Welcome!

Maths at St Andrew's

20/01/2023

- Overview:
  - Maths at St Andrew's
  - Calculation Policy
  - Concrete Pictorial Abstract
- Year 1 'Lesson'
- Year 5 'Lesson'
- Any Questions?

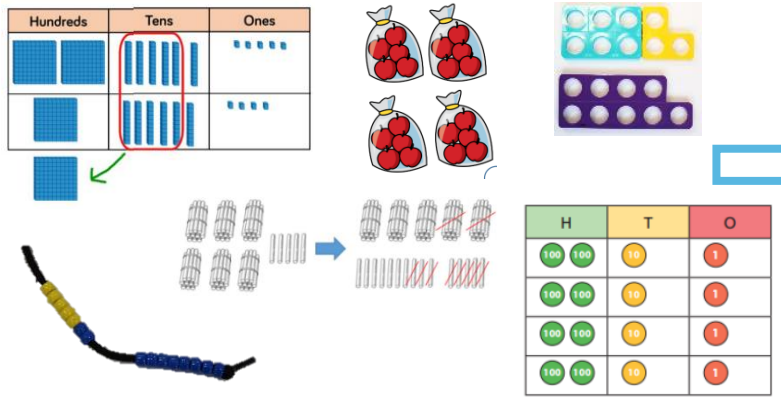
Maths at St Andrew's

Long term planning using the National Curriculum objectives, is approached through the **White Rose** scheme of learning. The calculation policy enables consistency in models and methods, creating a coherent and well-sequenced plan. Approaching maths through teaching and learning the **Concrete** to **Pictorial** to **Abstract** methods enables all pupils to build and secure basic numeracy skills and develop mastery. The methods taught and used by pupils aid in developing their fluency, reasoning and problem-solving skills.

Doodle Maths is used across the school, to encourage an online personalised daily opportunity to rehearse and practise Mathematical skills.

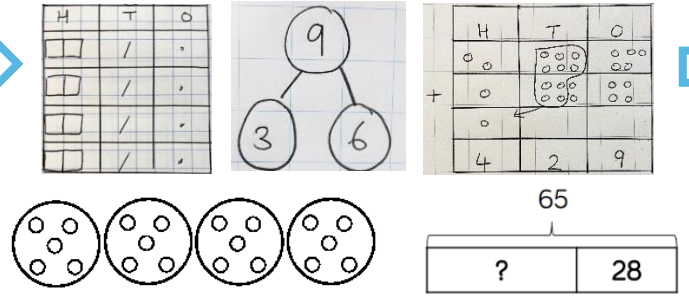
Concrete

Using objects (including manipulatives)



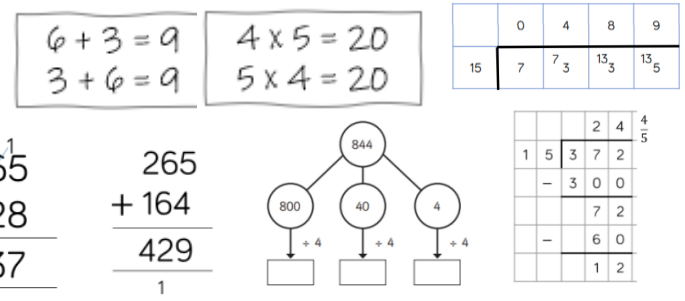
Pictorial

Pictures representing the concrete methods. Also includes bar models, number lines and hundred squares



Abstract

Formal written methods such as column addition or long division, or number sentences.



Calculation Policy

Manipulatives and Models

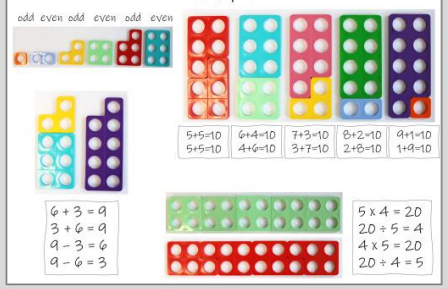
Click on the name of the manipulative/model to see examples and read how they may be useful.

- Bar Models
- Bead String
- Unifix and Multilink Cubes
- Cuisenaire Rods
- Dienes/Base 10 (+/-)
- Dienes/Base 10 (x/÷)
- Number Shapes/Numicon
- Number Tracks
- Number Lines (Labelled)
- Number Lines (Blank)
- Part-Whole Models
- Place Value Counters (+/-)
- Place Value Counters (x/÷)
- Ten-Frame

Some of the images are sourced from White Rose, the Maths scheme we follow.

Number Shapes/Numicon

Examples

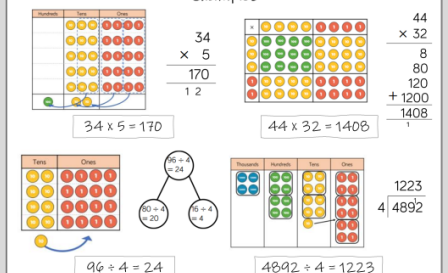


Useful for:

- odd and even numbers
- number bonds to 10
- adding and subtracting within 10 and beyond
- multiplying and dividing numbers

Place Value Counters (x/÷)

Examples



Useful for:

- supporting understanding of column multiplication, with the written method alongside the model
- supporting understanding of division; first (Y3/4), linked to a part-whole model – sharing counters. Later (Y5/6), short division – grouping counters.

Contents

Click on the title to follow the link to the sectio

Click on these icons to do the following a

Return to Contents Page

Return to Manipulatives and Models

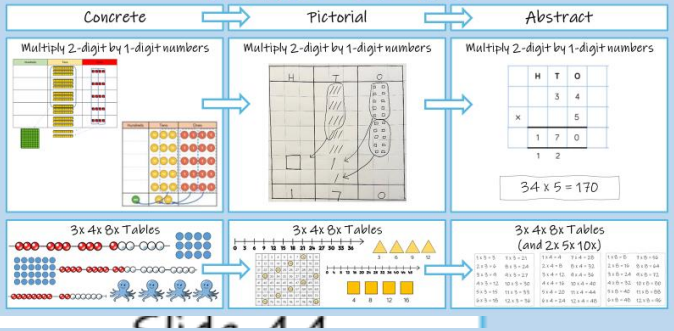
Calculation Policies

Click on the link to see the policy.
Then, click the back arrow in the top left corner to return to this page.

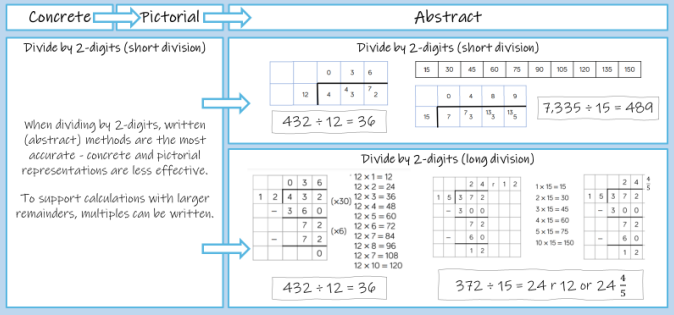
Maths in Rainbows (Reception)			
Addition – Y1	Subtraction – Y1	Multiplication – Y1	Division – Y1
Addition – Y2	Subtraction – Y2	Multiplication – Y2	Division – Y2
Addition – Y3	Subtraction – Y3	Multiplication – Y3	Division – Y3
Addition – Y4	Subtraction – Y4	Multiplication – Y4	Division – Y4
Addition – Y5	Subtraction – Y5	Multiplication – Y5	Division – Y5
Addition – Y6	Subtraction – Y6	Multiplication – Y6	Division – Y6

Some of the images are sourced from White Rose, the Maths scheme we follow.

Multiplication – Y3



Division – Y6



Year 1 'Lesson'

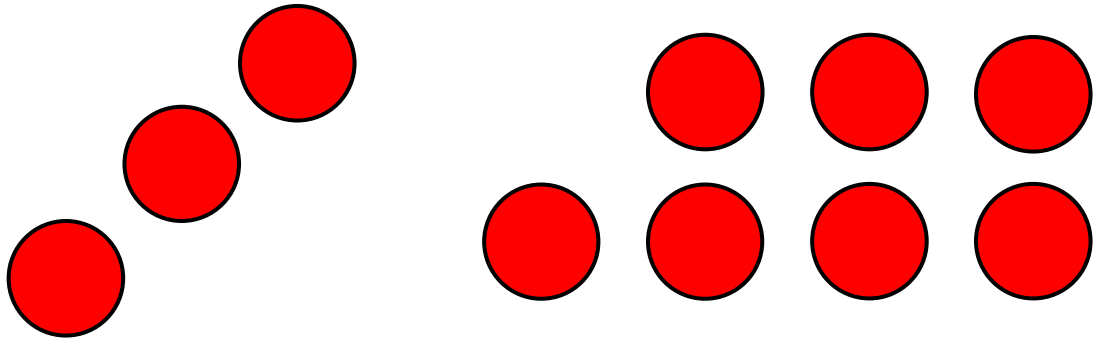
Maths at St Andrew's

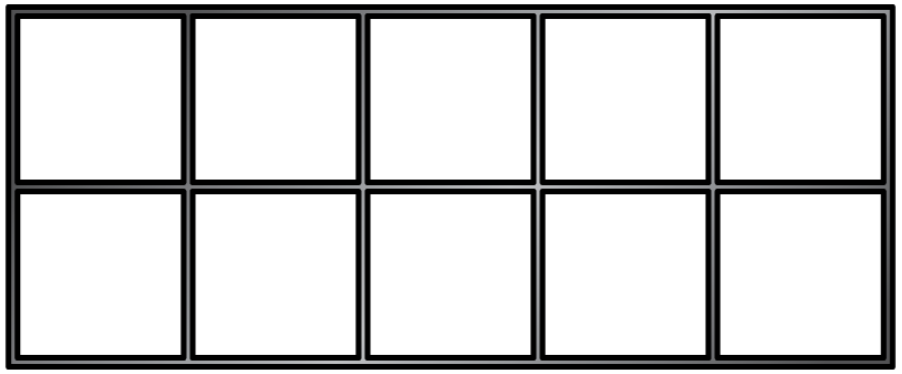
20/01/2023

Example of a Year 1 lesson

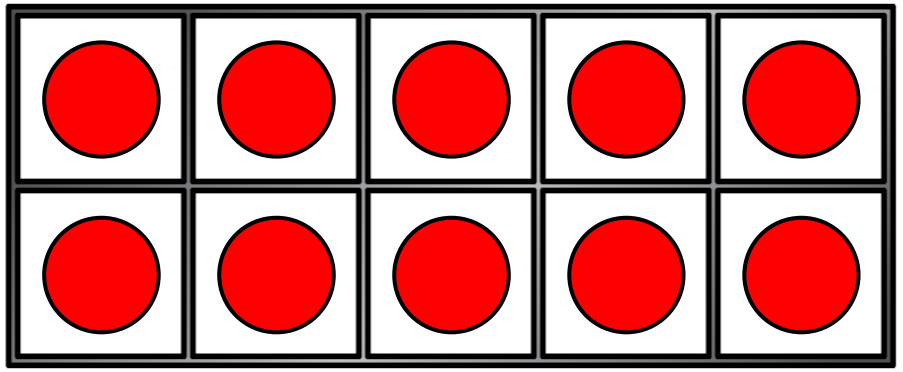
Understand 10, 11, 12, 13, 14, and 15

How many counters are there?
How do you know?





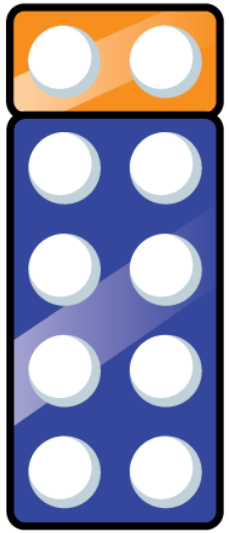
How many counters are there?



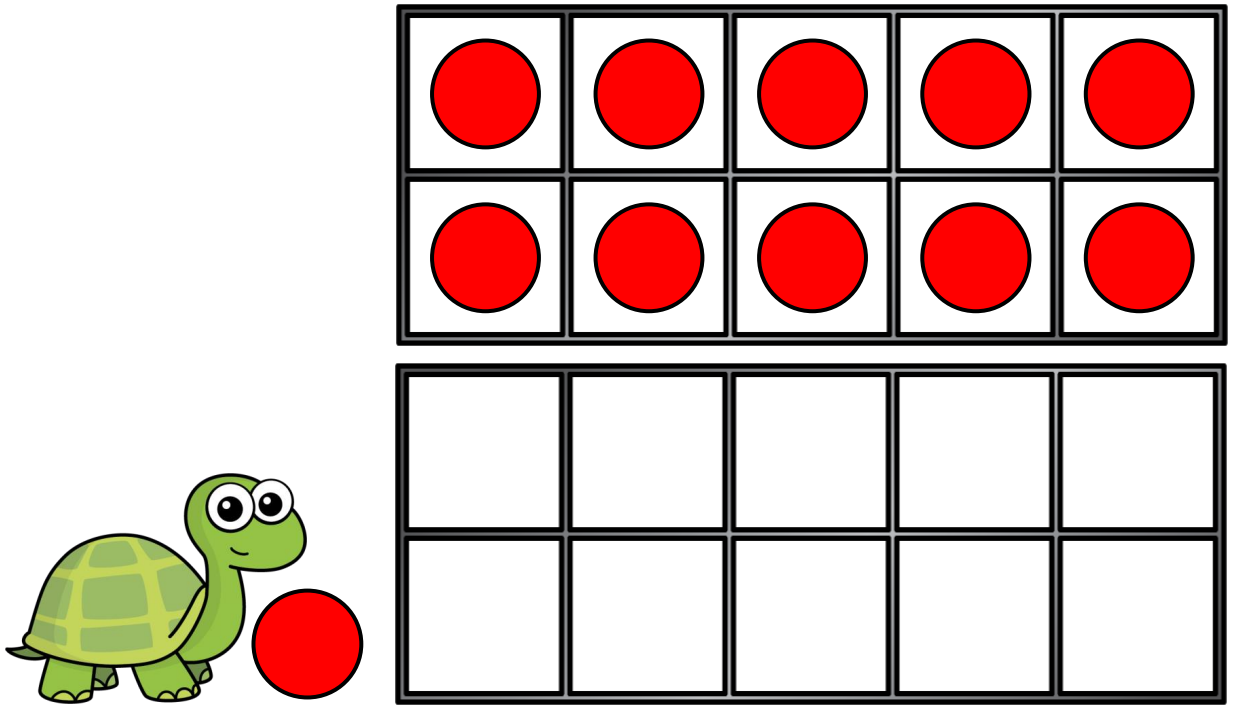
The ten frame is full,
so I know that I have made 10

Find a partner to make 10

Tell them the number sentence (e.g. 2 + 8 = 10)



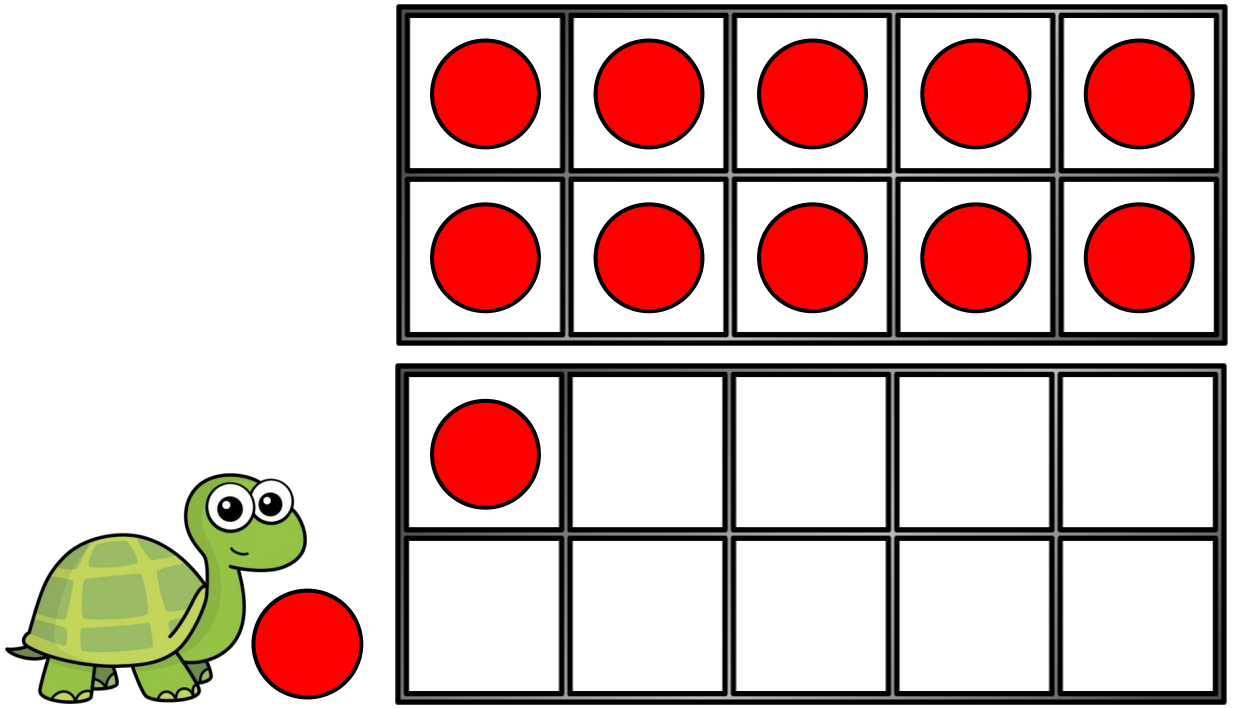
How many counters are there?



Have a think

11 has 1 ten and 1 one.

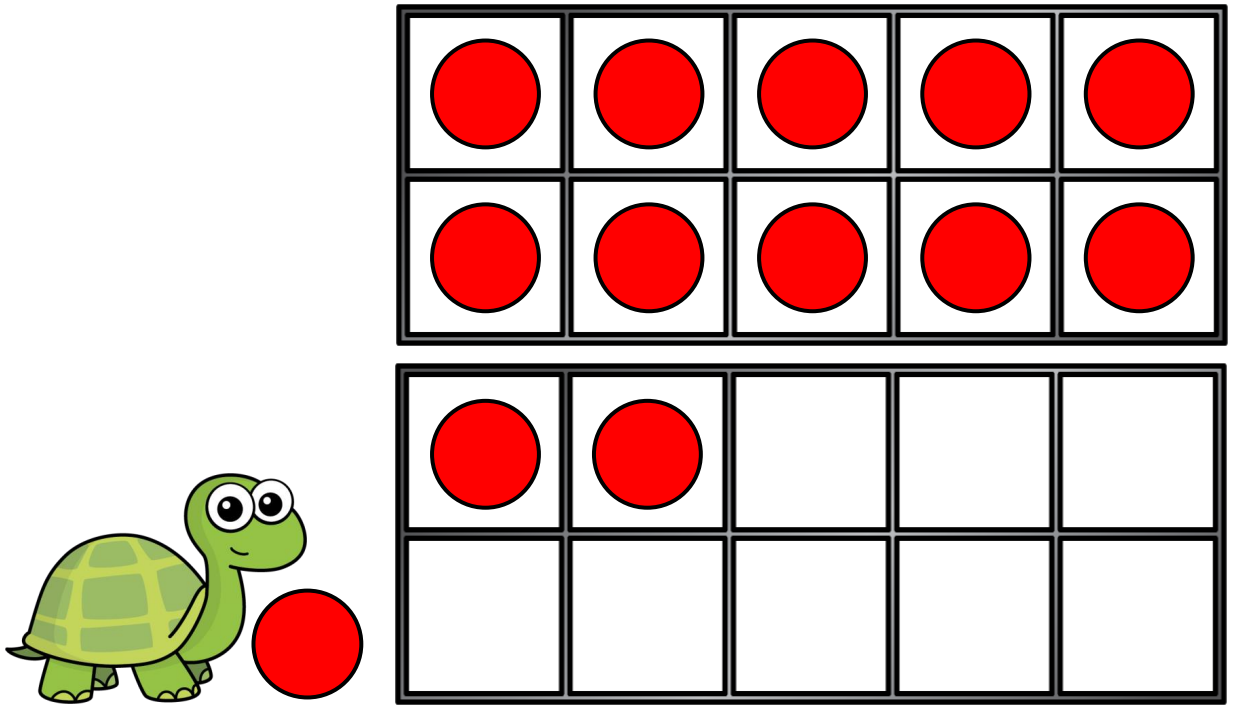
How many counters are there?



Have a think

12 has 1 ten and 2 ones.

How many counters are there?



Have a think

13 has _1_ ten and _3_ ones.

11 has 1 ten and 1 one.

12 has 1 ten and 2 ones.

13 has 1 ten and 3 ones.

14 has _1_ ten and _4_ ones.

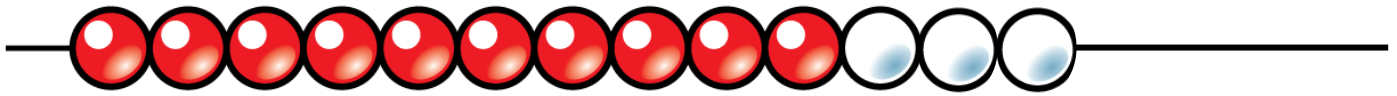
Have a think

15 has _1_ ten and _5_ ones.

Have a think

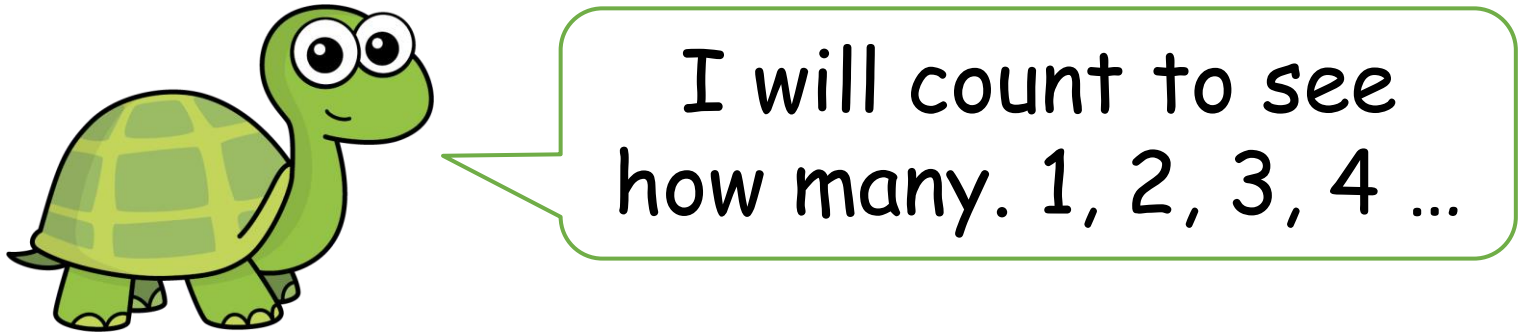
16 has _1_ ten and _6_ ones.

With your talk partner, ask them what is one more or one less than the number on your bead string



Have a think

Tiny has some beads on a bead string.



Does Tiny need to count the beads?

Year 5 'Lesson'

Example of a Year 5 lesson

Maths at St Andrew's

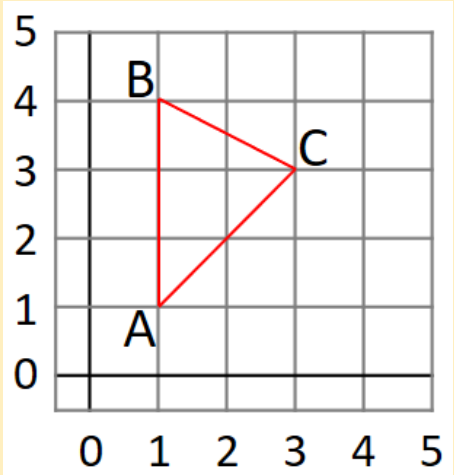
20/01/2023

15/09/2022

LO: I can recognize, read and write numbers to 1,000,000

1) What number is represented?

2) Write the coordinates of each of the vertices of the triangle.



3) 459 + 2,500 =

4) 4,000 – 219 =

5) 6,780 + 3,139 =

Challenge:

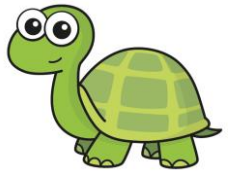
On the back of your whiteboard, write your 15 times tables as far as you can go.

HTh	TTh	Th	H	T	O

Thousands			Ones		
H	T	O	H	T	O

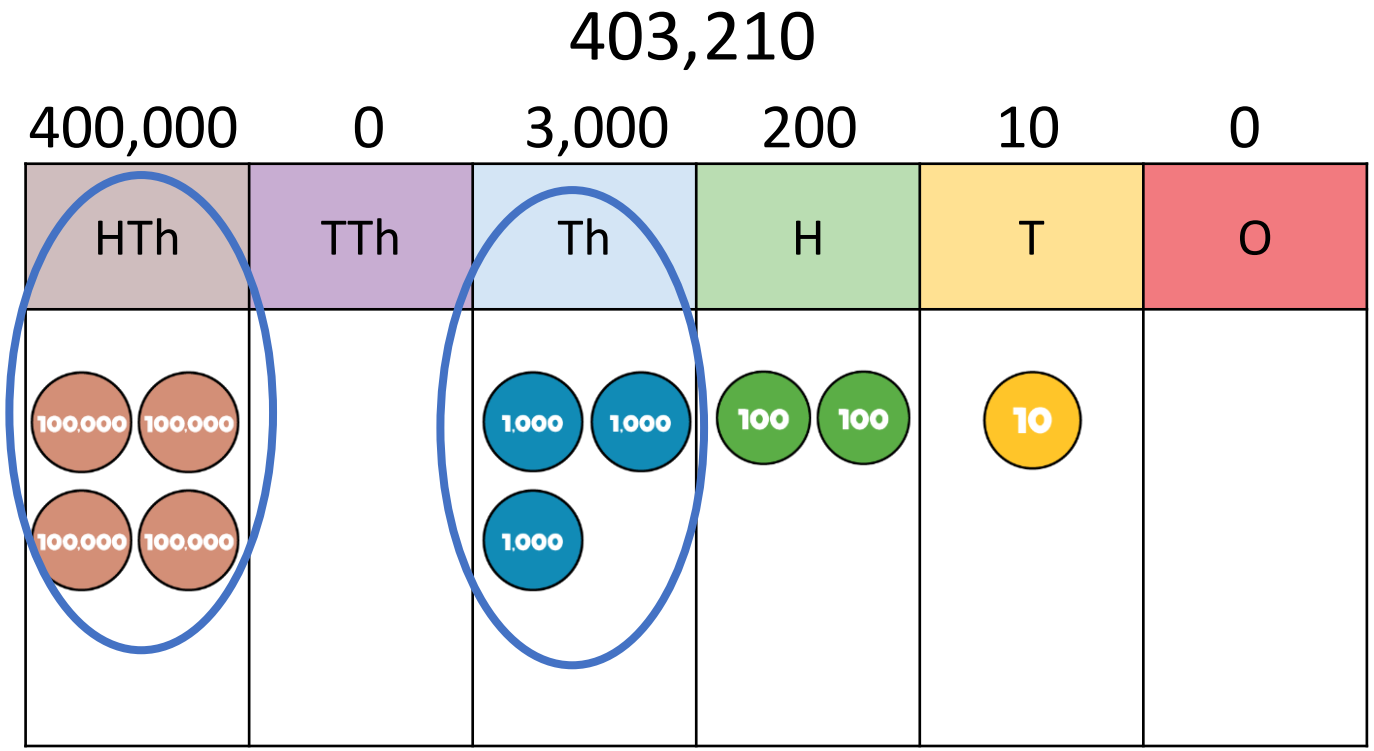
Have a think

The number is 43,210



HTh	TTh	Th	H	T	O
100,000 100,000 100,000 100,000		1,000 1,000 1,000	100 100	10	

What mistake has Tiny made?



Tiny did not include 0 as a place holder in the ten thousand column.

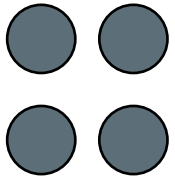
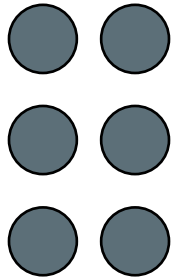
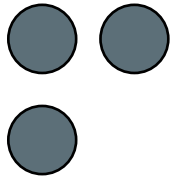
What number is shown in the place value chart?

Thousands			Ones		
H	T	O	H	T	O
●● ●●		●● ●● ●●	●● ●	●●	

Have a think

What number is shown in the place value chart?

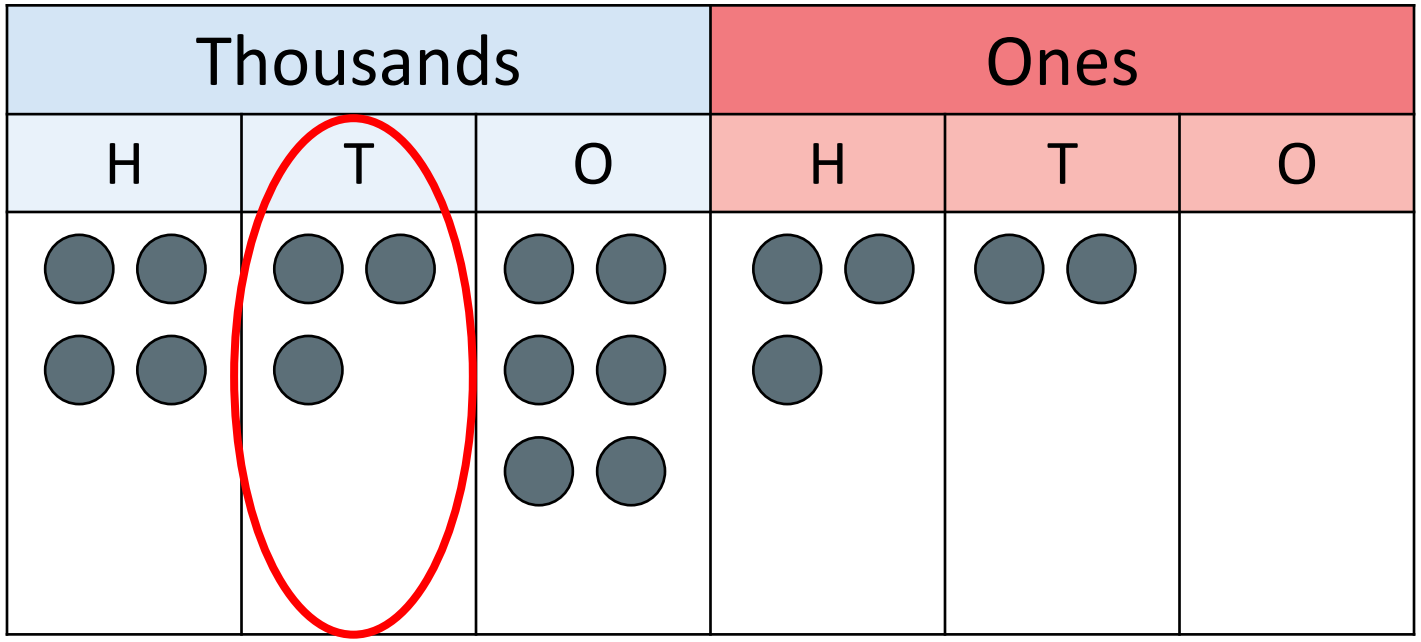
406,320

400,000	0	6,000	300	20	0
Thousands			Ones		
H	T	O	H	T	O
					
4	0	6	3	2	0

What number is shown in the place value chart?

406,320

Have a think



What will the number be if you add three counters to the ten-thousands column?

436,320

15/09/2022 XV/IX/MMXXII

LO: I can recognize, read and write numbers to 1,000,000

Bronze Start Q1 → **Silver** Complete Q1→Q7

Gold Complete Q1→Q7 + Challenges

1 What numbers are represented in the place value charts?

a)

HTh	TTh	Th	H	T	O
●● ●● ●● ●●	●●	●●	●● ●● ●● ●● ●	●● ●● ●●	●

b)

HTh	TTh	Th	H	T	O
	●● ●● ●● ●	●			●● ●● ●● ●● ●

c)

HTh	TTh	Th	H	T	O
●● ●		●● ●	●● ●●		●● ●● ●●

d)

HTh	TTh	Th	H	T	O
●● ●● ●	●	●● ●● ●● ●		●● ●● ●	

2 What numbers are represented in the place value charts?

a)

Thousands			Ones		
H	T	O	H	T	O
●● ●	●●	●● ●● ●	●● ●● ●● ●● ●	●	●● ●● ●●

b)

Thousands			Ones		
H	T	O	H	T	O
	●● ●●	●● ●●		●	●● ●● ●● ●● ●

c)

Thousands			Ones		
H	T	O	H	T	O
●● ●		●● ●● ●● ●	●● ●●	●● ●● ●	

d)

Thousands			Ones		
H	T	O	H	T	O
●● ●					●

3 What is the same and what is different about the place value charts in questions 1 and 2?

4 Make the numbers in a place value chart.

a) 104,379 **b)** 804,363 **c)** 92,715 **d)** 690,018

What is the same about all the numbers you have made?

5 **a)** Which numbers have 2 in the hundreds column?

295 **2,095** **19,216** **200,000**

b) Write three more numbers that have 2 in the hundreds column. Each number should have a different number of digits.

6 Write the value of the 3 in each number.

a) 387 **c)** 7,903 **e)** 531,476

b) 5,306 **d)** 307,612 **f)** 603,956

7 Dora is thinking of a 6-digit number.

- It is an odd number.
- The smallest digit has the greatest value.
- The greatest digit has the smallest value.
- The first and last digits add up to 10
- The first three digits also add up to 10
- The last three digits add up to 20
- The two middle digits are the same.

What could Dora's number be?

Write another 6-digit number and clues to go with it.
Share the clues with a partner to see if they can find your number.

Great Challenge

Find the values of A, B and C to complete the sentences using greater than or less than.

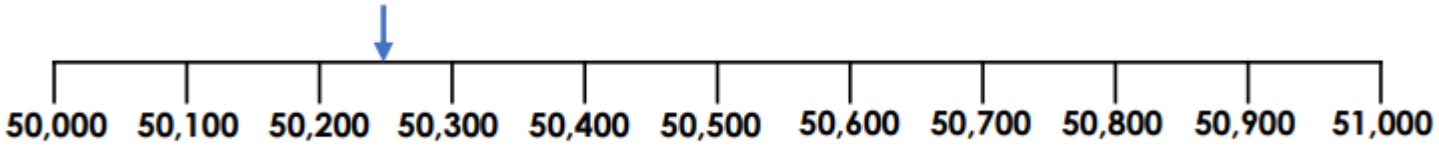
A.

TTh	Th	H	T	O
●● ●●		●●	●●● ●●	●● ●● ●

B.

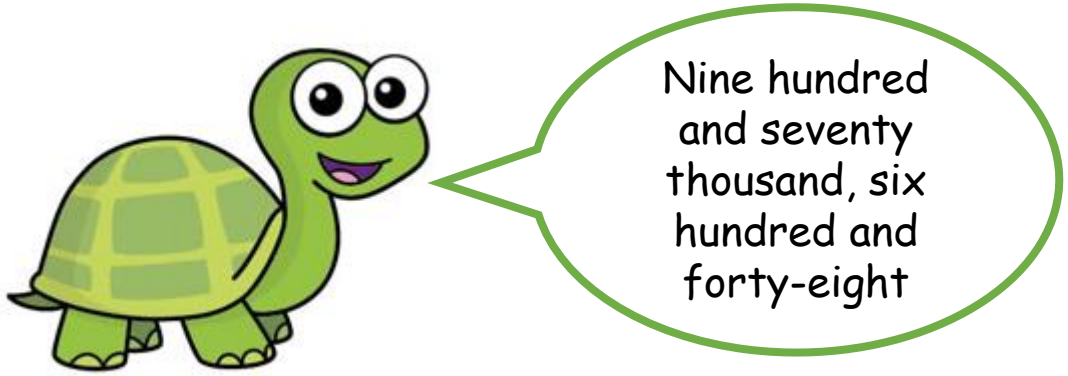
50,000	500	20	5

C.



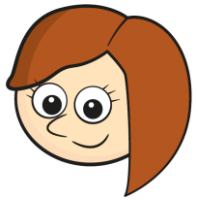
A is _____ than B. B is _____ than C. C is _____ A.

Amazing Challenge



Tiny has read the number 907,648. Is he correct? Explain your answer.

Rosie is thinking of a 6-digit number.



The greatest digit has the largest possible value.
The second digit is double the last digit.
The first and last digits add up to 11
The last 3 digits add up to 14
The value of the digit in the thousands column is 3
The value of the digit in the hundreds column is 7

What is Rosie's number?

HTh	TTh	Th	H	T	O
9	4	3	7	5	2

943,752

Any Questions?

Useful Websites/Links

For Parents/Carers

Curriculum at St Andrew's
https://www.st-andrews-pri.oxon.sch.uk/curriculum-at-st-andrews/

White Rose 'Parents' Advice and Guidance'
https://whiterosemaths.com/advice-and-guidance

White Rose 'Parent Resources' (including free workbooks)
https://whiterosemaths.com/parent-resources

White Rose 'Home Learning' (for videos that explain different concepts/methods covered)
https://whiterosemaths.com/homelearning

NRICH (for challenges and investigation tasks)
https://nrich.maths.org/8955

For Children

Doodle Learning (Doodle Maths and Doodle Tables)
https://doodlelearning.com/

BBC Bitesize
http://www.bbc.co.uk/bitesize/ks1/maths/
http://www.bbc.co.uk/bitesize/ks2/maths/

Maths Dictionary for Kids
http://amathsdictionaryforkids.com/

Multiplication.com
https://www.multiplication.com/

Topmarks
https://www.topmarks.co.uk/

Primary Games
https://primarygames.co.uk/