Early Maths

Welcome

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BLOWERS GREEN PRIMARY Dudley
KATES HILL PRIMARY Dudley
BEACON HILL ACADEMY Sedgley
PEGASUS ACADEMY Dudley
ST JAMES ACADEMY Dudley
THE LINK ACADEMY Netherton

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Aims

- To explain the **Early Learning Goals**
- Look at examples of the **expectations for maths**
- To explain **how we teach maths** in Reception and KS1
- Share some of our **resources**
- To show how you can **help at home**

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Learning through play

Development Matters
7 areas of learning & development

<u>3 prime areas</u>
Personal, Social & Emotional Development (PSED)
Communication & Language (CL)
Physical Development (PD)

<u>4 specific areas</u>
Literacy (L)
Mathematics (M)
Understanding the World (UW)
Expressive Arts & Design (EAD)

Department for Education

Early years foundation stage statutory framework

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Maths in the foundation stage

- Number rhymes!

- How many different number songs
- and rhymes do you know?

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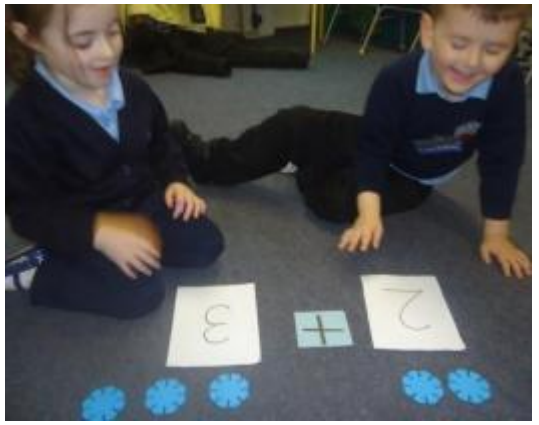
Maths in the foundation stage

Through daily maths lessons, adult led activities, structured play and child-initiated learning.



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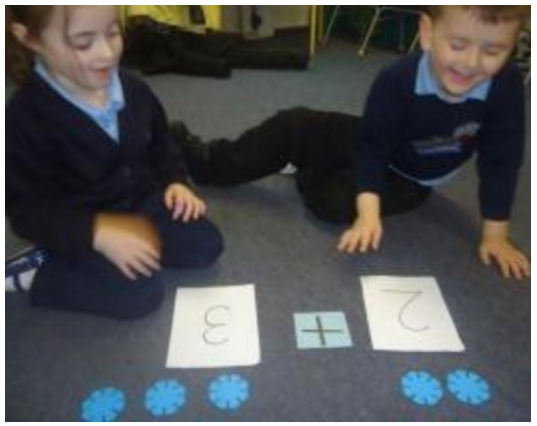
Maths in the foundation stage

Two areas of mathematics:

- Number
- Numerical patterns



Number ELG

Children at the end of reception will need to:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

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Maths in the foundation stage

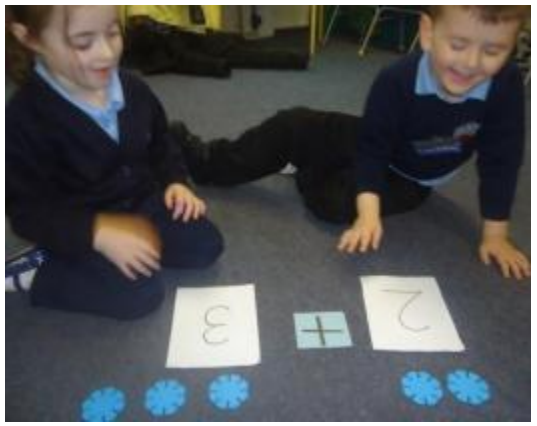
Two areas of mathematics:

- Number
- **Numerical patterns**

Numerical Patterns ELG

Children at the end of reception will need to:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.



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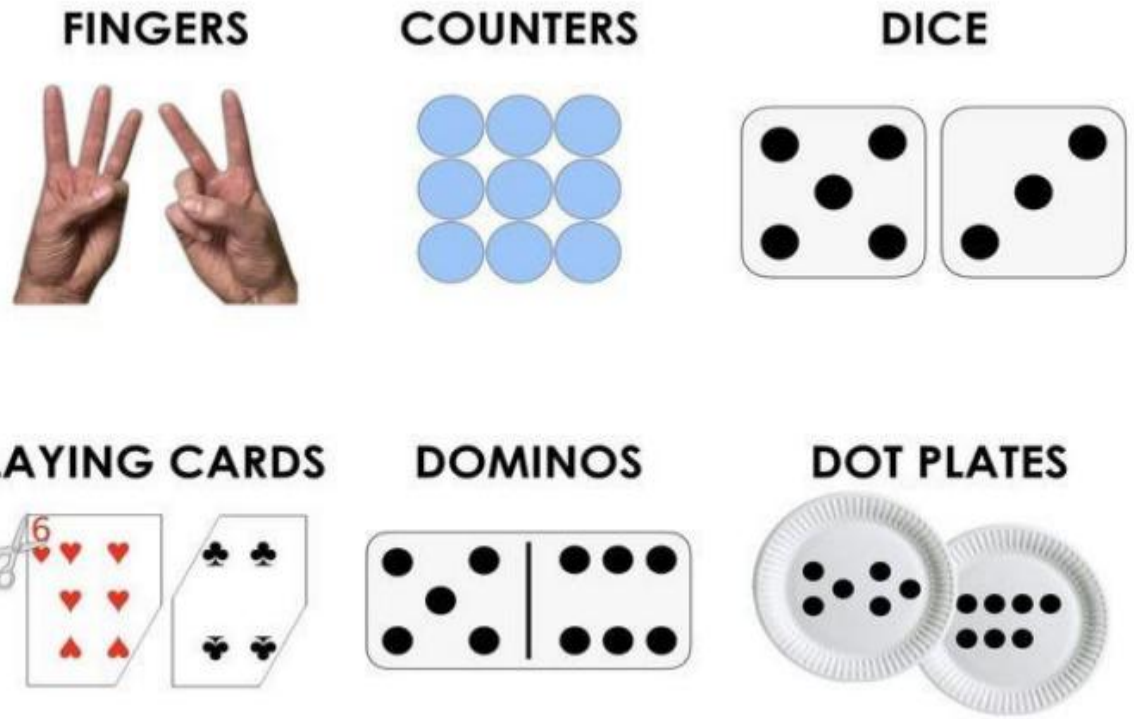
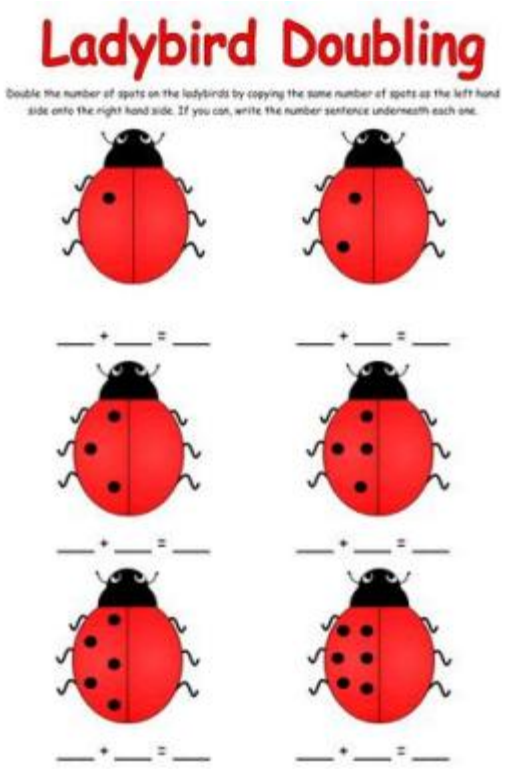
Subitise (recognise quantities without counting)



Automatically recall number bonds and doubling facts

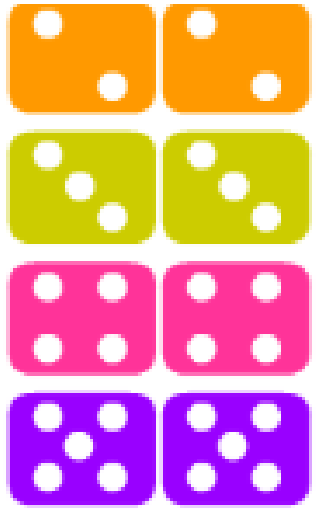


2 + 2 = 4

3 + 3 = 6

4 + 4 = 8

5 + 5 = 10

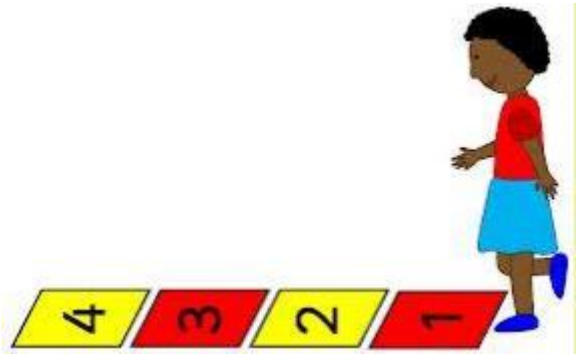


Verbally count beyond 20 (recognising patterns in the counting system)

- Using counting rhymes, stories and games.

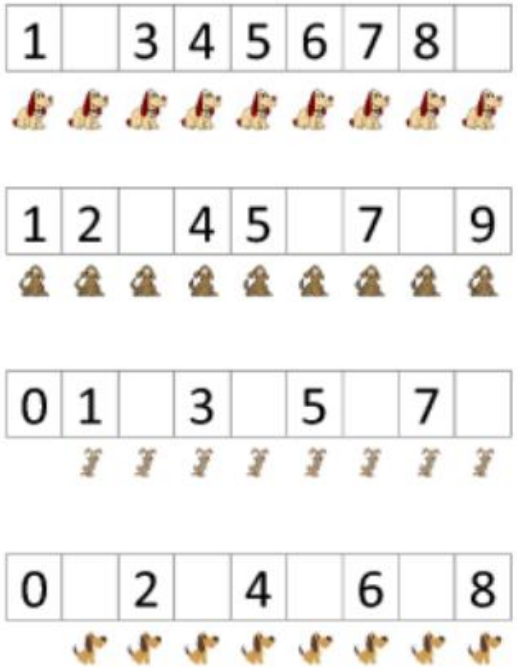
- We encourage the use of cubes, compare bears, fingers, number fans and number lines up to 10 and 20.

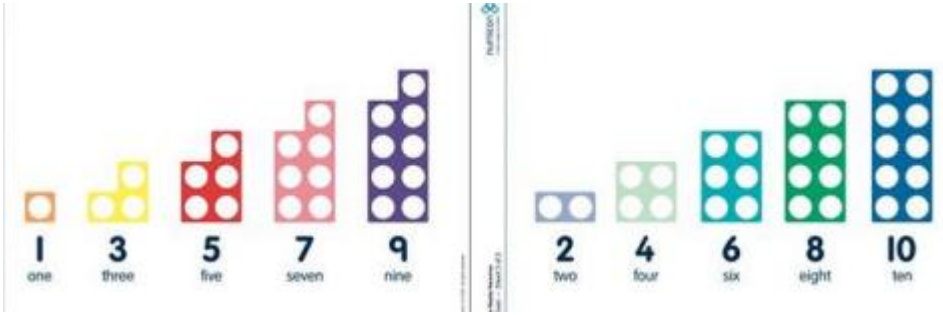
- We talk about 1 more and 1 less and odd and even.

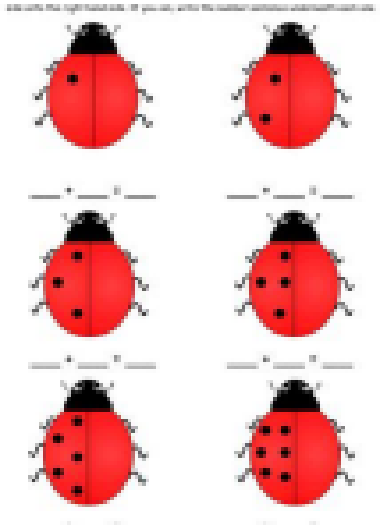


Explore and represent patterns within numbers up to 10

Odd or even?





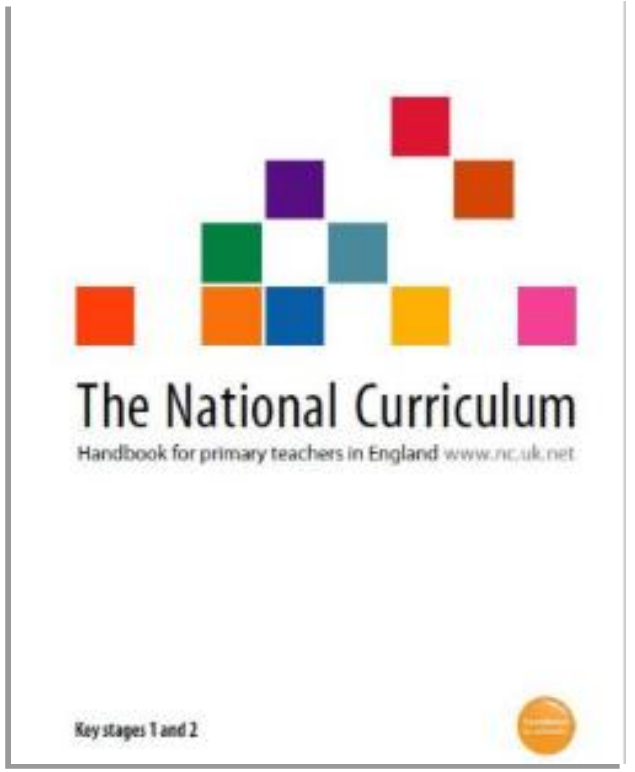


Doubles facts

KS1 Maths

- National Curriculum

- Number and place value
- Addition and subtraction
- Multiplication and division
- Measurement
- Geometry – shapes
- Geometry – position and direction



KS1 Maths

- Taught daily
- **Concrete**, pictorial and abstract
- Topics / skills are revisited
- No longer KS1 SATs

Concrete *Can we make it?*	Pictorial *Can we draw it?*	Abstract *Can we write the equation?*
4+1 = 5+0 = 3+2 = 		 Role play getting on the bus.

Year 1 - number

- Count to and across 100 from any given number
- Read and write numbers to 100 (in numerals: 13, 46)
- Know one more and one less than a given number
- Represent numbers using objects, pictures and a number line
- Read and write numbers from 1 to 20 (in words and numerals: one 1, seventeen 17, twenty 20)

Year 1 - number

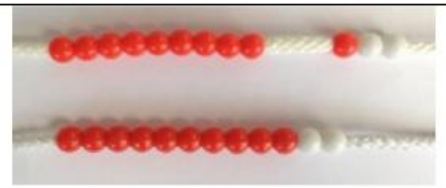
- Read, write and understand numbers sentences using + - and =
- Know number bonds and related – facts within 20 (related)
- Add and subtract one-digit and two-digit numbers to 20

  13+4, 17+0, 18-12
- Solve problems using objects and pictures to help
- Find missing numbers 7 = ? – 9
- Through grouping and sharing small quantities, begin to understand x and ÷
- Make connections between pictures (arrays) and counting in 2s, 5s, and 10s.

Adding

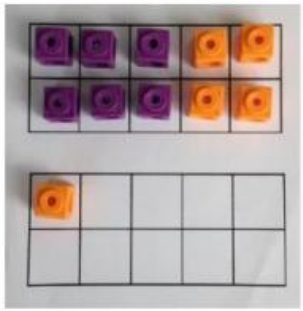
Regrouping to make 10.

Tens frame – crossing 10.

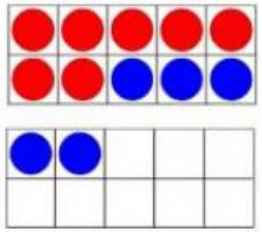


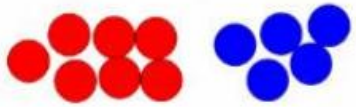
9 + 3 = 12

6 + 5 = 11

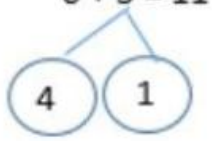


Start with the bigger number and use the smaller number to make 10.





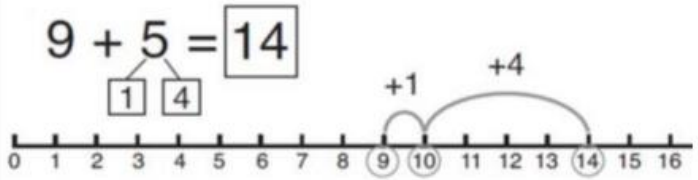
6 + 5 = 11



6 + 4 =10

10 + 1 = 11

Use pictures or a number line. Regroup or partition the smaller number to make 10.



7 + 4= 11

If I am at seven, how many more do I need to make 10?

7 + 3 = 10

How many more do I add on now?

10 + 1 = 11

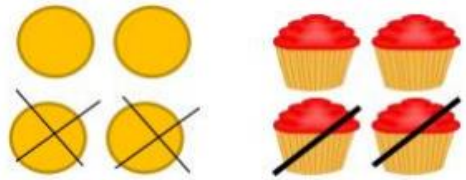
Apply knowledge of number bonds to 10.

Subtracting

Counting what is left; numbers up to 10 and then 20

Taking away ones

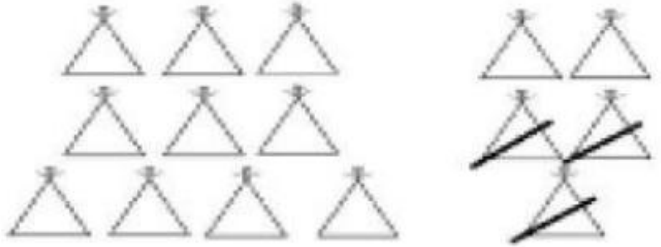
4 – 2 = 2



Use physical objects, counters, cubes etc. to show how objects can be taken away.

Cross out drawn objects to show what has been taken away.

10 – 6 = 4



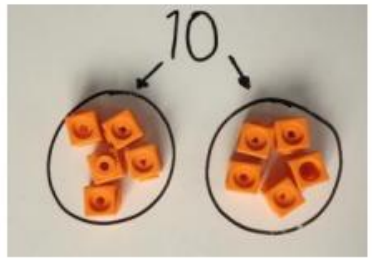
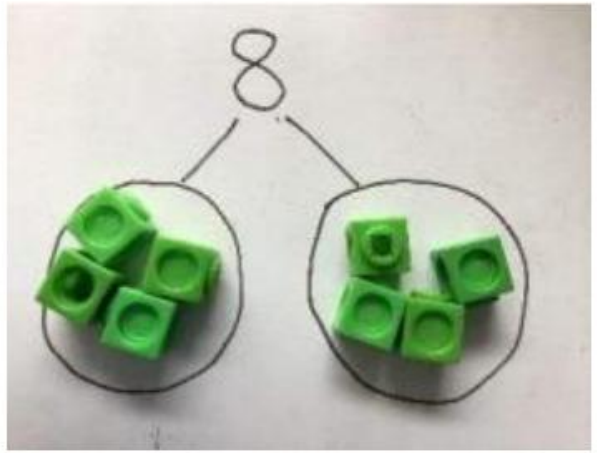
15 – 3 = 12

18 - 3 = 15

8 – 2 = 6

Sharing

Discover more

Share equally to solve division problems Sharing objects into groups	 **I have 10 cubes, can you share them equally between 2 people?** 	Children use pictures of shapes to share quantities.  **8 ÷ 2 = 4**	Share 8 buns between two people.  **8 ÷ 2 = 3**

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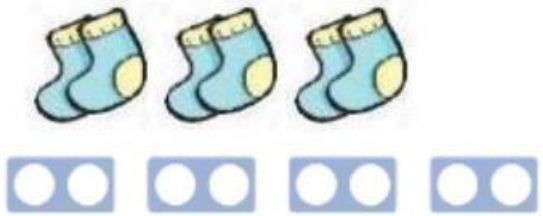
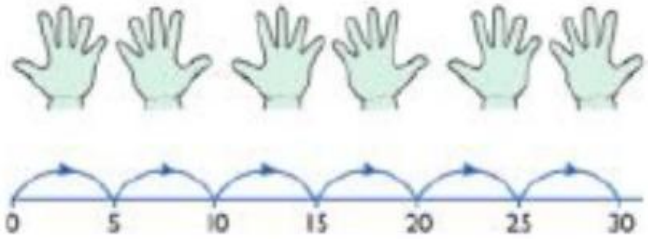
Grouping

Year 1	Counting in multiples of 2, 5 and 10; develop understanding of multiplication using practical equipment Real life addition of more than 2 numbers the same	 Count in multiples supported by concrete objects in equal groups – single gloves (5+5+5), pairs of shoes (2+2+2)… 	 Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. **2, 4, 6, 8, 10** **5, 10, 15, 20, 25, 30**

Year 2 - number

- Count in steps of 2, 3 and 5
- Secure understanding of numbers up to 100 – read, write, compare, order, represent.
- Know + and – facts to 20
- + and – to 2-digit numbers 22+5, 33+30, 23+21
- + and – 3 single digit numbers 8+5+3
- Record number sentences using + - and =
- Know adding two numbers can be done in any order
- Find missing numbers
- Solve problems

Adding

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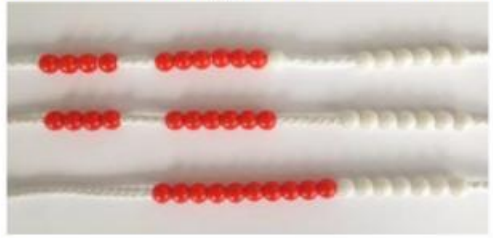
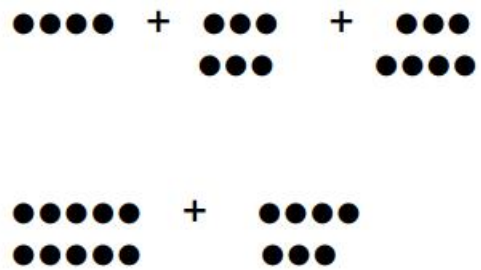
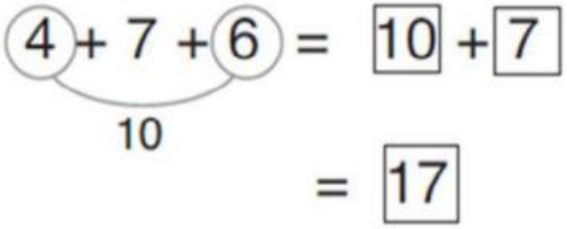
Year 2	Adding three single digits Applying knowledge of bonds to 10 / 20.	**4 + 7 + 6= 17** Put 4 and 6 together to make 10. Add on 7.  Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.	 Add together three groups of objects. Draw a picture to recombine the groups to make 10.	 Combine the two numbers that make 10 and then add on the remainder.

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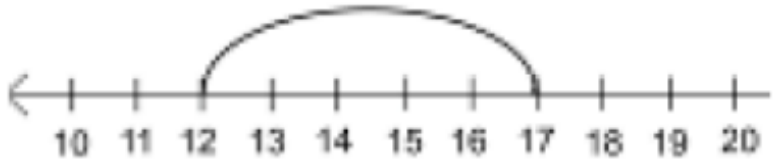
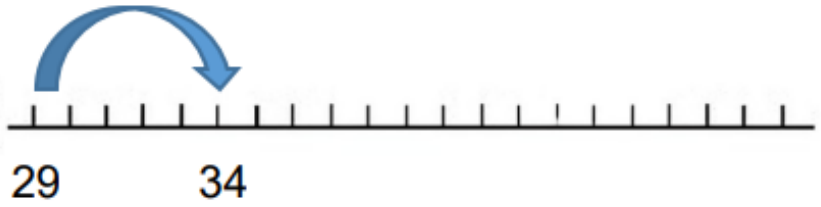
Adding

12 + 5 = 17

Jump on in one jump to find the answer.

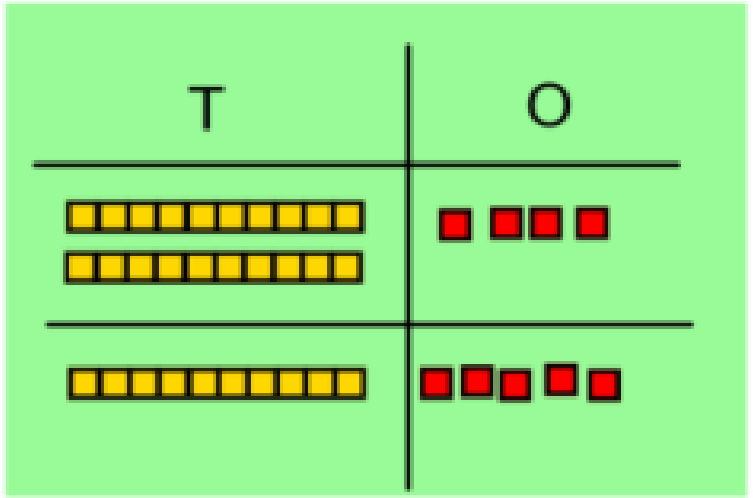


29 + 5 = 34



Use a blank number line.

24 + 15 =



Year 2 - number

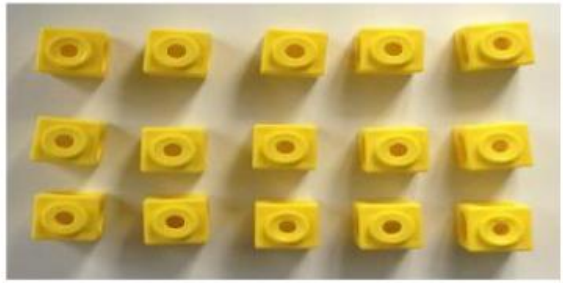
- Know x and ÷ facts for the 2, 5 and 10 times tables
- Recognise odd and even
- Record number sentences using x ÷ and =
- Know the x of two numbers can be done in any order
- Solve problems

Multiplication

Group in 2s, 5s and 10s

Arrays- showing commutative multiplication – link to repeated addition

Create arrays using counters/ cubes to show multiplication sentences.



Draw arrays in different rotations to find **commutative** multiplication sentences.

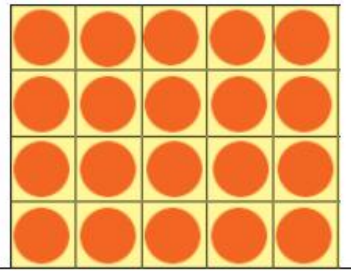
4 × 2 = 8

2 × 4 = 8

2 × 4 = 8

4 × 2 = 8

Link arrays to area of rectangles.

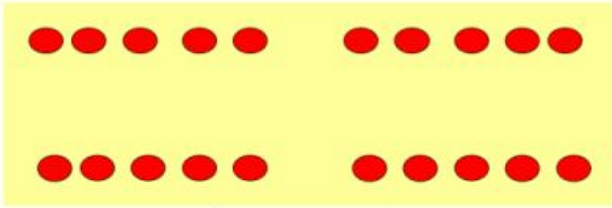


Use an array to write multiplication sentences and reinforce repeated addition.

5 + 5 + 5 = 15
3 + 3 + 3 + 3 + 3 = 15
5 x 3 = 15
3 x 5 = 15

5 x 4 = 5 lots of 4

4 x 5 = 4 lots of 5



4 x 5 = 20

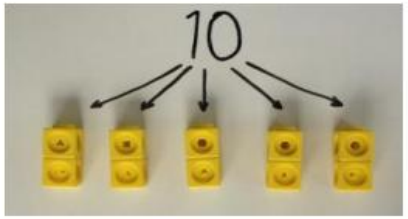
Division

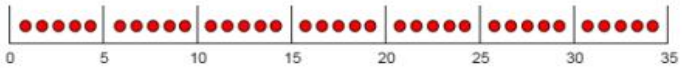
Group objects (up to 100 in 10s)

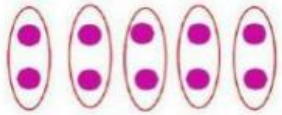
Division as grouping

Divide quantities into equal groups.

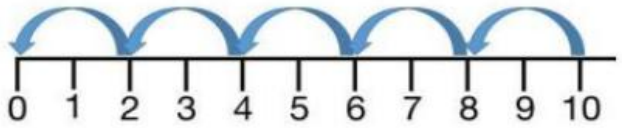
Use cubes, counters, objects, or place value counters to aid understanding.

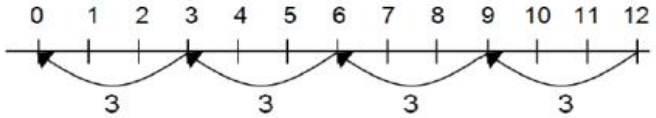




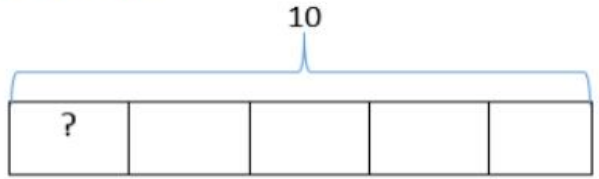


Use a number line to show jumps in groups. The number of jumps equals the number of groups.





Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.



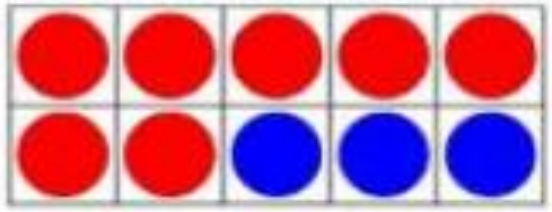
10 ÷ 5 = ?
5 x ? = 10

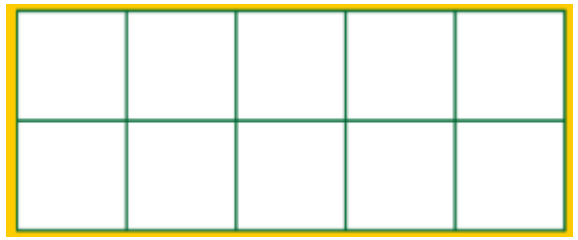
10 ÷ 5 = 2

Divide 10 into 5 groups. How many are in each group?

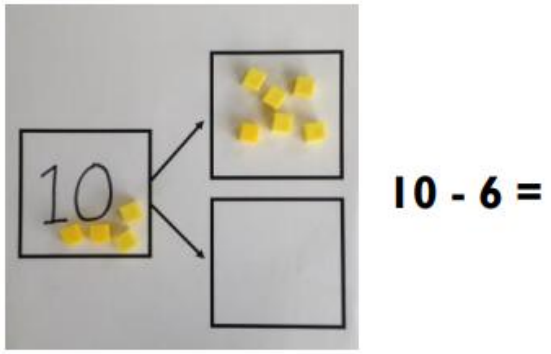
Key models, images and methods

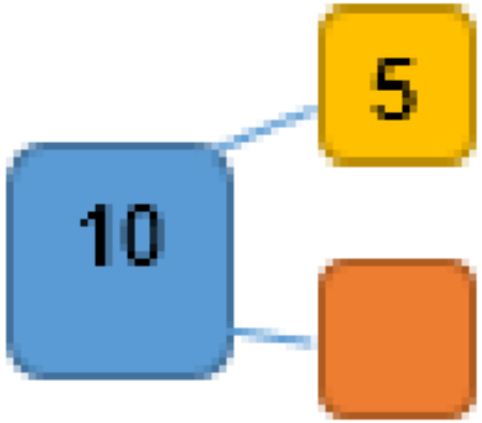
- Tens frame



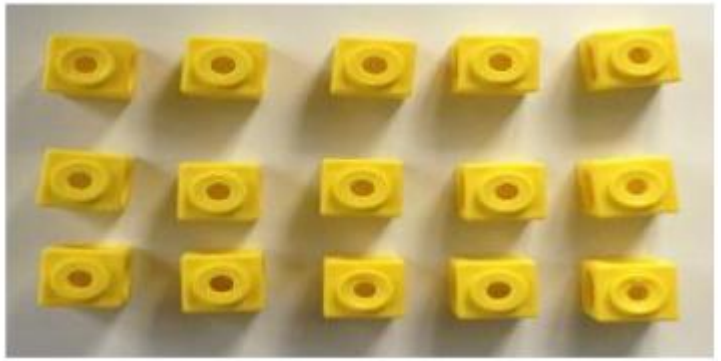


Part-whole model



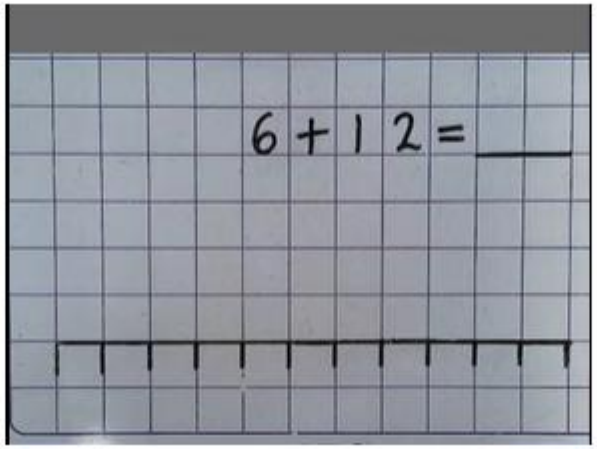


Arrays



Key models, images and methods

- Learning Journals
- Calculation videos
- Blowers Green Primary School - Maths Calculation Videos



How can you help at home?

Talk about *how* you do maths.

Be positive.

Give praise and encouragement.

Ask your child to explain.

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Practical maths at home

cooking

counting

dice

cards

using food

money

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Practical maths at home

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Supporting maths learning at home:

- TTRS Y2 Times Tables Rock Stars: Play
- NumBots YR – Y2 Numbots Game
- Number blocks @Numberblocks - Ten Again! | Learn to Count - YouTube
- Homework
- Use the learning journals to support methods of calculation

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