

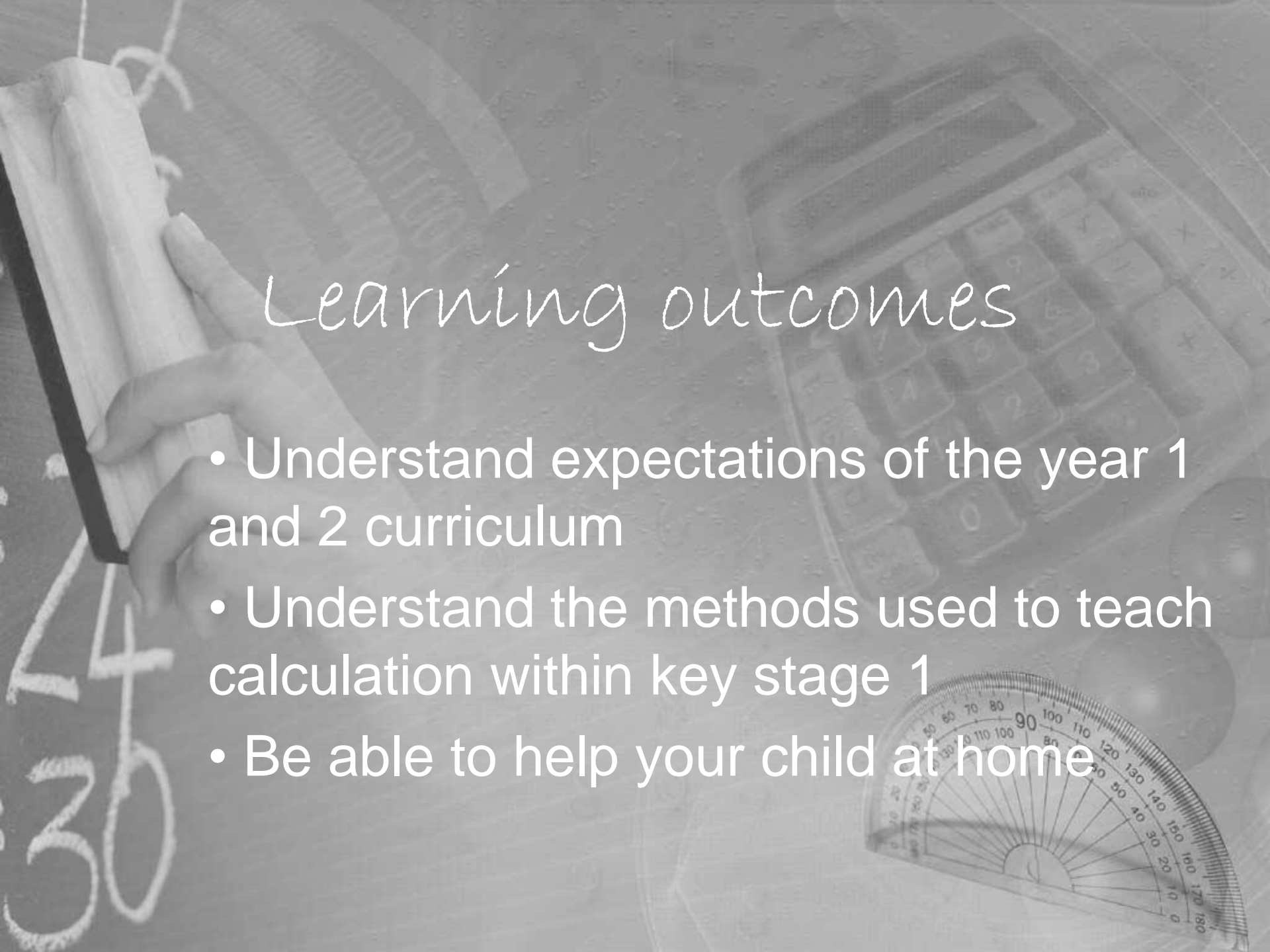
Maths Calculation Workshop



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Acting Maths Leader



Learning outcomes

- Understand expectations of the year 1 and 2 curriculum
- Understand the methods used to teach calculation within key stage 1
- Be able to help your child at home

National Curriculum

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

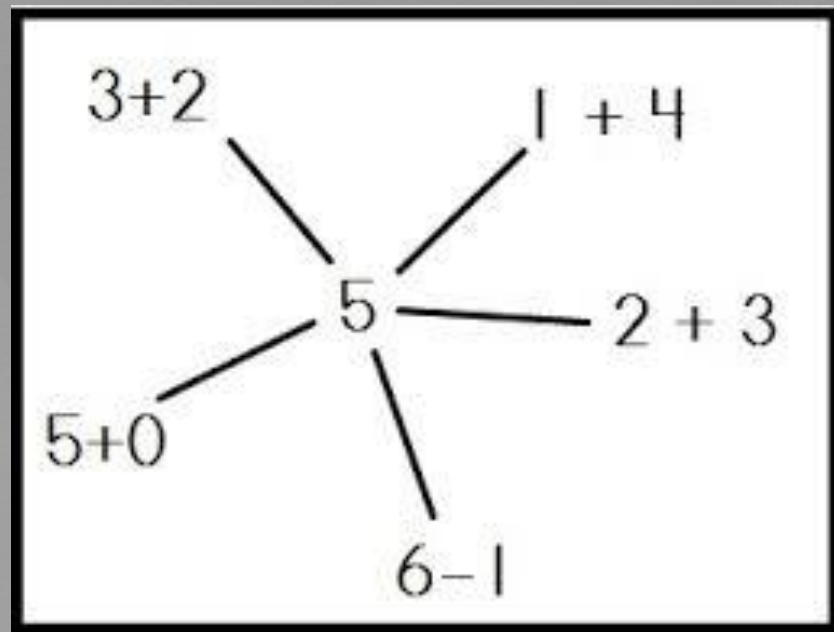
Year 1 and 2 Addition

Year 1 Objectives:

- read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds within 20
- add one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$.

Year 2 Objectives:

- Recall and use number bond facts up to 20 fluently, and use these to derive facts to 100
- Using objects, pictures and mental calculations, add:
 - A 2-digit number and ones
 - A 2-digit number and tens
 - Two 2-digit numbers
 - Adding three one digit numbers
- Solve problems using objects and pictures, and missing number problems, and move on to using mental and written methods
- Use the inverse of addition to check calculations



44
30



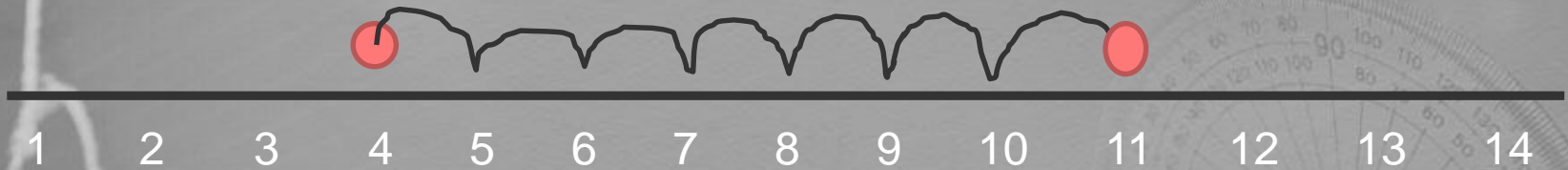
Methods

- Numicon/number bonds



Number line

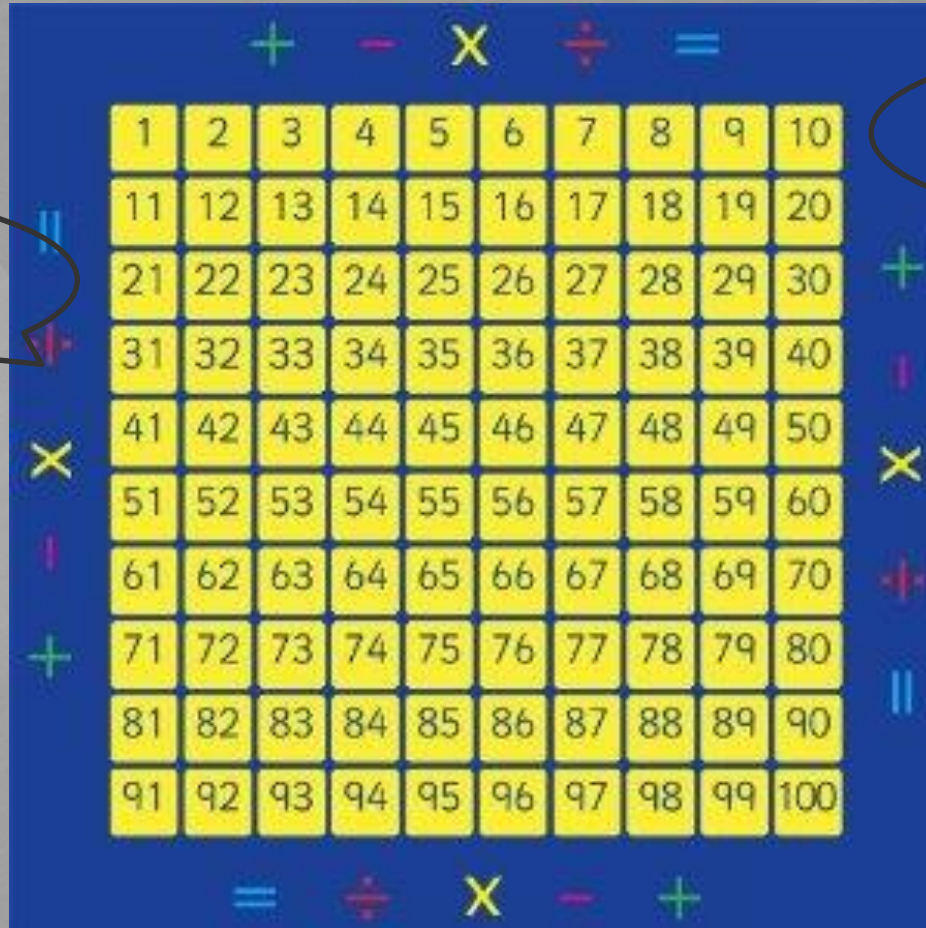
$$4 + 7 =$$



Hundred Square

What is 1 more than...

What is 10 more than...



44
30



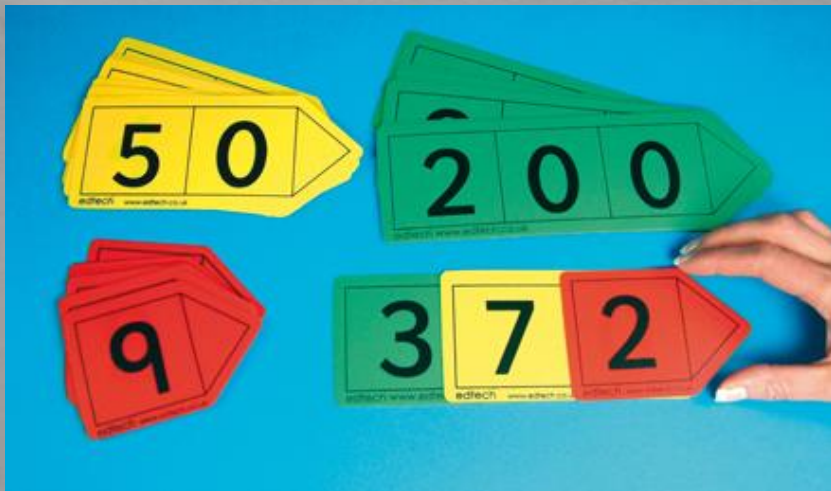
Partitioning

- Place value cards
- Number line

$$25 + 13 =$$

$$25 + 10 + 3 =$$

Beginning to partition using a number line



Year 2

Addition

Finally...

Moving on to the expanded method of addition

$$\begin{array}{r} 200 + 40 + 3 \\ + 300 + 50 + 1 \\ \hline 500 + 90 + 4 \end{array}$$

Ready for column addition in Year 3

Subtraction

Year 1 Objectives:

- Subtract one digit and two-digit numbers from 20.
- Read, write and interpret mathematical statements using - and =
- Represent and use number bonds within 20
- Solve one-step problems using concrete objects and pictorial representations, and missing number problems such as $7 = 9 - ?$

Year 2 Objectives:

- Recall and use number bond facts up to 20 fluently, and use these to derive facts to 100
- Using objects, pictures and mental calculations, subtract:
 - A 2-digit number and ones
 - A 2-digit number and tens
 - Two 2-digit numbers
- Solve problems using objects and pictures, and missing number problems, and move on to using mental and written methods
- Use the inverse of subtraction to check calculations

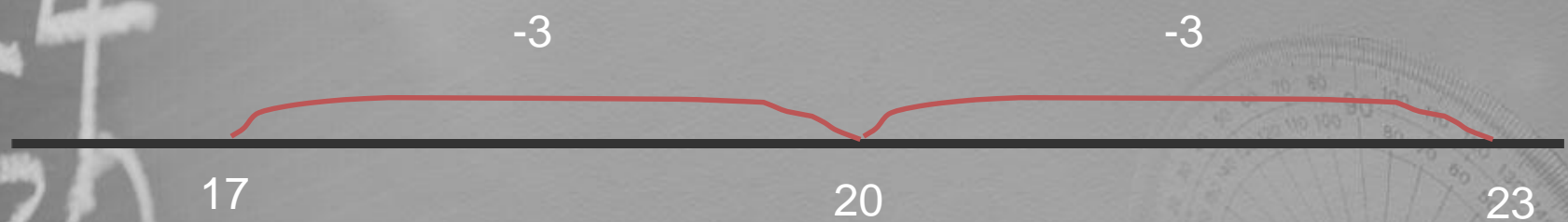
Methods

Number line/ Blank number line

$$7 - 3 =$$

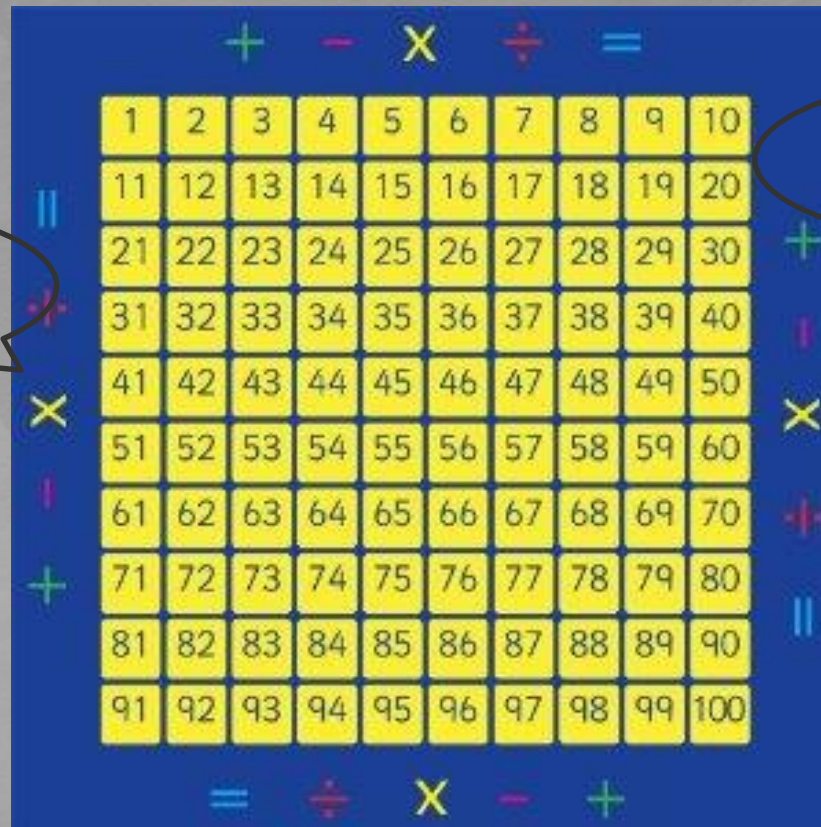


$$23 - 6 =$$



- Hundred square

What is 1 fewer than...



What is 10 fewer than...

Inverse operations

$$6 + \underline{\quad} = 10$$

$$10 - 6 = \underline{\quad}$$

Moving on to...
Expanded subtraction

$$47 - 24 = 23$$

$$\begin{array}{r} 40 + 7 \\ - 20 + 4 \\ \hline 20 + 3 \end{array}$$

$$\begin{array}{r} 50 + 14 \\ 64 = \cancel{60} + \cancel{4} \\ -28 = \underline{20} + \underline{8} \\ 30 + 6 = 36 \end{array}$$

Multiplication

Year 1 Objectives

- Recognise odd and even numbers.
- Double numbers up to 10
- Count in 2s, 5s and 10s

Year 2 Objectives

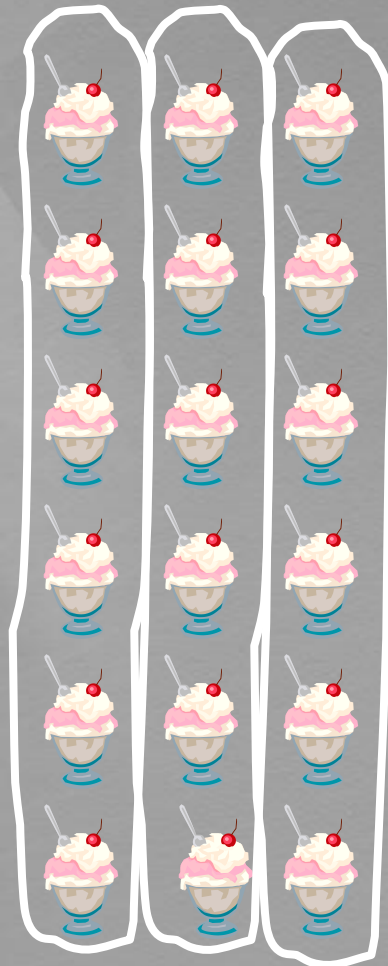
- Understand multiplication as repeated addition
- Recall and use multiplication facts for the 2, 3, 5 and 10 times tables
- Recognise sign X
- Double numbers up to 100 e.g. 35
- Understand that multiplication can be done in any order
- Use multiplication in problem solving

What is an array?



$$3 \times 6 =$$

Array



If we know $3 \times 6 = 18$,
then we know $18 \div 3 = 6$

$$4 \times 2 =$$

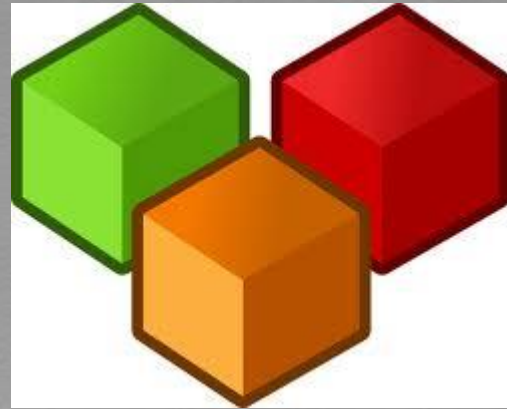
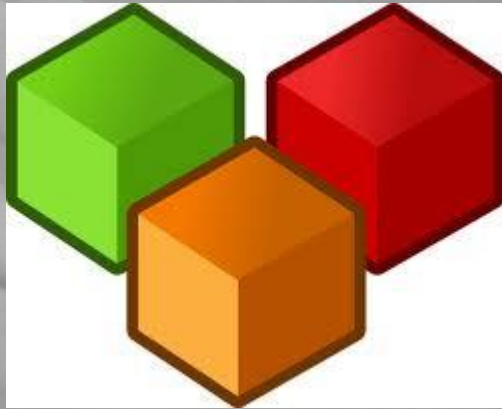
$$2 + 2 + 2 + 2 = 8$$

Four groups of 2


$$= 8$$

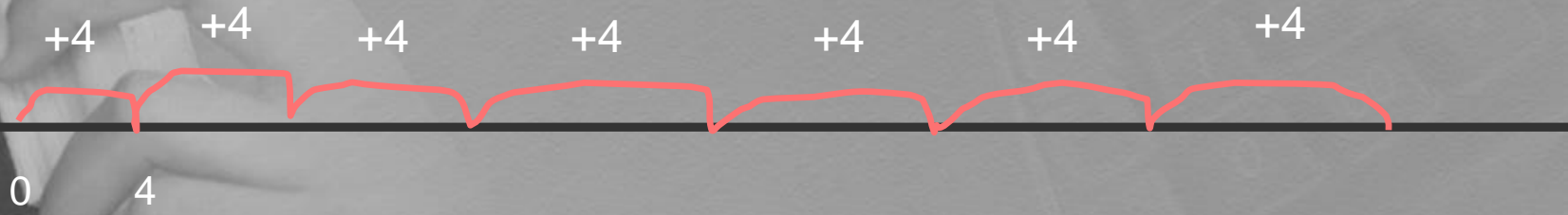
Put objects into groups at home!

$$2 \times 3 = 6$$



$$7 \times 4 = 28$$

Repeated addition
Blank number line



4
30



Division

Year 1 Objectives

- Begin to halve even numbers
- Repeated subtraction
- Counting in 2s, 5s and 10s

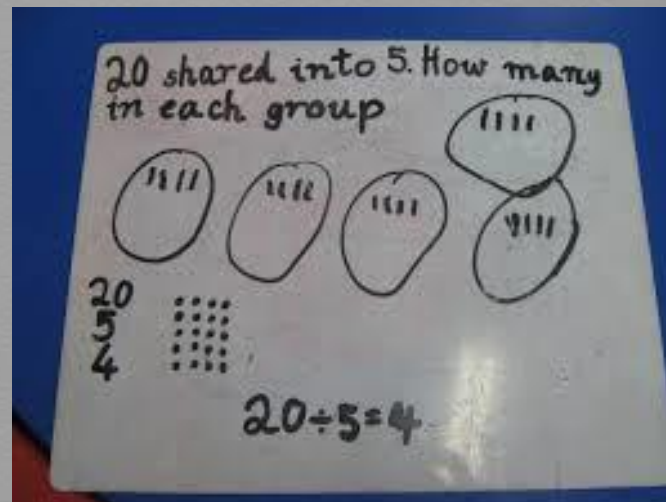
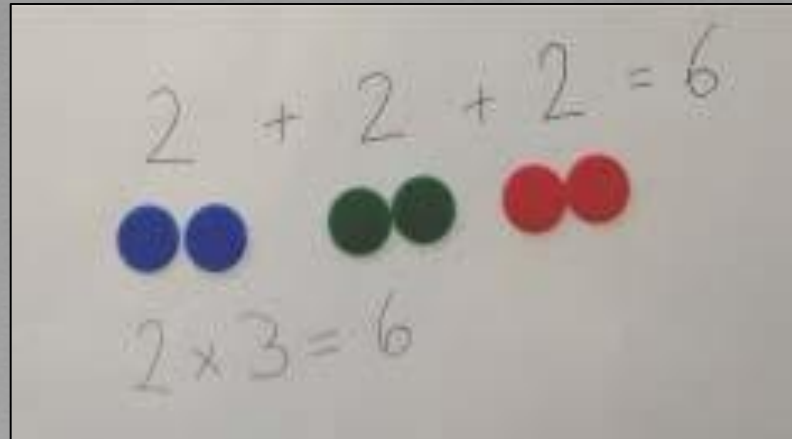
Year 2 Objectives

- Understand division as repeated subtraction
- Recall and use multiplication facts for the 2, 5 and 10 times tables
- Recognise sign \div
- Halves and quarters of even numbers
- Understand that division cannot be done in any order, and that it is the inverse of multiplication
- Use division in problem solving

Methods

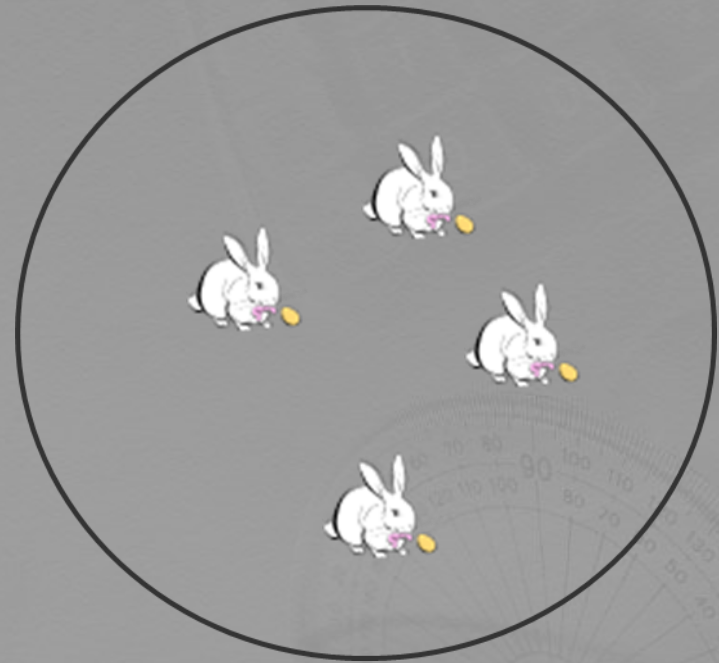
Sharing objects (before moving on to pictures).

How can we share 6 cakes between 3 people?



$$8 \div 2 =$$

Grouping



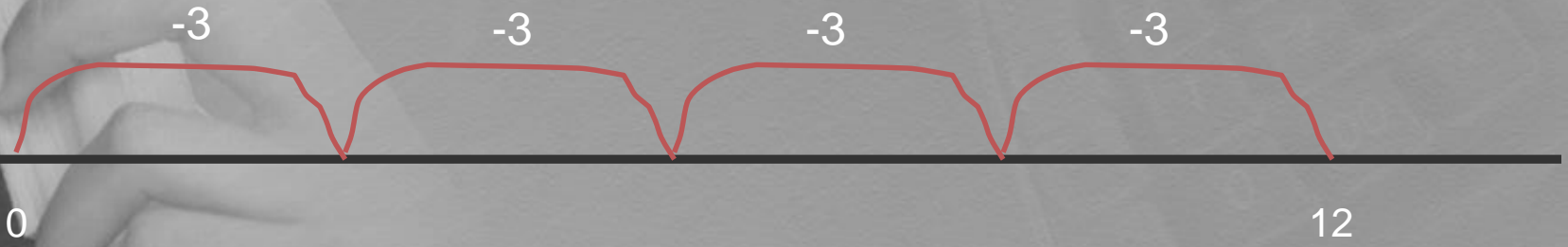
$$17 \div 2 = 8 \text{ r}1$$

Now learning about remainders!



$$12 \div 3 = 4$$

Blank number line



Repeated subtraction

4
30



17

Sam is collecting cards.

He wants to collect **100** cards altogether.

Last week he collected **50** cards.

This week he collects **30** cards.



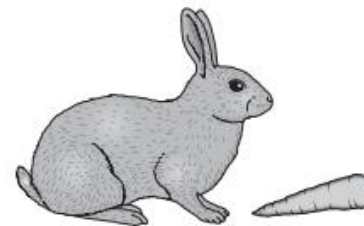
How many **more** cards does he need?

	cards
--	-------

Amy plants **4** rows of carrots.

There are **3** carrots in each row.

A rabbit eats **2** of the carrots.



How many carrots are left?

Show
your
working

	carrots
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29 Do these calculations have the same answer?

Write **yes** or **no** next to each box.

One is done for you.

$$8 + 2 \quad \text{and} \quad 2 + 8$$

yes or no?

yes

$$8 \times 2 \quad \text{and} \quad 2 \times 8$$

$$8 - 2 \quad \text{and} \quad 2 - 8$$

27 Sita has **50** raisins.

She gives **23** to Ben.

She gives **15** to Amy.



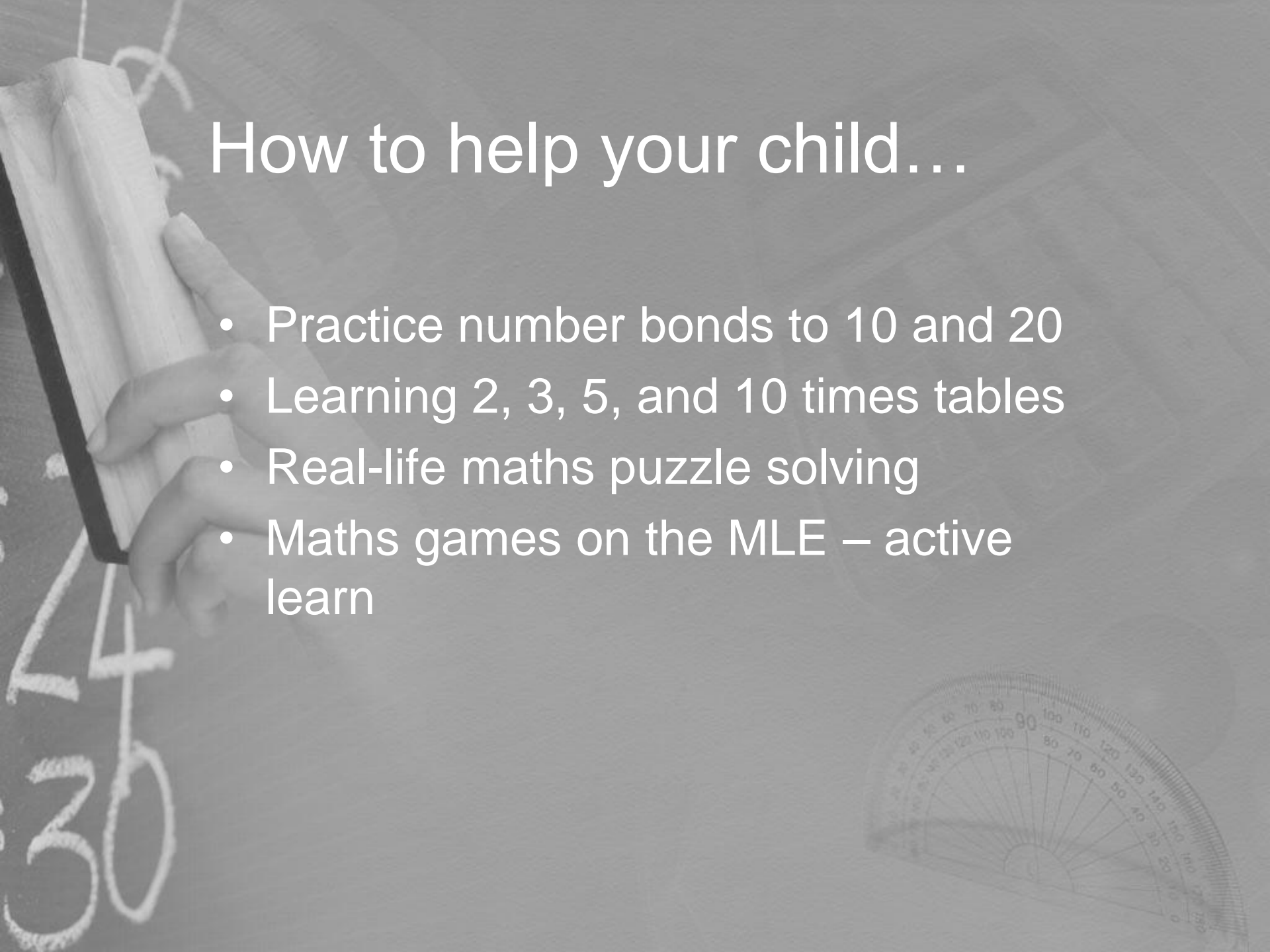
How many raisins does Sita have left?

Show
your
working

raisins

How to help your child...

- Practice number bonds to 10 and 20
- Learning 2, 3, 5, and 10 times tables
- Real-life maths puzzle solving
- Maths games on the MLE – active learn



A hand holding a rolled-up scroll on a chalkboard background. The chalkboard has the numbers '44' and '30' written on the left side. A protractor is visible in the bottom right corner. The text 'Thank you for coming!' is written in white on the right side of the board.

Thank you for coming!

Any questions?