



Teaching Maths in Year 3 and 4

Parent Workshop – Thursday 9th March 2023

A decorative graphic on the left side of the slide. It features a dark grey arrow pointing right at the top, with several thin, curved lines in shades of blue and grey extending downwards and to the right from its base.

Aims

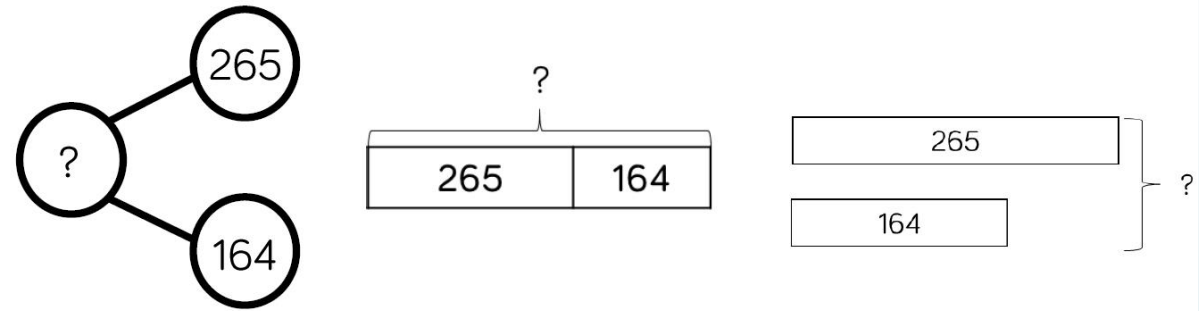
- ▶ To understand how we teach the four operations in Year 3 and Year 4
- ▶ To understand the importance of knowing the multiplication tables
- ▶ To know about the Multiplication Tables Check in Year 4
- ▶ To know how to support a positive attitude to maths

Year 3 Addition

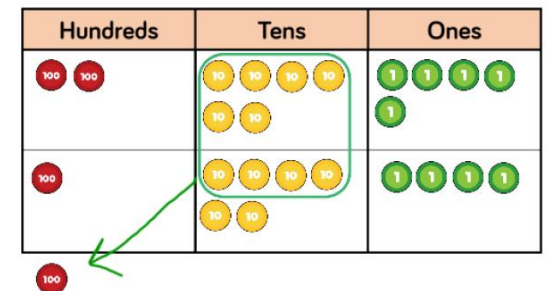
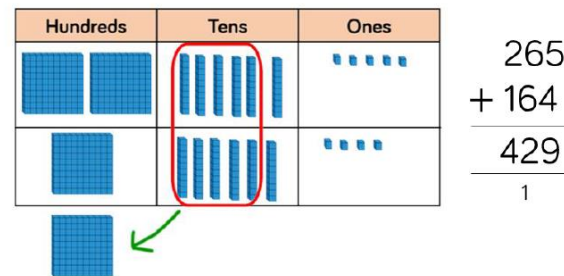
Adding 3-digit numbers

Base 10 and place value counters are the most effective manipulatives when adding numbers of up to 3 digits.

Children write their calculation alongside concrete resources so that they can see the links to the written column method.



$$265 + 164 = 429$$



Year 4 Addition

Adding 4-digit numbers

Base 10 and place value counters are the most effective manipulatives when adding numbers of up to 4 digits.

Children write their calculation alongside concrete resources so that they can see the links to the written column method.

The diagram illustrates the addition of 1,378 and 2,148 using various methods:

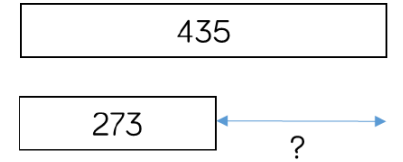
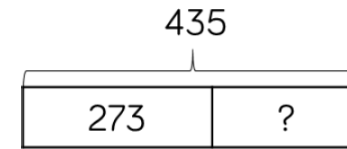
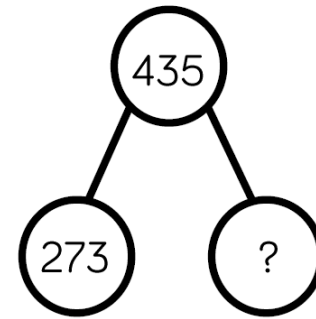
- Tree Diagram:** Shows 1,378 and 2,148 in circles, both pointing to a central circle containing a question mark.
- Box Diagram:** Shows 2,138 and 1,378 in boxes, with a question mark above them.
- Written Column Method:**

| | | | | |
|---|---|---|---|---|
| | | | | ? |
| | 2 | 1 | 3 | 8 |
| + | 2 | 1 | 4 | 8 |
| | 3 | 5 | 2 | 6 |
| | | | 1 | 1 |
- Equation:** $1,378 + 2,148 = 3,526$
- Place Value Charts:**
 - Left Chart:** Shows base 10 blocks for 1,378 (1 thousand, 3 hundreds, 7 tens, 8 ones) and 2,148 (2 thousands, 1 hundred, 4 tens, 8 ones). Green arrows show the exchange of 10 tens for 1 hundred and 10 ones for 1 ten.
 - Right Chart:** Shows base 10 counters for the same numbers. Red arrows indicate the exchange of 10 tens for 1 hundred and 10 ones for 1 ten.

Year 3 Subtraction Subtracting 3-digit numbers

Base 10 and place value counters are the most effective manipulatives when subtracting numbers of up to 3 digits.

Children write their calculation alongside concrete resources so that they can see the links to the written column method.



$$435 - 273 = 262$$

| Hundreds | Tens | Ones |
|----------|------|------|
| | | |
| | | |

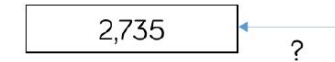
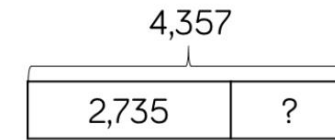
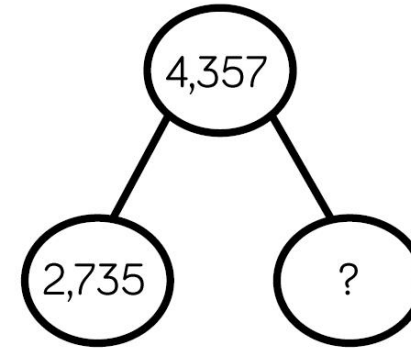
$$\begin{array}{r} 3 \ 1 \\ 435 \\ - 273 \\ \hline 262 \end{array}$$

| Hundreds | Tens | Ones |
|----------|------|------|
| | | |
| | | |

Year 4 Subtraction Subtracting 4-digit numbers

Base 10 and place value counters are the most effective manipulatives when subtracting numbers of up to 4 digits.

Children write their calculation alongside concrete resources so that they can see the links to the written column method.



$$\begin{array}{r} ^3 ^1 \\ 4357 \\ - 2735 \\ \hline 1622 \end{array}$$

$$4,357 - 2,735 = 1,622$$

| Thousands | Hundreds | Tens | Ones |
|-----------|----------|------|------|
| | | | |

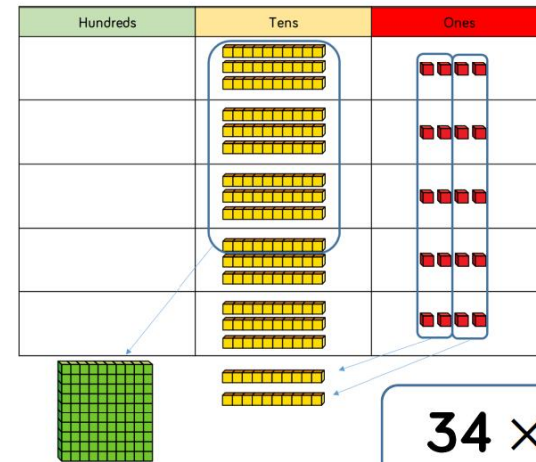
| Thousands | Hundreds | Tens | Ones |
|-----------|----------|------|------|
| | | | |

Year 3 Multiplication 2-digit number by 1-digit number

Children may first look at the expanded column method before moving onto the short multiplication method.

Place value counters are used to support understanding of the method rather than supporting the multiplication, as children should use their times table knowledge.

It is vital that children know their multiplication tables: 2x, 3x, 4x, 5x, 8x, 10x (end of year expectation)



| | H | T | O | |
|---|---|---|---|----------|
| | | 3 | 4 | |
| × | | | 5 | |
| | | 2 | 0 | (5 × 4) |
| + | 1 | 5 | 0 | (5 × 30) |
| | 1 | 7 | 0 | |

$$34 \times 5 = 170$$

| | H | T | O | |
|---|---|---|---|--|
| | | 3 | 4 | |
| × | | | 5 | |
| | 1 | 7 | 0 | |
| | 1 | 2 | | |

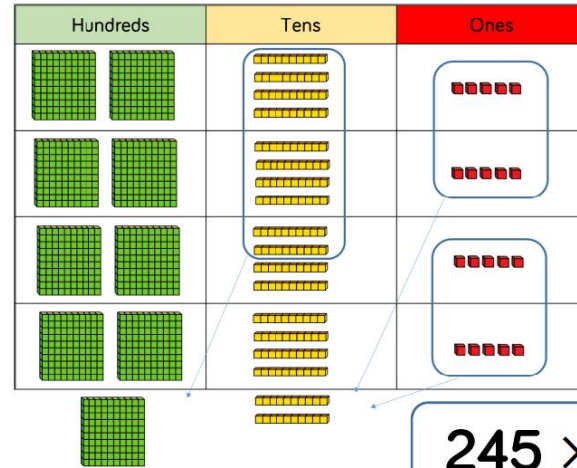


Year 4 Multiplication 3-digit number by 1-digit number

Children are encouraged to move towards the short, formal written method.

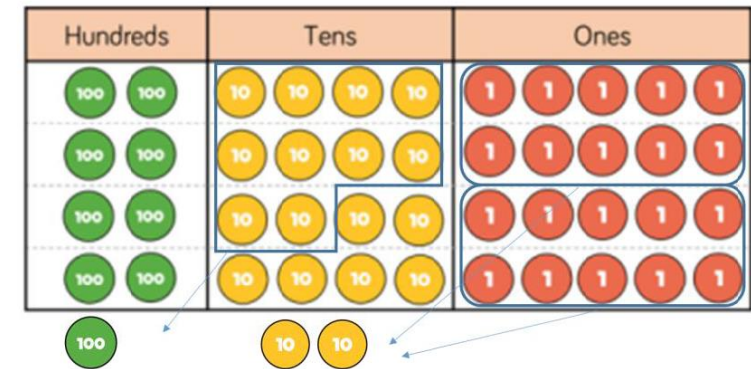
Base 10 and place value counters continue to support the understanding of the written method.

It is vital that children know all of their multiplication tables up to 12x12 (end of year expectation).



| | H | T | O |
|-------|---|---|---|
| | 2 | 4 | 5 |
| x | | | 4 |
| <hr/> | | | |
| | 9 | 8 | 0 |
| | 1 | 2 | |

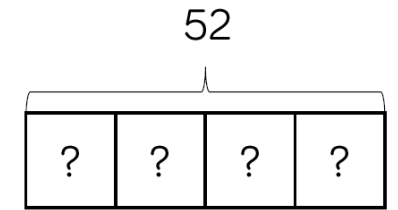
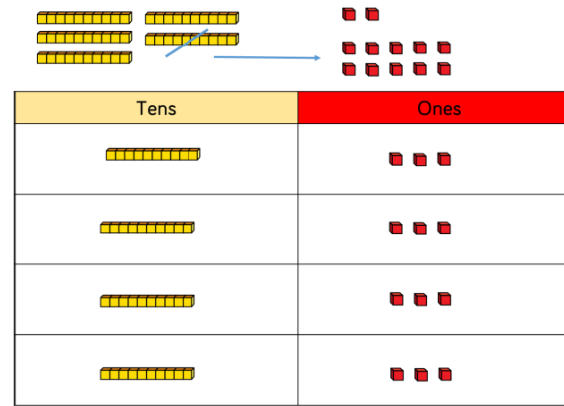
$$245 \times 4 = 980$$



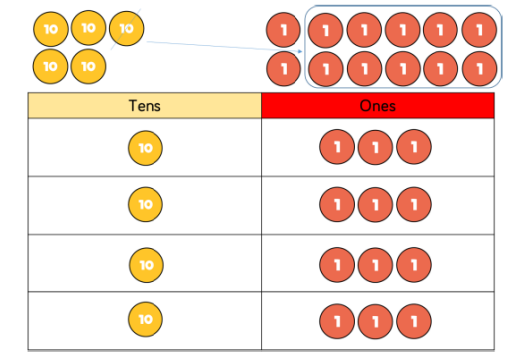
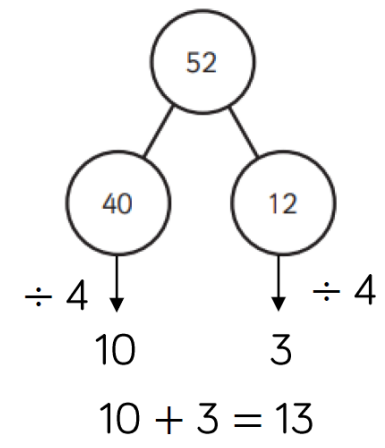
Year 3 Division 2-digit number by 1-digit number

When dividing numbers involving an exchange, children use Base 10 and place value counters to exchange one ten for ten ones.

Children start with their equipment outside the grid before sharing the tens and ones equally.



$$52 \div 4 = 13$$

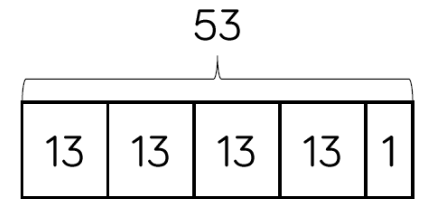
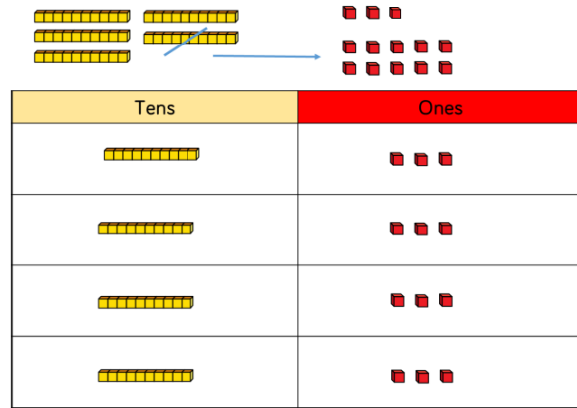


Year 3 Division 2-digit number by 1-digit number (with remainder)

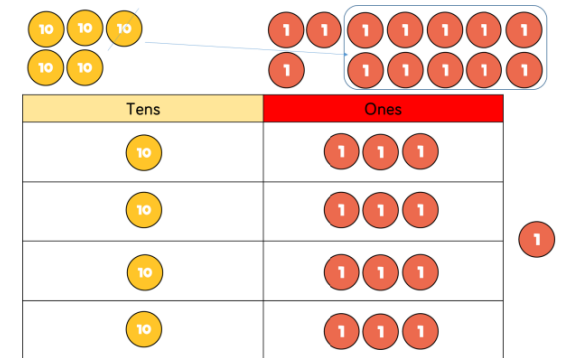
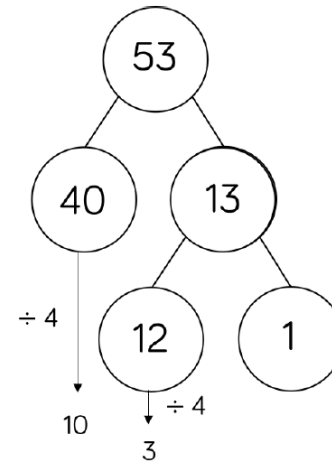
When dividing numbers involving an exchange, children use Base 10 and place value counters to exchange one ten for ten ones.

Children start with their equipment outside the grid before sharing the tens and ones equally.

Starting with the equipment outside of the grid will highlight the remainders as they will be left outside once the equal groups have been made.



$$53 \div 4 = 13 \text{ r}1$$



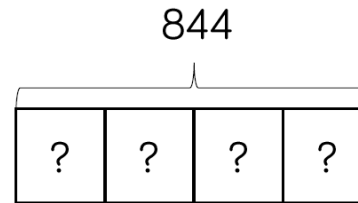
Year 4 Division

3-digit number by 1-digit number

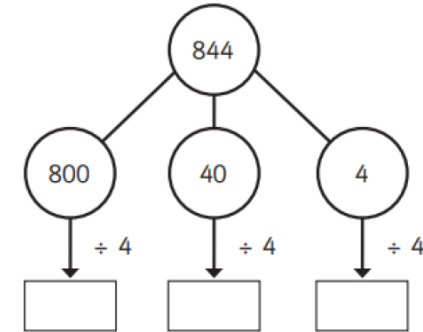
Children can continue to use place value counters to share 3-digit numbers into equal groups.

Children should start with their equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows

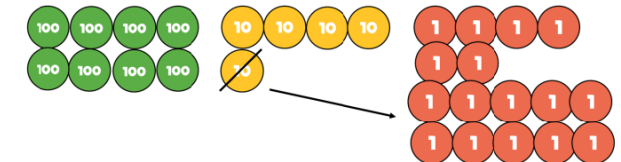
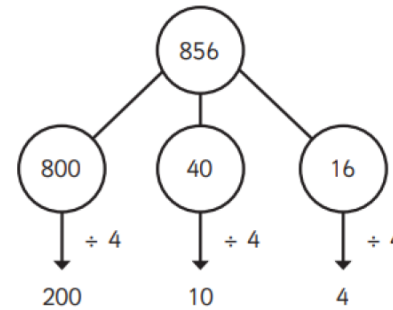
$$844 \div 4 = 211$$



| H | T | O |
|---------|----|---|
| 100 100 | 10 | 1 |
| 100 100 | 10 | 1 |
| 100 100 | 10 | 1 |
| 100 100 | 10 | 1 |



$$844 \div 4 = 211$$



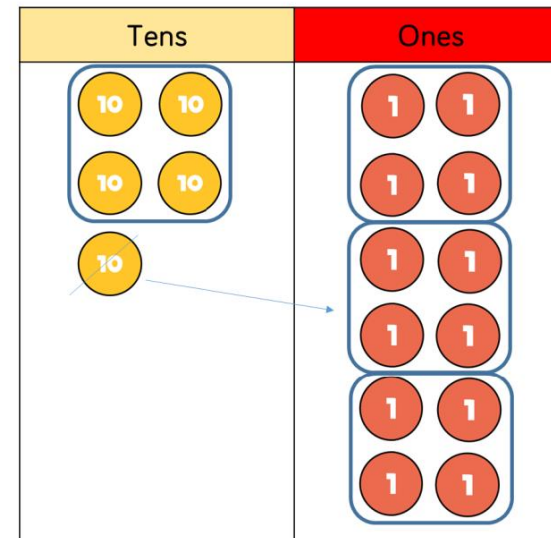
| Hundreds | Tens | Ones |
|----------|------|---------|
| 100 100 | 10 | 1 1 1 1 |
| 100 100 | 10 | 1 1 1 1 |
| 100 100 | 10 | 1 1 1 1 |
| 100 100 | 10 | 1 1 1 1 |

Year 4 Division 2-digit number by 1-digit number

When using the short division method, children use grouping. Starting with the largest place value, the group by the divisor.

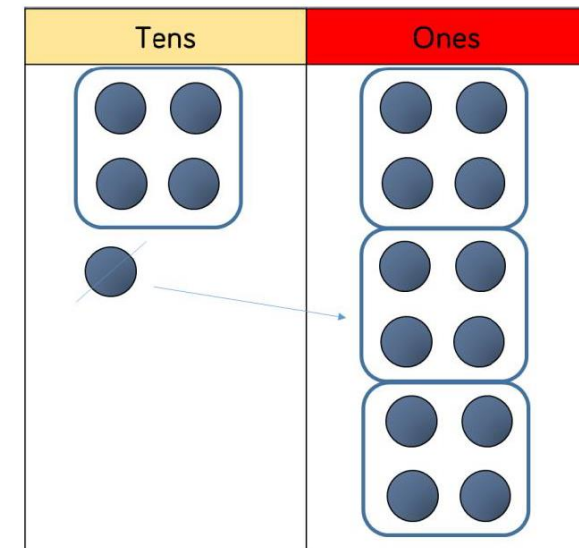
Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?'

Remainders can also be seen as they are left ungrouped.



$$52 \div 4 = 13$$

| | | | | |
|--|---|---|----|--|
| | | 1 | 3 | |
| | 4 | 5 | 12 | |



How do we challenge our pupils?

- ▶ Applying the skills and knowledge that the children have learnt into context.
- ▶ Problem Solving and Reasoning

6 There are 5,677 people in a village.

1,952 are women, 2,803 are men and the rest are children.

Complete the bar model to represent this.

| | | |
|--|--|--|
| | | |
| | | |

How many children are there?

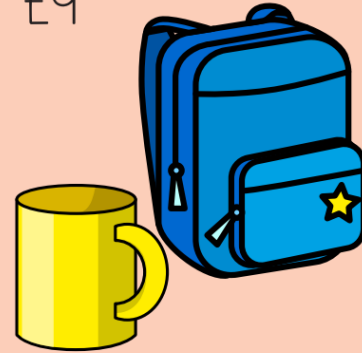
How do we challenge our pupils?

7 A bag costs £11 and a mug costs £9

Annie spends £95 in total on bags and mugs.

She buys 7 bags.

How many mugs does she buy?





Year 4 Multiplication Tables Check

A dark blue arrow points to the right from the left edge of the slide. Below it, several thin, curved lines in shades of blue and grey sweep across the left side of the slide.

What is the MTC?

- It's a new national test for Year 4 students
- Under the national curriculum primary school children are expected to know their 12 times tables by the end of Year 4
- So we've been preparing students to know their times tables by the end of Year 4.

A decorative graphic on the left side of the slide. It features a dark grey arrow pointing right at the top, with several thin, curved lines in shades of blue and grey extending downwards and to the right from its base.

The Practicalities

- ▶ Takes place in June
- ▶ Is done on a tablet or computer
- ▶ Will take no longer than 5 minutes
- ▶ There are 25 questions
- ▶ Pupils have 6 seconds to answer each question
- ▶ There's no problem solving or division just simple "3 x 4 = ?" type questions
- ▶ The results are for Teachers
- ▶ There is no pass or fail mark
- ▶ Results are not published

Time left: 5

$6 \times 11 =$

1

2

3

4

5

6

7

8

9

C

0

Enter



How you can help

- ▶ We will of course continue to teach the full curriculum, and would love your continued support to **HELP PRACTISE** the times tables with your children.
- ▶ Some easy ways to do this include:
 - **ASKING QUESTIONS** such as “What’s 7 x 8?”
 - reciting times tables by **ROTE** (4 times 1 is 4, 4 times 2 is 8, etc)
 - **SINGING** times tables songs (there are loads online)
 - using **APPS AND GAMES** (like Times Table Rock Stars)



How can you help?

- ▶ Everyone can achieve in Maths
- ▶ Children's belief in their potential is heavily influenced by perceptions of the adults around them
- ▶ Hard work, effort and commitment all contribute towards success.

I can't do
maths

I wasn't good
at maths as a
child

Encouraging a growth mindset

DEVELOPING A GROWTH MINDSET



| INSTEAD OF..... | TRY THINKING.... |
|------------------------------|-------------------------------|
| I'm not good at this | What am I missing? |
| I give up | I'll use a different strategy |
| It's good enough | Is this really my best work? |
| I can't make this any better | I can always improve |
| This is too hard | This may take some time |
| I made a mistake | Mistakes help me to learn |
| I just can't do this | I am going to train my brain |
| I'll never be that smart | I will learn how to do this |
| Plan A didn't work | There's always Plan B |
| My friend can do it | I will learn from them |



Any questions?