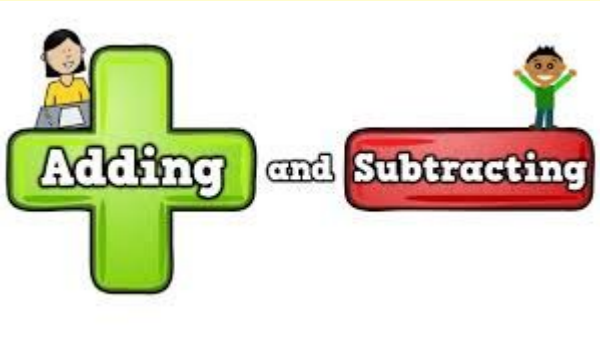
Thursday 12th March

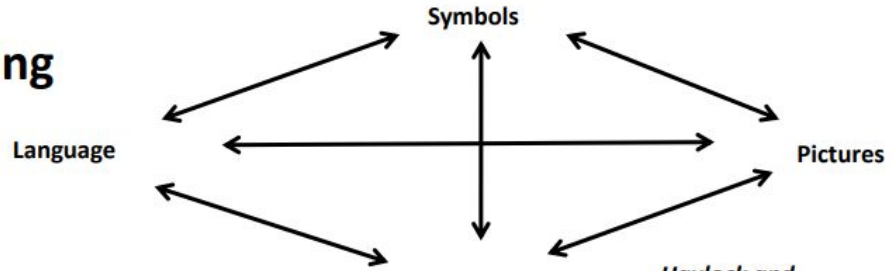
Addition and Subtraction workshop



Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. … pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

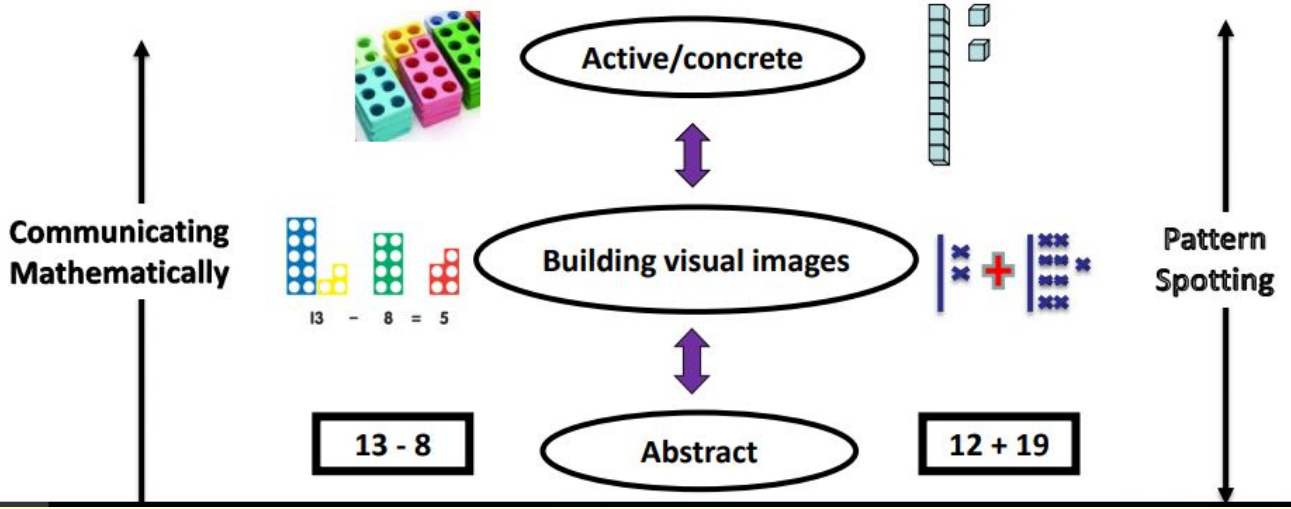
National Curriculum 2014

Structuring Learning



Haylock and Cockburn (2008)

Children must have concrete experiences that enable them to create visual images. They should be encouraged to articulate their learning and to become pattern spotters.

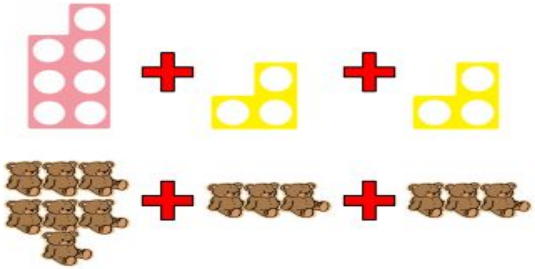


Structures of Addition (Haylock and Cockburn 2008)

Children should experience problems with all the different addition structures in a range of practical and relevant contexts e.g. money and measurement

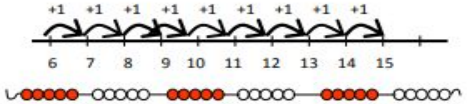
Aggregation

Union of two sets
How many/much altogether?
The total



Augmentation

Start at and count on
Increase by
Go up by



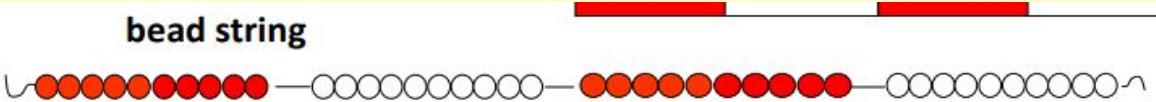
Commutative law

Understand addition can be done in any order
Start with bigger number when counting on
(Explain to children that subtraction does not have this property)

is the same as/equal to (=)

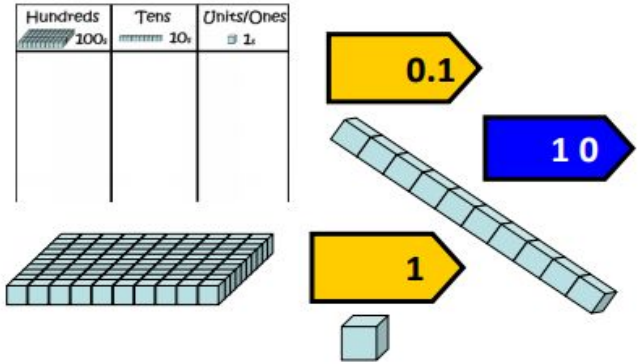
RESOURCES

bead string



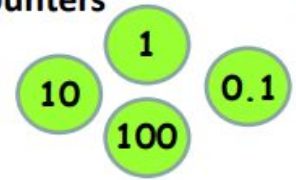
count stick

place value apparatus



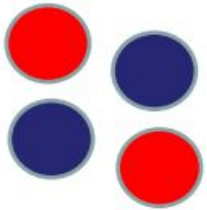
Multilink

place value counters



Cuisenaire

Numicon



double sided counters

number grids 100 and 200

number line

bead string

count stick

place value apparatus

Hundreds	Tens	Units/Ones
100s	10s	1s

0.1

1 0

1

Multilink

place value counters

1

10

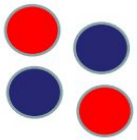
0.1

100

Cuisenaire

Numicon

number line



double sided counters

number grids 100 and 200

Retrieval

- Learning and retrieval of maths facts
  - fact organisers
  - **retrieval**
  - home learning

YEAR 3 FACT ORGANISER

Number bonds for all numbers to 20

2 + 9 = 11	5 + 9 = 14	**Example of a fact family**
3 + 8 = 11	6 + 8 = 14	6 + 9 = 15
4 + 7 = 11	7 + 7 = 14	9 + 6 = 15
5 + 6 = 11	6 + 9 = 15	15 – 9 = 6
3 + 9 = 12	7 + 8 = 15	15 – 9 = 6
4 + 8 = 12	7 + 9 = 16	**Examples of other facts**
5 + 7 = 12	8 + 8 = 16	4 + 5 = 9
6 + 6 = 12	8 + 9 = 17	13 + 5 = 18
4 + 9 = 13	9 + 9 = 18	19 – 7 = 12
5 + 8 = 13		10 – 6 = 4
6 + 7 = 13		

This list includes the most challenging facts but children will need to learn all number bonds for each number to 20

(e.g. 15 + 2 = 17). This includes related subtraction facts (e.g. 17 – 2 = 15).

3 x table and related division facts

3 × 1 = 3	1 × 3 = 3	3 ÷ 3 = 1	3 ÷ 1 = 3
3 × 2 = 6	2 × 3 = 6	6 ÷ 3 = 2	6 ÷ 2 = 3
3 × 3 = 9	3 × 3 = 9	9 ÷ 3 = 3	9 ÷ 3 = 3
3 × 4 = 12	4 × 3 = 12	12 ÷ 3 = 4	12 ÷ 4 = 3
3 × 5 = 15	5 × 3 = 15	15 ÷ 3 = 5	15 ÷ 5 = 3
3 × 6 = 18	6 × 3 = 18	18 ÷ 3 = 6	18 ÷ 6 = 3
3 × 7 = 21	7 × 3 = 21	21 ÷ 3 = 7	21 ÷ 7 = 3
3 × 8 = 24	8 × 3 = 24	24 ÷ 3 = 8	24 ÷ 8 = 3
3 × 9 = 27	9 × 3 = 27	27 ÷ 3 = 9	27 ÷ 9 = 3
3 × 10 = 30	10 × 3 = 30	30 ÷ 3 = 10	30 ÷ 10 = 3
3 × 11 = 33	11 × 3 = 33	33 ÷ 3 = 11	33 ÷ 11 = 3
3 × 12 = 36	12 × 3 = 36	36 ÷ 3 = 12	36 ÷ 12 = 3

Children should be able to answer these questions in any order, including missing number questions

e.g. 3 × ◯ = 18 or ◯ ÷ 3 = 11.

Duration of time

There are 60 seconds in a minute.
There are 60 minutes in an hour.
There are 24 hours in a day.
There are 7 days in a week.
There are 12 months in a year.
There are 365 days in a year.
There are 366 days in a leap year.

Number of days in each month			
January	31	July	31
February	28/29	August	31
March	31	September	30
April	30	October	31
May	31	November	30
June	30	December	31

3 x table and related division facts

4 × 1 = 4	1 × 4 = 4	4 ÷ 4 = 1	4 ÷ 1 = 4
4 × 2 = 8	2 × 4 = 8	8 ÷ 4 = 2	8 ÷ 2 = 4
4 × 3 = 12	3 × 4 = 12	12 ÷ 4 = 3	12 ÷ 3 = 4
4 × 4 = 16	4 × 4 = 16	16 ÷ 4 = 4	16 ÷ 4 = 4
4 × 5 = 20	5 × 4 = 20	20 ÷ 4 = 5	20 ÷ 5 = 4
4 × 6 = 24	6 × 4 = 24	24 ÷ 4 = 6	24 ÷ 6 = 4
4 × 7 = 28	7 × 4 = 28	28 ÷ 4 = 7	28 ÷ 7 = 4
4 × 8 = 32	8 × 4 = 32	32 ÷ 4 = 8	32 ÷ 8 = 4
4 × 9 = 36	9 × 4 = 36	36 ÷ 4 = 9	36 ÷ 9 = 4
4 × 10 = 40	10 × 4 = 40	40 ÷ 4 = 10	40 ÷ 10 = 4
4 × 11 = 44	11 × 4 = 44	44 ÷ 4 = 11	44 ÷ 11 = 4
4 × 12 = 48	12 × 4 = 48	48 ÷ 4 = 12	48 ÷ 12 = 4

They should be able to answer these questions in any order, including missing number questions e.g. 4 × ◯ = 16 or ◯ ÷ 4 = 7

8 x table and related division facts

8 × 1 = 8	1 × 8 = 8	8 ÷ 8 = 1	8 ÷ 1 = 8
8 × 2 = 16	2 × 8 = 16	16 ÷ 8 = 2	16 ÷ 2 = 8
8 × 3 = 24	3 × 8 = 24	24 ÷ 8 = 3	24 ÷ 3 = 8
8 × 4 = 32	4 × 8 = 32	32 ÷ 8 = 4	32 ÷ 4 = 8
8 × 5 = 40	5 × 8 = 40	40 ÷ 8 = 5	40 ÷ 5 = 8
8 × 6 = 48	6 × 8 = 48	48 ÷ 8 = 6	48 ÷ 6 = 8
8 × 7 = 56	7 × 8 = 56	56 ÷ 8 = 7	56 ÷ 7 = 8
8 × 8 = 64	8 × 8 = 64	64 ÷ 8 = 8	64 ÷ 8 = 8
8 × 9 = 72	9 × 8 = 72	72 ÷ 8 = 9	72 ÷ 9 = 8
8 × 10 = 80	10 × 8 = 80	80 ÷ 8 = 10	80 ÷ 10 = 8
8 × 11 = 88	11 × 8 = 88	88 ÷ 8 = 11	88 ÷ 11 = 8
8 × 12 = 96	12 × 8 = 96	96 ÷ 8 = 12	96 ÷ 12 = 8

They should be able to answer these questions in any order, including missing number questions

e.g. 8 × ◯ = 16 or ◯ ÷ 8 = 7

Tell time

Children need to be able to tell the time using a clock with hands. This target can be broken down into several steps:

- To nearest hour
- To nearest half an hour
- To nearest quarter of an hour
- To nearest 5 minutes
- To nearest 1 minutes

YEAR 4 FACT ORGANISER

Number bonds to 100

Some examples: 60 + 40 = 100 40 + 60 = 100 100 – 40 = 60 100 – 60 = 40 75 + 25 = 100 25 + 75 = 100 100 – 25 = 75 100 – 75 = 25	37 + 63 = 100 63 + 37 = 100 100 – 63 = 37 100 – 37 = 63 48 + 52 = 100 52 + 48 = 100 100 – 52 = 48 100 – 48 = 52	What do I add to 65 to make 100? What is 100 take away 6? What is 13 less than 100? How many more than 98 is 100? What is the difference between 89 and 100?

This list includes some examples of facts that children should know. They should be able to answer questions including missing number questions e.g. 49 + ◯ = 100 or 100 – ◯ = 72.

6 x table and related division facts

6 × 1 = 6	1 × 6 = 6	6 ÷ 6 = 1	6 ÷ 1 = 6
6 × 2 = 12	2 × 6 = 12	12 ÷ 6 = 2	12 ÷ 2 = 6
6 × 3 = 18	3 × 6 = 18	18 ÷ 6 = 3	18 ÷ 3 = 6
6 × 4 = 24	4 × 6 = 24	24 ÷ 6 = 4	24 ÷ 4 = 6
6 × 5 = 30	5 × 6 = 30	30 ÷ 6 = 5	30 ÷ 5 = 6
6 × 6 = 36	6 × 6 = 36	36 ÷ 6 = 6	36 ÷ 6 = 6
6 × 7 = 42	7 × 6 = 42	42 ÷ 6 = 7	42 ÷ 7 = 6
6 × 8 = 48	8 × 6 = 48	48 ÷ 6 = 8	48 ÷ 8 = 6
6 × 9 = 54	9 × 6 = 54	54 ÷ 6 = 9	54 ÷ 9 = 6
6 × 10 = 60	10 × 6 = 60	60 ÷ 6 = 10	60 ÷ 10 = 6
6 × 11 = 66	11 × 6 = 66	66 ÷ 6 = 11	66 ÷ 11 = 6
6 × 12 = 72	12 × 6 = 72	72 ÷ 6 = 12	72 ÷ 12 = 6

Children should be able to answer these questions in any order, including missing number questions

e.g. 6 × ◯ = 72 or ◯ ÷ 6 = 7.

Multiply and divide single-digit numbers by 10 and 100

7 × 10 = 70	30 × 10 = 300	0.8 × 10 = 8
10 × 7 = 70	10 × 30 = 300	10 × 0.8 = 8
70 ÷ 7 = 10	300 ÷ 30 = 10	8 ÷ 0.8 = 10
70 ÷ 10 = 7	300 ÷ 10 = 30	8 ÷ 10 = 0.8
6 × 100 = 600	40 × 100 = 4000	0.2 × 10 = 2
100 × 6 = 600	100 × 40 = 4000	10 × 0.2 = 2
600 ÷ 6 = 100	4000 ÷ 40 = 100	2 ÷ 0.2 = 10
600 ÷ 100 = 6	4000 ÷ 100 = 40	2 ÷ 10 = 0.2

These are just examples of the facts for this term. Children should be able to answer these questions in any order, including missing number questions e.g. 10 × ◯ = 5 or ◯ ÷ 10 = 60.

9 x table and 11 x table and related division facts

9 × 1 = 9	9 ÷ 9 = 1	11 × 1 = 11	11 ÷ 11 = 1
9 × 2 = 18	18 ÷ 9 = 2	11 × 2 = 22	22 ÷ 11 = 2
9 × 3 = 27	27 ÷ 9 = 3	11 × 3 = 33	33 ÷ 11 = 3
9 × 4 = 36	36 ÷ 9 = 4	11 × 4 = 44	44 ÷ 11 = 4
9 × 5 = 45	45 ÷ 9 = 5	11 × 5 = 55	55 ÷ 11 = 5
9 × 6 = 54	54 ÷ 9 = 6	11 × 6 = 66	66 ÷ 11 = 6
9 × 7 = 63	63 ÷ 9 = 7	11 × 7 = 77	77 ÷ 11 = 7
9 × 8 = 72	72 ÷ 9 = 8	11 × 8 = 88	88 ÷ 11 = 8
9 × 9 = 81	81 ÷ 9 = 9	11 × 9 = 99	99 ÷ 11 = 9
9 × 10 = 90	90 ÷ 9 = 10	11×10 = 110	110÷11 = 10
9 × 11 = 99	99 ÷ 9 = 11	11×11 = 121	121÷11 = 11
9 × 12 = 108	108 ÷ 9 = 12	11×12 = 132	132÷11 = 12

Children should be able to answer these questions in any order, including missing number questions e.g. 9 × ◯ = 54 or ◯ ÷ 9 = 11.

7 x table and related division facts

7 × 1 = 7	1 × 7 = 7	7 ÷ 7 = 1	7 ÷ 1 = 7
7 × 2 = 14	2 × 7 = 14	14 ÷ 7 = 2	14 ÷ 2 = 7
7 × 3 = 21	3 × 7 = 21	21 ÷ 7 = 3	21 ÷ 3 = 7
7 × 4 = 28	4 × 7 = 28	28 ÷ 7 = 4	28 ÷ 4 = 7
7 × 5 = 35	5 × 7 = 35	35 ÷ 7 = 5	35 ÷ 5 = 7
7 × 6 = 42	6 × 7 = 42	42 ÷ 7 = 6	42 ÷ 6 = 7
7 × 7 = 49	7 × 7 = 49	49 ÷ 7 = 7	49 ÷ 7 = 7
7 × 8 = 56	8 × 7 = 56	56 ÷ 7 = 8	56 ÷ 8 = 7
7 × 9 = 63	9 × 7 = 63	63 ÷ 7 = 9	63 ÷ 9 = 7
7 × 10 = 70	10 × 7 = 70	70 ÷ 7 = 10	70 ÷ 10 = 7
7 × 11 = 77	11 × 7 = 77	77 ÷ 7 = 11	77 ÷ 11 = 7
7 × 12 = 84	12 × 7 = 84	84 ÷ 7 = 12	84 ÷ 12 =7

Children should be able to answer these questions in any order, including missing number questions e.g. 7 × ◯ = 28 or ◯ ÷ 6 = 7.

Recognise decimal equivalents of fractions

1/2 = 0.5	1/10 = 0.1	1/100 = 0.01
1/4 = 0.25	3/10 = 0.3	7/100 = 0.07
3/4 = 0.75	7/10 = 0.7	21/100 = 0.21
	9/10 = 0.9	99/100 = 0.99

Children should be able to convert between decimals and fractions for ½, ¼, ¾ and any number of tenths and hundredths.

Explicit teaching - bridging through ten, doubles, near doubles, compensation, part/whole models

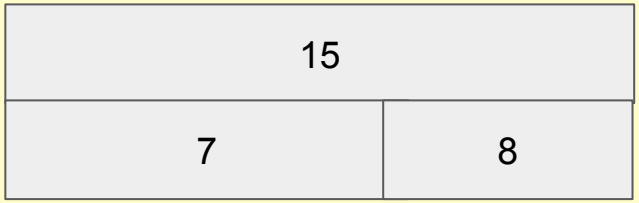
Repetition, repetition, repetition - every day

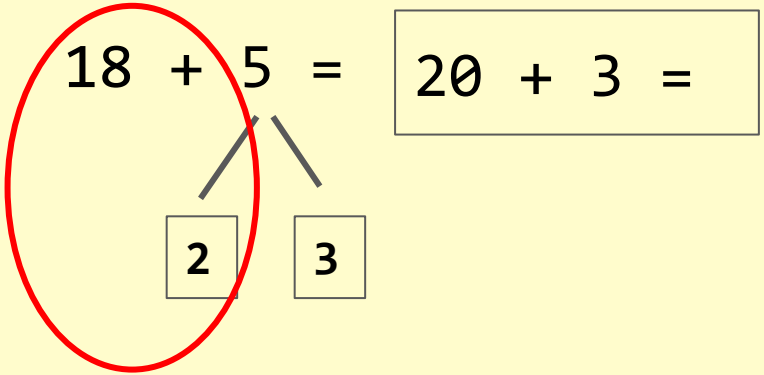
Spaced retrieval - mix retrieval of recently taught facts with new facts to keep it fresh. The more times a fact is retrieved from memory, the better the learning - especially if some time has elapsed since it was last retrieved

Low stakes testing - repeated quizzing/self testing without accountability improves recall

Summative testing - followed by intervention if necessary

2 + 9 = 11	5 + 9 = 14
3 + 8 = 11	6 + 8 = 14
4 + 7 = 11	7 + 7 = 14
5 + 6 = 11	6 + 9 = 15
3 + 9 = 12	7 + 8 = 15
4 + 8 = 12	7 + 9 = 16
5 + 7 = 12	8 + 8 = 16
6 + 6 = 12	8 + 9 = 17
4 + 9 = 13	9 + 9 = 18
5 + 8 = 13	
6 + 7 = 13	



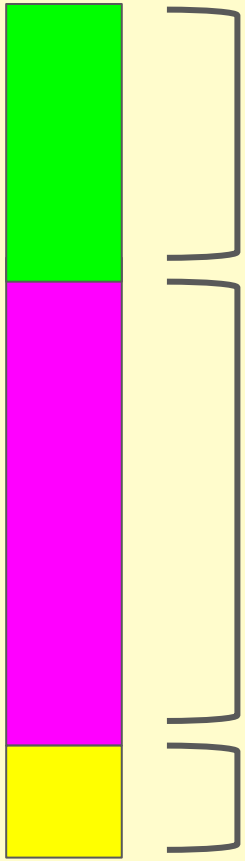


- Learning and retrieval of maths facts
  - fact organisers
  - **retrieval**
  - home learning

Not just maths facts.

All concepts and strategies need continual repeated practice

Maths lesson - proposed breakdown



Retrieval - 15-20 minutes

New Learning - 35-40 minutes

Plenary - 5 minutes

Retrieval - 15-20 minutes daily

Counting stick

Maths fact recall

4 operations (non-negotiables)

Reasoning (with secure learning)

Maths talk

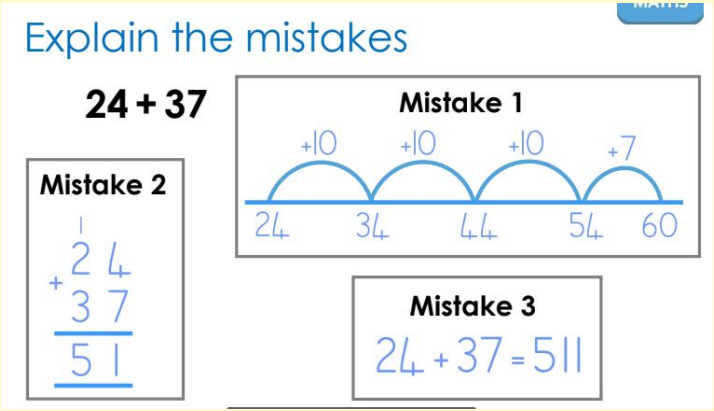
Retrieval

Yesterday

How many multiplication and division facts can you derive from

15 x 4

Last week



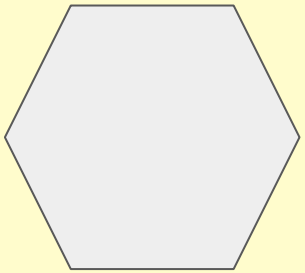
Last month

Always, sometimes, never?

Numbers with more digits are greater in value.

How do you know?

Ages ago



What can you tell me about this shape?

- Learning and retrieval of maths facts
- **Progression in calculation**
- Reasoning resources

Important for conceptual understanding of written methods and building on prior learning.

Calculation Policy

Written methods of calculations are based on mental strategies. Each of the four operations builds on mental skills which provide the foundation for jottings and informal written methods of recording. Skills need to be taught, practised and reviewed constantly. These skills lead on to more formal written methods of calculation.

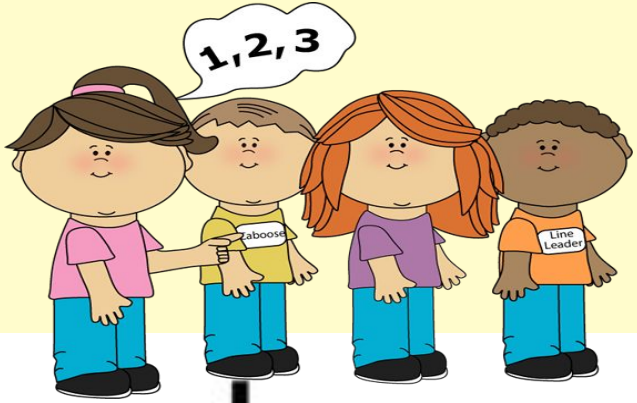
Strategies for calculation need to be represented by models and images to support, develop and secure understanding. This, in turn, builds fluency. When teaching a new strategy it is important to start with numbers that the child can easily manipulate so that they can understand the methodology.

https://www.youtube.com/watch?v=yXdHGBfoqfw

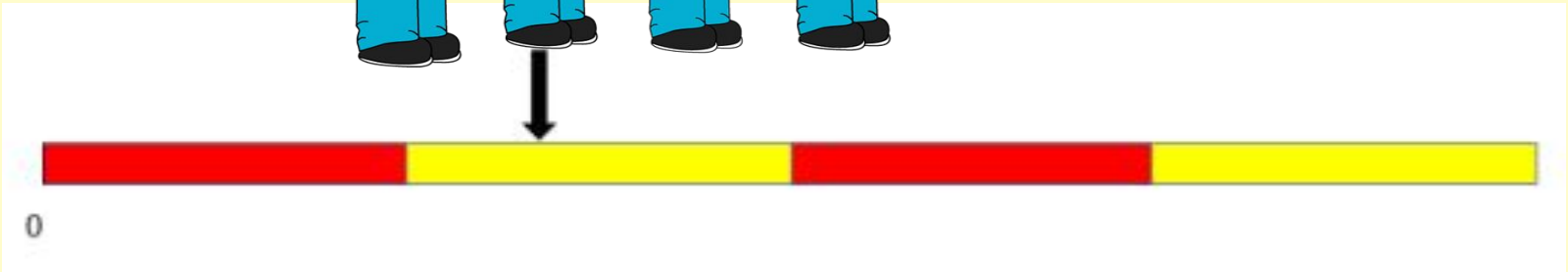
This shows how using known addition/subtraction number facts helps to make links with adding larger numbers mentally like in this video

We use the counting stick to practise times tables, counting on from any number and also to support addition and subtraction.

Let's count on in **100s** from 128 to 2028.



Which digits change when we count in hundreds?



Now count backwards from 1000 in hundreds.

Base 10 represents thousands, hundreds, tens and ones.

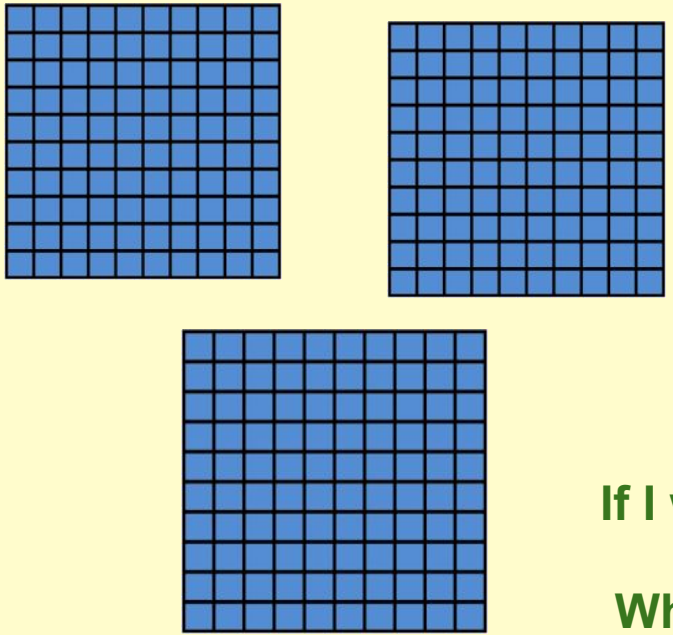
Use the base 10 to make 123

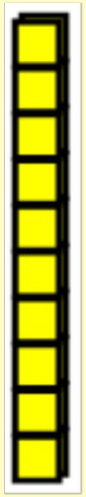
Add 100

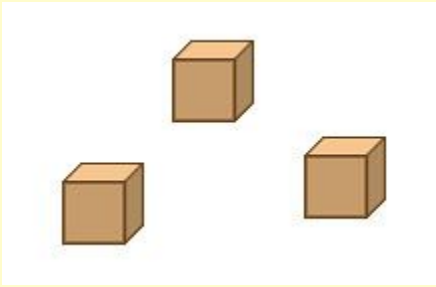
What will your answer be?

Hundreds	Tens	Ones

What is this number?



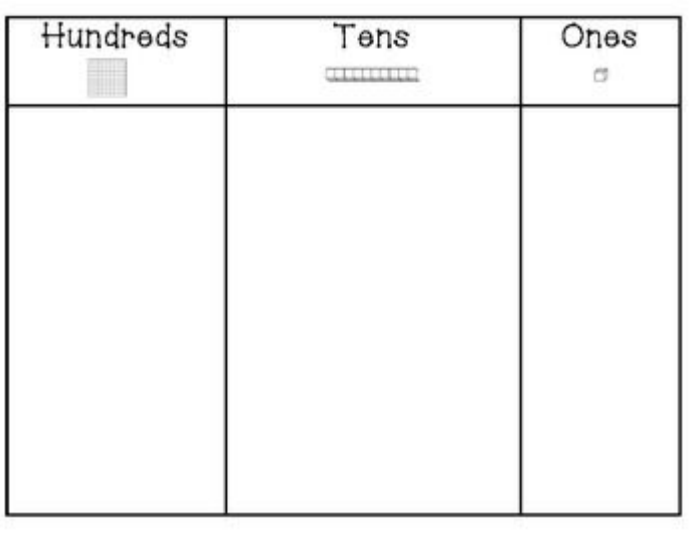




If I was going to add 3, what would I need to do?

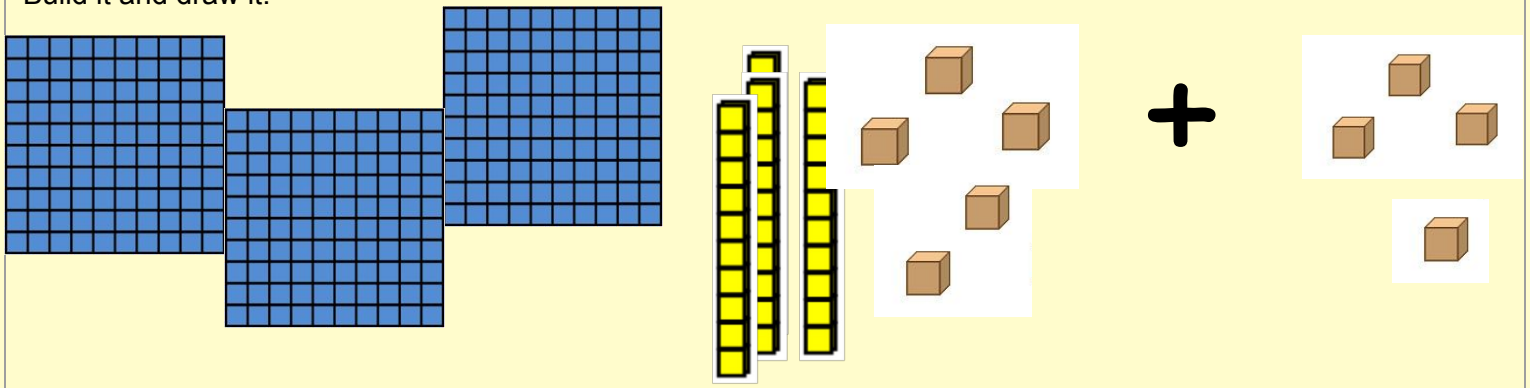
Which column changes? Why?

On your place value mat, please make 345.

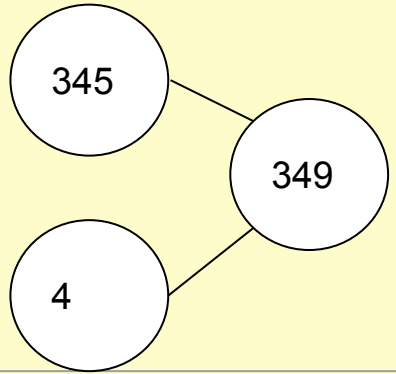


If I add 4, what changes? Why?

Build it and draw it:



Put it in a part whole model:

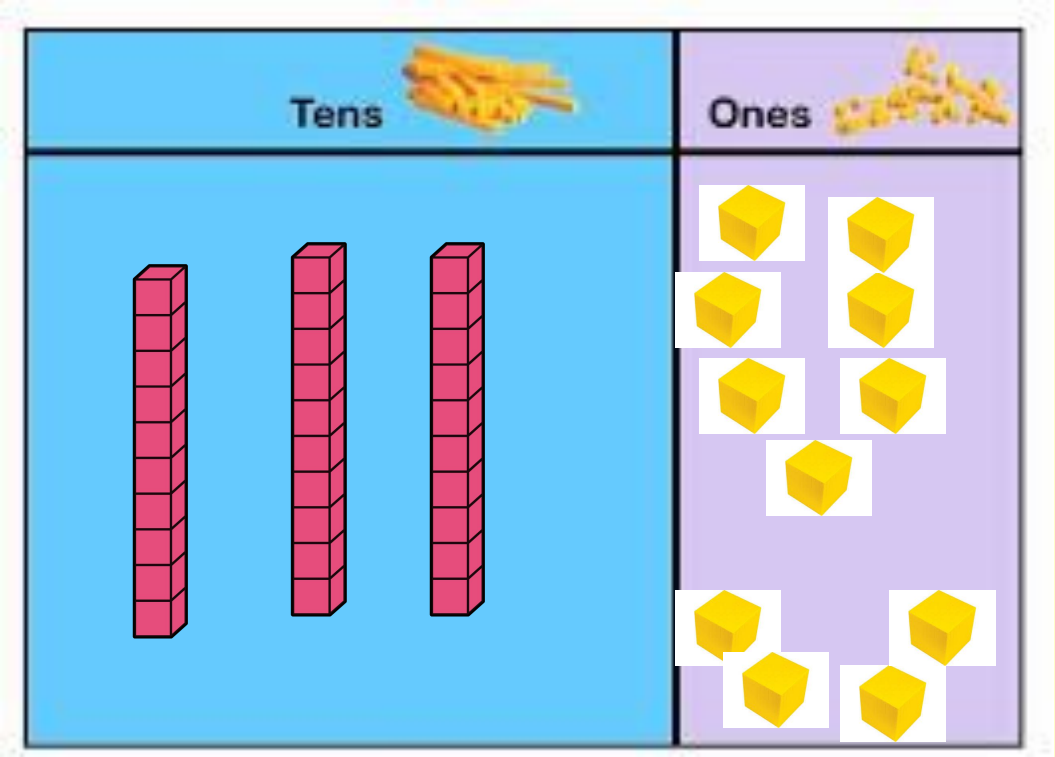


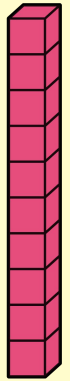
Write it as a number sentence:

345 + 4 = 349

We can also use dienes to help us cross the tens boundary.

34 + 7 =





Now you try ……

Use your place value mat and the base 10 to solve these problems

25 + 5 =

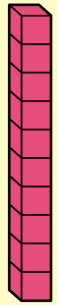
46 + 5 =

23 + 8 =

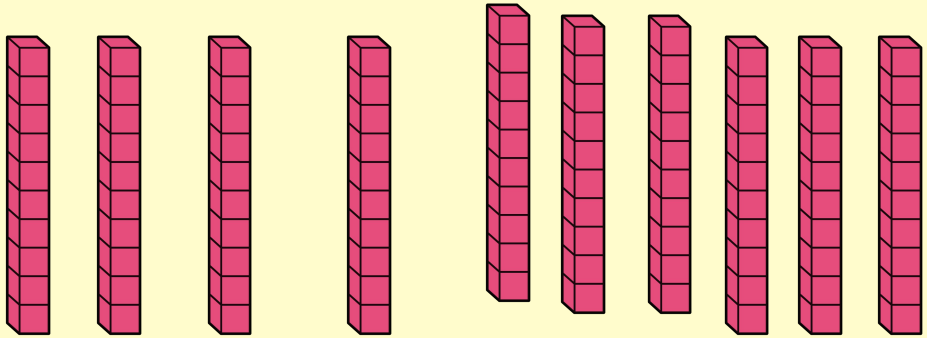
19 + 3 =

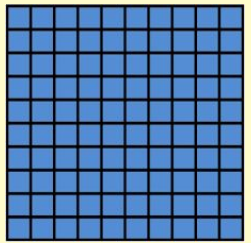
17 + 6 =

We can exchange 10 ones for a block of ten.

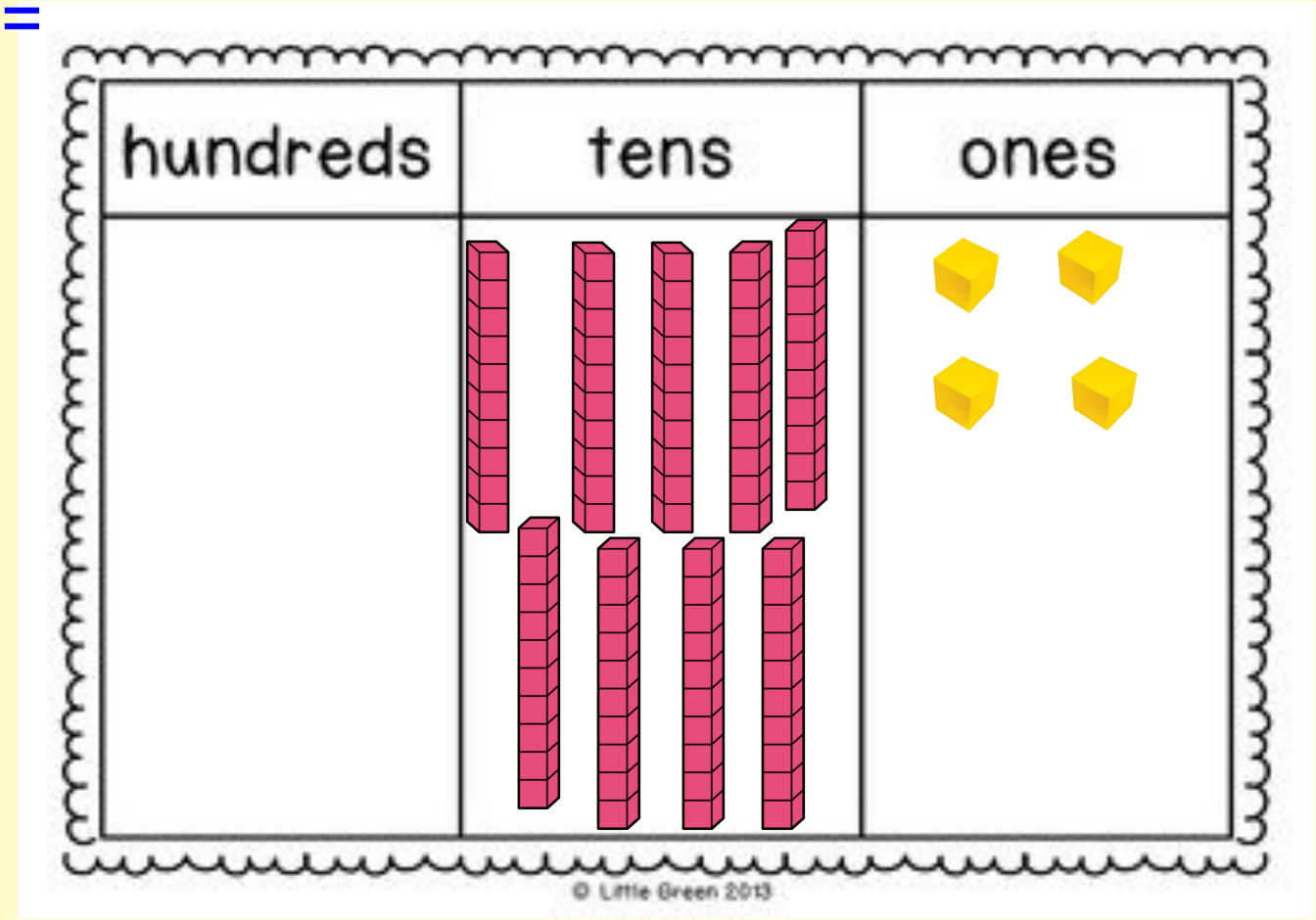


We can also exchange 10 tens for a block of 100.

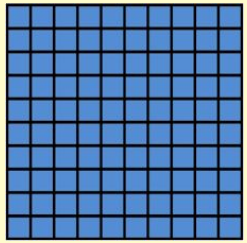


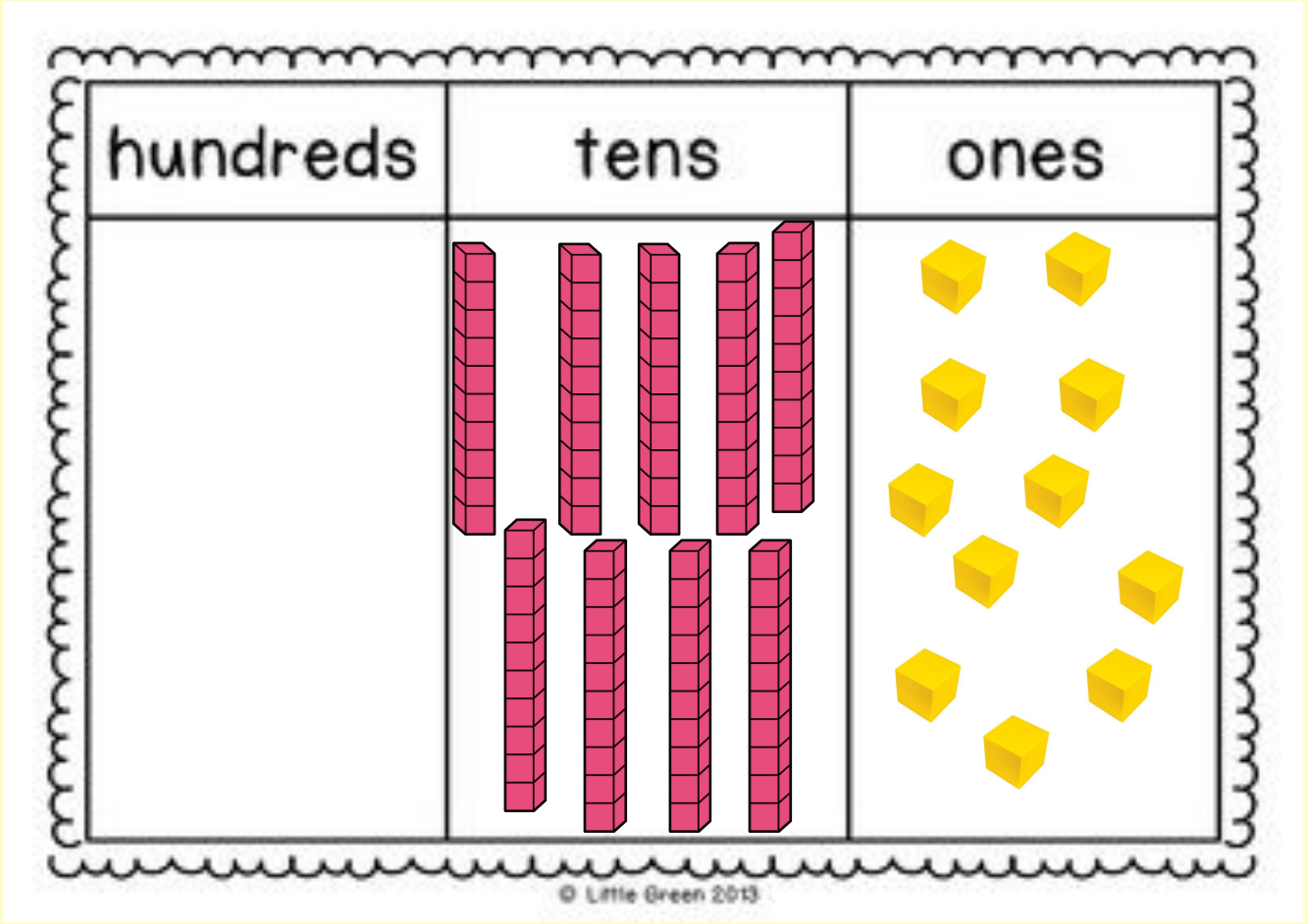


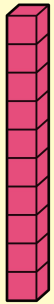
94 + 7 =



94 + 7 =

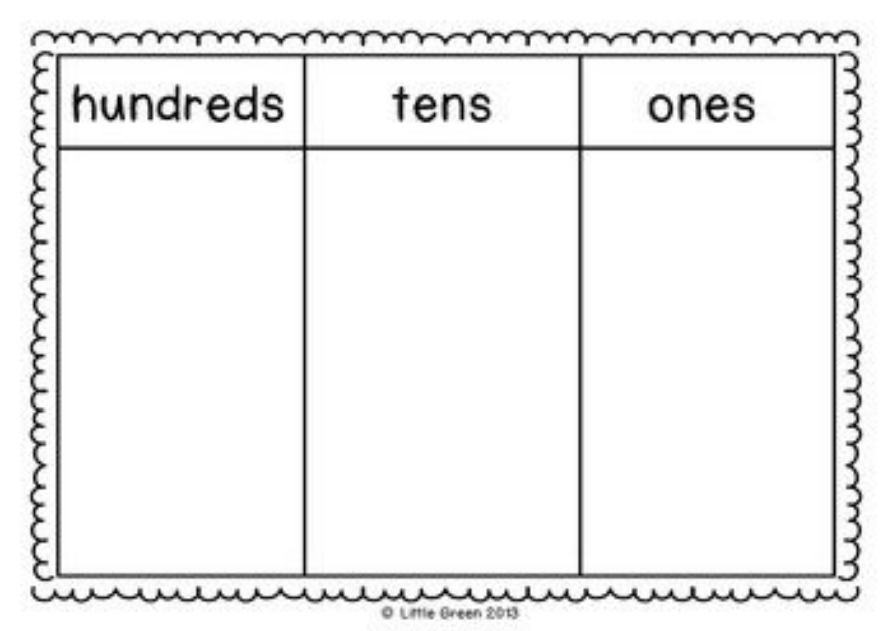






Now you try ……
Use your place value mat and the base 10 to solve these problems:

195 + 5 =
298+ 5 =
199 + 8 =
198 + 3 =
297 + 6 =



We can use similar methods for subtraction

Base 10 represents thousands, hundreds, tens and ones.

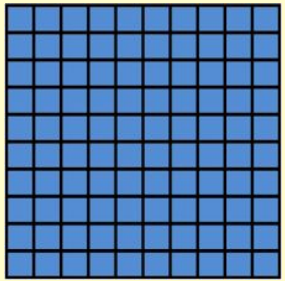
Use the base 10 to make 123

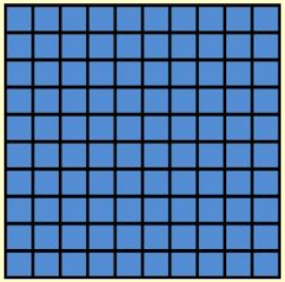
Subtract 100

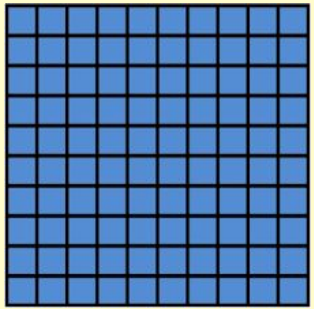
What will your answer be?

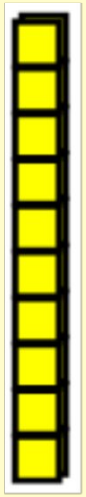
Hundreds	Tens	Ones

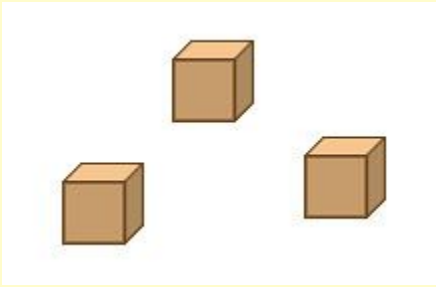
What is this number?







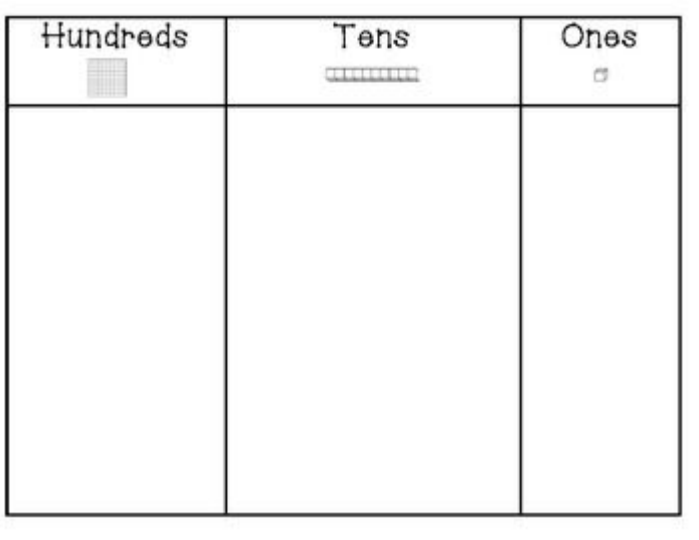




If I was going to subtract 3, what would I need to do?

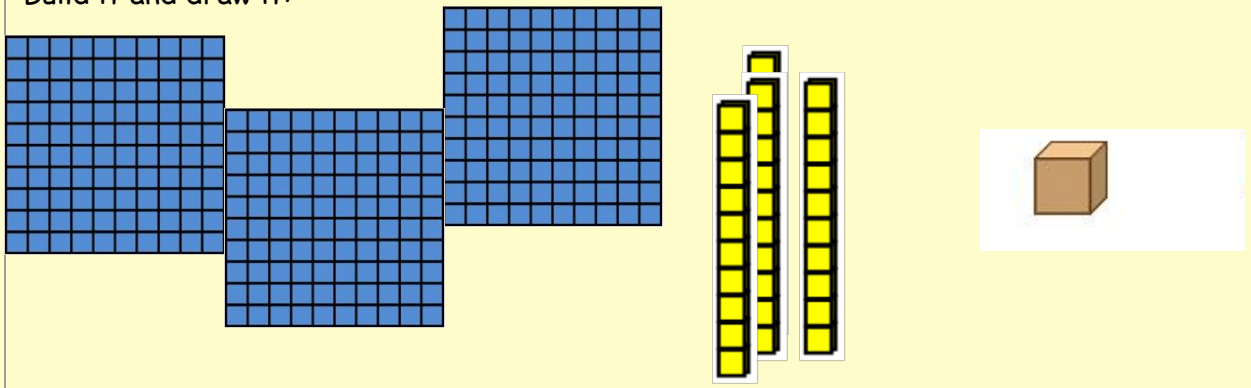
Which column changes? Why?

On your place value mat, please make 345.

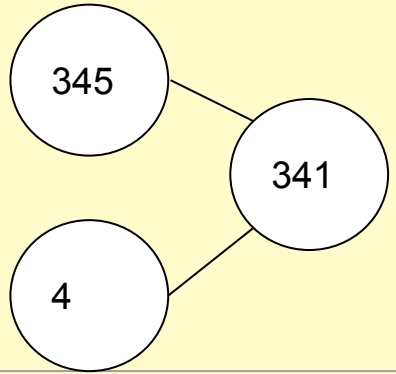


If I subtract 4, what changes? Why?

Build it and draw it:



Put it in a part whole model:

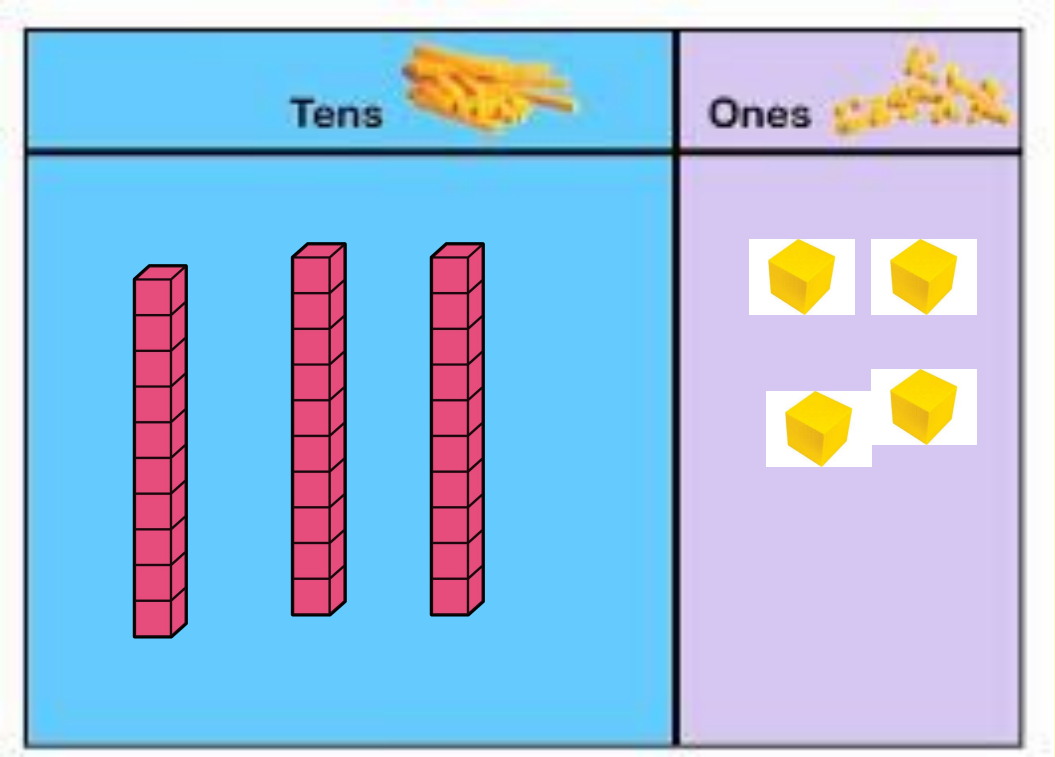


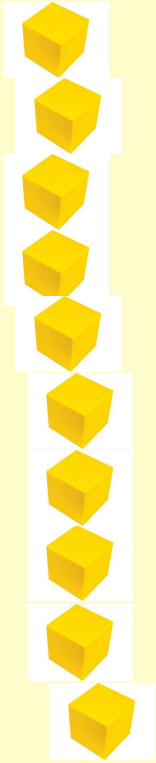
Write it as a number sentence:

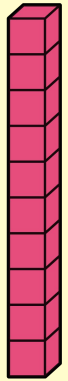
345 - 4 = 341

We can also use dienes ro help us cross the tens boundary.

34 - 7 =







Now you try ……

Use your place value mat and the base 10 to solve these problems

25 - 8=

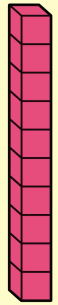
42 - 5 =

23 - 6 =

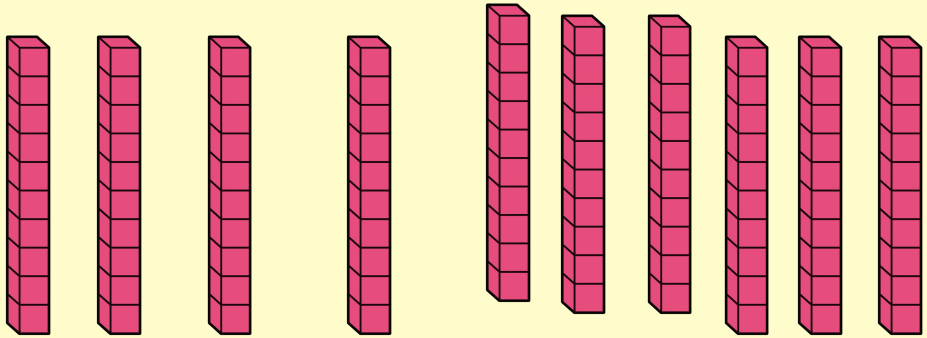
12 - 7 =

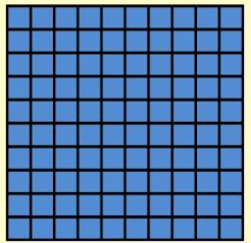
17 - 9 =

We can exchange 10 ones for a block of ten.

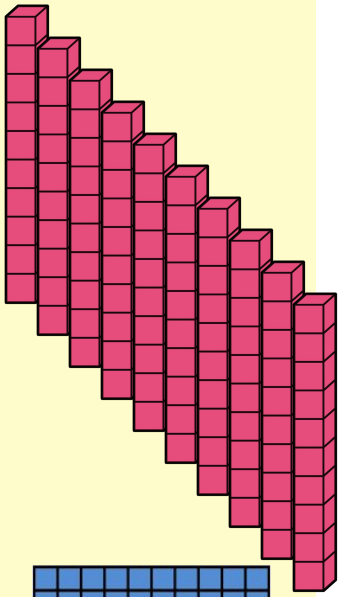


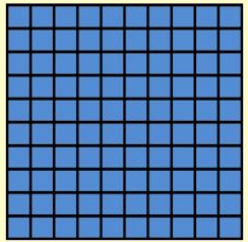
We can also exchange 10 tens for a block of 100.

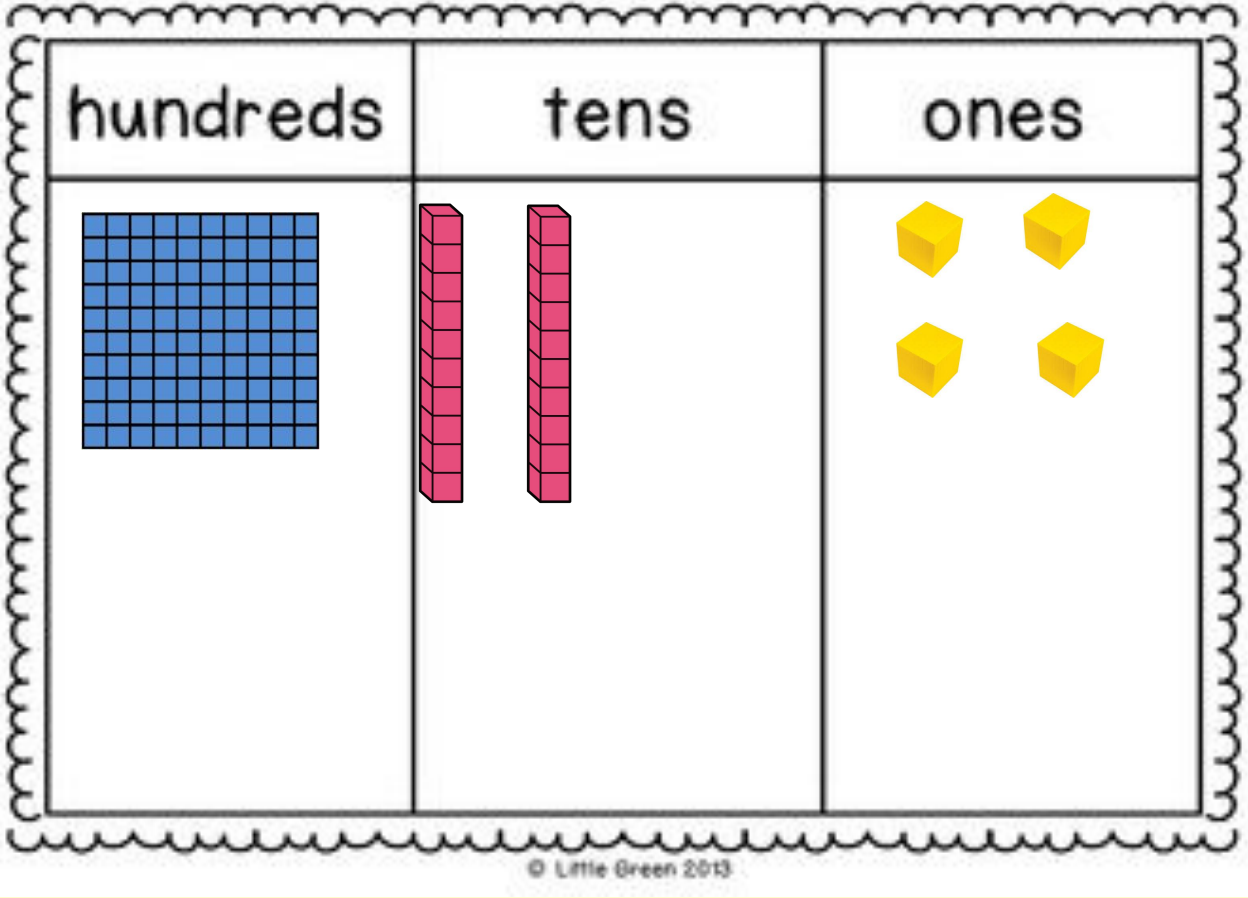


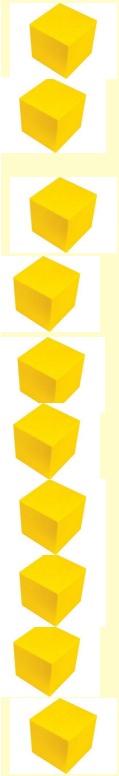


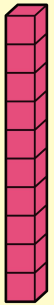
124 - 37 =



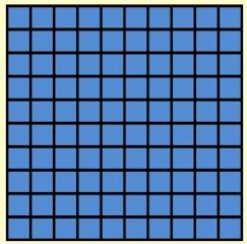


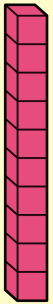


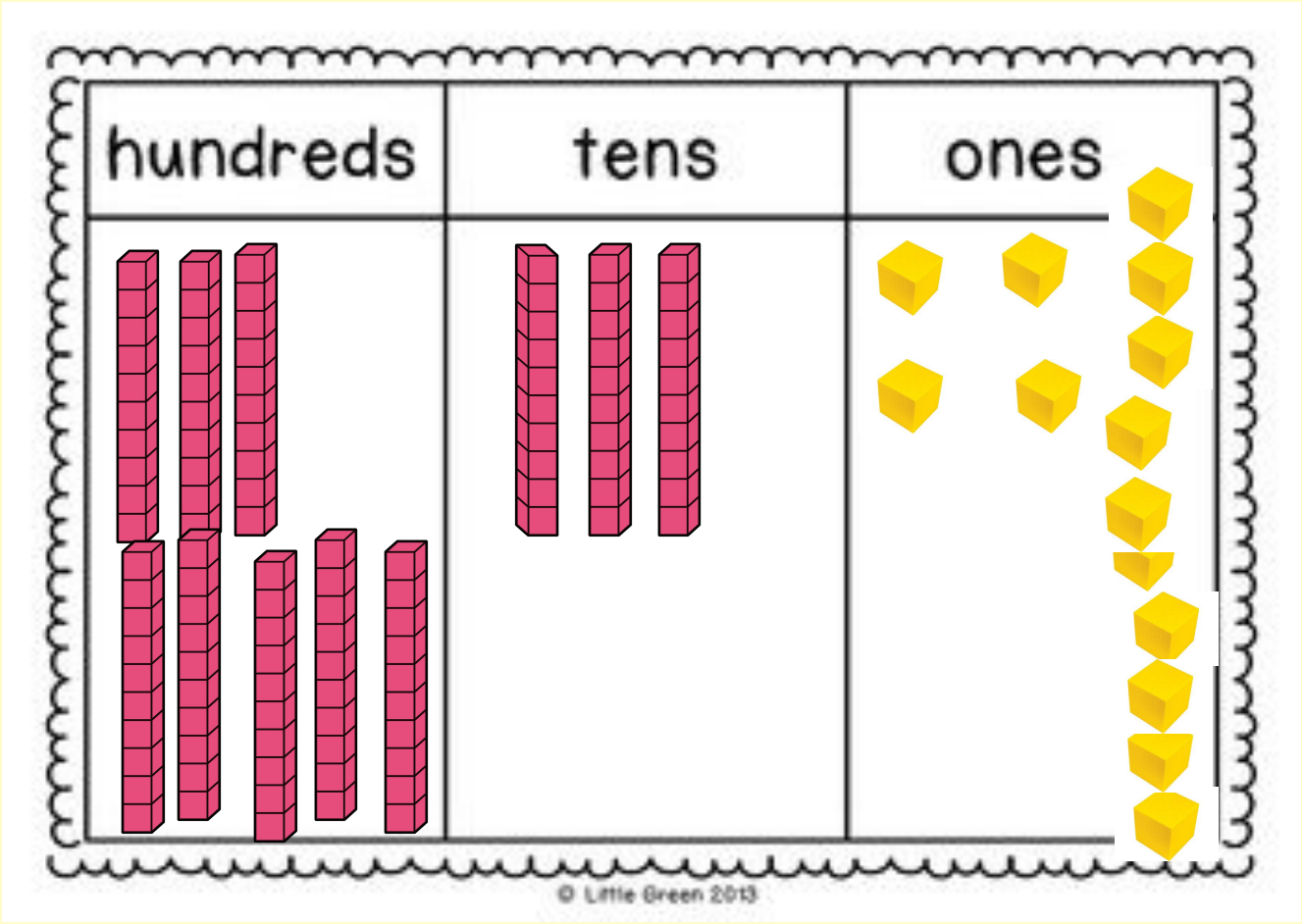




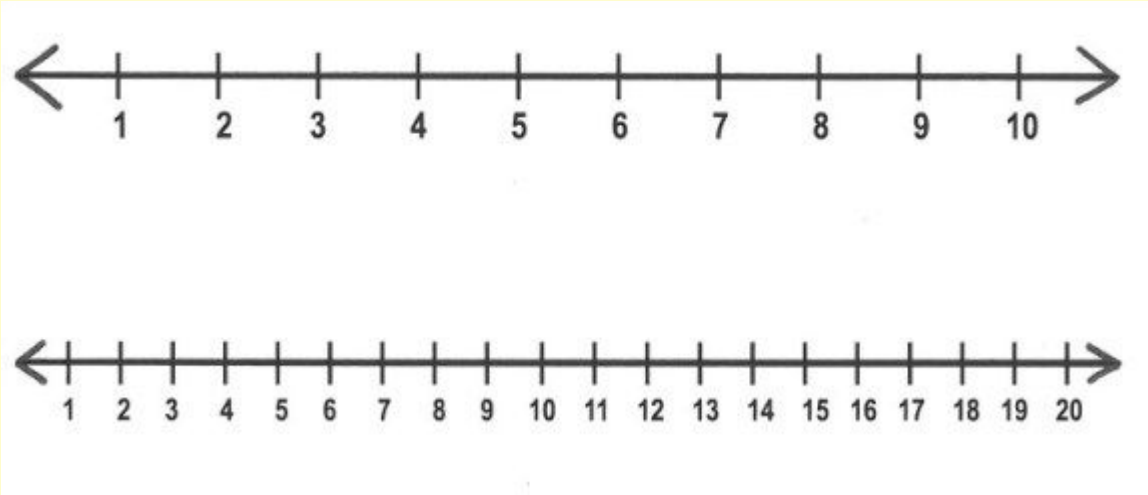
124 - 37







We can also use number lines to add. The jumps represent the steps that we will eventually carry out mentally in order to find the answer to a problem.

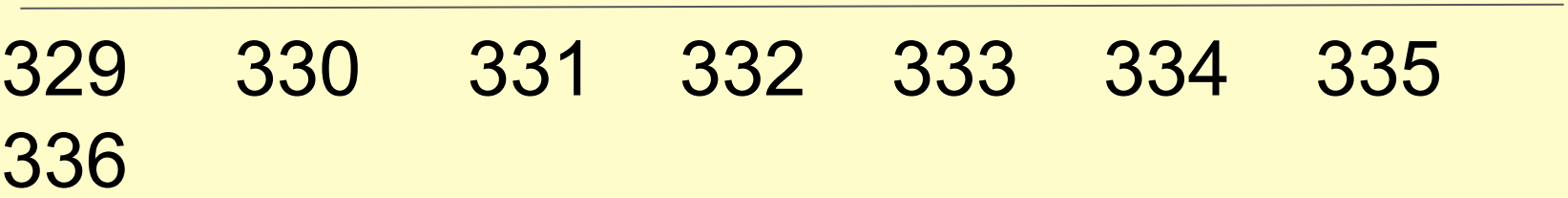


223 + 6 = 229

Which digit changed? Why?

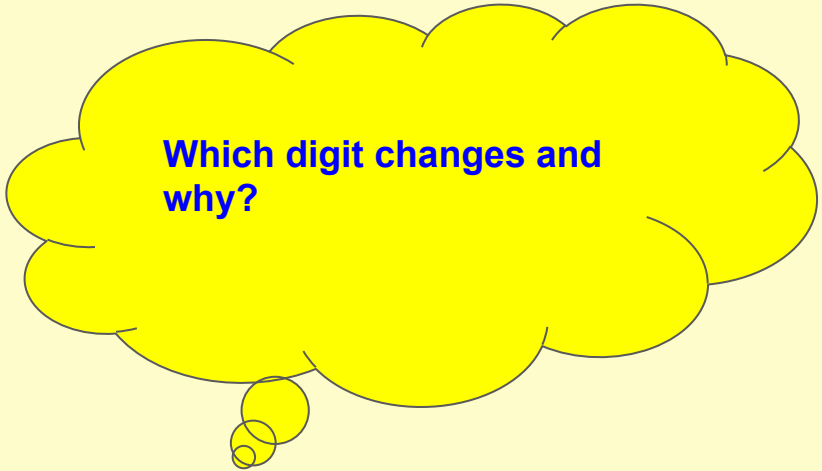
329 + 7 =

How could you find the answer?



527 + 20 =

542 + 30 =



527

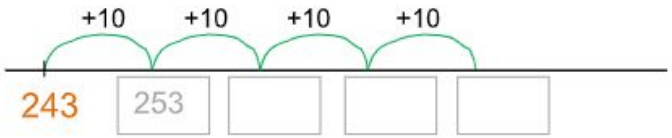
Typical task

Adding a multiple of ten

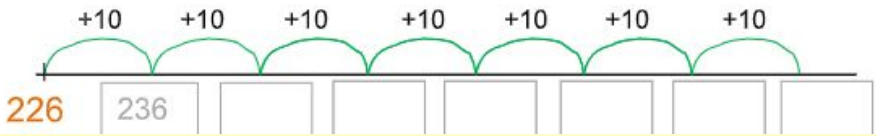
4.1 p7 Challenge 1

Show your working out on the number line.

a. 243 + 40 =



b. 226 + 70 =



149 - 6 =

Which digit do we start with? Why?

How do we partition these jumps?

170-8=

180-40=

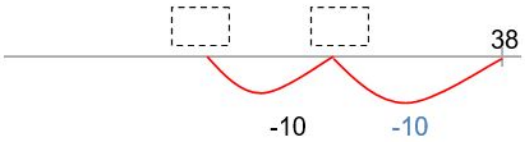
How do we partition these jumps?

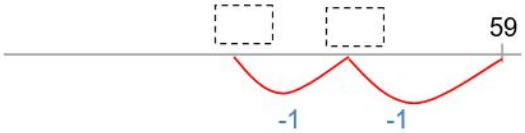
Typical task

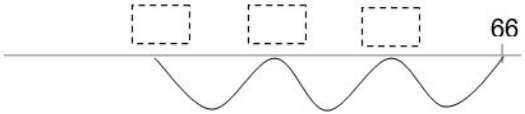
Subtract

1. 38 – 20 = ☐
2. 59 – 2 = ☐
3. 66– 30 = ☐
4. 85 – 6 = ☐
5. 47 – 4 = ☐

My working out





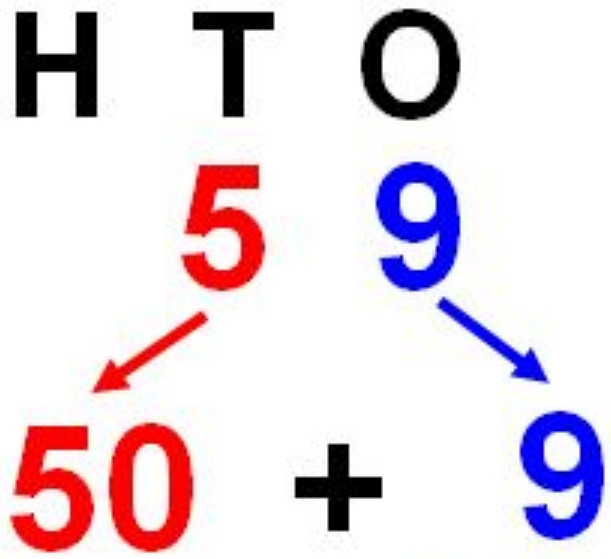


L.O: To use column addition.

I can:

- Understand the place value of a digit.
- Set up a calculation correctly.
- Understand how and why we carry.

Partitioning



5 lots of tens

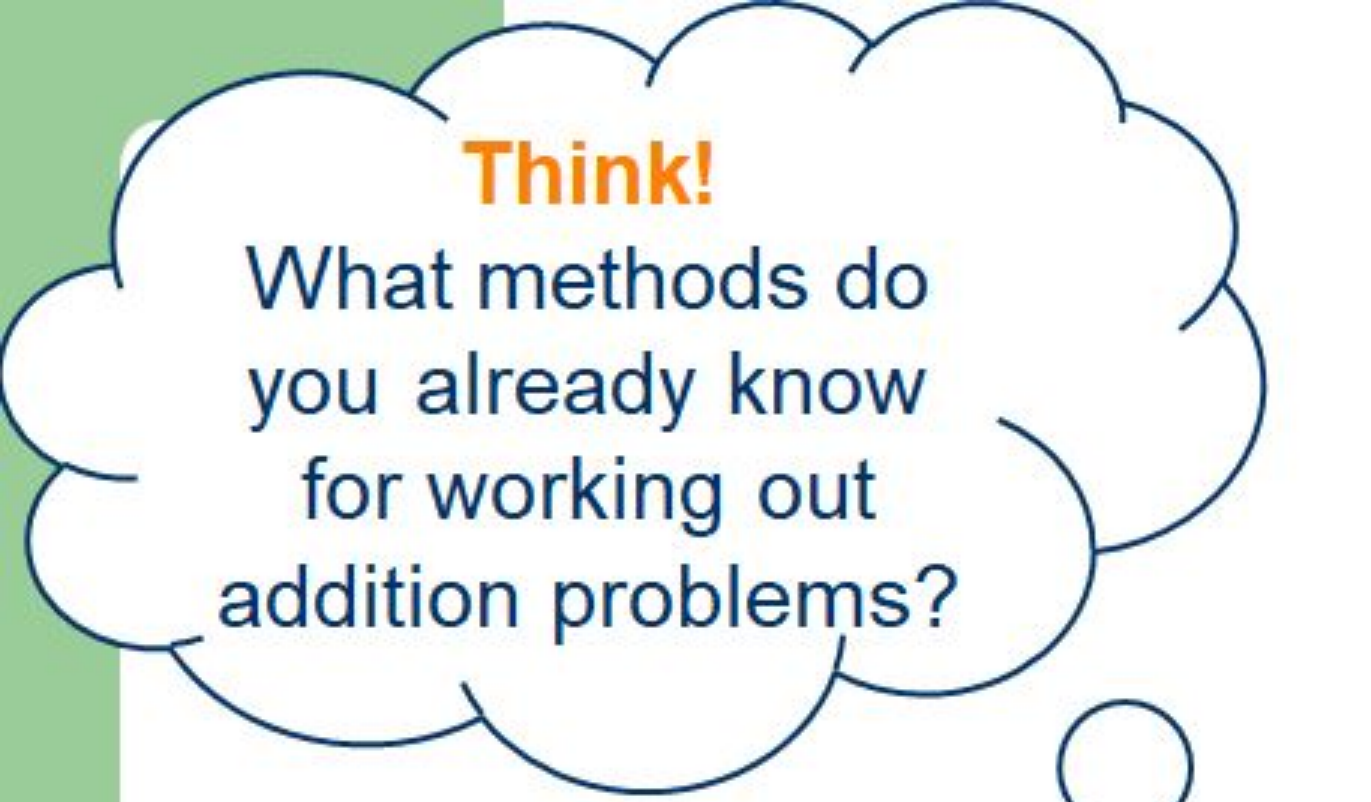
9 lots of ones

Partition these numbers!

64 98 143

7458

127 458



To solve 35 + 23, what method would you use?

Steps to success

1) Place the digits in the correct column.
2) Show the addition and equal sign.
3) Add the units column first.
4) Add the tens column.
5) Add the hundreds column.

Column method for addition

26 + 13 =

H	T	O
	2	6
+	1	3
	3	9

1. Place the digits in the correct column.
2. Show the addition and equal sign.
3. Add the units column first.
4. Add the tens column.

154 + 135 = ...

	H	T	O
	1	5	4
+	1	3	5
	2	8	9

1. Place the digits in the correct column.
2. Show the addition and equal sign.
3. Add the units column first.
4. Add the tens column.
5. Add the hundreds column.

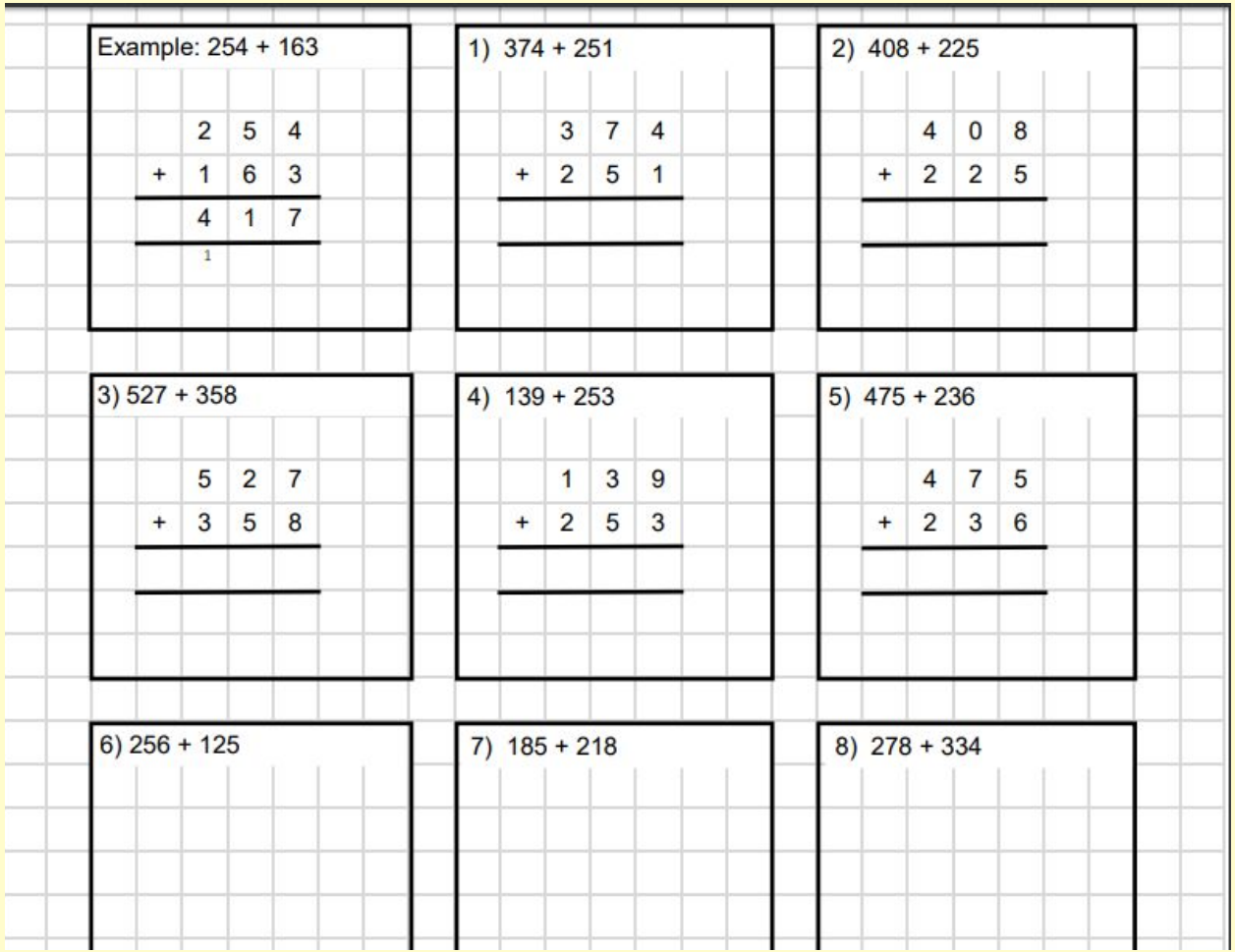
Plenary

Apply column method for addition to this:

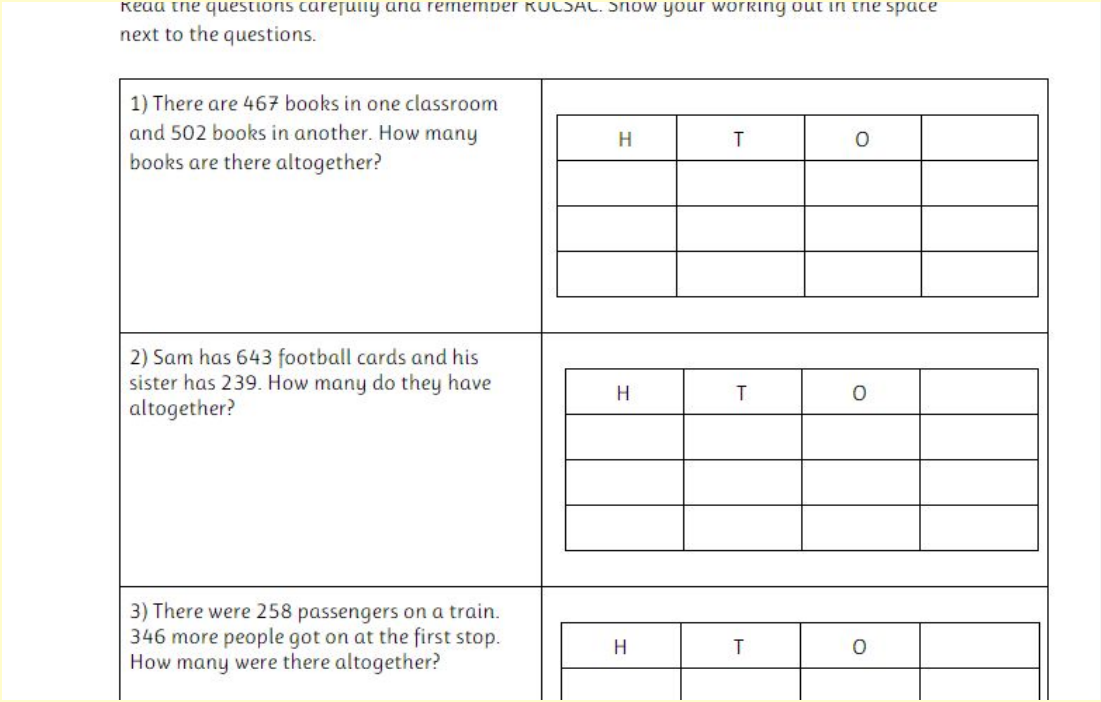
414 + 23 + 2= ….

H T O

Typical task



We would then move on to applying this method to problem solving activities.



Read the questions carefully and remember ROCSAC. Show your working out in the space next to the questions.

1) There are 467 books in one classroom and 502 books in another. How many books are there altogether?

H	T	O	

2) Sam has 643 football cards and his sister has 239. How many do they have altogether?

H	T	O	

3) There were 258 passengers on a train. 346 more people got on at the first stop. How many were there altogether?

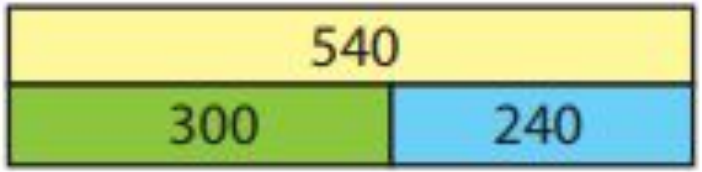
H	T	O	

L.O: To use column subtraction.

I can:

- Understand the place value of a digit.
- Set up a calculation correctly.
- Understand how and why we exchange.

Write the four number facts that this bar model shows.



$\square + \square = \square$

$\square + \square = \square$

$\square - \square = \square$

$\square - \square = \square$

65 - 22 =

Put each digit into the correct place value column.

	TO
	65
-	22

Top tip:

1. Always start with the ones.
2. Then move to the tens column.

Try some for yourself ……

67	89	78
- 45	- 26	-24

134
- 12

Top tip:

1. Set the numbers out in the correct column
2. Always start with the ones.
3. Then move to the tens column.

H	T	0
3	6	4

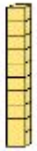
What is the VALUE of the digit 3?

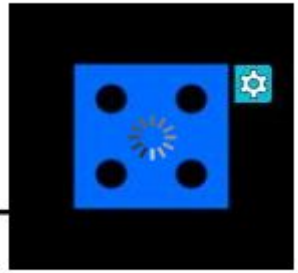
What is the VALUE of the digit 6?

What is the value of the digit 4?

We can use dienes again to show us how to exchange a ten for ten ones in order to be able to carry out the calculation.

Try this with the dienes ……..





Hundreds	Tens	Ones/ Units
4	6	2
− 1	2	7

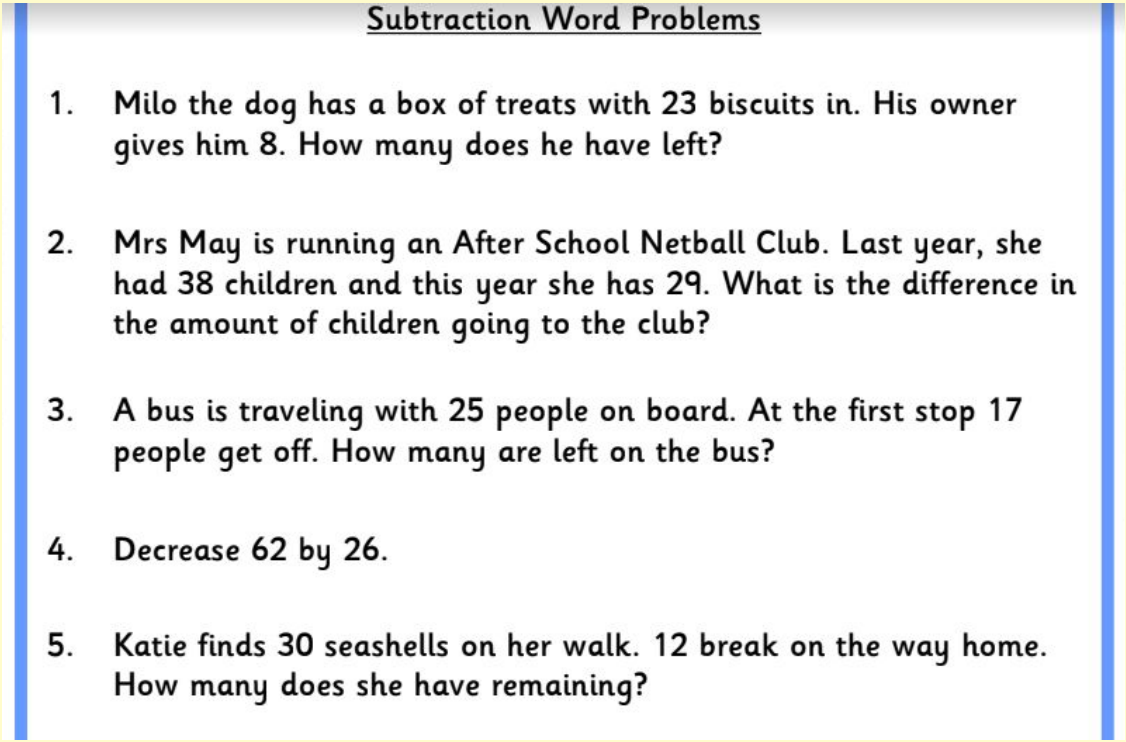
Hundreds	Tens	Ones/ Units
3	7	5
− 1	3	8

Typical task

Challenge 1:	Challenge 2:	Challenge 3:
638 – 125 =	472 – 136 =	826 – 154 =
745 – 124 =	524 – 208 =	536 – 241 =
936 – 415 =	752 – 335 =	759 – 276 =
82 – 56 =	655 – 219 =	923 -256 =
41 – 26 =	373 – 127 =	547 – 168 =

Remember to set out your calculation using H T O

We would again move on to applying this method to problem solving activities.



Subtraction Word Problems

1. Milo the dog has a box of treats with 23 biscuits in. His owner gives him 8. How many does he have left?

2. Mrs May is running an After School Netball Club. Last year, she had 38 children and this year she has 29. What is the difference in the amount of children going to the club?

3. A bus is traveling with 25 people on board. At the first stop 17 people get off. How many are left on the bus?

4. Decrease 62 by 26.

5. Katie finds 30 seashells on her walk. 12 break on the way home. How many does she have remaining?

I can work out missing number problems.

Missing number subtraction and additions.

1.
$$\begin{array}{r} 4\ 2\ 5 \\ +\ \square\ 3\ \square \\ \hline 5\ \square\ 7 \end{array}$$

2.
$$\begin{array}{r} \square\ 4\ 6 \\ +\ 1\ \square\ 3 \\ \hline 6\ 6\ \square \end{array}$$

3.
$$\begin{array}{r} 7\ \square\ 2 \\ +\ 2\ 4\ \square \\ \hline \square\ 8\ 9 \end{array}$$

8.
$$\begin{array}{r} \square\ 6\ \square \\ -\ 3\ \square\ 1 \\ \hline 4\ 0\ 1 \end{array}$$

9.
$$\begin{array}{r} 4\ 3\ \square \\ -\ \square\ 3\ 4 \\ \hline 3\ \square\ 1 \end{array}$$

10.
$$\begin{array}{r} 7\ \square\ \square \\ -\ 3\ 5\ 1 \\ \hline \square\ 4\ 0 \end{array}$$

L.O: To use expanded column addition.

I can:

- Understand the place value of a digit.
- Set up a calculation correctly.

Numbers can be added together using the written method of expanded column addition

351 + 437 =

HTO + HTO
351 + 437

300	+	50	+	1	
400	+	30	+	7	
	+		+		

1. Partition each number into hundreds, tens and ones.

HTO + HTO
351 + 437

300	+	50	+	1	
400	+	30	+	7	
	+		+	8	

2. Add the ones together, writing the answer in the answer section.

HTO + HTO
351 + 437

300	+	50	+	1
400	+	30	+	7
	+	80	+	8

3. Add the tens together, writing the answer in the answer section.

HTO + HTO
351 + 437

300	+	50	+	1
400	+	30	+	7
700	+	80	+	8

4. Add the hundreds together, writing the answer in the answer section.

HTO + HTO
351 + 437

300	+	50	+	1	
400	+	30	+	7	
700	+	80	+	8	= 788

5. Recombine the hundreds, tens and ones.

351 + 437 = 788

Solve this independently …..

234 + 146

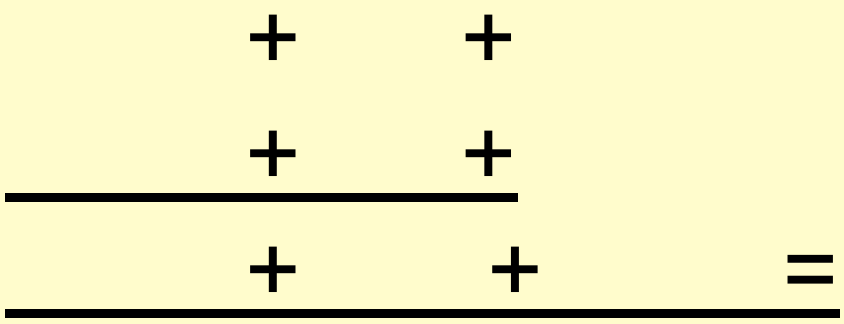
200 + 30 + 4

100 + 40 + 6

\+ + =

And this ….

475 + 126

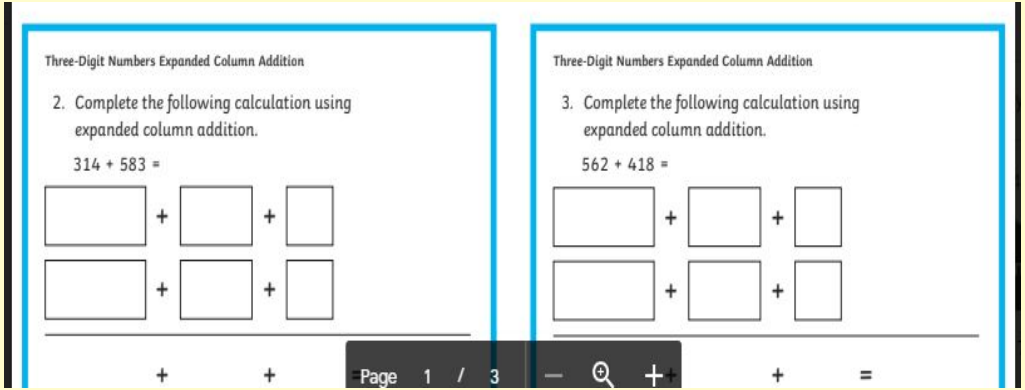


Typical task

Choose a challenge card,

stick into your book

And solve the problem



Three-Digit Numbers Expanded Column Addition

2. Complete the following calculation using expanded column addition.

314 + 583 =

Three-Digit Numbers Expanded Column Addition

3. Complete the following calculation using expanded column addition.

562 + 418 =

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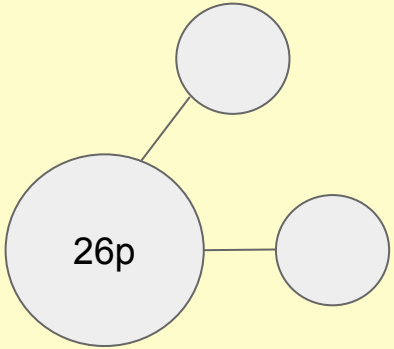
How would I make 26p? I might need to partition. Let's do this one together.



Money

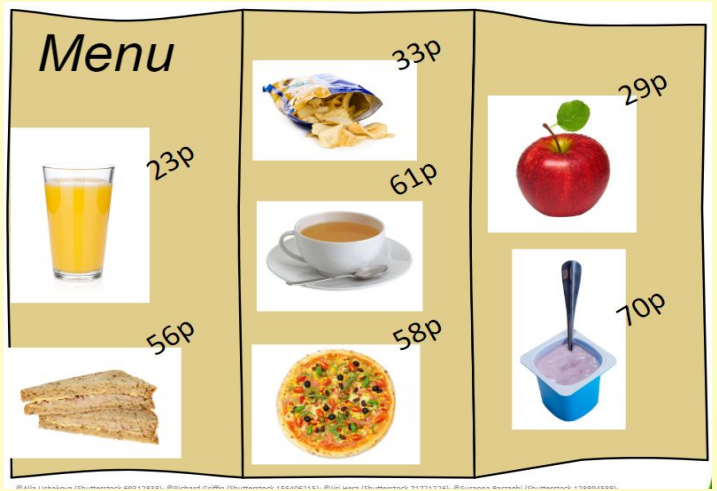
L.O: To find totals of money.

I can:

- Recall addition facts.
- Use my knowledge of column addition.
- Remember how many p are in £

W **A** **M**

Self **Peer** **Teacher**



I went to the shop and bought... How much money will I need?

1. Tea and orange juice

	H	T	O	
		6	1	p
+		2	3	p

2. Yoghurt and an apple

	H	T	O	
		~~7~~	0	p
+		2	9	p

3. Tea and crisps

	H	T	O	
		6	1	p
+		3	3	p

4. A sandwich and juice

	H	T	O	
				p
+		2	3	p

5. Pizza and an apple

	H	T	O	
				p
+				p

6. Yoghurt and crisps

	H	T	O	
				p
+				p

Questions