in the abstract forms of bar model and part-part-whole model (cherry model)

Record our understanding as additive equations.

Number and Place Value

Year 2

Two-digit numbers in the linear number system.

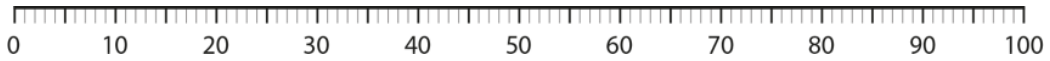
Vocabulary:

Ones Tens Place Value Number Line Multiple Previous Next

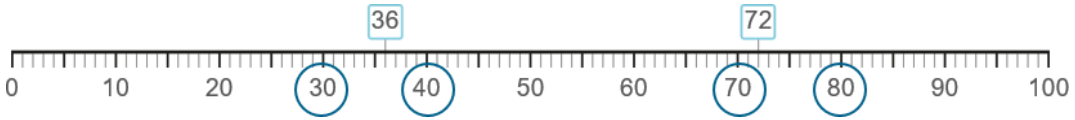
Bead string/bar

32

Describe the number of beads in tens and ones.



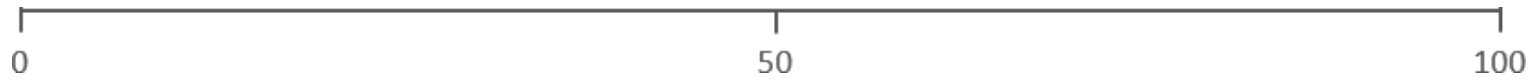
Make connections between the bead string and the number line.



Identify the previous and next multiple of ten that a number sits between.

36 is between 30 and 40.

30 is the previous multiple of 10. 40 is the next multiple of 10.



Identify the number that sits halfway between 0 and 100. Make connections to 0-10 number line.

Estimate the position of 2-digit numbers on the blank number line.

Addition and Subtraction

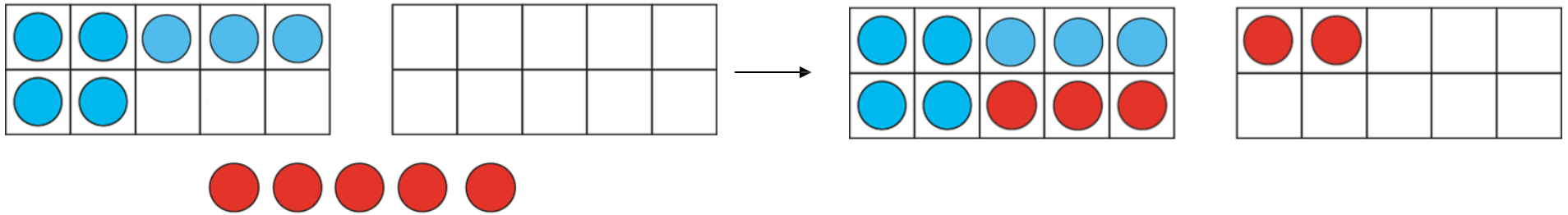
Year 2

Add and Subtract across 10 (1)

Vocabulary:

Part Whole One Two Three Four Five Six Seven Eight Nine Ten
Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model
Tens Frame Fingers Five and-a-bit Systematic Plus + Minus - Equal to =
Addition Subtraction Quantity Increase Decrease First, Then, Now
Expression Equation

Addend + Addend = Sum Minuend – Subtrahend = Difference



7 + 5

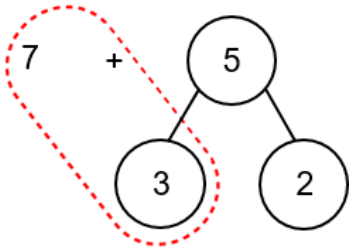
7 + 5 = 7 + 3 + 2 = 10 + 2

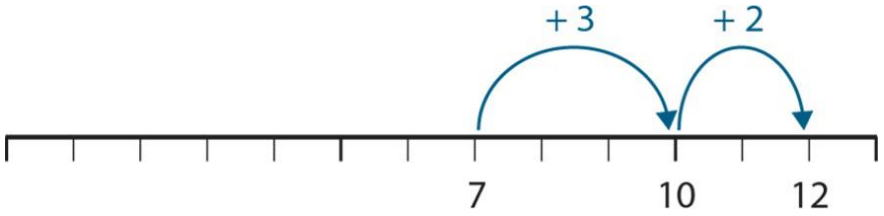
Use knowledge of known facts to bridge 10 using a 'make 10' strategy.

First, I partition the ___into ____and ___.

Then, I add ____and ____to make 10.

Then, I add the remaining ____to make ___.





7 + 3 = 10

10 + 2 = 12

Addition and Subtraction

Year 2

Add and Subtract across 10 (2)

Vocabulary:

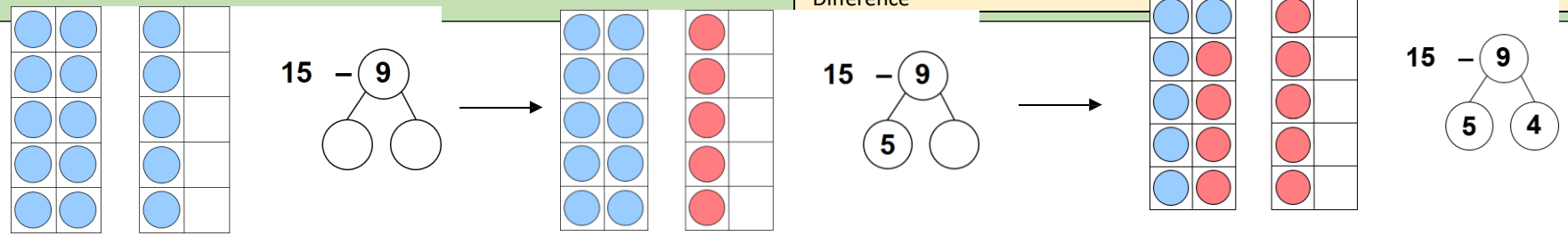
Part Whole One Two Three Four Five Six Seven Eight Nine Ten Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model

Tens Frame Fingers Five and-a-bit Systematic Plus + Minus -

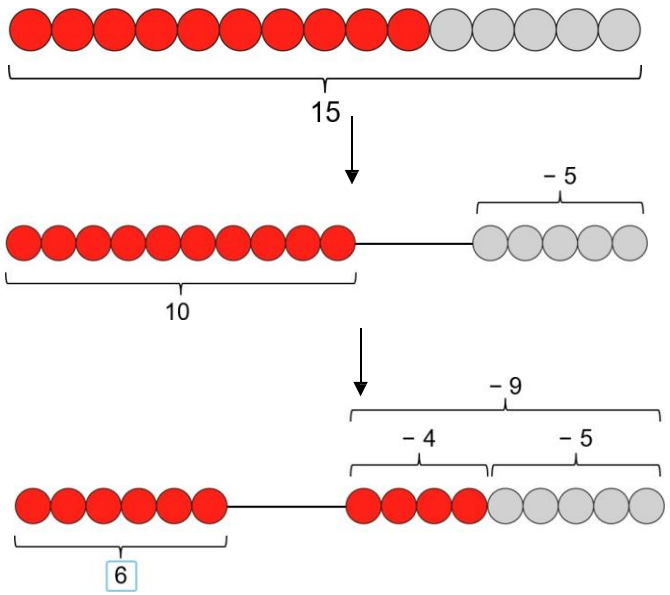
Equal to = Addition Subtraction Quantity Increase Decrease

First, Then, Now Expression Equation

Addend + Addend = Sum Minuend – Subtrahend = Difference



15 – 9 = 6

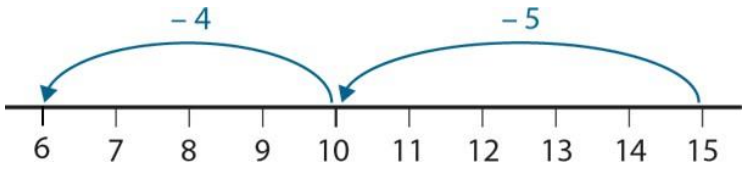


Use knowledge of known facts to subtract *through 10*. We can partition the subtrahend to help us subtract.

First, I partition the ___into ____and ____.

Then, I subtract ____and ____to get to 10.

Then, I subtract the remaining ____to make ____.



Addition and Subtraction

Year 2

Add and Subtract across 10 (3)

Vocabulary:

Part Whole One Two Three Four Five Six Seven Eight Nine Ten
Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model
Tens Frame Fingers Five and-a-bit Systematic Plus + Minus - Equal to =
Addition Subtraction Quantity Increase Decrease First, Then, Now
Expression Equation

Addend + Addend = Sum

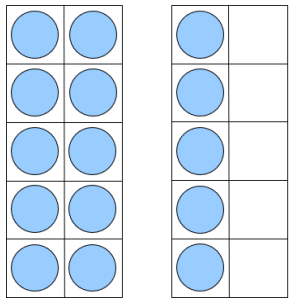
Minuend – Subtrahend = Difference

Use knowledge of known facts to subtract *from 10*. We can partition the subtrahend to help us subtract.

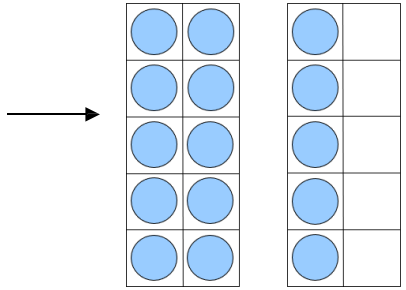
First, I partition the ___into ____and ____.

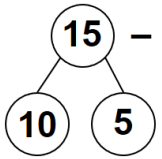
Then, I subtract ____from 10 to make ____.

Then, I add the remaining ____to make ____.

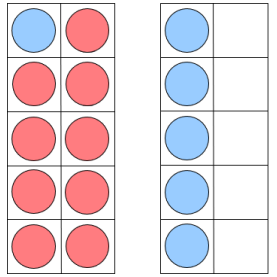


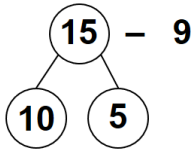
15 – 9





15 – 9





15 – 9

10 – 9 = 1

1 + 5 = 6

15 – 9 = 6

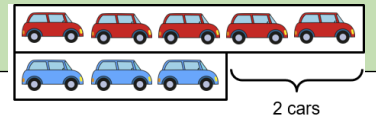
Addition and Subtraction

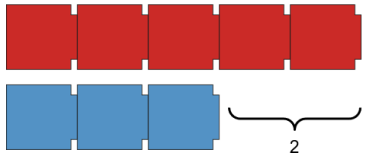
Year 2

Solve Comparative Addition and Difference Problems

Vocabulary:

Part Whole One Two Three Four Five Six Seven Eight Nine Ten Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model
Tens Frame Fingers Five and-a-bit Systematic Plus + Minus -
Equal to = Addition Subtraction Quantity Increase Decrease
First, Then, Now Expression Equation
Difference Bar model
Addend Addend Sum
Minuend – Subtrahend = Difference





Line up sets of objects in a bar model structure to support comparison.

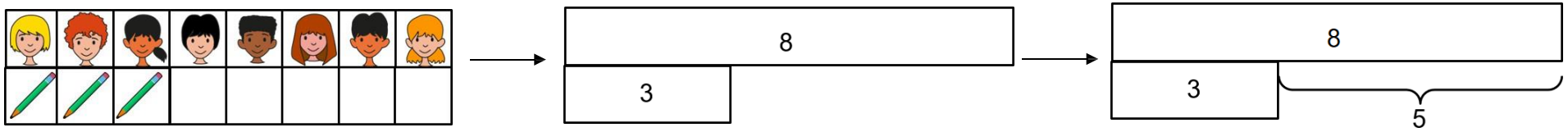
There are 2 fewer blue cars than red cars.

There are 2 more red cars that blue cars.

Represent a range of comparison contexts.

Ben is 7 years older than Charlotte.

Charlotte is 7 years younger than Ben.



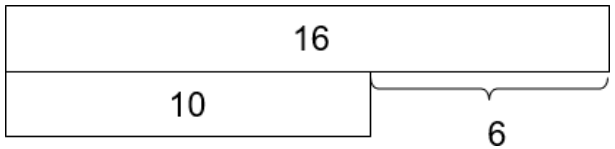
We can use subtraction to help solve difference problems / missing addend problems about 'how many more?' and 'how many fewer?'

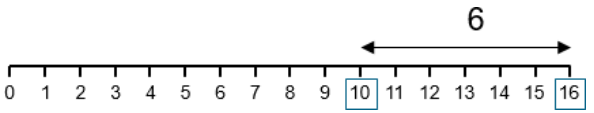
3 + ___= 8

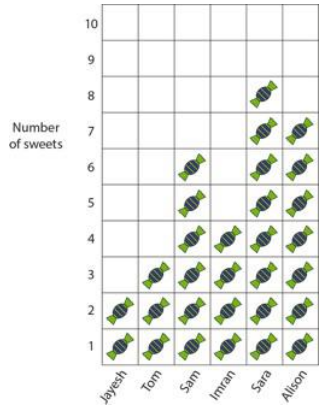
8 – 3 = 5

Create contexts for recognising the difference/comparative addition structure with all representations below.

10 + ☐ = 16 **16 – 10 = ☐**







Addition and Subtraction

Year 2

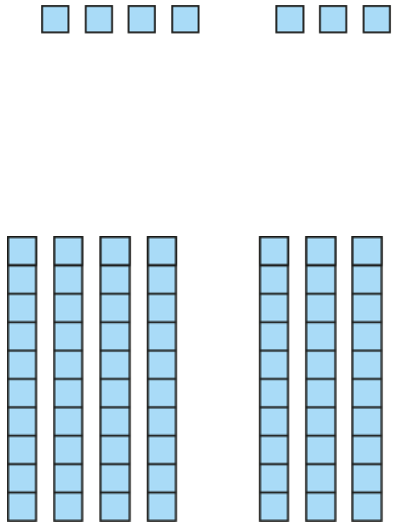
Add and Subtract within 100 (1).

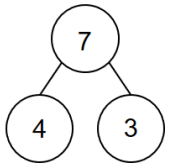
Vocabulary:

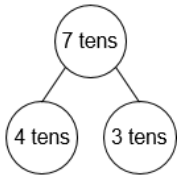
Part Whole Ones Tens Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model Tens Frame Dienes Plus + Minus - Equal to = Addition Subtraction Expression Equation Exchange Count on Count back Number line Tens Boundary

Addend + Addend = Sum

Minuend – Subtrahend = Difference







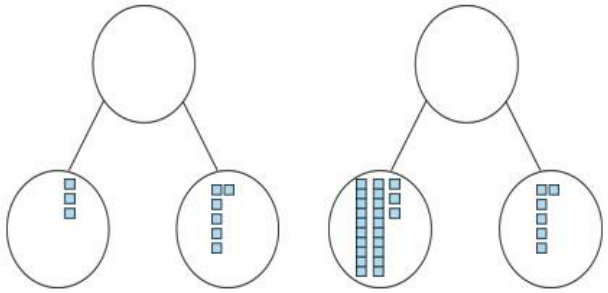
Use known facts within 10 to add/subtract multiples of 10.

I know that 4 plus 3 is equal to 7.

So, 4 tens plus 3 tens is equal to 7 tens.

40 + 30 = 70.

70 – 40 = 30



3 + 6 = 9

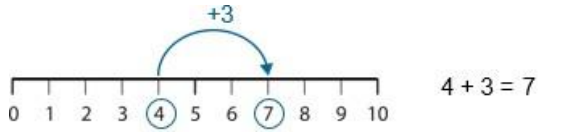
23 + 6 = 29

Use known facts within 10 to add/subtract ones to/from a 2 digit number.

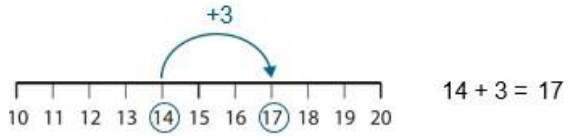
I know that 3 plus 6 is equal to 9.

So, 2 tens and 3 ones plus 6 ones is equal to 2 tens and 9 ones.

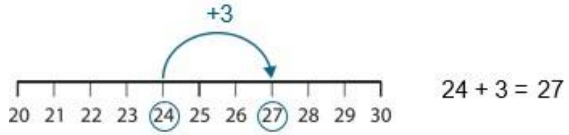
23 + 6 = 29.



4 + 3 = 7



14 + 3 = 17



24 + 3 = 27

Generalise that adding/subtracting within 10 can be applied to adding a 2 digit number with a 1 digit number – not crossing the tens boundary.

I know that 4 plus 3 is equal to 7.

So, 1 ten and 4 ones plus 3 ones is equal to 1 tens and 7 ones.

14 + 3 = 17.

Addition and Subtraction

Year 2

Add and Subtract within 100 (2).

Vocabulary:

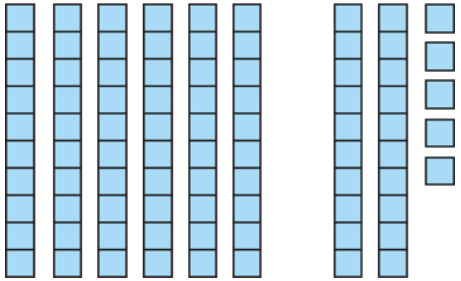
Part Whole Ones Tens Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model Tens Frame Dienes Plus + Minus - Equal to = Addition Subtraction Expression Equation Exchange Count on Count back Number line Tens Boundary

Addend + Addend = Sum

Minuend – Subtrahend = Difference

6 + 2 = 8

60 + 25 = ?



Use known facts within 10 to add/subtract multiples of 10 to a 2 digit number.

I know that 6 plus 2 is equal to 8.

So, 6 tens plus 2 tens is equal to 8 tens. Then add the additional 5 ones.

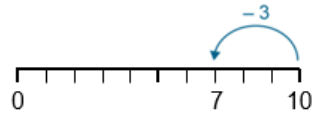
60 + 25 = 85.

Use knowledge of subtracting from 10 to subtract a single-digit number from a multiple of 10.

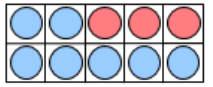
I know that 10 minus 3 is equal to 7.

So, 3 tens minus 3 ones is equal to 2 tens and 7 ones.

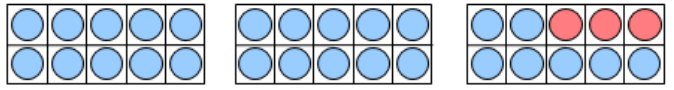
30 - 3 = 27.



10 – 3



30 – 3



Addition and Subtraction

Year 2

Add and Subtract within 100 (3).

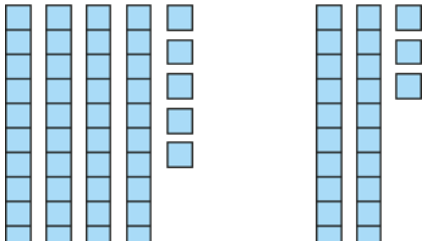
Vocabulary:

Part Whole Ones Tens Represents Compose Combine Partition Total Part-Part-Whole (Cherry) model Tens Frame Dienes Plus + Minus - Equal to = Addition Subtraction Expression Equation Exchange Count on Count back Number line Tens Boundary

Addend + Addend = Sum

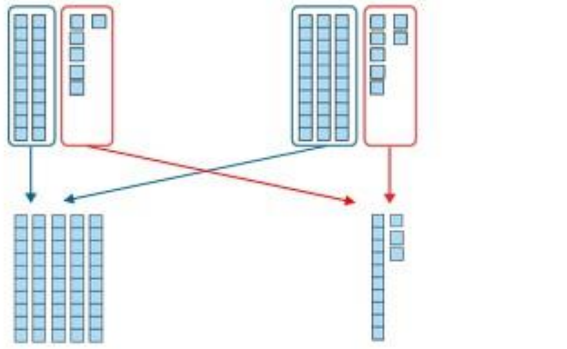
Minuend – Subtrahend = Difference

45 + 23



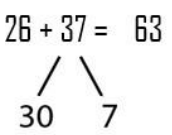
Partition both addends to add efficiently without crossing the tens boundary.

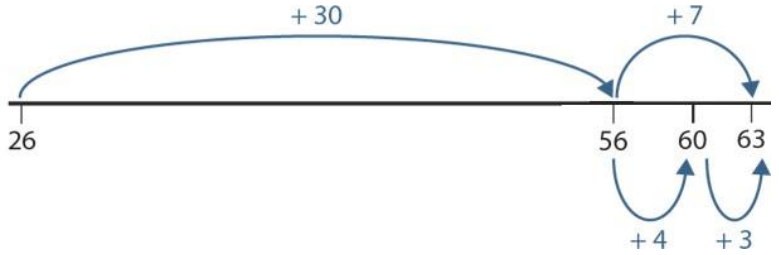
26 + 37 = 63



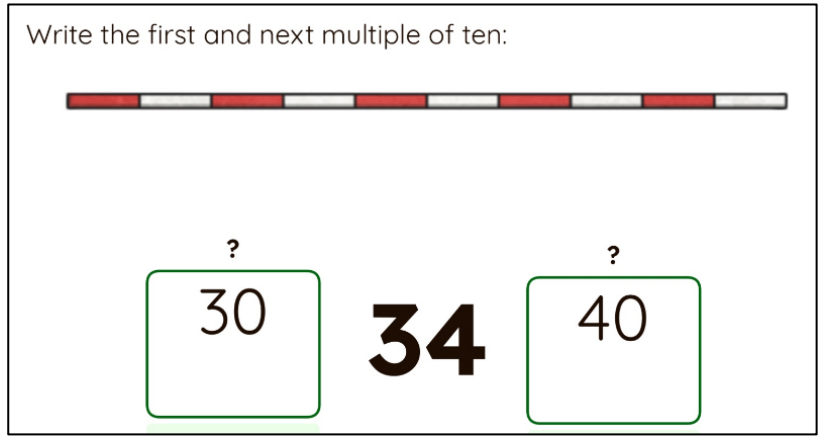
50 + 13 = 63

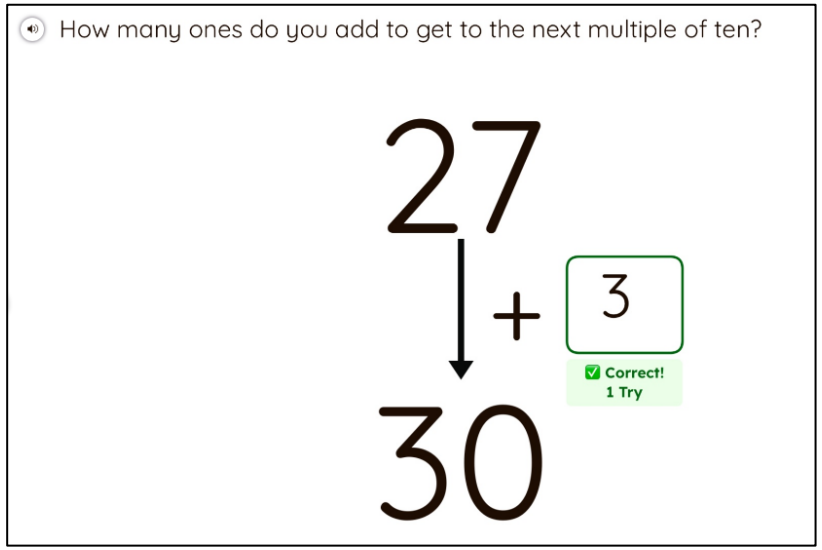
Partition one addend and count on in ones and tens.

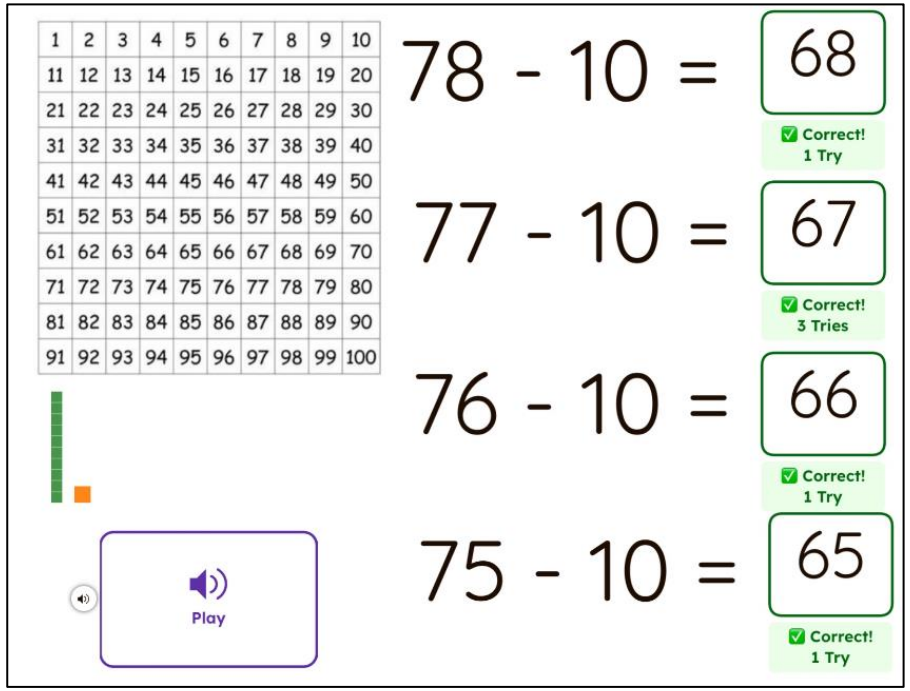


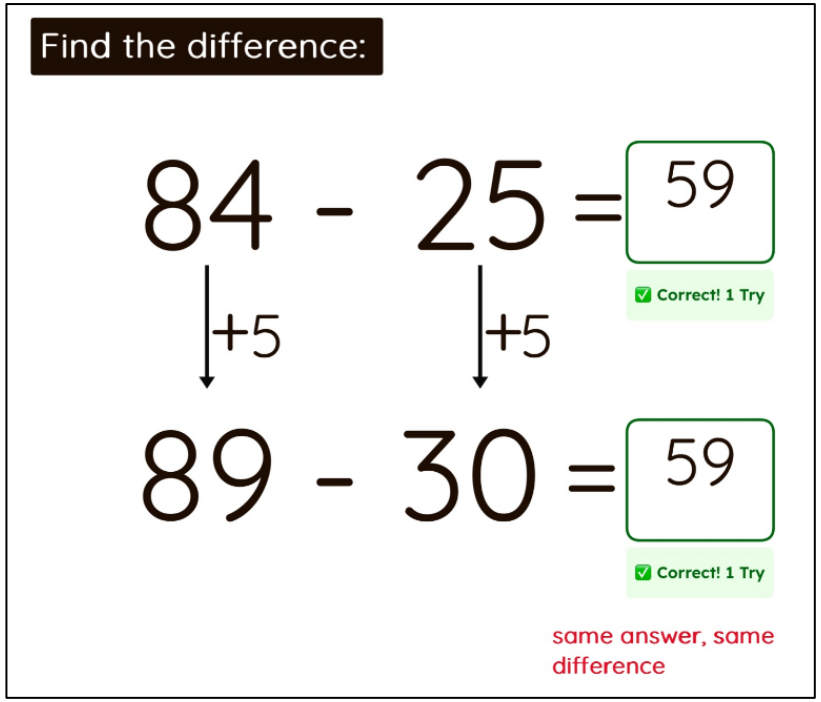


Subtracting two-digit numbers









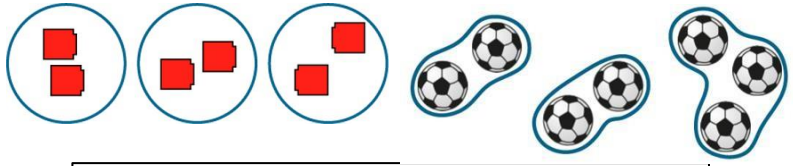
Multiplication and Division

Year 2

Multiplication as Repeated Addition

Vocabulary:

Group Equal Unequal Repeated Addition Multiplication Expression Equation Part Altogether Represents Amount Size



Understand the difference between equal and unequal groups.

The ___have been grouped.

We can represent equal groups as repeated addition.

There are 3 groups of 5.

$5 + 5 + 5$

3×5

$5 + 5 + 5 = 3 \times 5$

We can represent repeated addition using a multiplication expression.

The 3 represents the number of groups.

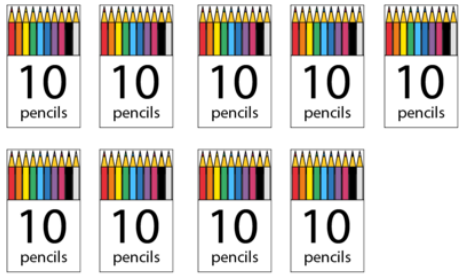
The 5 represents the number of eggs in each group.

15 represents the total number of eggs.

The ___represents the number of groups.

The ___represents the number of ___in each group.

___represents the total number of ___.



9×10

We can skip count in multiples of ___to work out the total amount.

10, 20, 30, 40 … there are 90 pencils altogether.

7×2

Notice how the representations allow the children to see each of the factors (i.e. 10 pencils and 9 packets).

Multiplication and Division

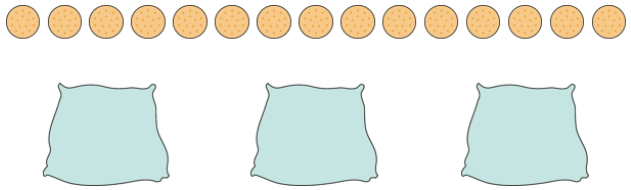
Year 2

Grouping problems: missing factors and division

Vocabulary:

Multiplication Division Factor 'divided by' Represents Skip Counting

Multiplication facts Groups Amount Size



$3 \times 5 = 15$

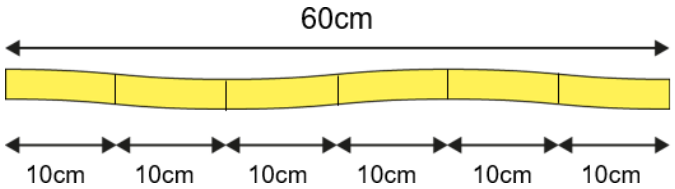
$15 \div 5 = 3$

The 15 represents the number of biscuits.

The 5 represents the number of biscuits in each bag (group).

The 3 represents the number of bag (groups).

We can solve division problems by finding missing factors.



$6 \times 10 = 60$

$60 \div 10 = 6$

The 60cm represents the length of the ribbon.

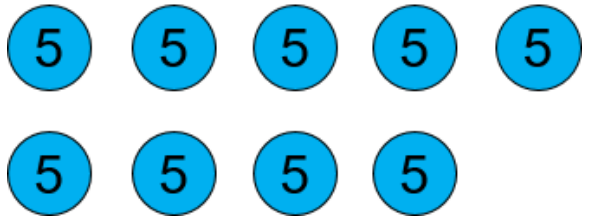
The 10 represents the size of each piece.

The 6 represents the number of pieces we can make.

We can use ÷ to mean 'divided by'

We can use our knowledge of times tables to help solve division problems.

$45 \div 5 = 9$

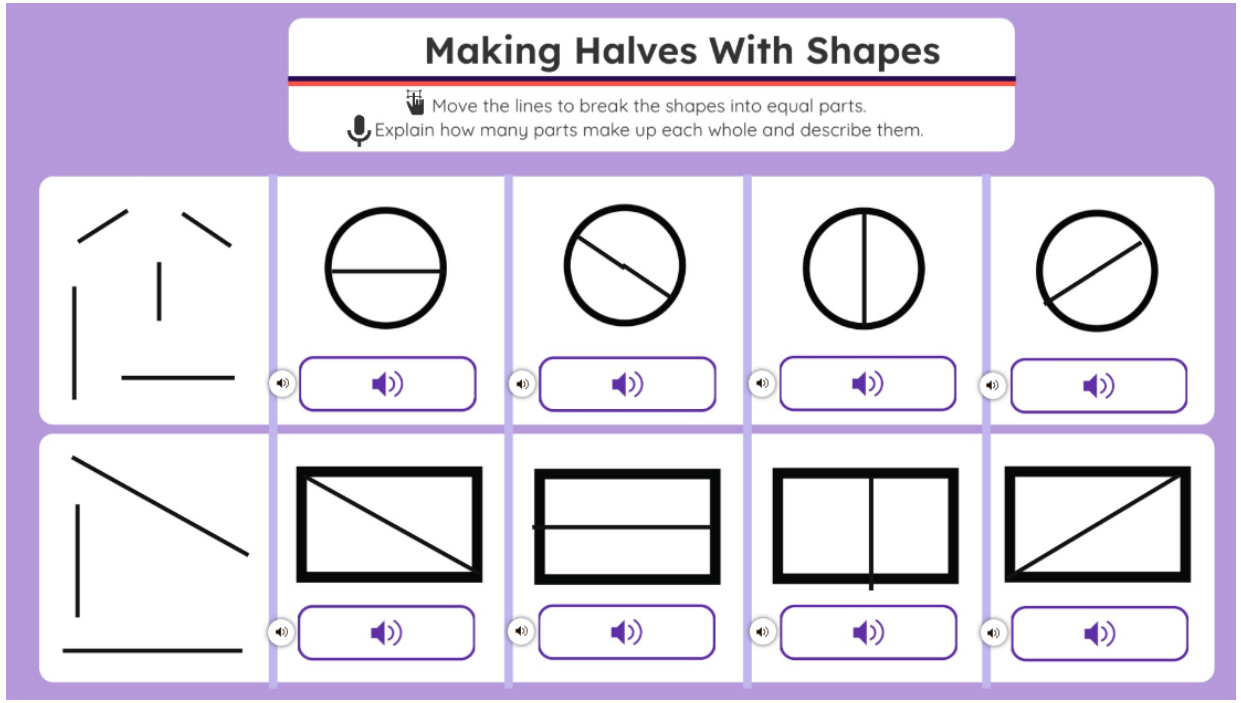


Multiplication and Division

Year 2

Fractions –half, quarter, third

Vocabulary:
part and whole
one half one third one quarter
equal parts



DUO: thirds as three equal parts.

Look at the pictures in the middle of your table. Have they been split into thirds? Prove and show how you know!

Picture 1:

Play

Stem: I know this is split in thirds because there are three equal parts.