Maths Examples

Year 3 Maths strategies at Haywards

By the end of KS1 children should:

- know number bonds to 10, 20 and 100.
(e.g. 6 + 4; 13 + 7; 30 + 70; 10 - 6 = 4; 20 - 3 = 17; 100 - 20 = 80)

- be able to quickly recall number facts for 1-digit numbers. *(e.g. 3 + 4 = 7; 6 - 2 = 4)*

- be able to read, write order and compare numbers to 100.

- be able to count forwards and backwards from any number up to 100.

- be able to partition 2-digit numbers (e.g. 46 = 40 + 6; 4 tens and 6 ones)

- know 2, 5 and 10 times tables and be able to recall these quickly.

Place value - what children need to know and understand about numbers.

- **Recognise the place value of digits in numbers to 1,000** (*e.g. 435 - 3 is 3 tens; 369 - 3 is 3 hundreds)*
- **Read and write numbers to 1,000 in numerals and words.**
- **Order and compare numbers up to 1,000** and use place value in a number to explain (*e.g. 407 is smaller than 470 because 470 has 7 10s and 407 has 0 tens.*)
- **Count forwards and backwards in 1s from any number.** *Including across 10s boundaries, e.g. 348, 349, 350, 351, etc.*
- **Count forwards and backwards in 10s from any number.** *Including across 100s boundaries, e.g. 487, 497, 507, 517, etc.*
- **Count forwards and backwards in 100s from any number.** *E.g. 236, 336, 436, etc.*
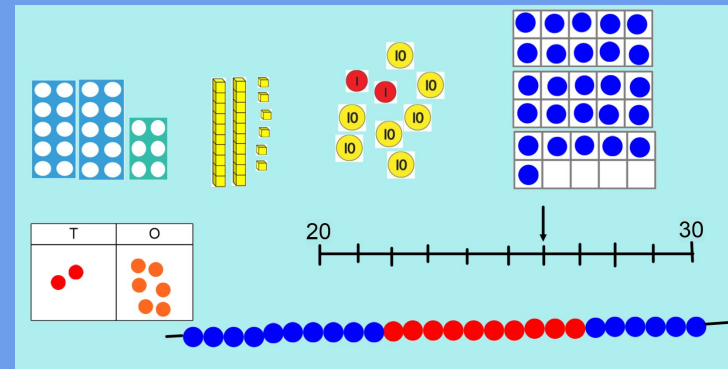
Represent numbers in different ways.

10 ones = 10

10 tens = 100

10 hundreds = 1,000
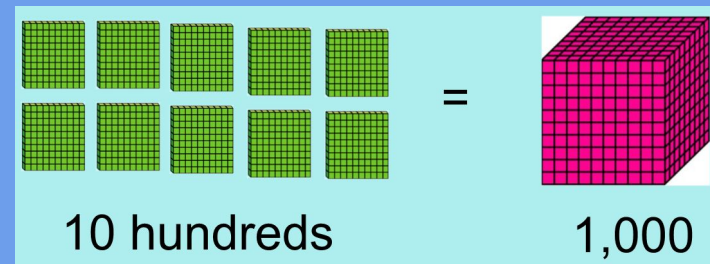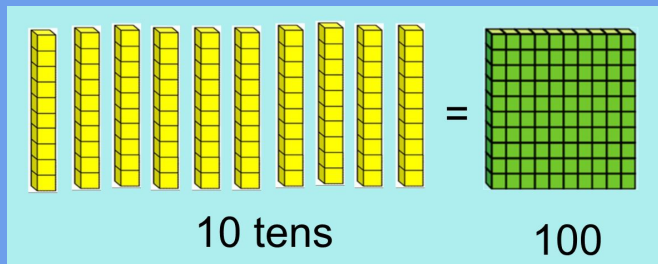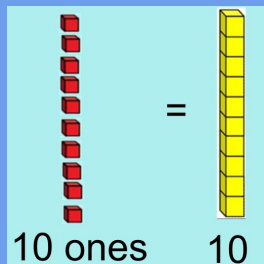
Addition - adding 2- and 3-digit numbers using the **expanded method.**

Expanded Addition

$$247 + 478 = 725$$

REMEMBER! Always start with the ones!

200   40   7 +

400   70   8
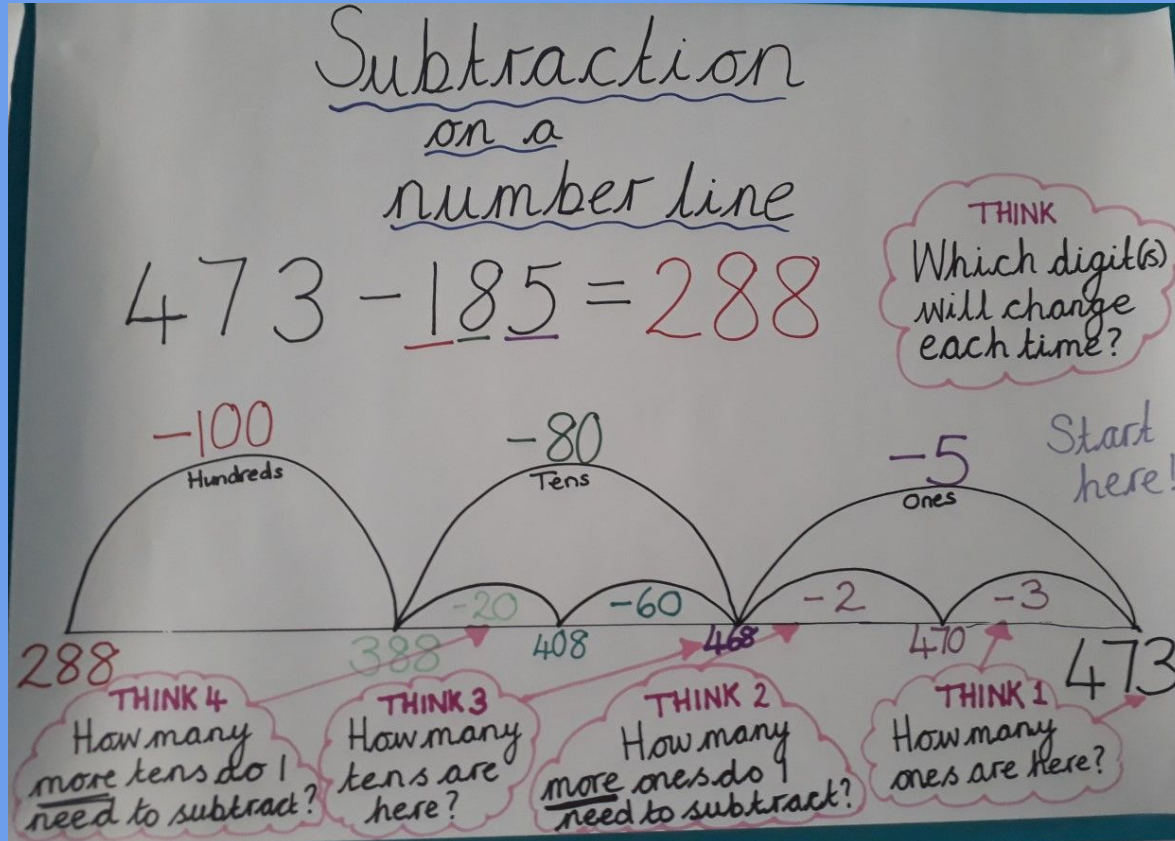
600   110   15

REMEMBER! Make sure your ones are always lined up!

REMEMBER!
$4 + 7 = 11$
so
$40 + 70 = 110$
and
$400 + 700 = 1100$

Tricky parts:

- setting it out accurately, especially if the second number only has 2 digits. **Make sure the 1s are always lined up.**

- adding 10s across the hundreds boundary. **Count in 10s to help.** *E.g 70 + 40: 80, 90, 100, 110*

- adding accurately at the end - children forget to add 10s that are in the 1s or 100s that are in the 10s. **Combine hundreds first, then tens, then ones.** *E.g. 600+ 100 = 700; 700+10+10 = 720; 720+5 = 725.*

Subtraction - subtracting 2- and 3-digit numbers using a **number line.**

Subtraction on a number line

$473 - 185 = 288$

THINK
Which digit(s) will change each time?

-100 Hundreds
-80 Tens
-5 Ones

Start here!

-20 -60 -2 -3

288   388   408   468   470   473

THINK 4
How many more tens do I need to subtract?

THINK 3
How many tens are here?

THINK 2
How many more ones do I need to subtract?

THINK 1
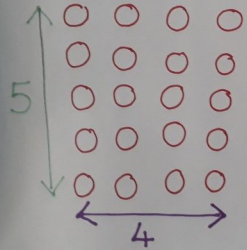How many ones are here?

Tricky parts:

- partitioning the right number. **Make sure children are clear which number they are subtracting before they start.**

- subtracting across boundaries. **Start with what they can see.** *e.g. 473 - can see 3 1s.* **How many more do I need to subtract?** *i.e. 3 + ? = 5.* **If needed, hide the hundreds to help.** *i.e calculate 70 - 2 to help with 470 - 2.*

Times tables - understanding what x means and recalling both multiplication and division facts.

Children should be able to make clear links between multiplication and division - using bar models and 'multiplication with holes' (inverse) helps this.

e.g. 15 ÷ 5 = ?   use: 5 x ? = 15

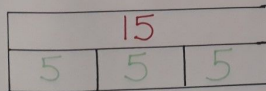**By Year 3, children should already know the 2, 5 and 10 times tables.**

By the END of Year 3, children should also know the 3, 4, 6 and 8 times tables.

By the end of Year 4, children will be expected to know all times tables (multiplication and division) up to 12 x 12.

Multiplication - partitioning arrays to understand the **grid method.**

Tricky parts:

- knowing which numbers to multiply after partitioning.
Write the calculation they need to do in each box.

- adding the answer back together. **Add tens from both numbers, then add ones.**

National Curriculum strands

The curriculum focuses on developing breadth and depth rather than accelerating children onto more advanced skills. There are 3 strands to the National Curriculum:

Fluency - knowing number facts, being able to use calculation strategies, understanding how to do the Maths. *e.g. what you have seen on the previous slides.*

Reasoning - developing thinking skills and explaining their thinking and understanding.

e.g.

True or false?
4 x 5 = 3 x 6
Explain how you know.

274   284   294
Sam says: 'The next number will be 314.'
Daisy says: 'The next number will be 304.'
Who do you agree with? Why?

Problem Solving - applying their skills in a wider range of contexts and being able to decide what steps they need to do to solve a problem.

e.g.

Use the number cards to make the statement correct. Can you find 3 different ways?
3 x ___ < ____ x 5

2   4   5   8   10   12

A farmer has 432 chickens. In the barn he counts 145 chickens and in the field there are 86. How many chickens are hiding in the coop?