Autumn 1 Year 2

Links to prior learning/ objectives:	**Resources:**	**Vocabulary:**
Links to number bonds work in Year 1, addition and subtraction on number lines, place value and number reading/ writing to 20. Finding 1 more and 1 less than a number.	Counters, base 10, numicon, digit cards, number cards to 100, place value grids, place value arrows, number lines, scrabble tiles (words), 100 squares, **Mastery:** (where to find some resources) • Teaching for Mastery • White Rose **New and old documents** • Mastery maths stickers • Nrich (curriculum mapping)	Tens, ones, partition, place value, digit, compare, order, greater than, less than, equal to, numeral, Addition, add, total, sum, altogether Subtraction, take away, minus, calculation, left, facts, more, less, tens boundary Numbers to one hundred Hundreds Partition, recombine Hundred more/less Greater than > Less than < Exchange

Objectives and Teaching

Week 1

Barriers to ARE (misconceptions):

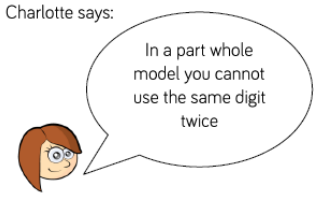
Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols

Recognise the place value of each digit in a two-digit number (tens, ones)

- To know how to partition numbers into tens and ones
- To know how to show the value of each digit in a number

Identify, represent and estimate numbers using different representations, including the number line

- To know how to show a number in different ways
- To know how to estimate a number on a number line
- To know how to identify numbers from different representations

Fluency	**Problem Solving**	**Reasoning**
		 Do you agree with Charlotte? Explain your reasoning.

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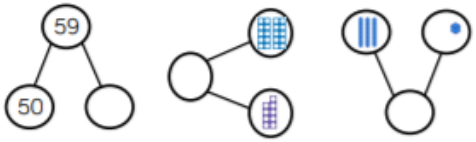
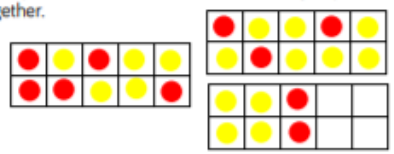
Complete the part whole models.

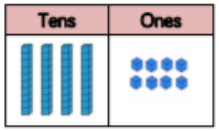


Complete the part whole models.

The ten frames represent lemon and strawberry cupcakes.
Draw a part whole model to show how many cupcakes there are altogether.



What number is represented in the place value chart?



Complete the place value charts using Base 10 and place value counters to represent the number 56.

What number is represented in the place value chart?

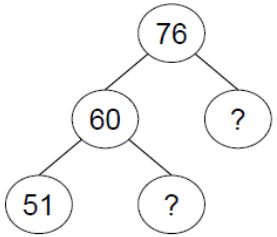
Tens	Ones
9	1

Write two different number sentences for this number.

____ + ____ = ____

____ = ____ + ____

Complete the extended part whole model:



Fill in the missing numbers:

1 ten + 3 ones = 13

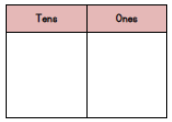
2 tens + ☐ ones = 23

☐ 3 tens + 3 ones = ☐

tens + 3 ones = 43

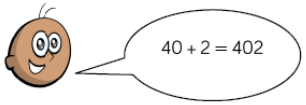
What would the next number in the pattern be?

How many two digit numbers can you make that have the same number of tens and ones?



Place 36 on each of the number lines below:

Joel thinks that:

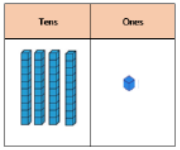


Explain the mistake he has made.

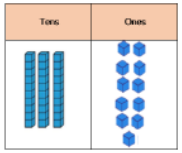
Can you show the correct answer using concrete resources?

Are these two place value charts of equal value?

A



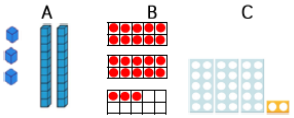
B



What is the same?

What is different?

One of these images <u>does not</u> show 23.
Can you explain the mistake?



True or False?

The arrow on the line below is pointing to 70.

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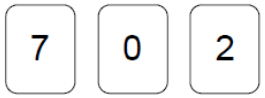
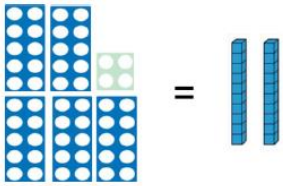
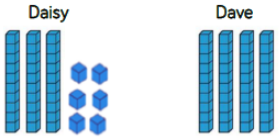
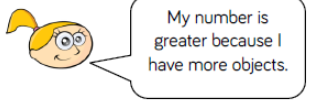
	How many two digit numbers can you make using the digit cards?  What is the largest number? Prove it by using concrete resources. What is the smallest number? Prove it by using concrete resources. Why can't the 0 be used as a tens number?	
Week 2 **Barriers to ARE (misconceptions):** Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols	Compare and order numbers from 0 up to 100; use <, > and = signs • To know how to compare groups of objects • To know how to compare numbers • To know how to order numbers to 100 Use place value and number facts to solve problems. • To develop the skill of solving problems using knowledge of place value.	
Fluency	**Problem Solving** Use Base 10 to make A and B equal:  How could you make B more than A? Here are some digit cards. Meg and Sam each use two of the cards to make a number. What is the difference between their two numbers? 	**Reasoning** Daisy and Dave are comparing numbers that they have made.  Daisy  Is Daisy correct? Explain your answer.

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Count and write the number of cars in the car park.

There are ..... cars in the car park.

What numbers are represented below?
Write your answer in numerals and words.

Match the numerals to the words.

17	48	38	70
Thirty eight	Seventy	Forty eight	Seventeen

How many different numbers can go in the box?

13 < ☐ < 20

Fill in the missing numbers using 1,2,4 and 7

	<	< 8
∧	∨	∨
5 <	6 >	3
∨	∧	∨
	< 9 >	

Bill has written a list of 2 digit numbers.

The digits of each number add up to 5.

None of the digits are 0.

Can you find all the numbers Bill could have written?

Write the numbers in order from smallest to largest.

True or False:

One ten and twelve ones is bigger than two tens.

Explain how you know.

If you ordered the numbers below, which would be the fourth?

Explain how you ordered them.

33	53	37
29	34	43

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Complete the statements using **more than**, **less than** or **equal to**.

42 is _____ 46

81 is _____ 60 + 4

30 + 8 is _____ thirty eight

Complete the number sentences.

4 tens and 9 ones > _____

_____ < 70 + 5

eight tens = _____

Put <, > or = in each circle.

28 ◯ 30

90 ◯ 70 + 28

30 + 23 ◯ 40 + 13

20 + 14 ◯ 24

Week 3

Barriers to ARE (misconceptions):

Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols

Read and write numbers to at least 100 in numerals and in words

- To develop the skill of reading numbers to 100
- To develop the skill of writing numbers to 100
- To develop the skill of reading and writing numbers in words

Fluency

Problem Solving

What numbers are represented below?
Write your answer in numerals and words.

Use the digit cards 2, 3 and 4.
How many different numbers can you make? You can use the digit cards more than once.
Write the numbers in words.

Reasoning

Which numbers sound similar?
How are 17 and 70 different? Can you show me?

Dan has written the number forty four as 40 4.
Is he correct?
Explain how you know.

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Here is part of a bead string.

Complete the sentence.

There are ..... tens and ..... ones.

The number is .....

Represent 45 on a bead string.

Match the number to the correct representation.

Three tens and four ones

Twenty five

33

Represent 67 in **three different** ways?

Each bag contains 10 cookies.

How many cookies are there altogether?

Write your answers in numerals and words.

What strategy did you use?

Did your partner use a different method?

What is the best strategy to use

Week 4

Barriers to ARE (misconceptions):

Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

- To know how to find fact families to 20 using those to 10
- To develop the skill of recalling addition facts to 20
- To know how to find related subtraction facts to 20
- To know how to derive facts to 100 from calculations I know

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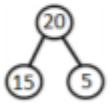
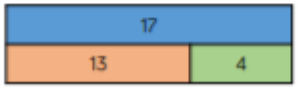
Fluency

Using concrete apparatus, can you talk about the relationships between the different flowers?

One relationship shown by this part whole model is
15 + 5 = 20.
Can you write all associated fact facts in the sentences below?

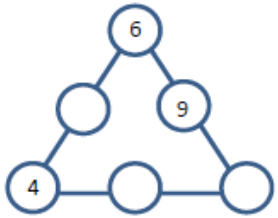


Look at the bar model below. Can you write all of the sentences in the fact family?



Problem Solving

Fill in the ◯ so the sum of the numbers on each line is 20



Can you complete the boxes so each row and column adds up to 100?

20		50
30	40	

Reasoning

Continue the pattern.
90 = 100 – 10
80 = 100 – 20

How is this pattern the same and different as this one?
9 = 10 – 1
8 = 10 – 2

Kim says
' If I know 9 + 1 = 10, I can work out 90 + ____ = 100'
Find the missing number and explain how Kim knows.

Week 5

Barriers to ARE (misconceptions):

Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
a two-digit number and ones

- To know how add ones using concrete objects
- To know how to add ones.
- To how to subtract ones.

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

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a two-digit number and tens

- To know how add tens using concrete objects and pictorial representations.
- To know how to subtract tens using concrete objects and pictorial representations.
- To know how to add and subtract tens.

Fluency

Continue the number track by adding 20 each time.

23				

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones

$$\begin{array}{r} 23 \\ +\ 40 \\ \hline \\ \hline \end{array}$$

Tens	Ones

$$\begin{array}{r} 56 \\ -\ 30 \\ \hline \\ \hline \end{array}$$

Problem Solving

Choose one of these symbols

<, > or =

to make the number sentences correct.

24 + 5 ◯ 24 + 6

18 + 3 ◯ 17 + 4

33 + 15 ◯ 40 + 8

Reasoning

True or False?

When you add two odd numbers together you always get an even number.

Convince me.

- Sam says

I am thinking of a two digit number, if I add ones to it, I will only need to change the ones digit.

Is he right?
Explain your answer.

Week 6

Barriers to ARE (misconceptions):

Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line understanding, understanding of vocabulary/ symbols

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

two-digit numbers

- To know how add two-digit numbers and one-digit numbers.
- To know how subtract one-digit numbers from two-digit numbers.
- To know how to add two two-digit numbers
- To know how to subtract two two-digit numbers
- To develop the skill of adding and subtracting two two-digit numbers.

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Fluency

Find the sum of 34 and 23

64 + 12 =

4 ones + 2 ones =
6 tens + 1 ten =
..... tens + ... ones =

Hamza has 41 sweets.

Jemima has 55 sweets.

How many sweets do they have altogether?

64 + 17 =

4 ones + 7 ones =
6 tens + 1 ten =
..... tens + ... ones =

$$\begin{array}{r} 64 \\ +\ 17 \\ \hline 11 \\ +\ 70 \\ \hline 81 \end{array}$$

Find the sum of 35 and 26

- Partition both the numbers.
- Add together the ones. Have we got 10 ones?
- Exchange 10 ones for 1 ten.
- How many ones do we have?
- Add together the tens. How many do we have altogether?

Problem Solving

Owen has 45 football cards, he gives 20 to his friend Jack.
How many does he have left?
Use the bar model to help you.

Razza and Gina have the same number of stickers.

- Razza gives 15 stickers away.
- Gina gives 32 stickers away.

How many more stickers than Gina does Razza have now?

Here is part of a number square.

5	6	7	8	9
15	16	17		
25				

Add together the two numbers that would be in the shaded squares.

Reasoning

Always, sometimes, never
When you add or subtract tens to a two digit number, only the tens column changes.

- What digits could go in the boxes?

□2 + □5 = 87

Week 7

Barriers to ARE (misconceptions):

Number recognition, place value understanding, visual representations of numbers, counting forwards and backwards skills, number line

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
adding three one-digit numbers

- To know how add 3 one-digit numbers using concrete objects
- To know how to add 3 one-digit numbers using pictorial representations
- To know how to add 3 one-digit numbers mentally

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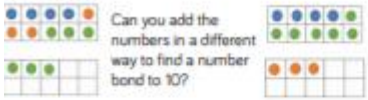
understanding, understanding of vocabulary/ symbols

Fluency

Use ten frames and counters to add the numbers
4 + 3 + 6



Can you add the numbers in a different way to find a number bond to 10?

4 + 6 = 10

10 + 3 = 13

Find the totals of each row and column.

5	4	2	
3	7	8	
5	7	3	

Use < > or = to compare the number sentences.

5 + 4 + 6 ◯ 6 + 5 + 4 7 + 3 + 8 ◯ 7 + 7 + 3

9 + 2 + 5 ◯ 8 + 3 + 5 8 + 4 + 2 ◯ 2 + 5 + 8

Problem Solving

These items are sold in a shop.

Ray buys three items.

Two of them were the same item.

He spent £23

Which items does he buy?

Reasoning

Take 3 consecutive numbers that are neighbours when you count.
Eg 4, 5, 6.
Add them together, what do you notice?
Choose 3 more neighbour numbers up to 10. See if there is a pattern as you add them.