Inspiring children to succeed

INSPIRE MATHS

Inspire Maths Curriculum Meeting

Fulwell Infant School Academy

Friday 7th November 2020

OXFORD

This parents' evening will explain:

- How maths will be taught
- Why the children will not be in sets or ability groups
- How the textbooks will be used in class
- How the part-whole model works
- How the bar model works
- How you can help your child at home
- Calculation strategies
- Examples of children's work

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What is *Inspire Maths*?

- We know that Singapore is consistently ranked in the top three spots in international tests.
- Schools in the UK are now investing in a ‘mastery’ approach to enable all children of different learning styles to be accommodated.
- It is a mastery curriculum with an emphasis on deep conceptual understanding and problem solving.
- The spiral curriculum builds upon skills and concepts chronologically. It is the idea that a concept is introduced at an early age and then built upon.
- The programme is build around the CPA approach.

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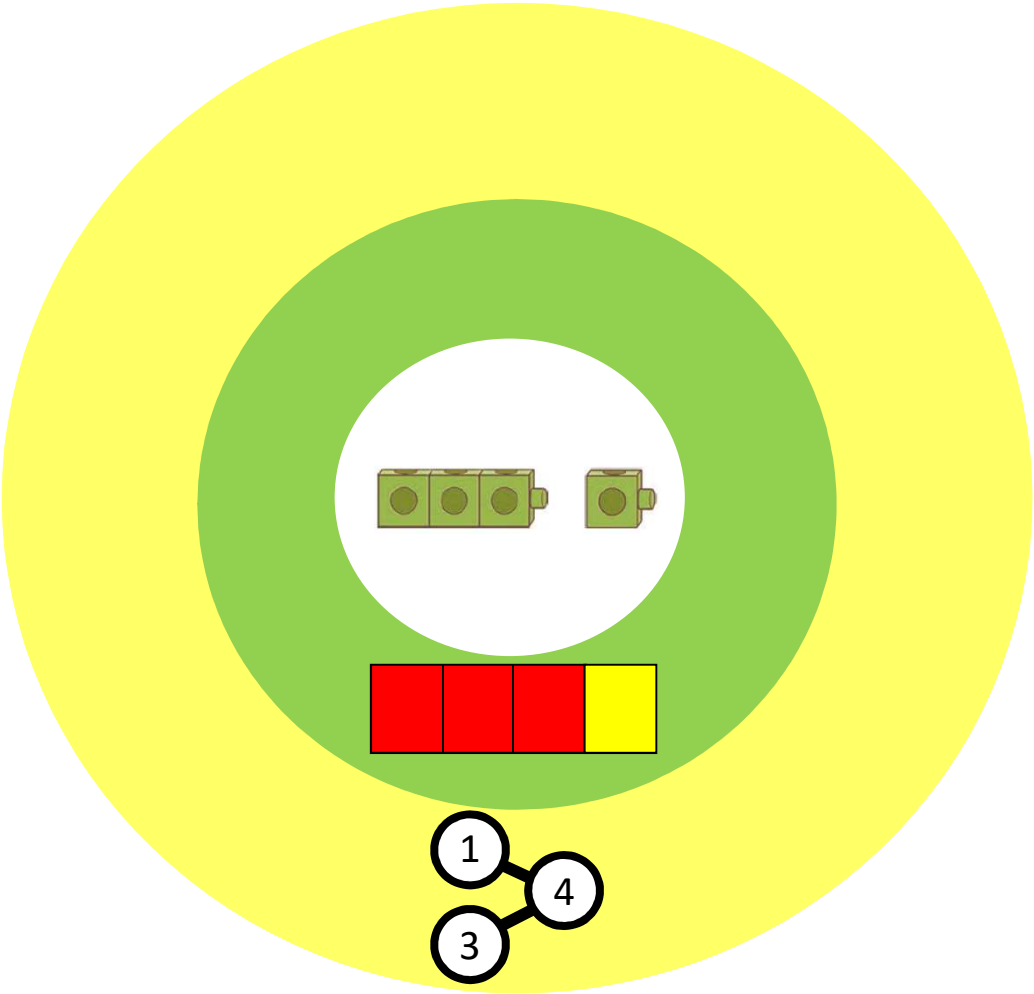
The CPA approach



Concrete:

resources such as cubes, counters and shapes

Pictorial:

pictures, drawings

Abstract:

numbers and symbols

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Inspire Maths and the National Curriculum

- Initially in Year 1 the implementation of Inspire Maths is tricky. Children are getting used to sitting in their seats for a day and understanding that they can't just go an choose! Incredibly, the children are now trained and confident in using their very own textbook, turning to different page numbers and completing challenging maths with confidence.
- Inspire maths is structured in a way to ensure greater depth and understanding from the early stages in Year 1 so that children can apply this knowledge to trickier concepts when they reach Year 2.
- At the beginning of Year 1, children concentrate on counting to ten, spelling numbers words and putting these numbers into a problem context. When this is embedded, they can then automatically apply this knowledge to numbers to 20 and so forth. This will cover numbers to 100 by the end of Year 1.
- Moving to Year 2, children start their learning by looking at 3-digit numbers and the importance of place value (Hundreds, Tens and Ones). Year 2 children are coping immensely well with this and their skills continue to grow daily.

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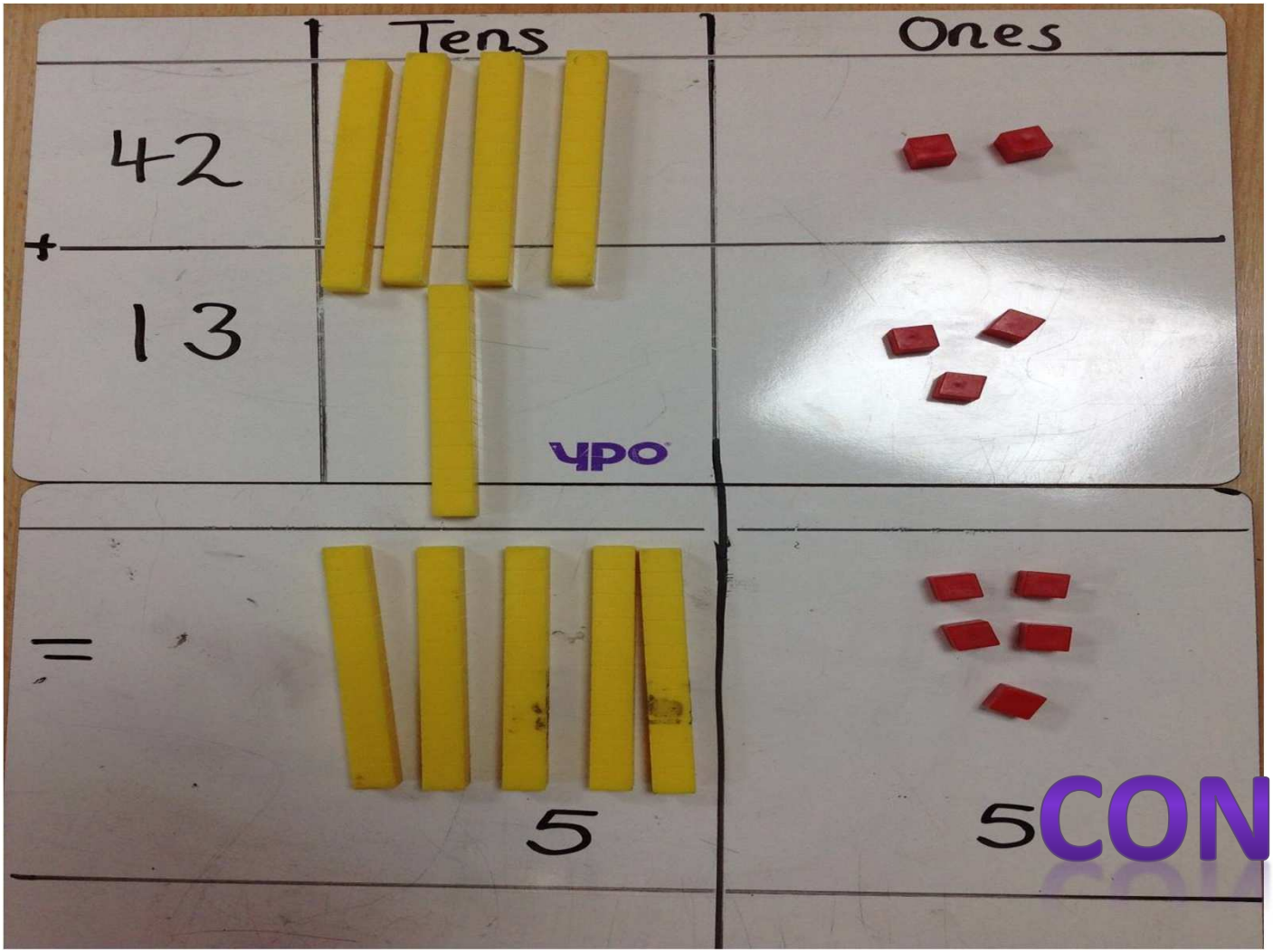
How the children use CPA…



The children can visually see the start of column addition. Using the Dienes equipment, the children can manipulate the numbers and have a deeper understanding to what each column means.

CONCRETE

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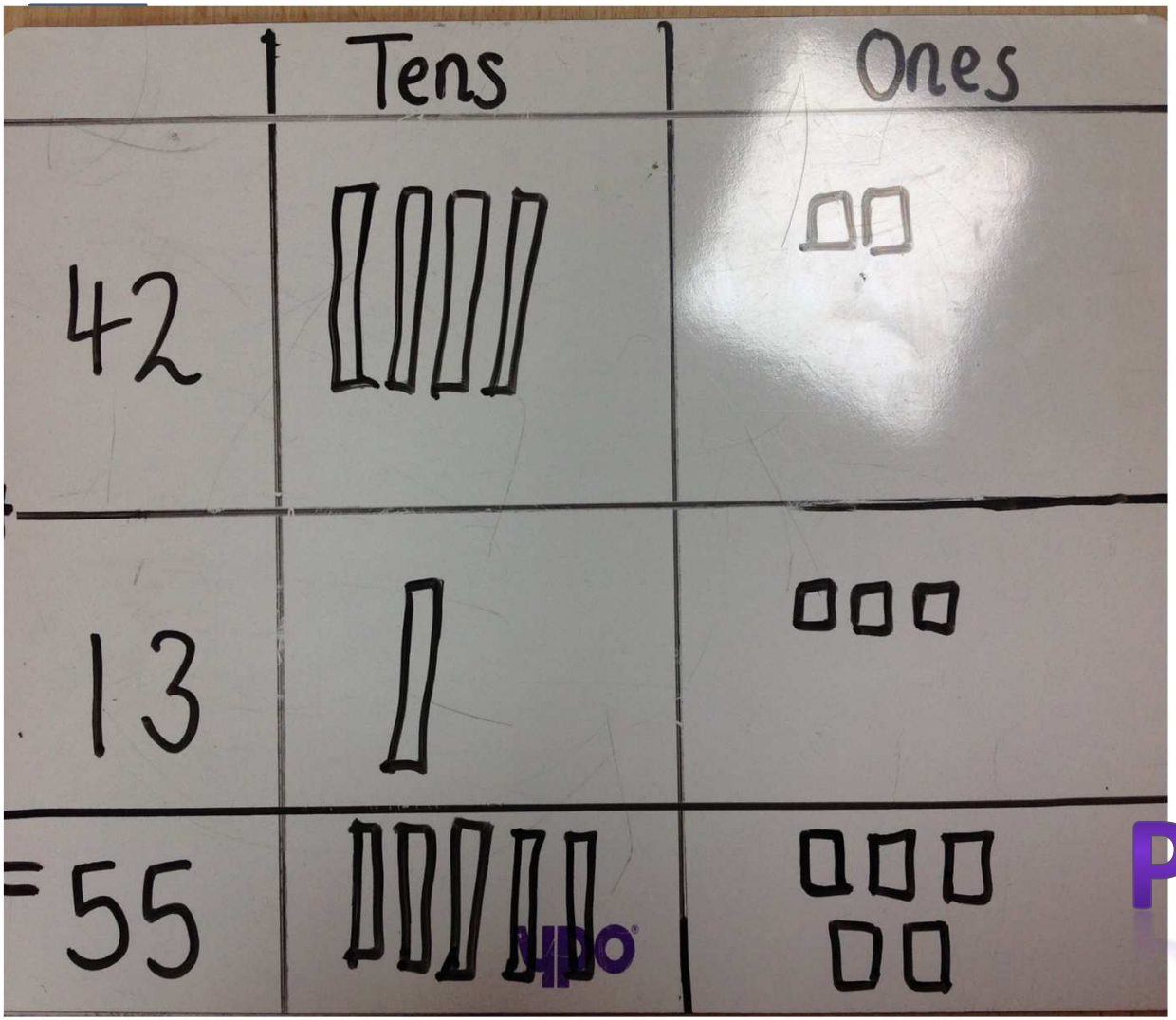
How the children use CPA…



- Here the children are showing they understand the value of each digit in a 2-digit number and are able to represent this pictorially.

PICTORIAL

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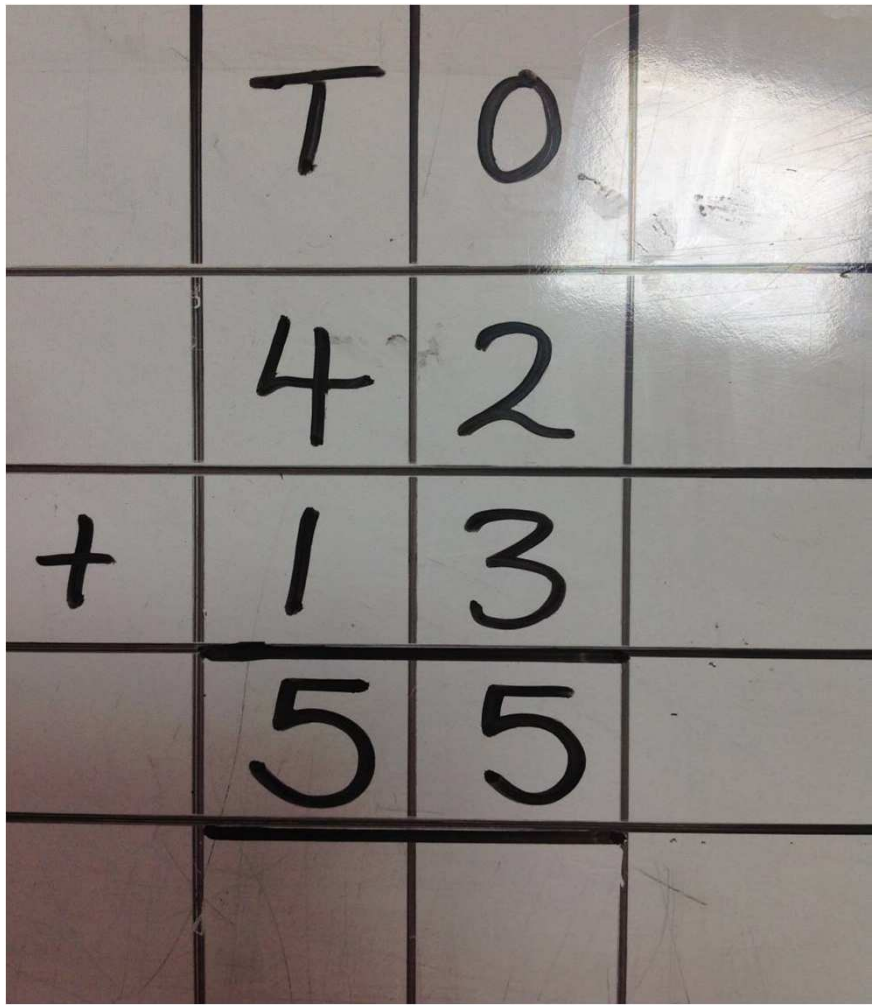
How the children use CPA…



- Alongside this, the abstract method of column addition is shown and supports and builds upon the steps the children take to record formally.

ABSTRACT

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Textbooks

Your child will work from a Pupil Textbook, as well as from a Practice Book and Assessment Book.

Children are now very independent when using their individual books and are able to follow the format that the book follows.

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A mastery curriculum

Key features:

- The curriculum is highly-structured and each topic follows on from another and allows chance to consolidate previous learning.
- Each maths area or topic is covered in depth for the year group once, and is not repeated within the same year.
- Children are not grouped or put into ability sets. This is to allow all children to reach and access the same objective using Concrete, Pictorial or Abstract resources to help them arrive to an answer.
- At times, children may be paired with a partner based on reading levels. This is not all the time and usually happens when working practically. This allows children to work together and assist each other's learning.
- A child's maths ability may be very different to their reading ability and we want to ensure that this is not hindering their achievements.

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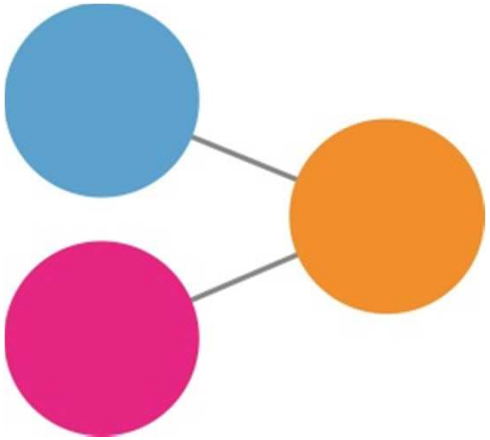
The part-whole model



Here is the part-whole model used in *Inspire Maths*. It works on the principle that if you know two values out of three in a calculation, you can calculate the missing value using addition or subtraction.

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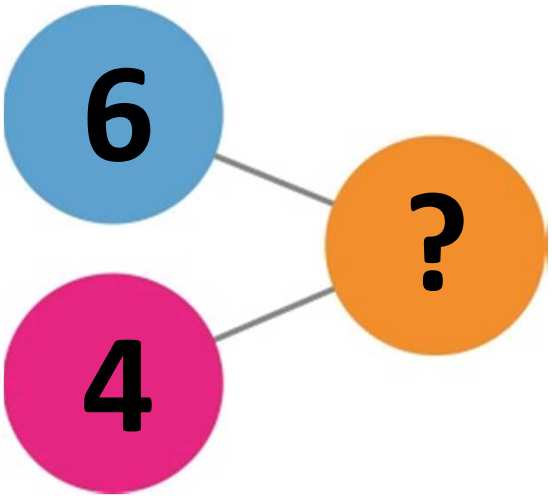
The part-whole model



6 and 4 more makes ?

The two parts (6 and 4) combine to make the whole (10).

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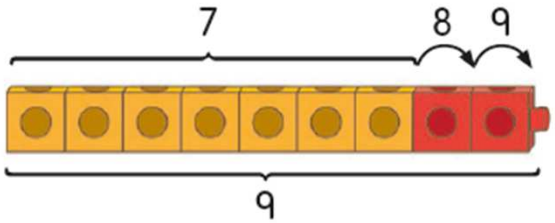
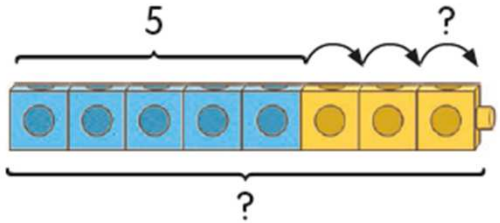
Introducing the bar model

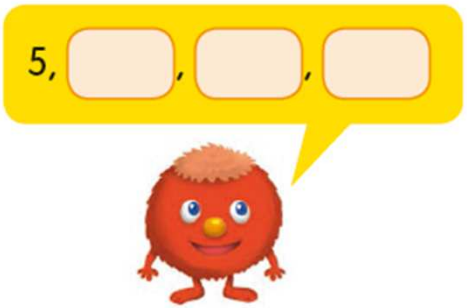
4 What is 2 more than 7?



2 more than 7 is 9.

5 What is 3 more than 5?





3 more than 5 is ☐.

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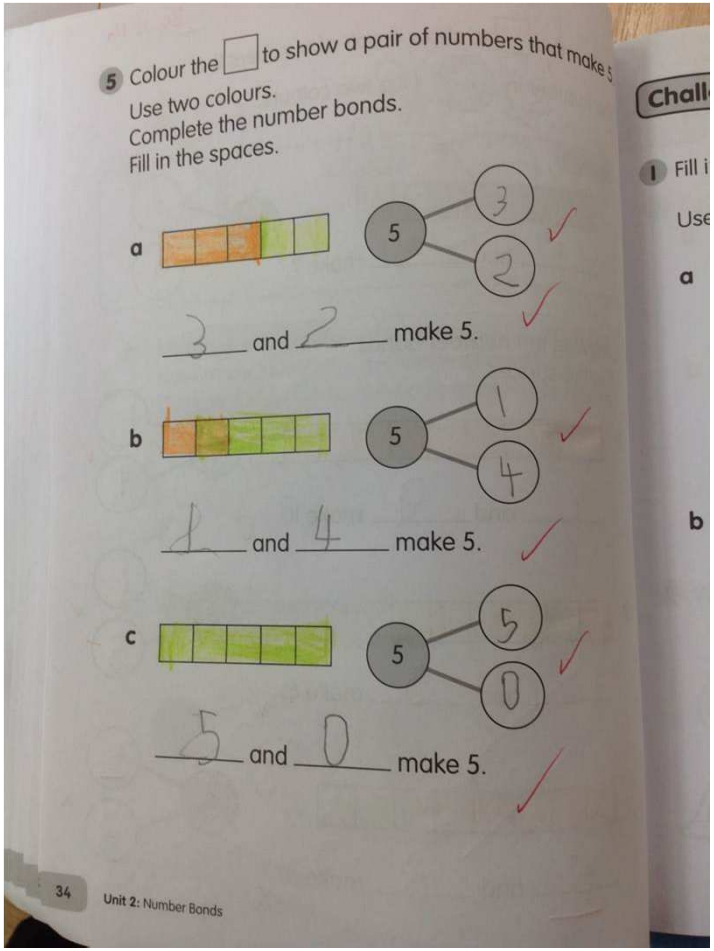
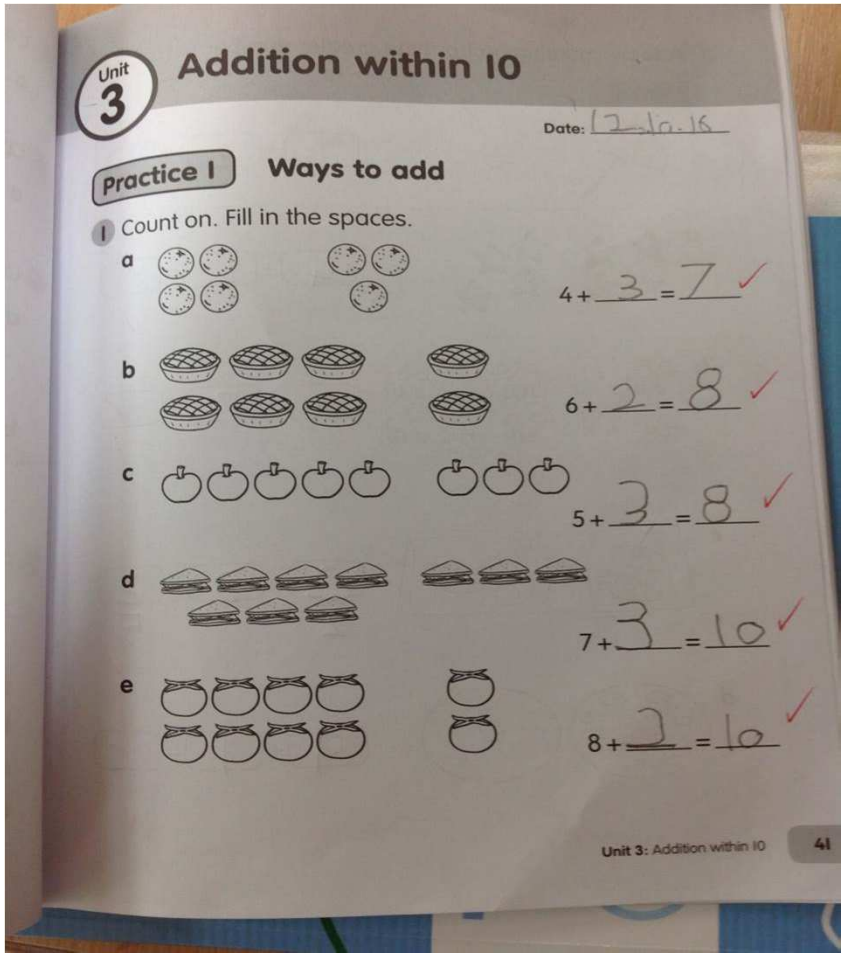
Addition and Subtraction – Year 1



Part- Whole Model



Pictorial Representation moving to abstract

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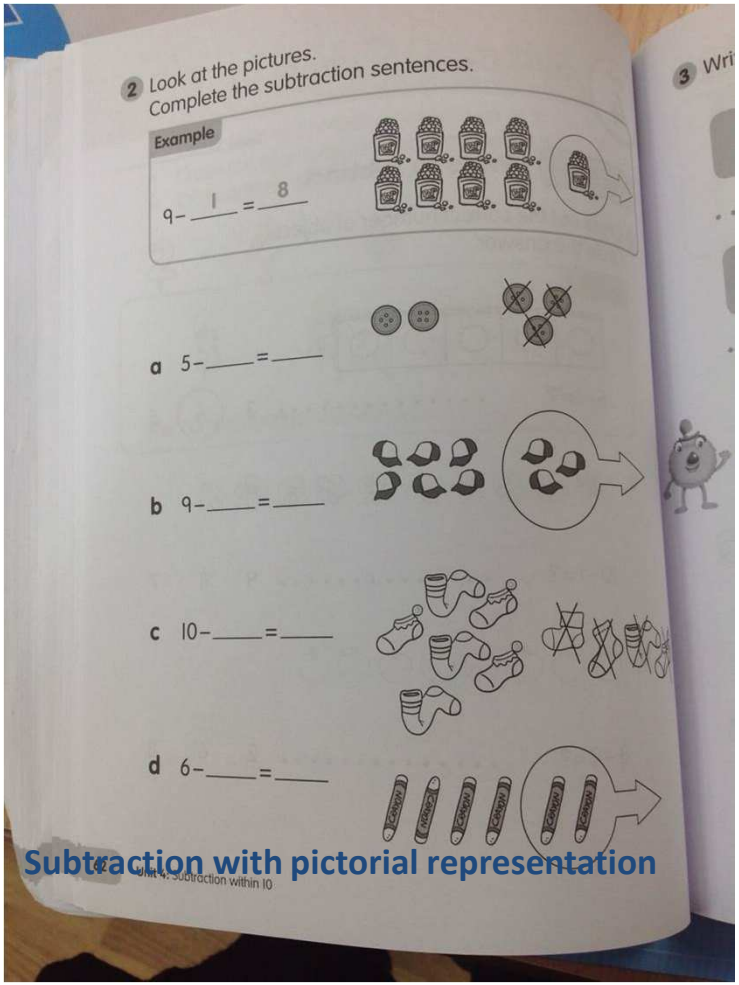
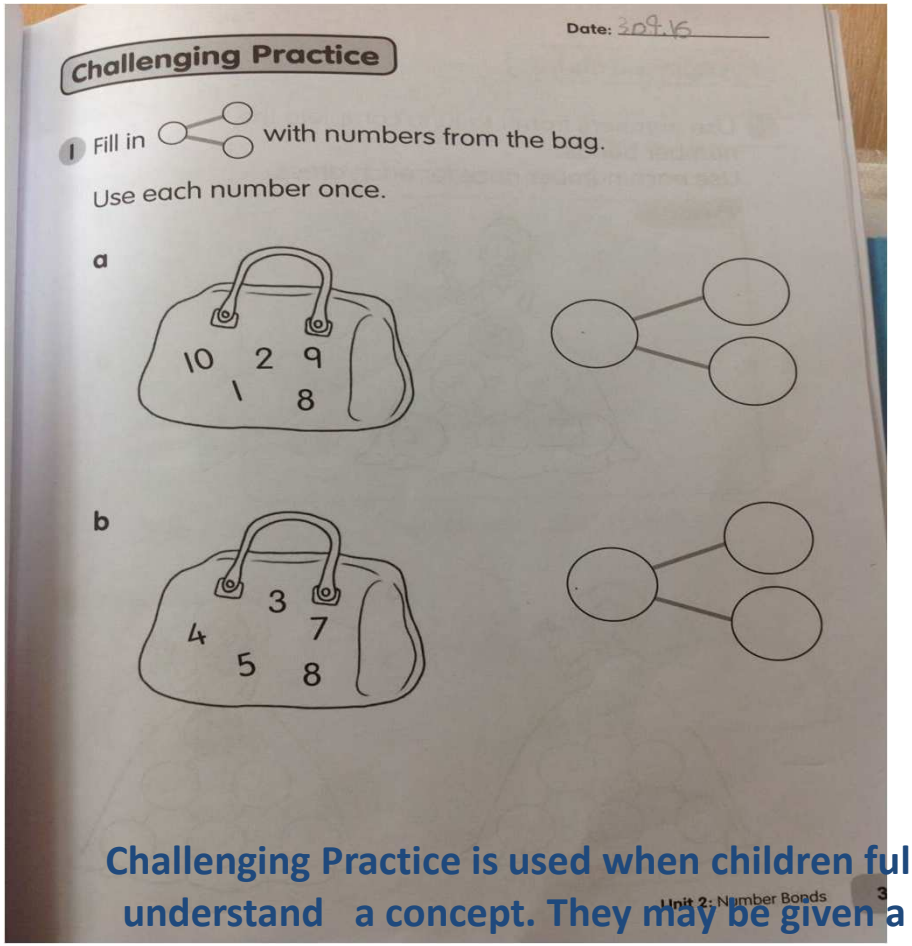
Addition and Subtraction – Year 1



Subtraction with pictorial representation



Challenging Practice is used when children fully understand a concept. They may be given a greater depth challenge which further enhances their learning.

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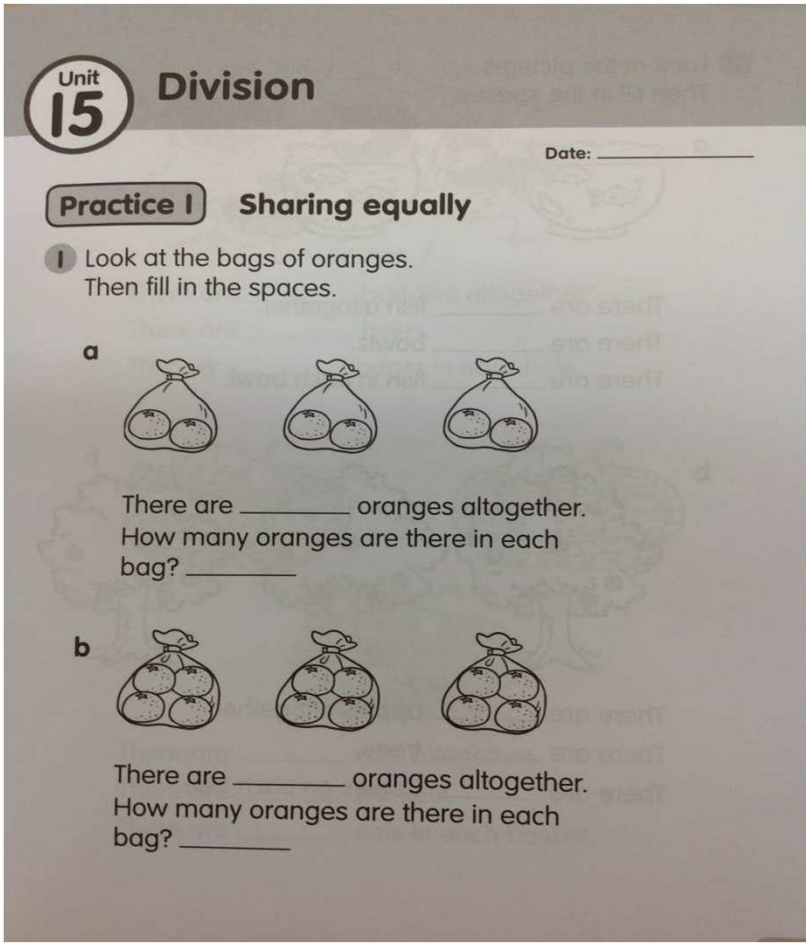
Multiplication and Division – Year 1



Unit 15 **Division**

Date: _____

Practice 1 **Sharing equally**

1 Look at the bags of oranges.
Then fill in the spaces.

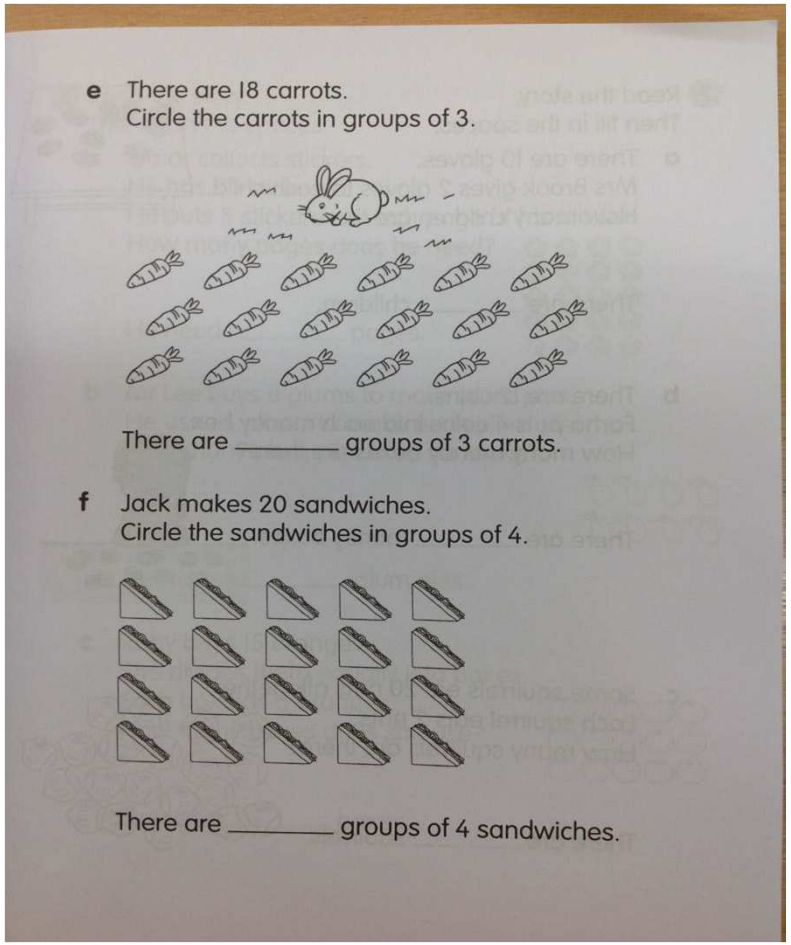
a

There are _____ oranges altogether.
How many oranges are there in each bag? _____

b

There are _____ oranges altogether.
How many oranges are there in each bag? _____

Sharing amounts with reading expectations



e There are 18 carrots.
Circle the carrots in groups of 3.

There are _____ groups of 3 carrots.

f Jack makes 20 sandwiches.
Circle the sandwiches in groups of 4.

There are _____ groups of 4 sandwiches.

Grouping amounts

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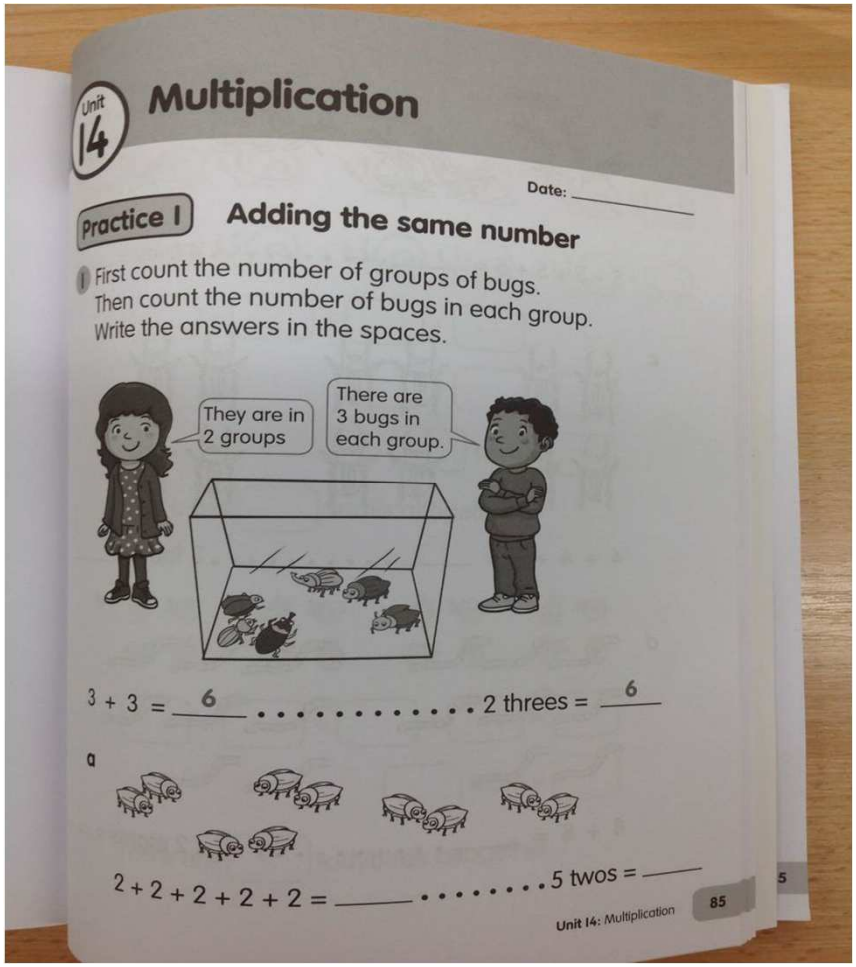
Multiplication and Division – Year 1



Unit 14 Multiplication

Date: _____

Practice 1 Adding the same number

1 First count the number of groups of bugs.
Then count the number of bugs in each group.
Write the answers in the spaces.

They are in 2 groups

There are 3 bugs in each group.

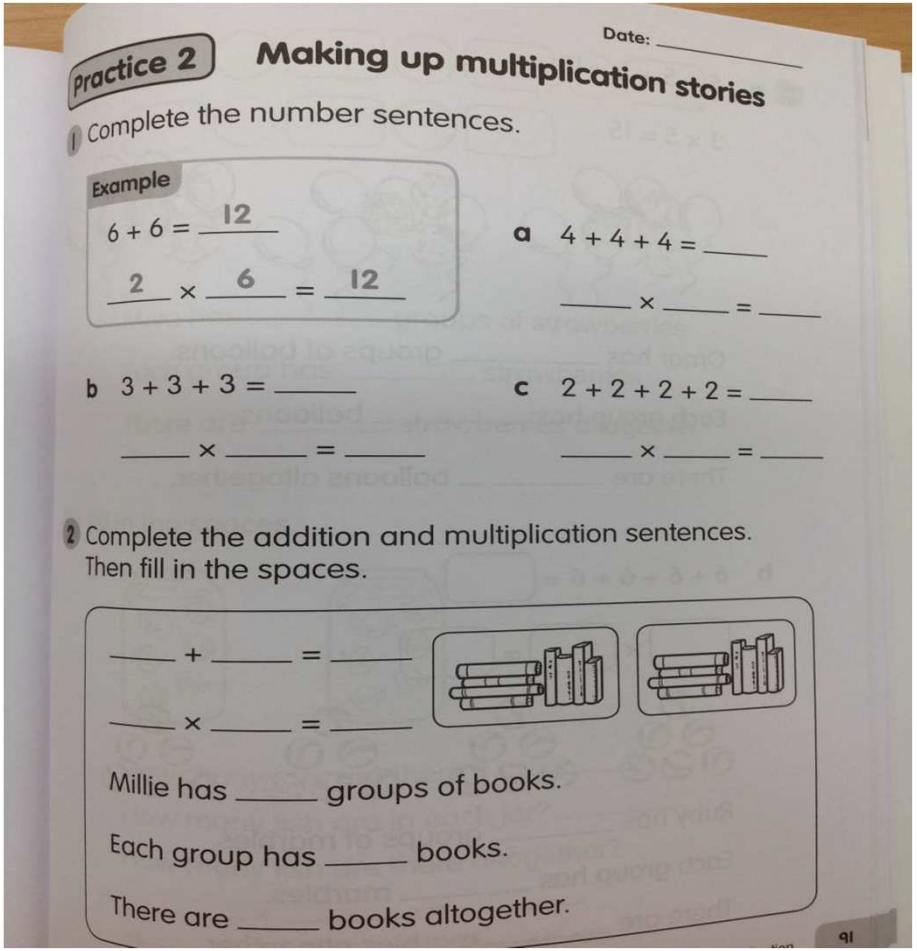
3 + 3 = 6 . . . . . 2 threes = 6

a

2 + 2 + 2 + 2 + 2 = _____ . . . . . 5 twos = _____

Unit 14: Multiplication 85

Repeated addition



Date: _____

Practice 2 Making up multiplication stories

1 Complete the number sentences.

Example

6 + 6 = 12

2 × 6 = 12

a 4 + 4 + 4 = _____

_____ × _____ = _____

b 3 + 3 + 3 = _____

_____ × _____ = _____

c 2 + 2 + 2 + 2 = _____

_____ × _____ = _____

2 Complete the addition and multiplication sentences.
Then fill in the spaces.

_____ + _____ = _____

_____ × _____ = _____

Millie has _____ groups of books.

Each group has _____ books.

There are _____ books altogether.

Starting to use the multiplication sign

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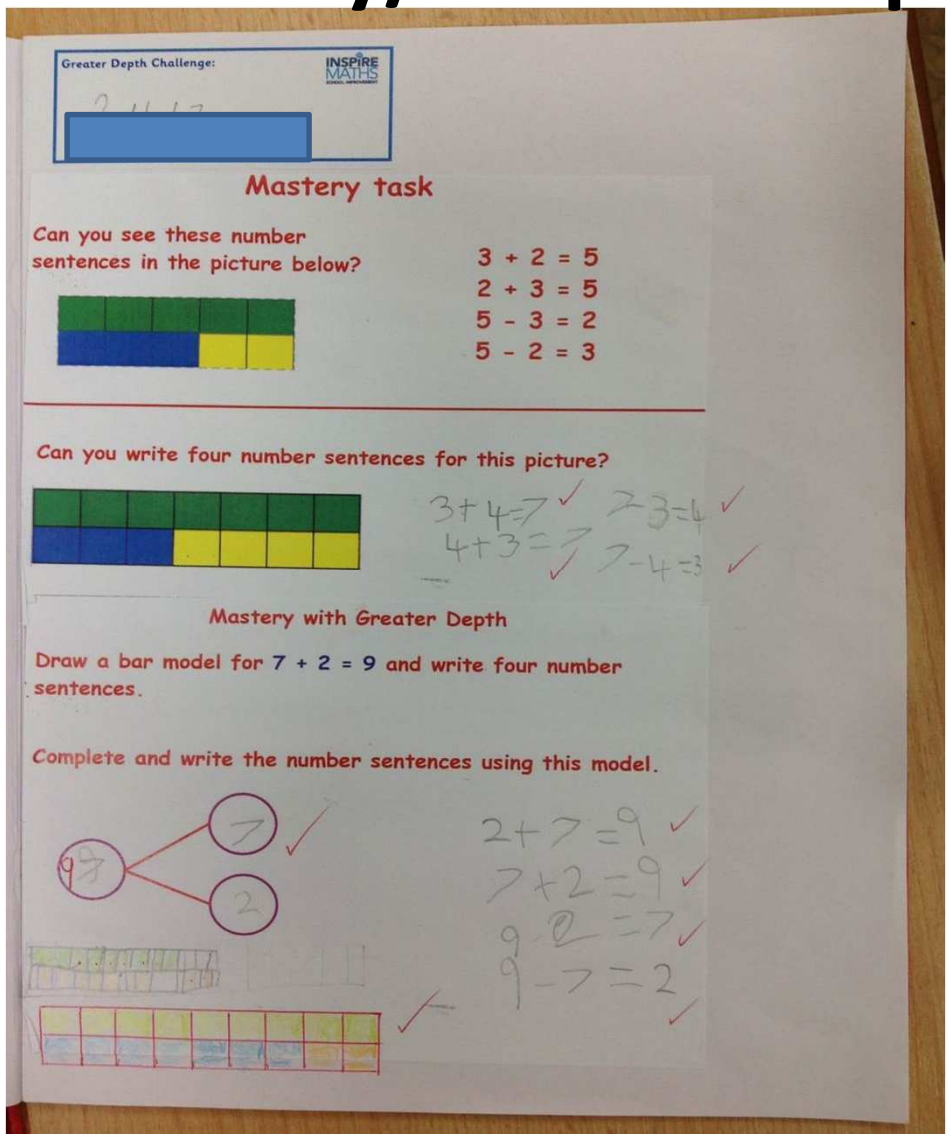
Mastery/ Greater Depth Challenges



Children who have a solid understanding of a concept will immediately be challenged within a lesson. This will give them a chance to use their new knowledge to problem solve and reason.

In the textbooks, children will also cover a range of shape, space and measure units.

- Time
- Length
- Weight
- Shape
- Capacity
- Pattern
- Problem solving

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Intervention

- At times, not all children may grasp a concept the first time and may need some extra support to feel confident to continue their learning.
- If this does happen, we have allocated time in our timetable to support children and re-discuss a concept. At Fulwell Infants, we are very lucky to have skilled support staff in each classroom. They will usually work in small groups with whoever needs it that day. We also might prepare the children for the next day's learning if we know they might not be so confident.
- This may involve children working with apparatus so they can visually see what is happening, drawing pictures or going over the formal method again. As we know, there are many different learning styles and Inspire Maths accommodates for all, which is why it is so successful and allows all children to achieve.

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Year 1 Maths Assessment Targets

Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions	Measurement	Geometry
I can count to and across 100, forwards and backwards, beginning from any given number.	I can read, write and interpret mathematical statements with +, - and = signs.	I can double single-digit numbers.	I can recognise, find and name a half of a shape.	I can compare, describe and solve problems involving measures.	I can use mathematical vocabulary to describe position, direction and movement.
I can count to 100 in multiples of 5.	I can add and subtract two-digit numbers to 20.	I can complete simple number patterns.	I can recognise, find and name a quarter of an object.	I can measure and begin to record lengths and heights.	I can identify and describe the properties of 2D shapes.
I can read and write numbers from 1 to 20 in digits and words.	I can solve one step problems that involve addition.	I can count in twos, fives and tens.	I can solve simple half and quarter problems.	I can measure and begin to record time (hours, minutes, seconds).	I can identify 2D shapes on the surface of 3D shapes.
I can count, read and write numbers to 100.	I can represent and use number bonds to 20.	I can solve one-step problems involving multiplication.	I can recognise, find and name a quarter of a shape.	I can tell the time to the hour and half past the hour.	I can compare and sort common 2D and 3D shapes.
I can count to 100 in multiples of 2.	I can show and use subtraction facts to 20.	I can show multiplication using arrays.	I can recognise, find and name a half of an object.	I recognise and know the value of different denominations of coins and	I can identify lines of symmetry in 2D shapes.
I can identify one more and one less of a given number.	I can solve one-step problems involving subtraction.	I can solve one-step problems involving division.	I can recognise, find and name a quarter of a quantity.	I can measure and begin to record capacity and volume.	I can order and arrange combinations of objects in patterns.
			I can find, name and write fractions of a set of objects.	I recognise and use language relating to dates, including days of the week,	I can identify and describe the properties of 3D shapes.

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How can I help my child?

You can help your child by finding and talking about maths in everyday situations. For example, a shopping trip is rich in mathematical opportunities, such as:

- Spending money, calculating change and working out which offers give the best value for money.
- Empty packaging can provide your child will immediate access to 3D shapes and nets.
- Counting in 2's, 5's and 10's to later support multiplication.
- Asking what comes before and after a given number so children recognise place value in 2-digit numbers.

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