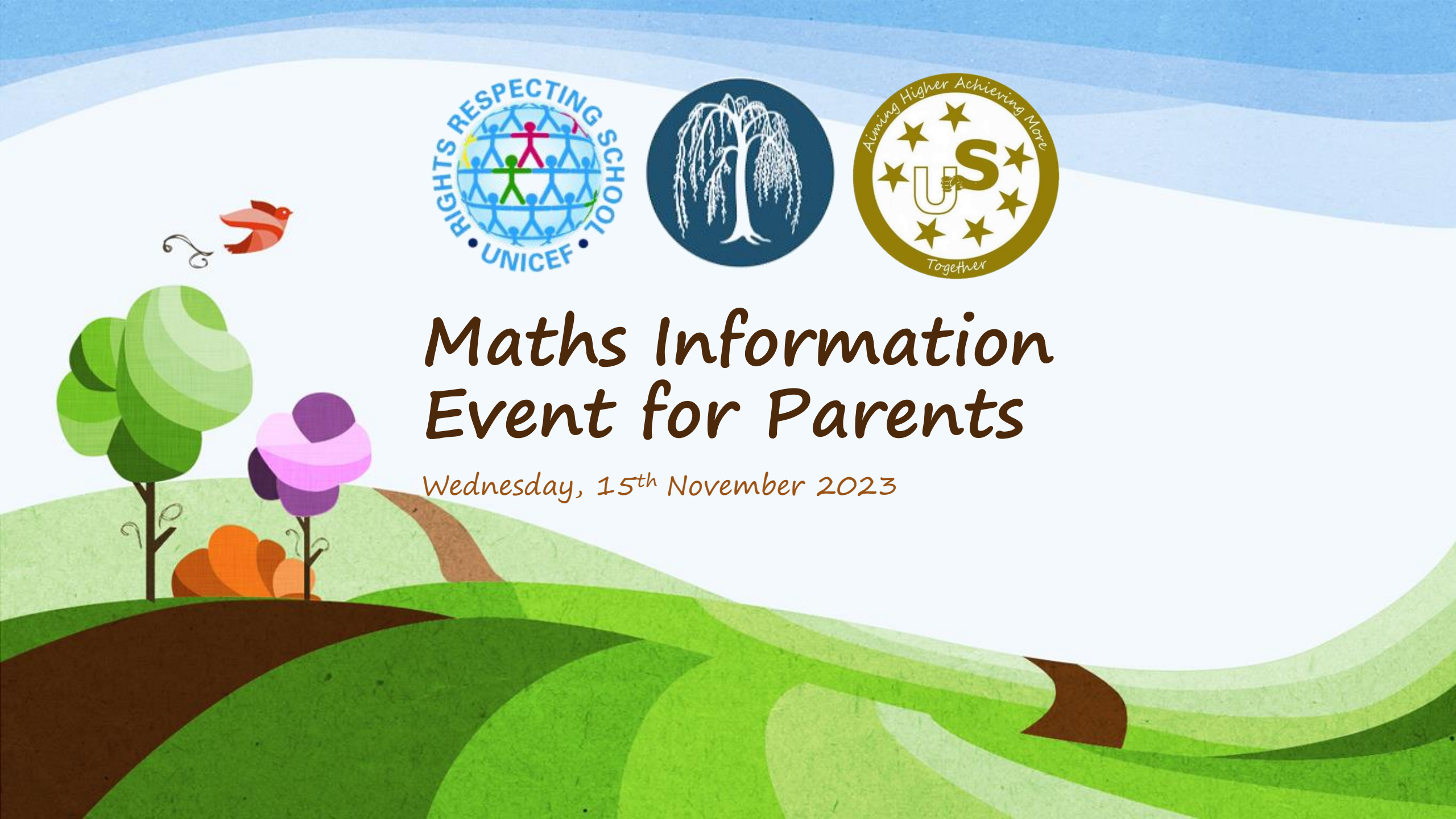


Maths Information Event for Parents

Wednesday, 15th November 2023

How Maths is taught at Ipplepen Primary School

Why is the way it is taught so important?

What Maths looks like in The Foundation Stage

- During Foundation, we focus on counting accurately and developing a deep understanding of numbers to 10. We will look at patterns and relationships within these numbers using a variety of resources to help us develop a secure starting point for our maths educational journey.

- We will also look at developing spatial reasoning skills across all areas of maths, including shape, space and measures. Providing children with the opportunity to consolidate and expand their knowledge, gaining confidence and a 'can do' attitude is at the heart of our foundation maths curriculum.

- Maths is very practical and hands on during Year F. Each week we have Learning Challenges in Maths to encourage the children to practice the concepts we are learning and expand their thinking with their peers and with support from an adult.

What Maths looks like in Key Stage 1

- Your child's formal mathematical education begins in Year One.
- In Year One your child will be expected to learn to count to and across 100, forwards and backwards as well as in multiples of twos, fives and tens. They will also need to be able to read and write these in numerals.
- Your child will learn to answer problems involving one more and one less, using their knowledge of the number system.
- In Year Two your child will be expected to work with numbers within 100 (2-digit numbers) and rapidly recall most of the multiplication and division facts for the 2, 5 and 10 times tables.

What Maths looks like in Lower Key Stage 2

- In Year Three your child will be expected to work with numbers within 1,000 (3-digit numbers) and rapidly recall all of the multiplication and division facts for the 3, 4 and 8 times tables.

- In Year Four your child will be expected to work with numbers within 10,000 (4-digit numbers) as well as beginning to explore decimal place value

- They will need to rapidly recall all of the multiplication and division facts for all the times tables up to 12x12.

What Maths looks like in Upper Key Stage 2

- In Year Five your child will be expected to work with numbers within 1,000,000 (6-digit numbers) as well as further exploring decimal place value to thousandths (3d.p.)

- In Year Six your child will sometimes be expected to work with numbers over 1,000,000 as well as further exploring decimal place value to thousandths (3d.p.)

Key Terminology

Key Terminology

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousandths
M	HTh	TTh	Th	H	T	O	.	t	h	th

Addition (+)	Subtraction (-)	Multiplication (x)	Division (÷)	Equals (=)
add more plus increase total sum altogether	subtract minus less decrease take away fewer leave difference	multiply times lots of groups of product array multiplied by repeated addition	divide by share divisible by group divide share equally	equivalent same as total makes balances

Early Concepts EYFS

Foundation Stage

Foundation Stage

Sorting and matching

When your child starts school (and towards the end of pre-school) they will begin to sort and match objects. This might be done by colour, size, shape, length etc. Children are encourage to find ways to sort and match different objects in different ways. For example, buttons of different sizes and colour or pasta of different shapes.

Foundation Stage

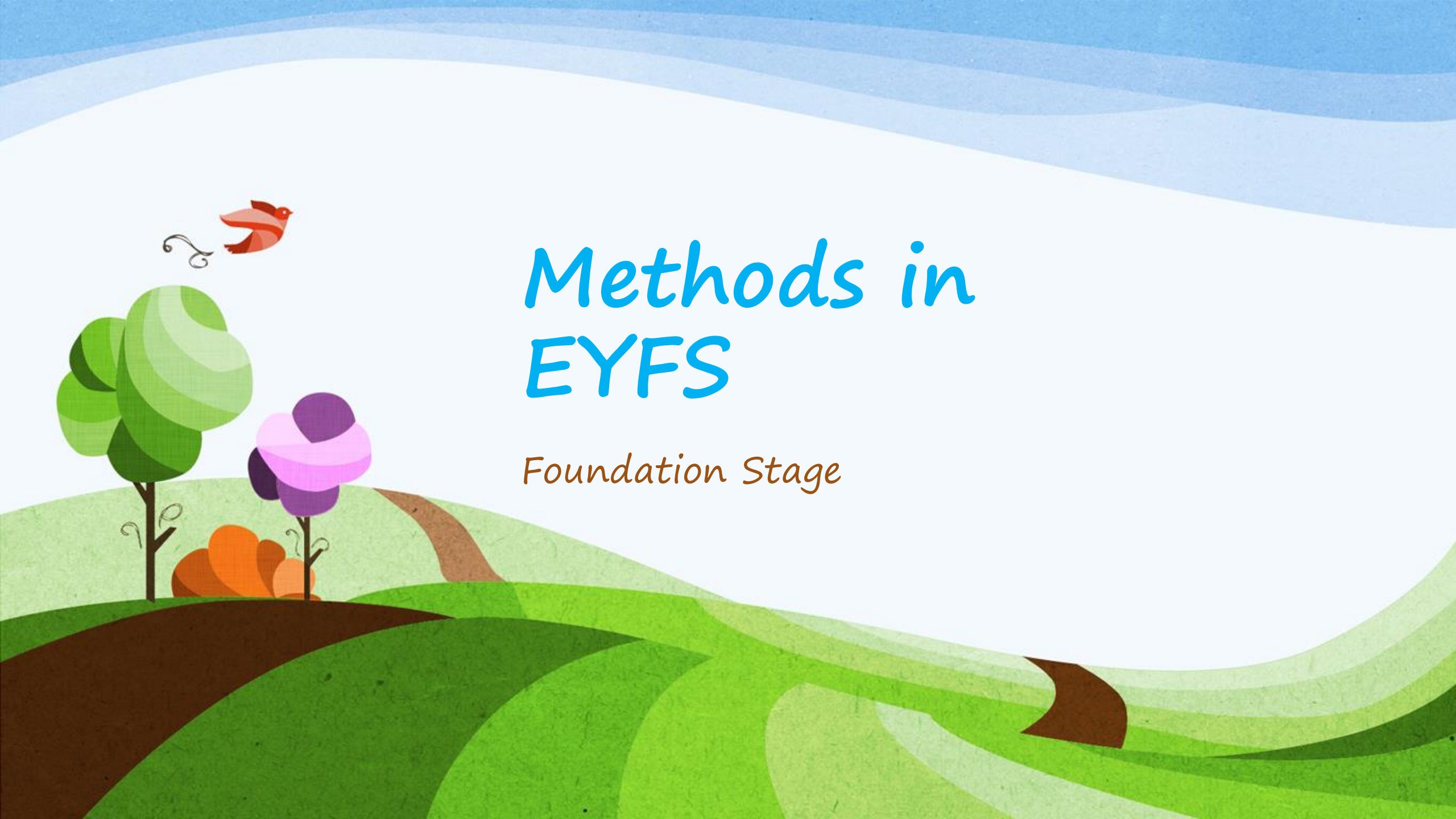
Counting 1 object at a time (1:1 correspondence)
During reception your child will practise and become confident with their counting ability. Some children join reception being able to count beyond 50 and that is OK but we will teach them how to count objects, sounds and movements 1 at a time. They will learn that the last number they say when counting is the total number of objects there are. We often use our fingers to point and touch 1 object at a time to help develop this skill.

Foundation Stage

Subitising

During reception your child will develop their subitising skills up to 10 (confidently to 5). Subitising is a skill that involves immediately recognising an amount, without needing to count. This is practised and consolidating in lots of ways. For example, playing a board game using a dice and recognising how many dots are on the dice without counting.

Addition



Methods in EYFS

Foundation Stage

Foundation Stage

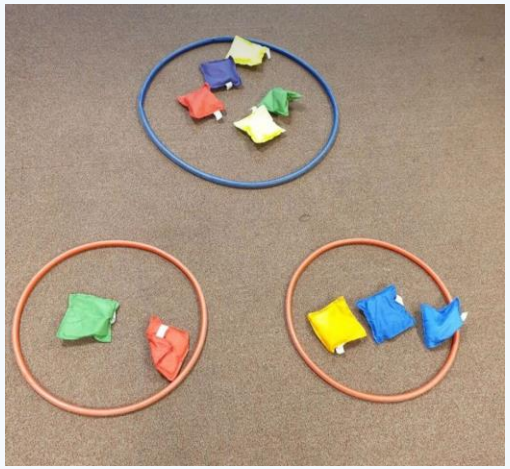
Addition

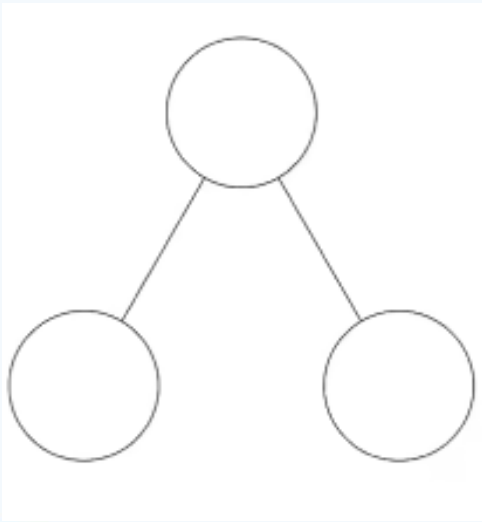
We explore addition in lots of ways in reception, using a variety of resources. We model number sentences verbally and encourage the children to explain how they see different amounts "I know that there are 2 frogs and 1 duck and that makes 3". This helps deepen their number knowledge. We work closely with numbers to 5 before moving on to 10.

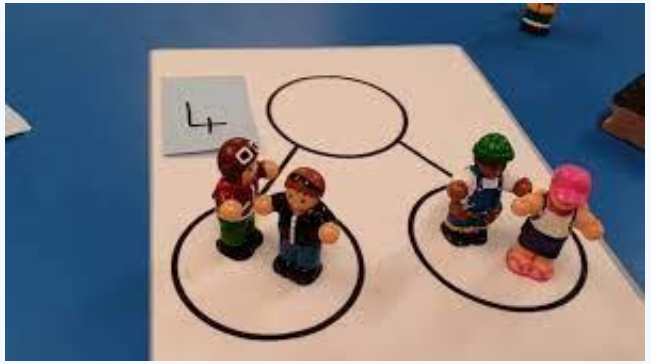
Foundation Stage

Part-part whole

These models help us to show how a number can be partitioned into 2 parts. Before using number representation, we will do this practically, then using physical objects and then pictures. Once children have grasped this, we will model using number sentences.







Foundation Stage

One More

This is often touched upon verbally with lots of things going on in the classroom. For example, "1 more Chestnut can come to this activity" or at snack time "there are 2 more bananas left".

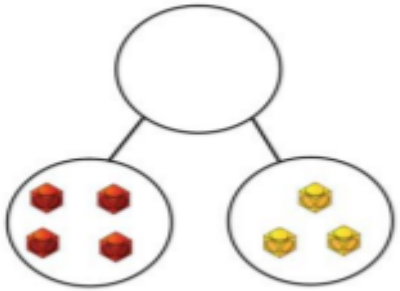
We use practical resources to find 1 more/ 2 more than an amount. This can be done using Lego, building blocks and cubes.

Methods in Key Stage One

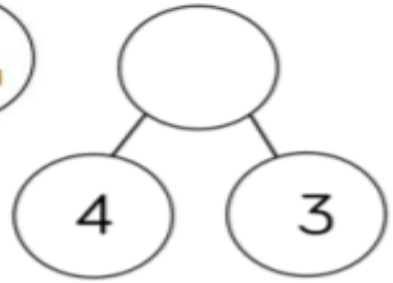
Years 1 and 2

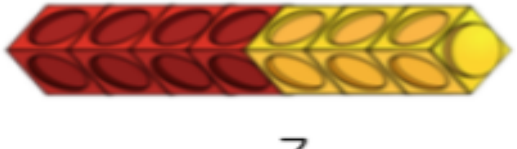
Year One

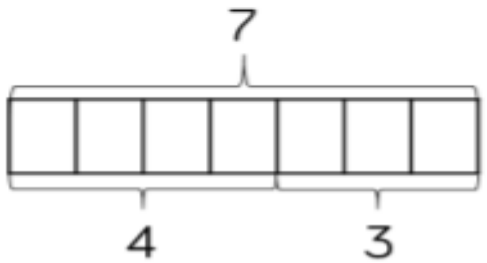
Skill: Add 1-digit numbers within 10

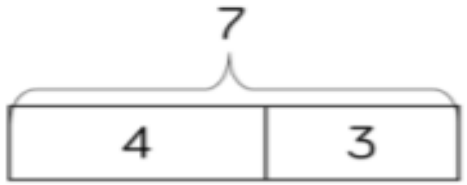


Part-whole model







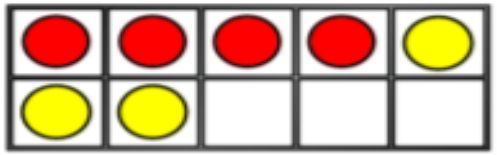


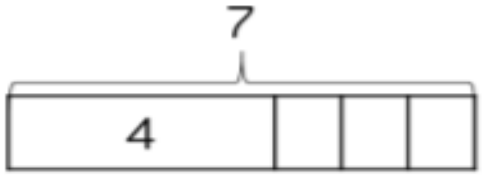
Bar models

$$4 + 3 = 7$$

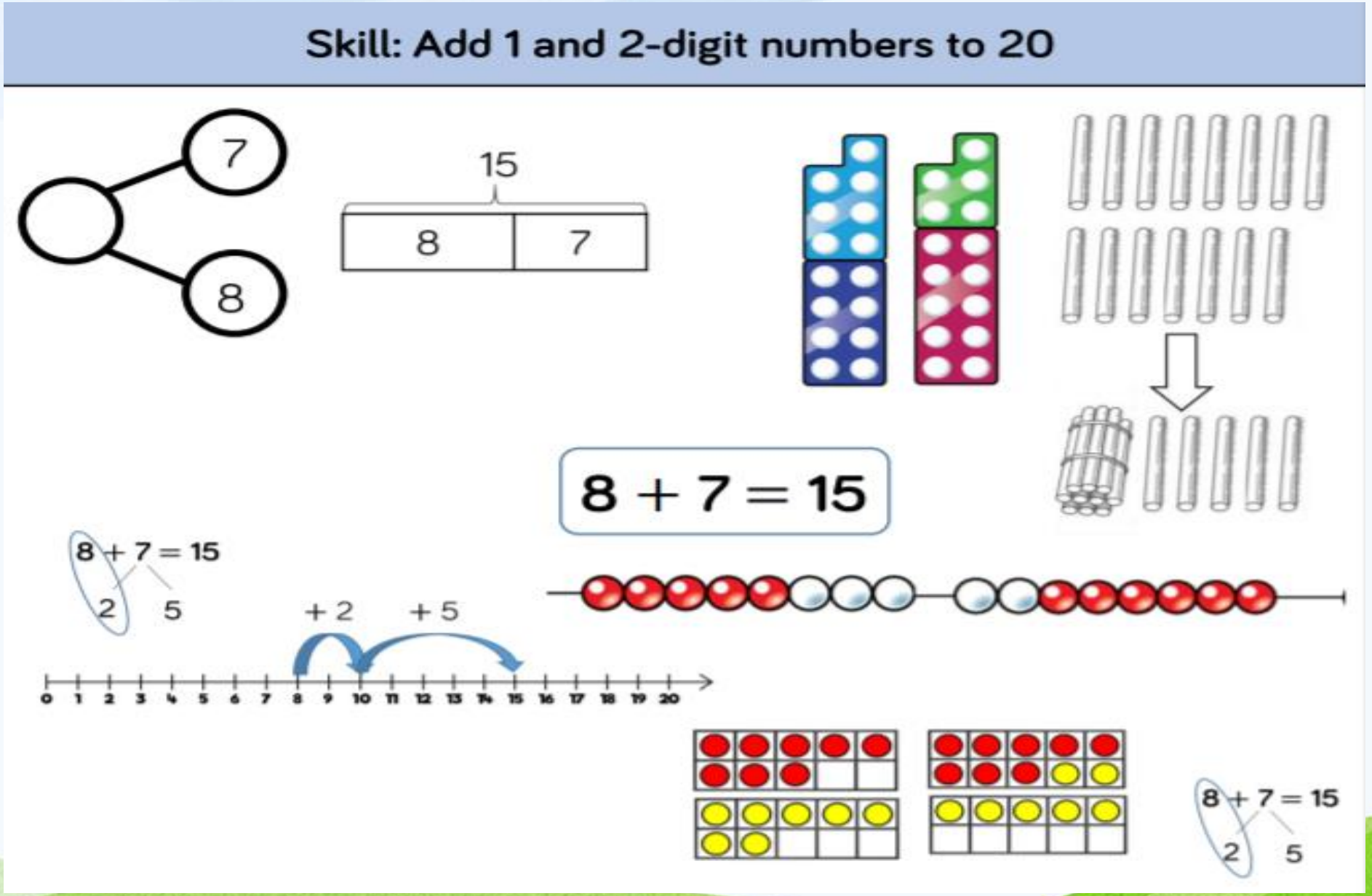
Numicon

Ten frames



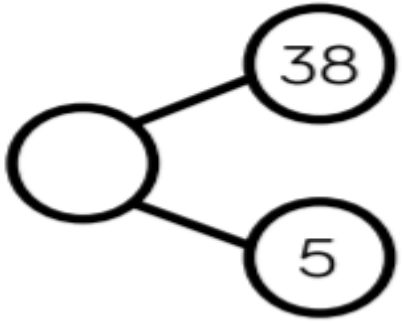


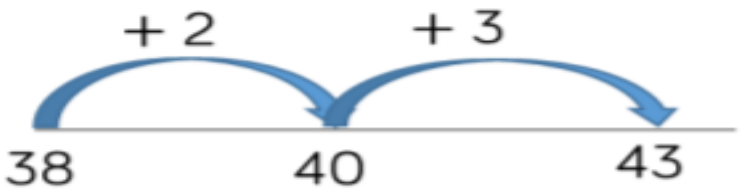
Year One (into Year Two)

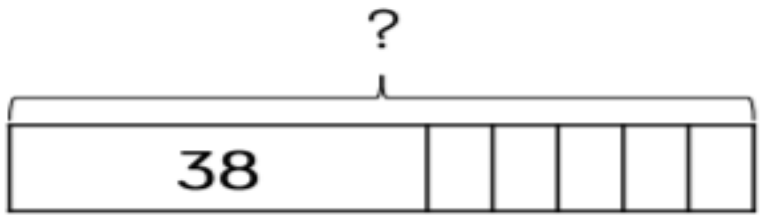


Year Two

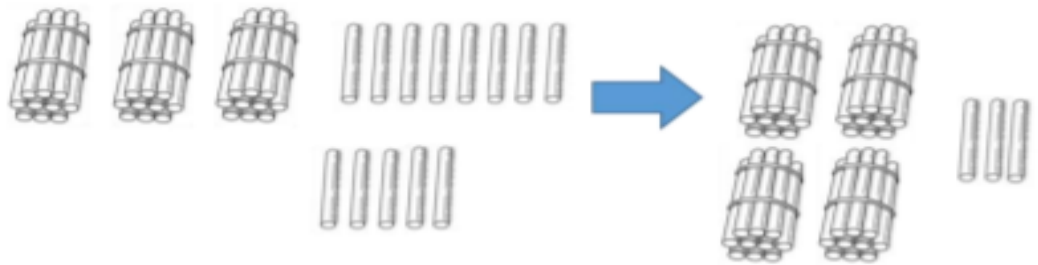
Skill: Add 1-digit and 2-digit numbers to 100







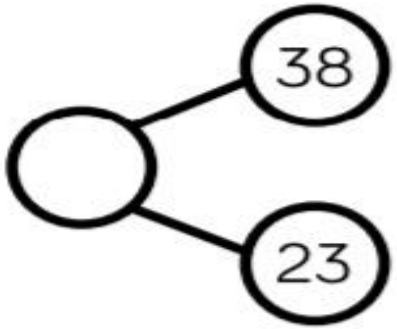
$$38 + 5 = 43$$

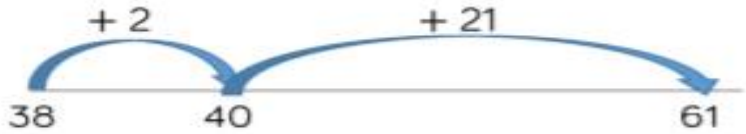


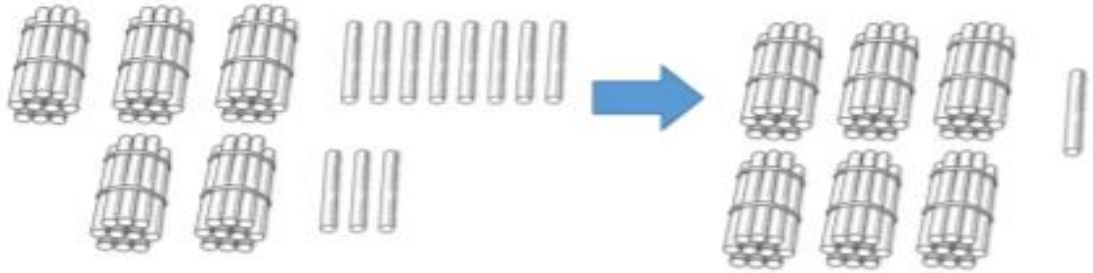
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

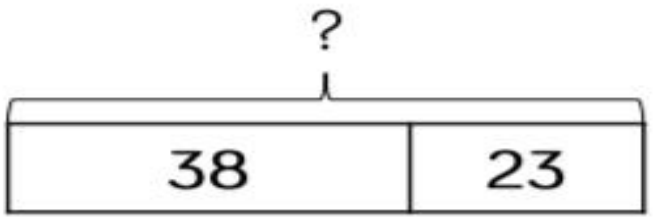
Year Two (into Year Three)

Skill: Add two 2-digit numbers to 100

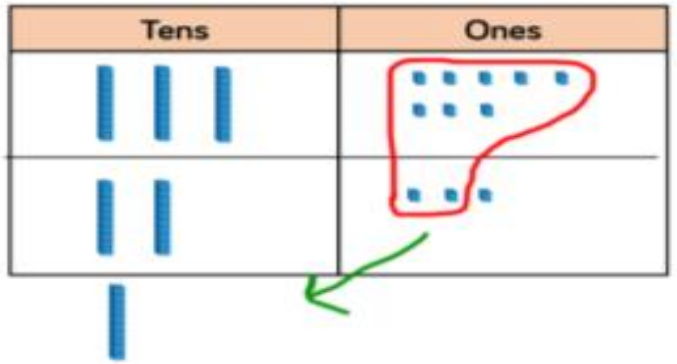




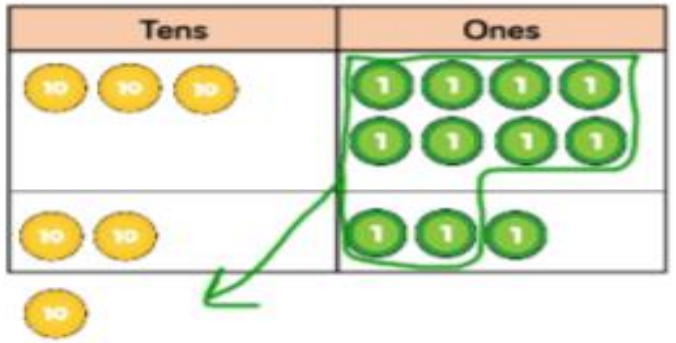


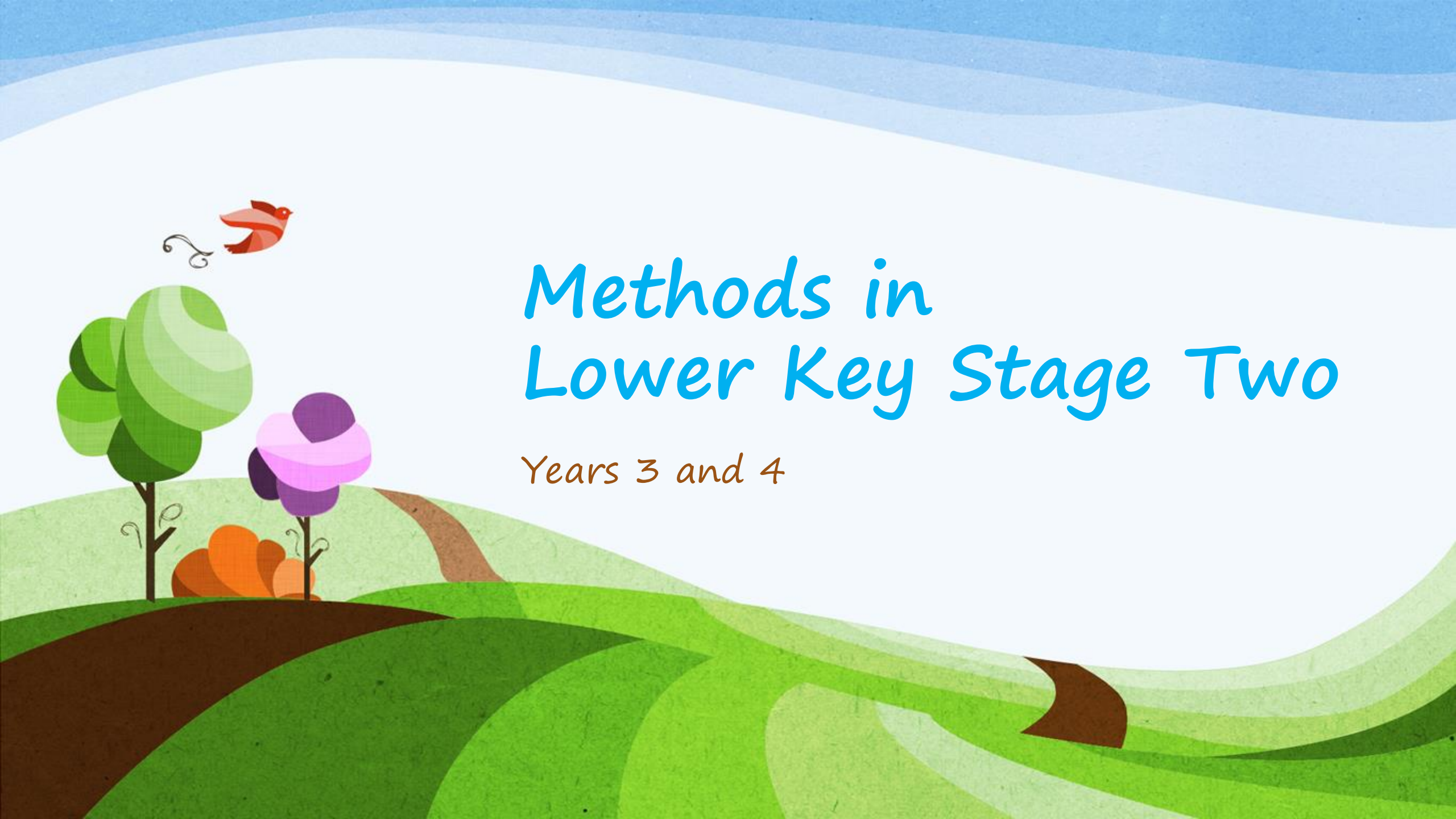


$$38 + 23 = 61$$



$$\begin{array}{r} 38 \\ +\ 23 \\ \hline 61 \\ \hline 1 \end{array}$$



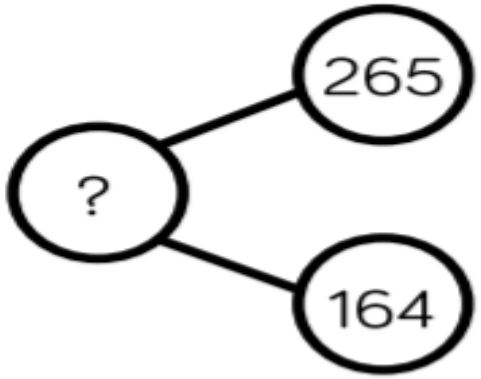


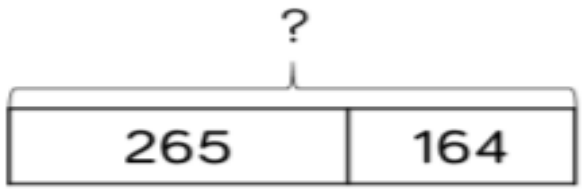
Methods in Lower Key Stage Two

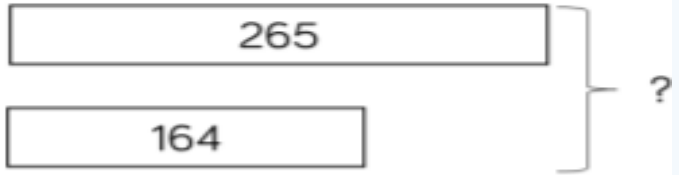
Years 3 and 4

Year Three

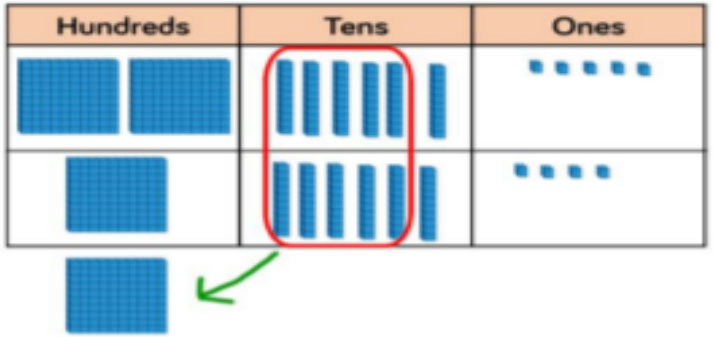
Skill: Add numbers with up to 3 digits



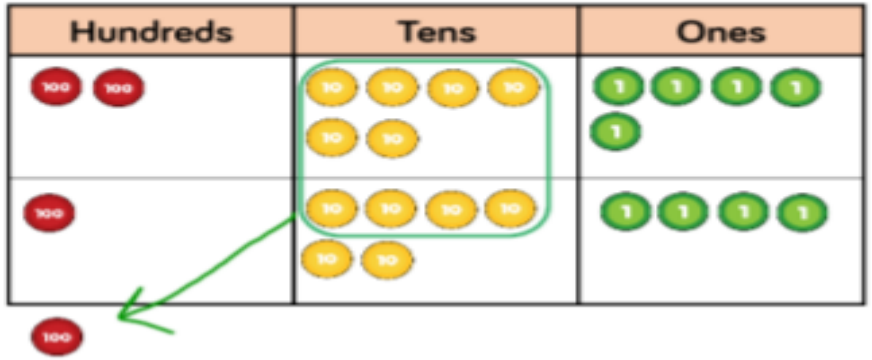




$$265 + 164 = 429$$

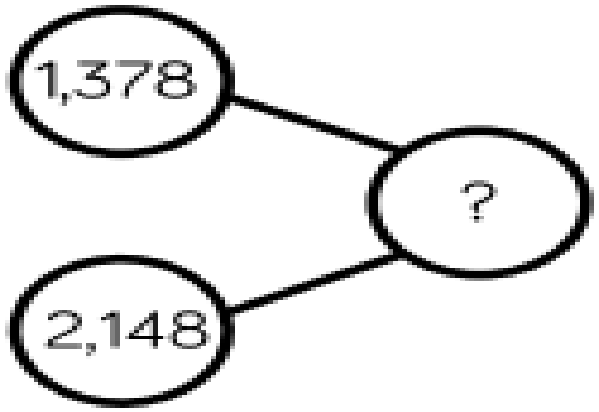


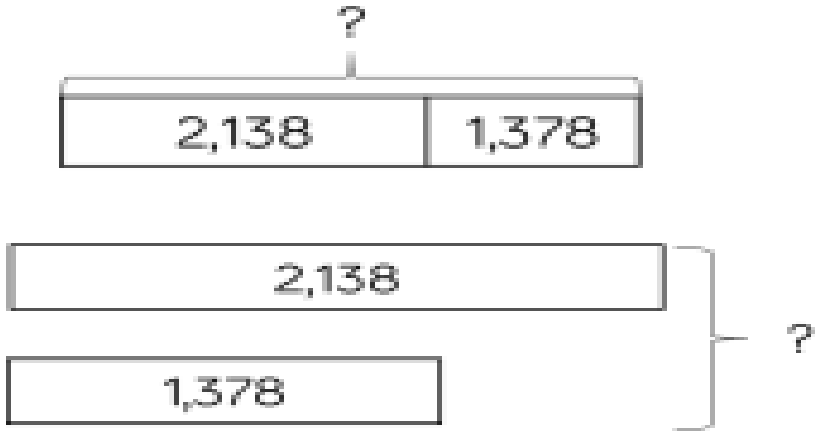
$$\begin{array}{r} 265 \\ +\ 164 \\ \hline 429 \\ \hline 1 \end{array}$$



Year Four

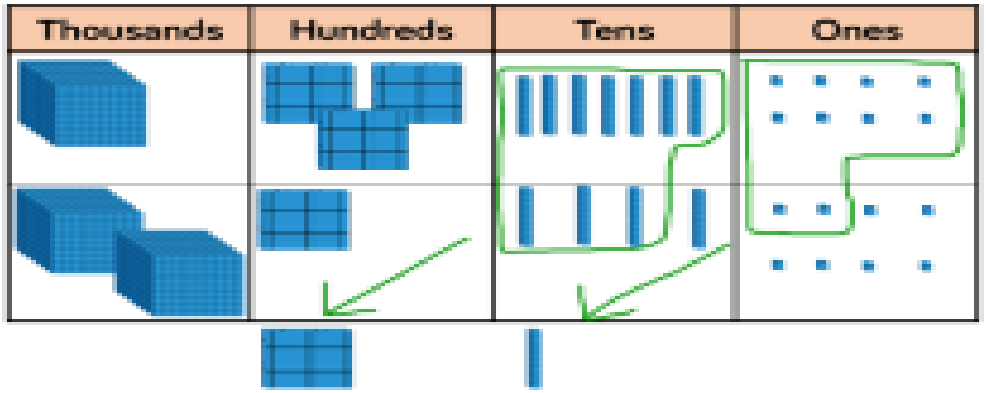
Skill: Add numbers with up to 4 digits



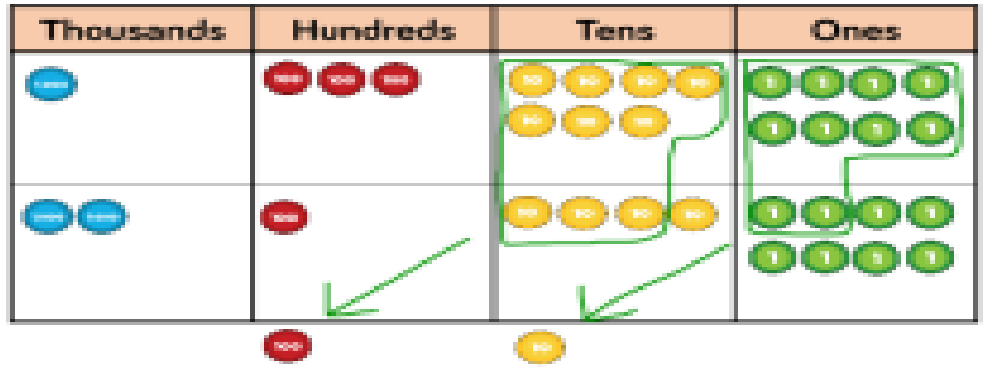


	1	3	7	8
+	2	1	4	8
	3	5	2	6
		1	1	

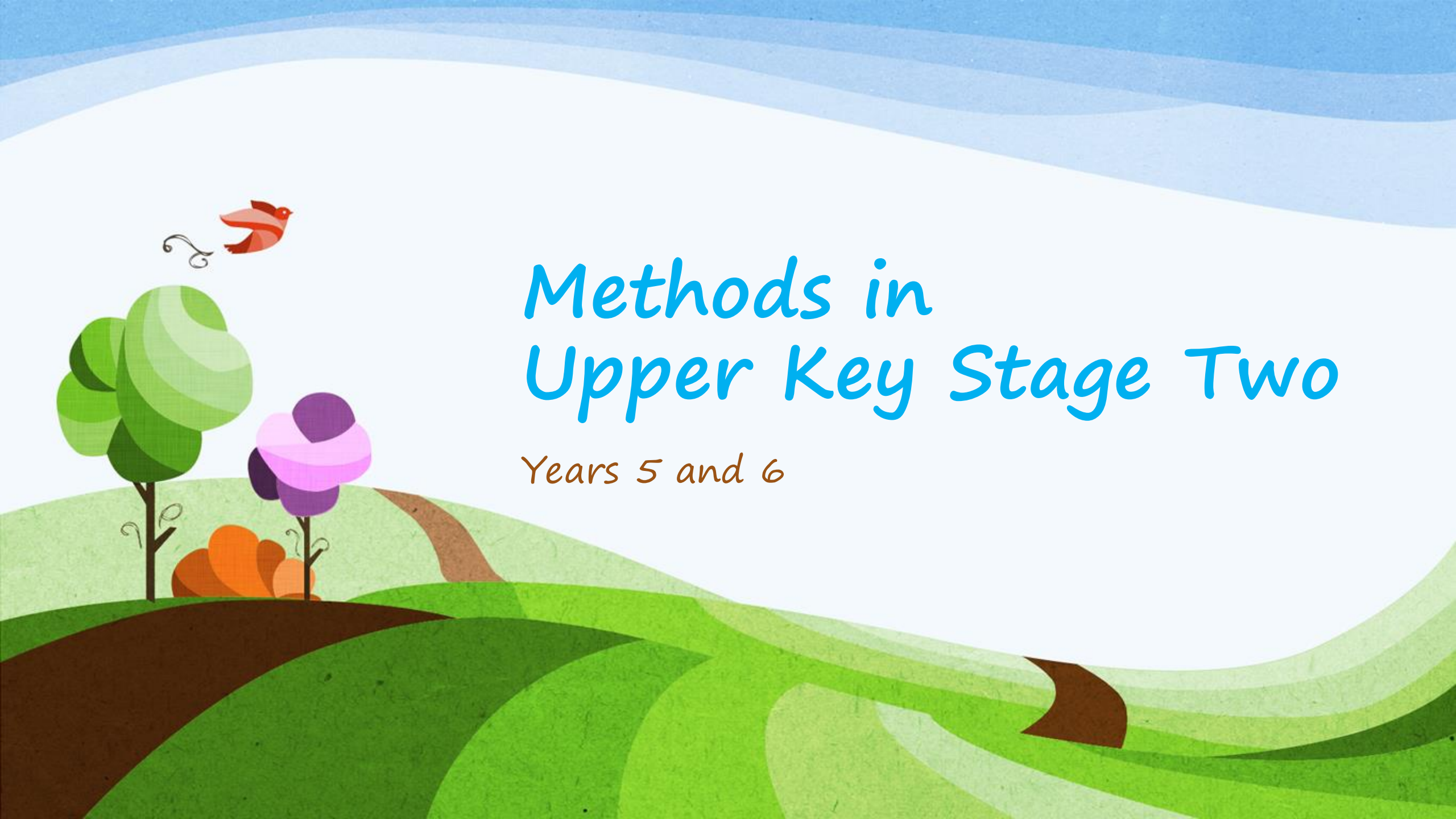
1,378 + 2,148 = 3,526



Dienes Apparatus (Base 10)



Place Value Counters

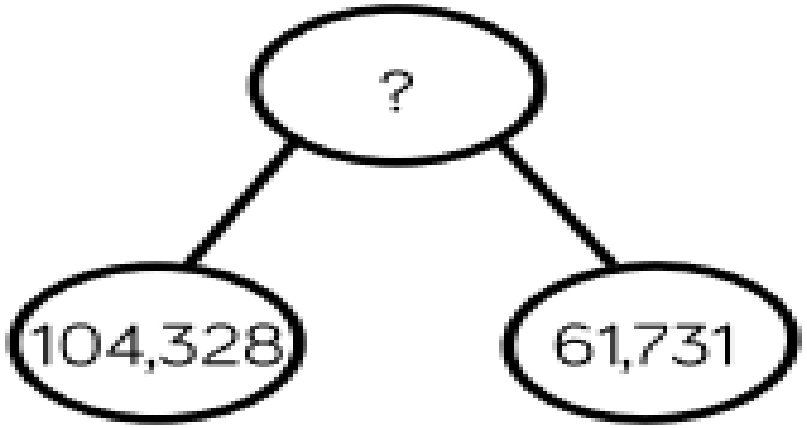


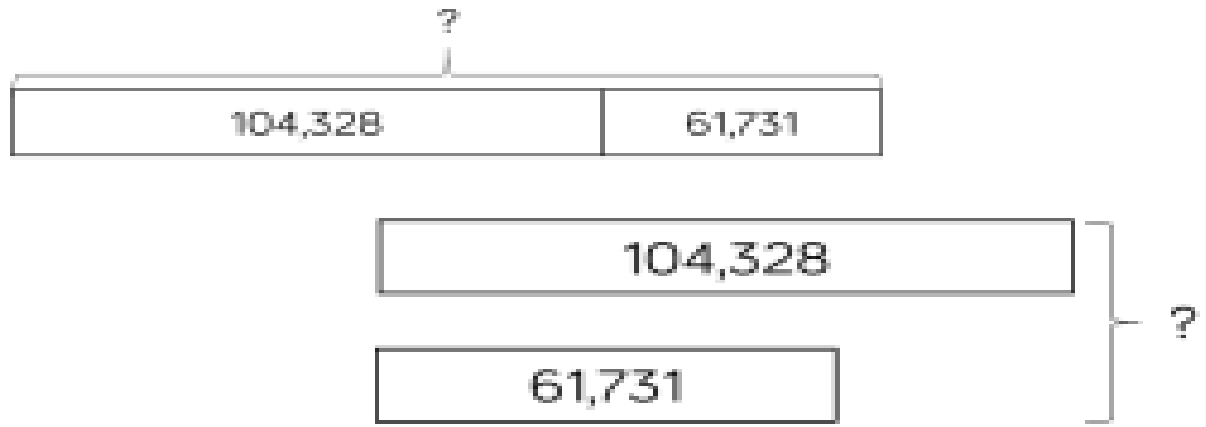
Methods in Upper Key Stage Two

Years 5 and 6

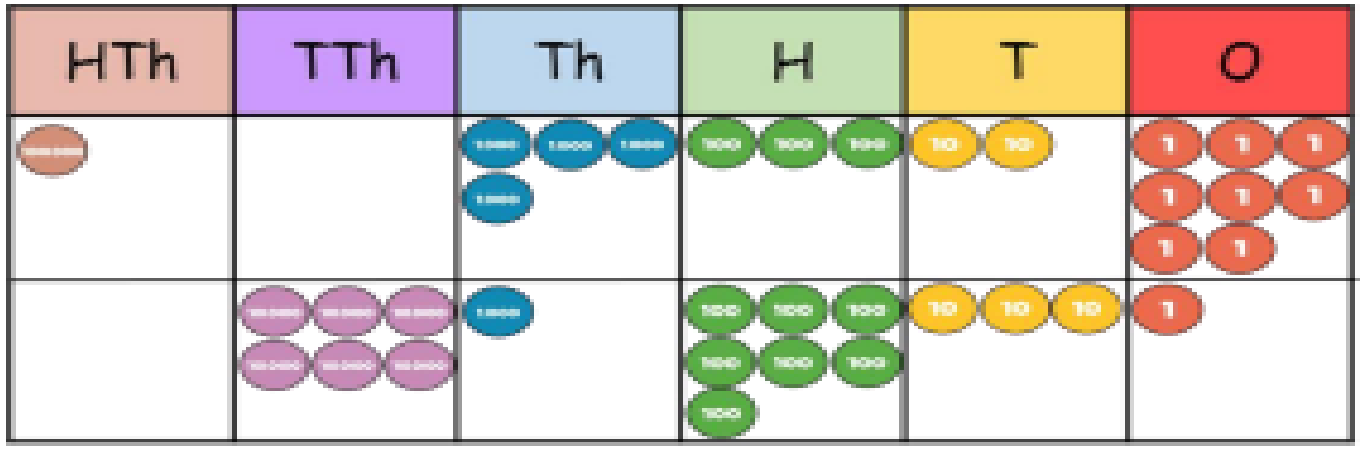
Year Five (into Year Six)

Skill: Add numbers with more than 4 digits





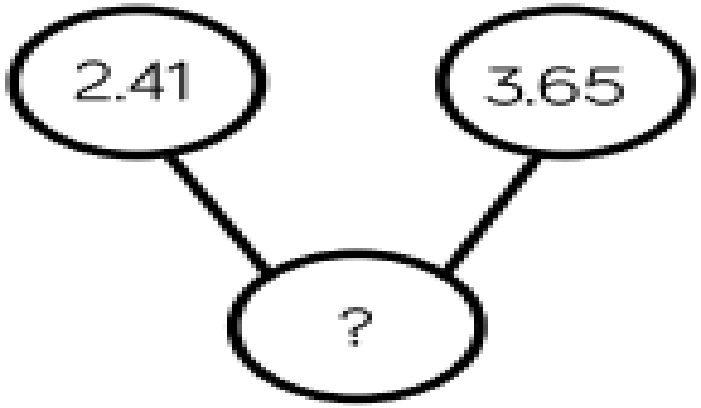
$$104{,}328 + 61{,}731 = 166{,}059$$

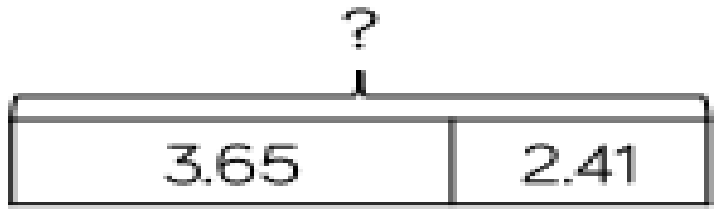


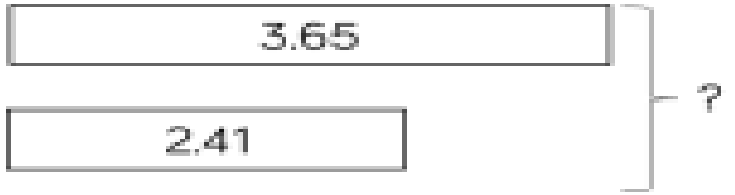
1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9
		1			

Year Five (into Year Six)

Skill: Add with up to 3 decimal places

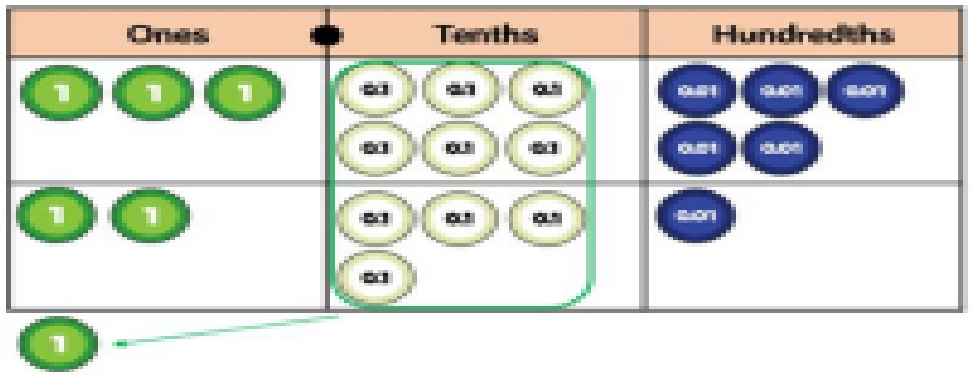


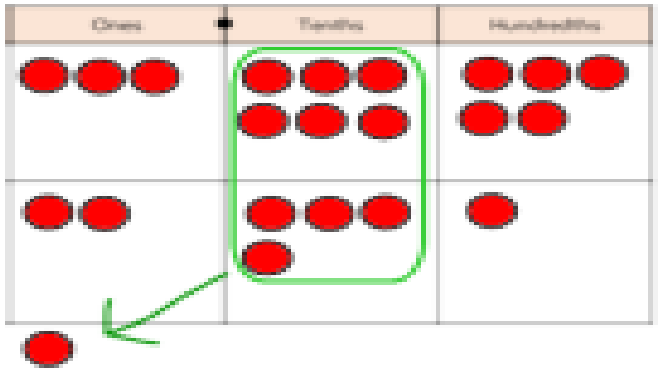




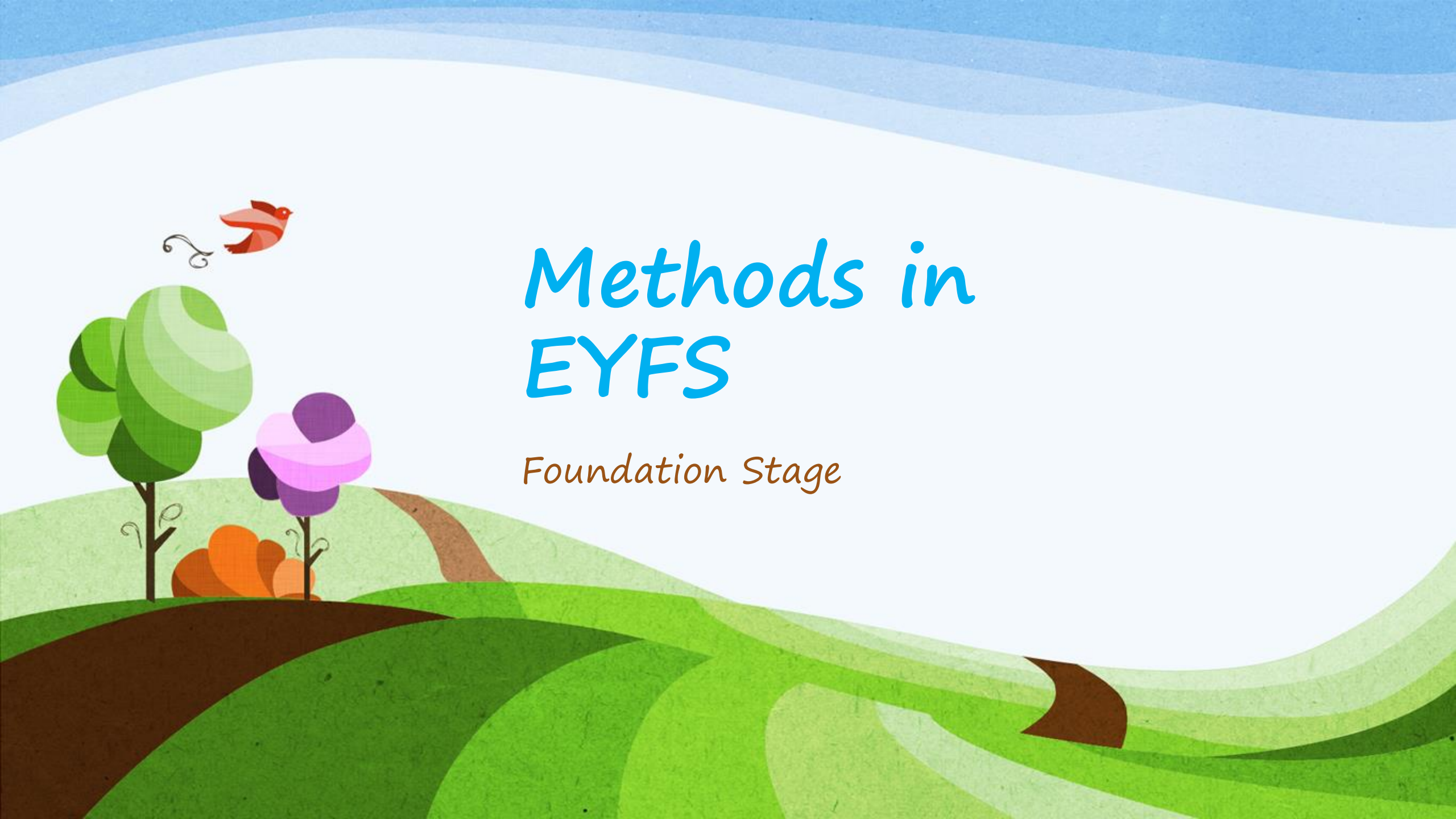
$$\begin{array}{r} 3.65 \\ +\ 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$

$$3.65 + 2.41 = 6.06$$





Subtraction



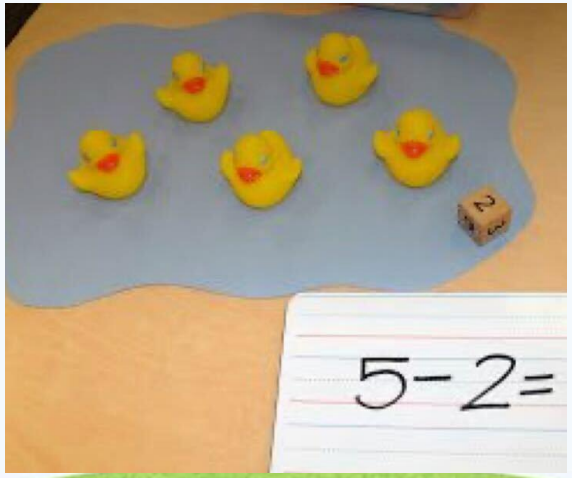
Methods in EYFS

Foundation Stage

Foundation Stage

Subtraction

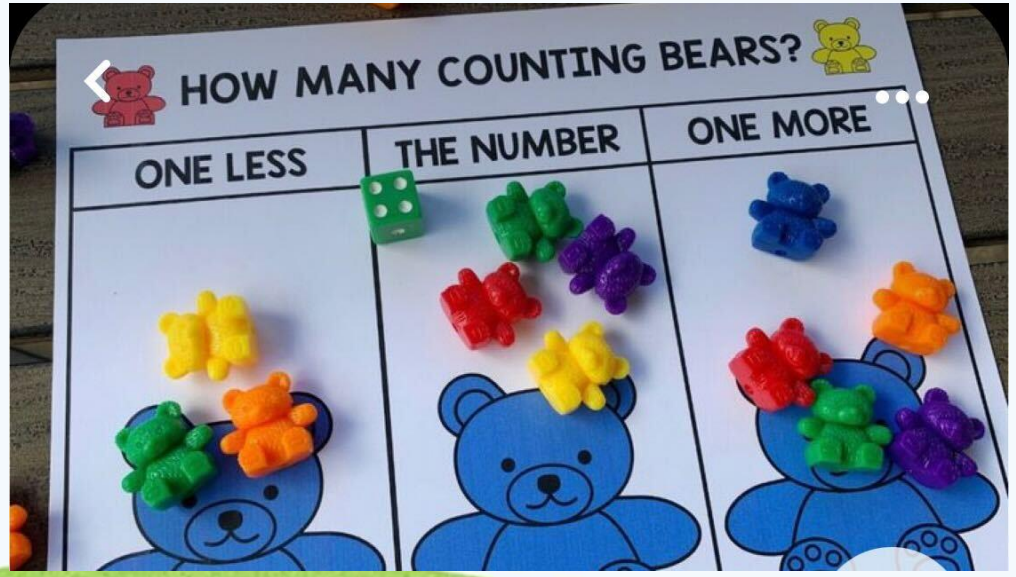
We begin to explore subtraction using nursery rhymes and props. For example, 5 Little Ducks. We will sing the song and physically remove a duck from the pond to show it being taken away. Eventually, this will be modelled with a number sentence. We also play games such as skittles where we talk about how many we knocked down and how many are left.



Foundation Stage

One less

Nursery rhymes are a great way to start discussions surrounding one less. We sing lots of rhymes in reception and use props to help us show 1 or 2 less than. We also explore using Lego bricks, skittles and when eating snack!

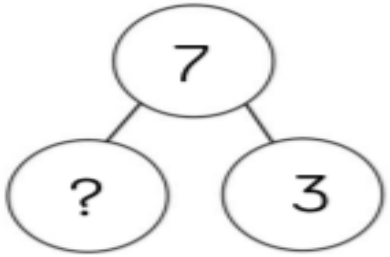


Methods in Key Stage One

Years 1 and 2

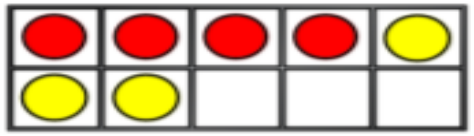
Year One

Skill: Subtract 1-digit numbers within 10

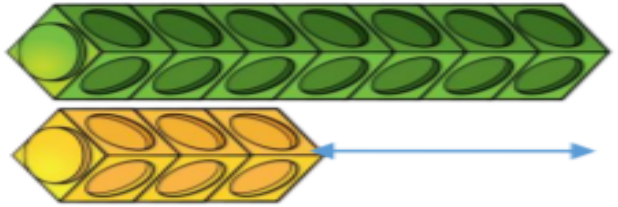


Part-whole model

Numicon

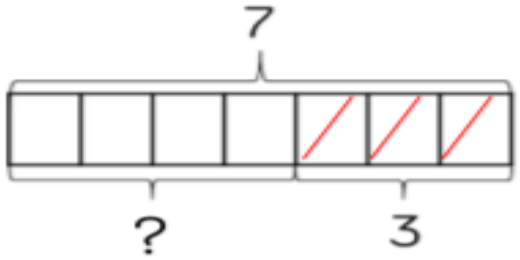


Ten frames

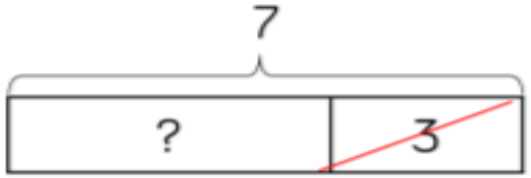


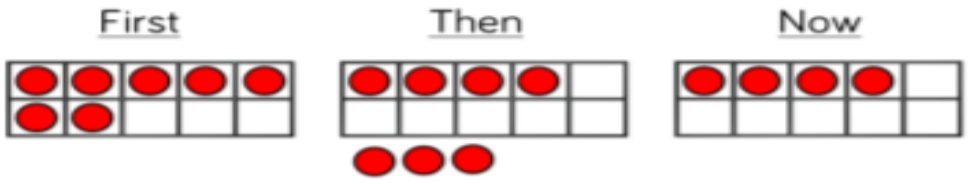
Bar model

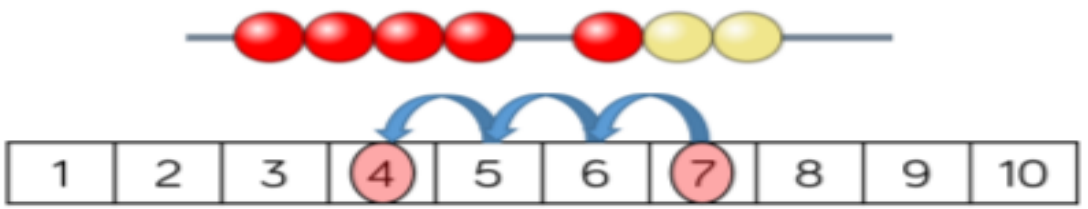
$$7 - 3 = 4$$



Bar model

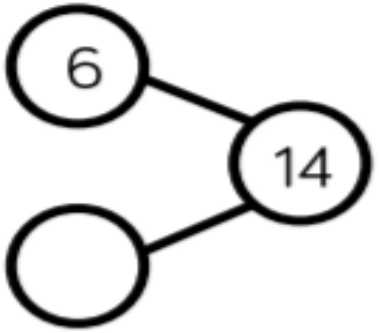


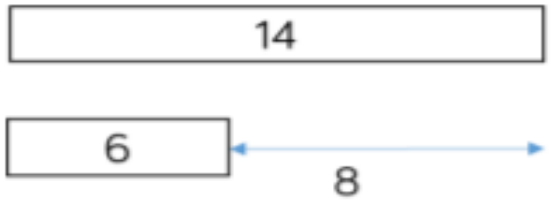


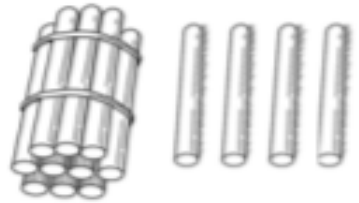


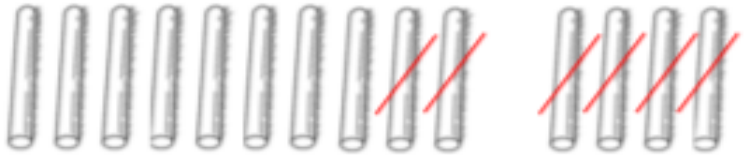
Year One (into Year Two)

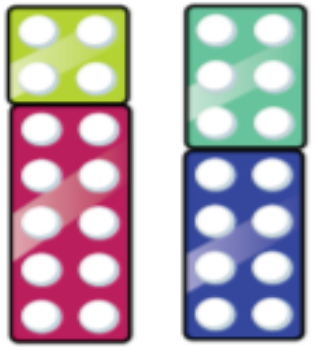
Skill: Subtract 1 and 2-digit numbers to 20



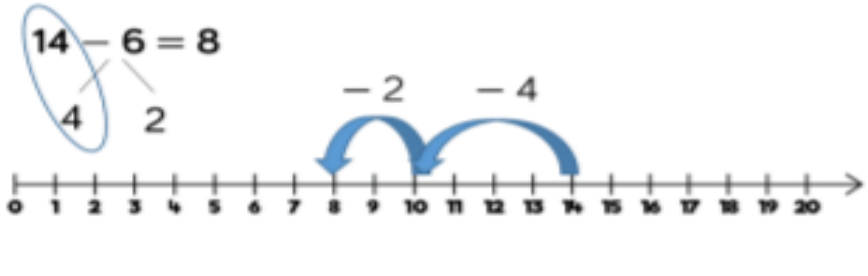


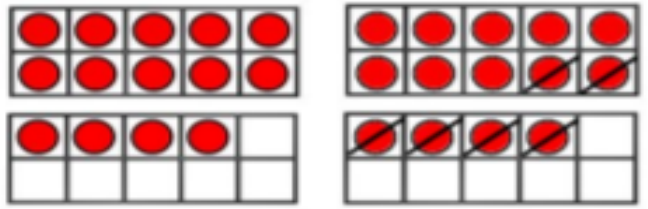


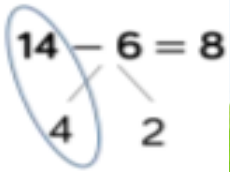




$$14 - 6 = 8$$

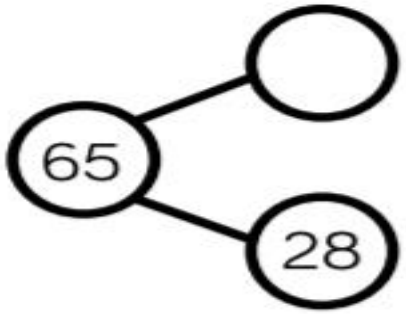


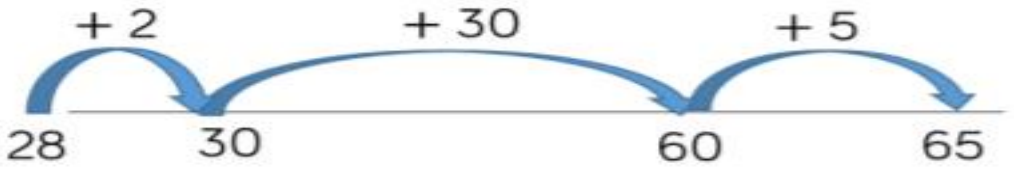


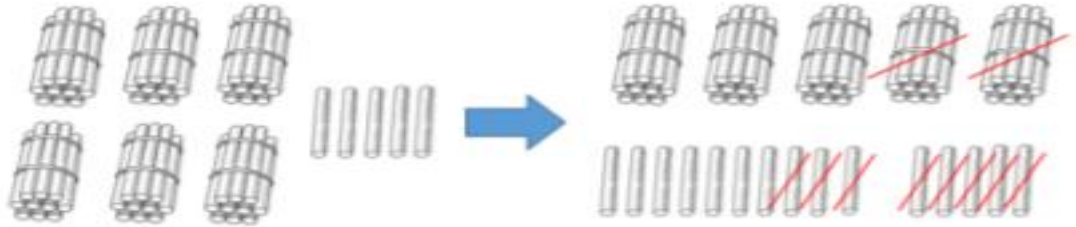


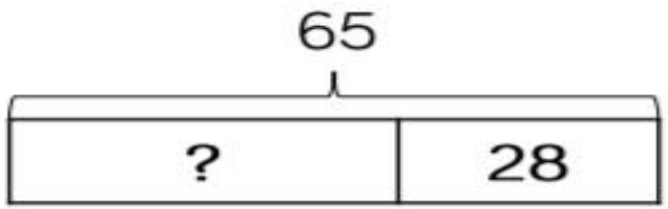
Year Two

Skill: Subtract 1 and 2-digit numbers to 100

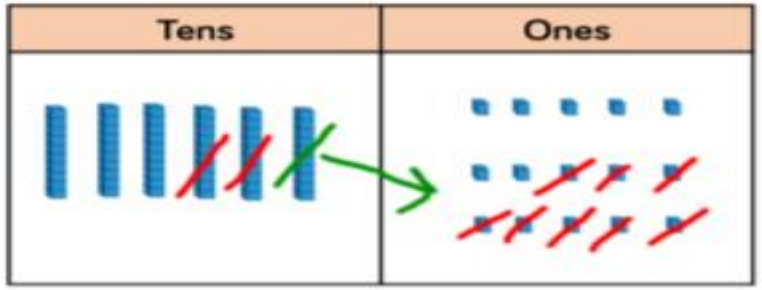




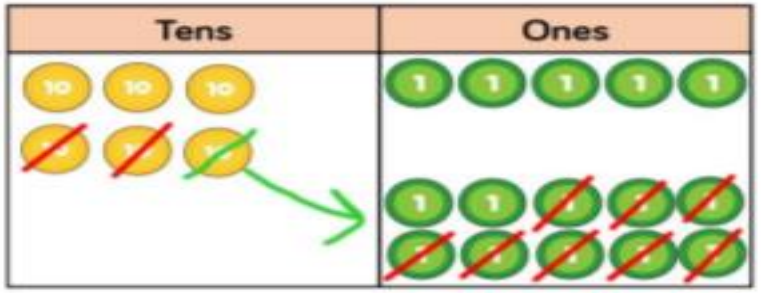


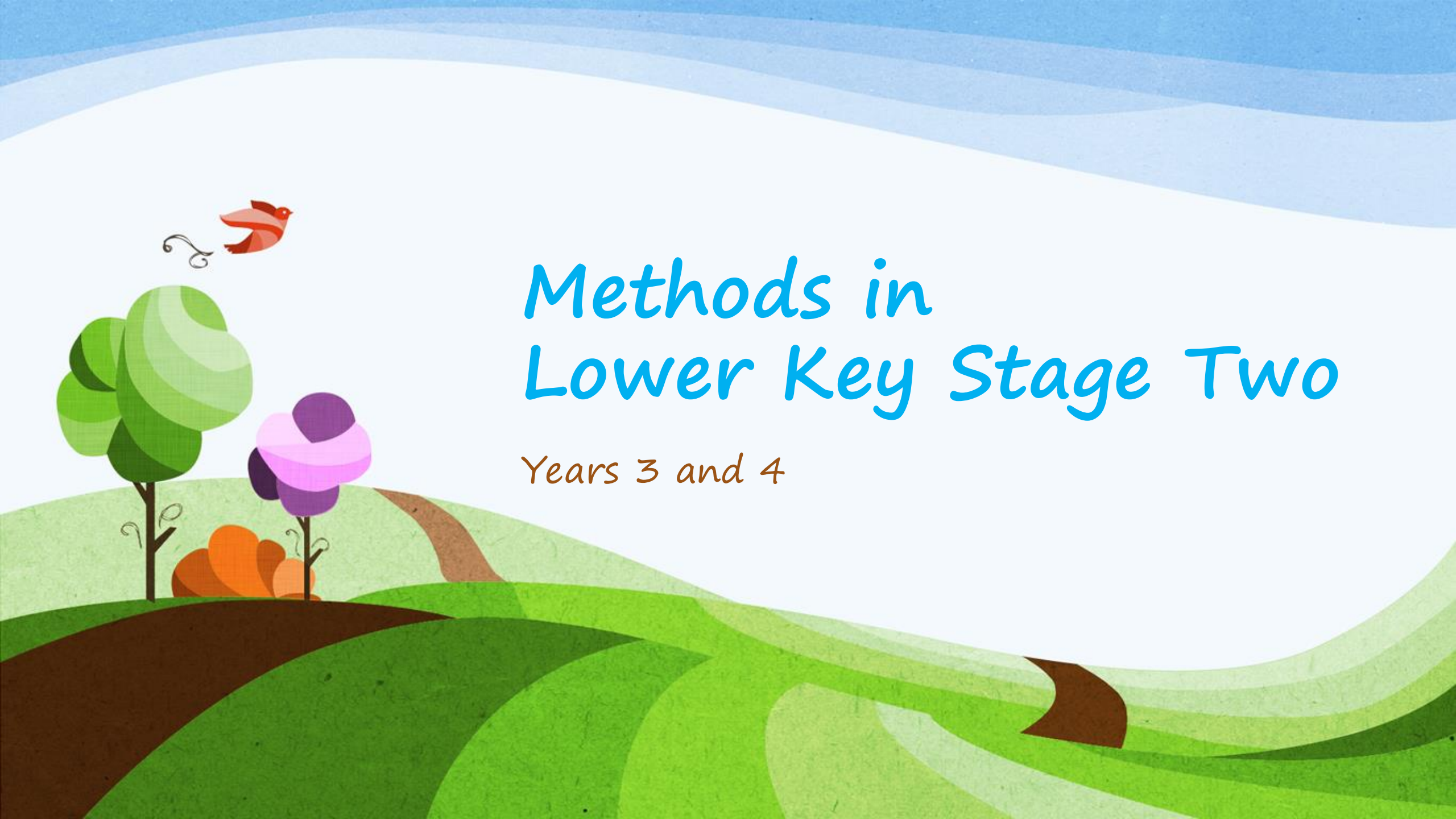


$$65 - 28 = 37$$



$$\begin{array}{r} {}^{5}\not{6}\,{}^{1}5 \\ -\ 2\ 8 \\ \hline 3\ 7 \end{array}$$



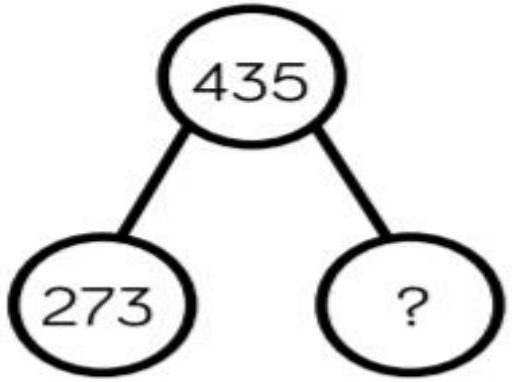


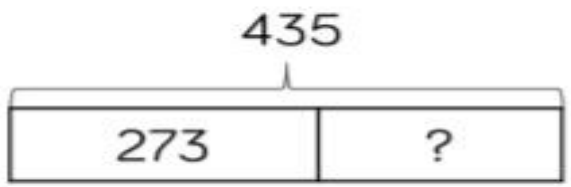
Methods in Lower Key Stage Two

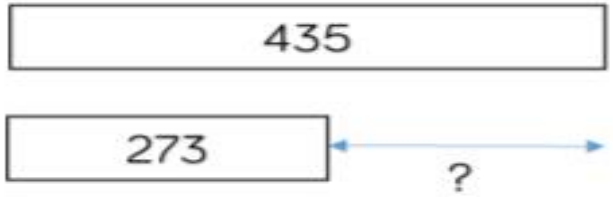
Years 3 and 4

Year Three

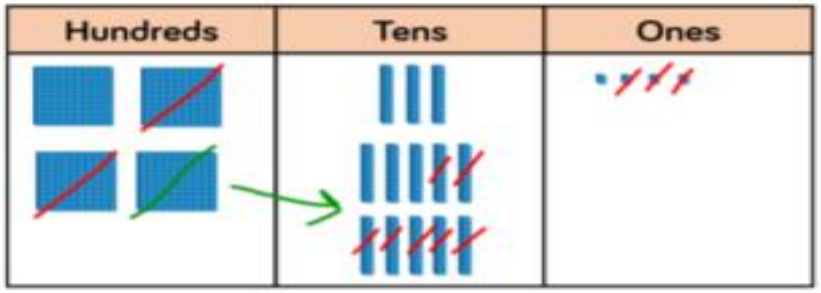
Skill: Subtract numbers with up to 3 digits



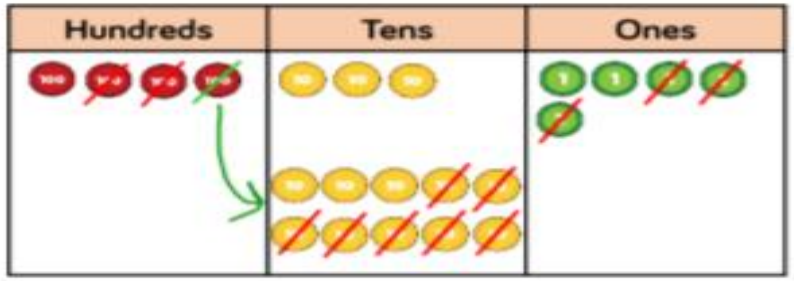




$$435 - 273 = 262$$

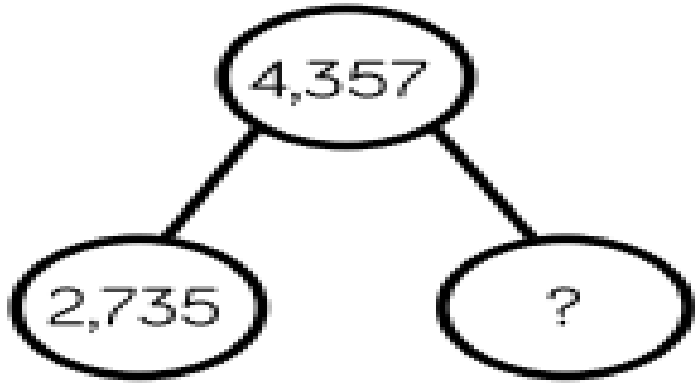


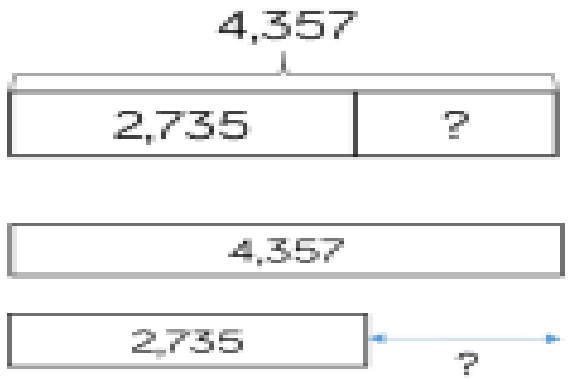
$$\begin{array}{r} {}^{3}\cancel{4}{}^{1}35 \\ -\ 273 \\ \hline 262 \end{array}$$



Year Four

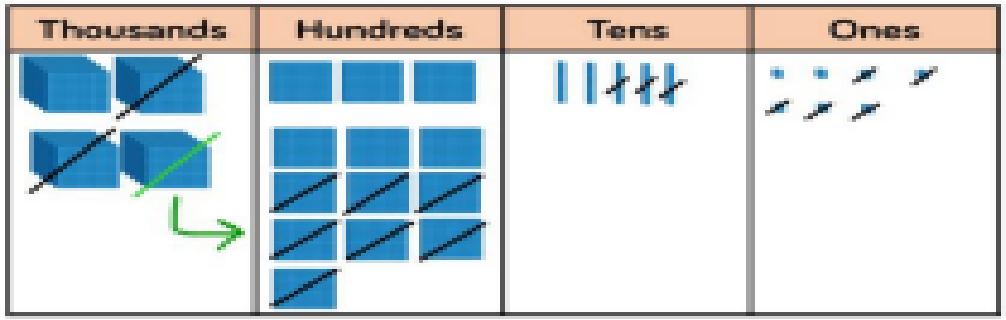
Skill: Subtract numbers with up to 4 digits



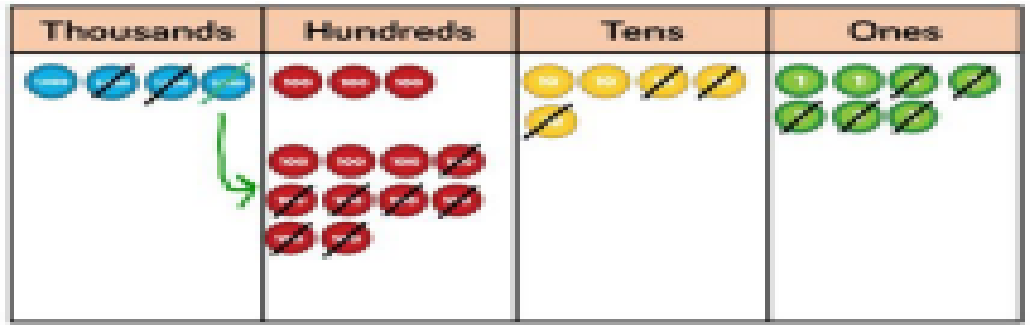


$$\begin{array}{r} {}^{3}\cancel{4}^{1}357 \\ -\ 2735 \\ \hline 1622 \end{array}$$

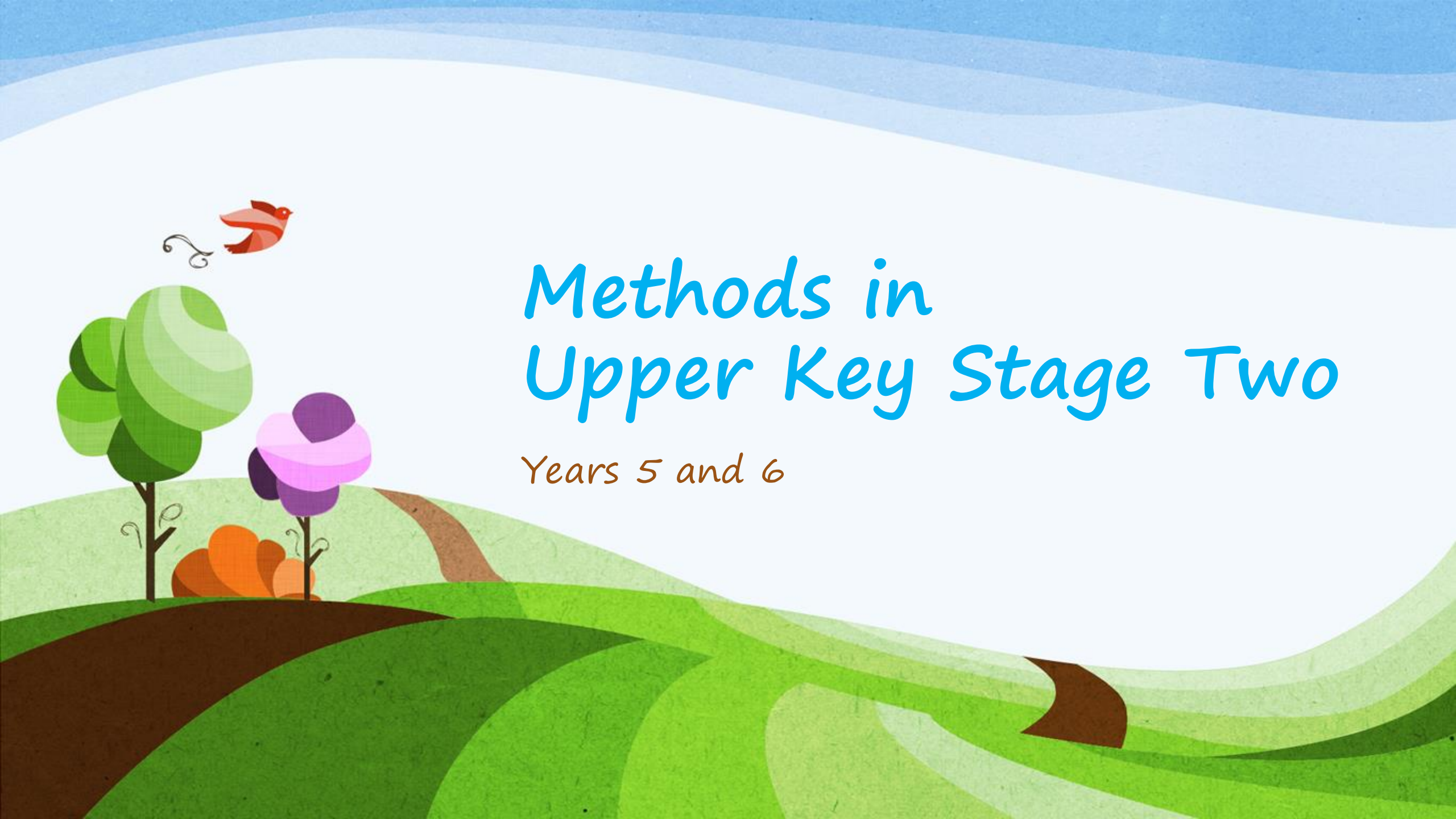
$$4{,}357 - 2{,}735 = 1{,}622$$



Dienes Apparatus (Base 10)



Place Value Counters

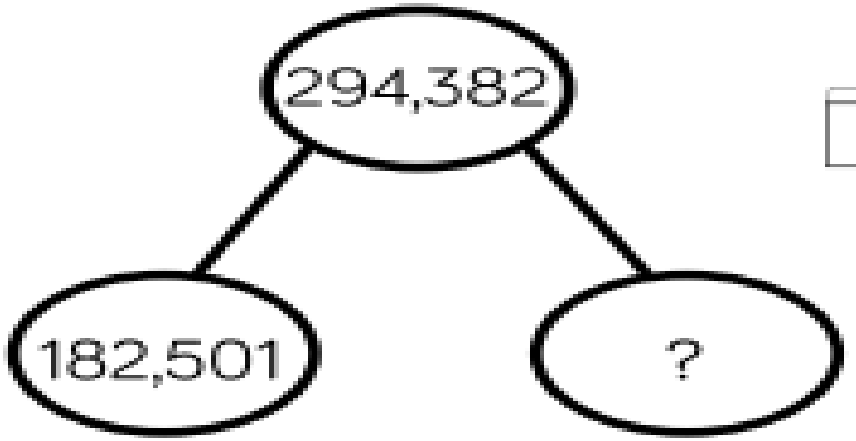


Methods in Upper Key Stage Two

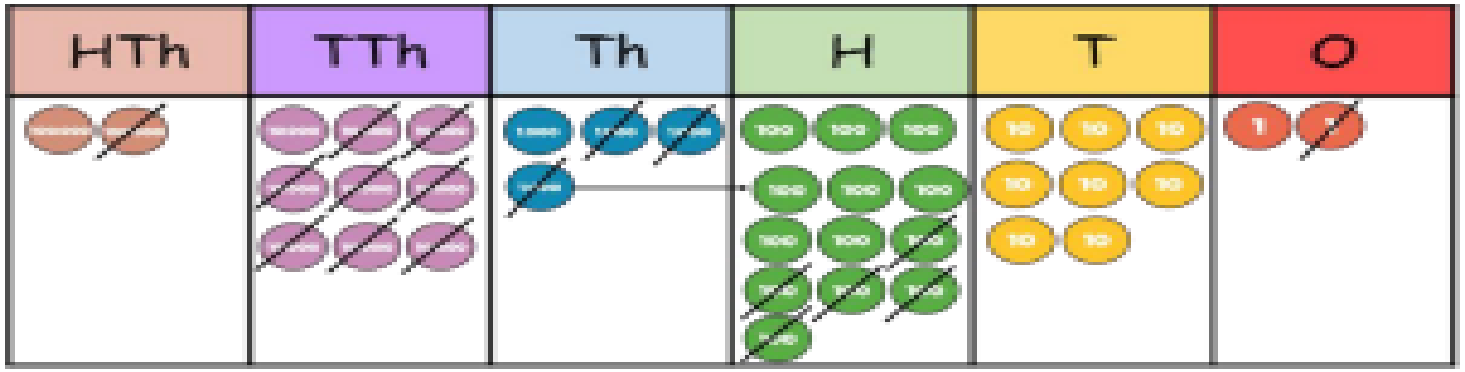
Years 5 and 6

Year Five (into Year Six)

Skill: Subtract numbers with more than 4 digits



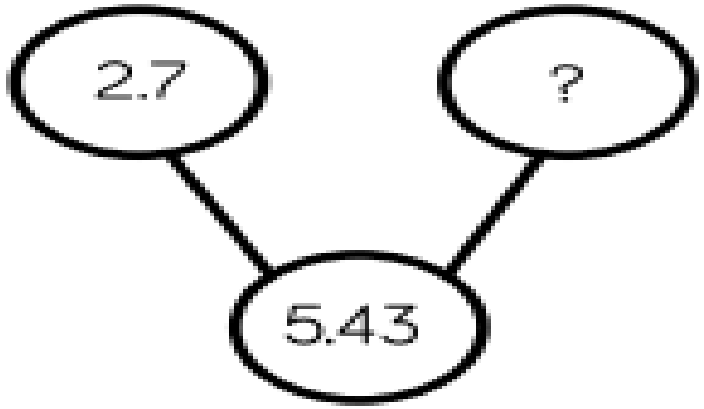
$$294{,}382 - 182{,}501 = 111{,}881$$

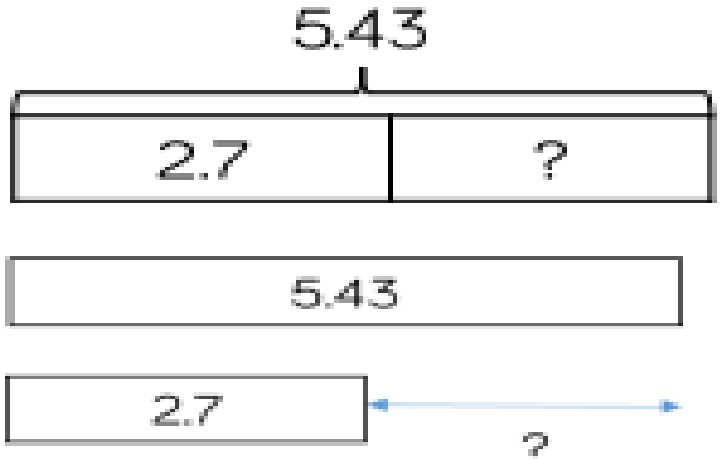


	2	9	$^{5}\not{3}$	$^{1}3$	8	2
−	1	8	2	5	0	1
	1	1	1	8	8	1

Year Five (into Year Six)

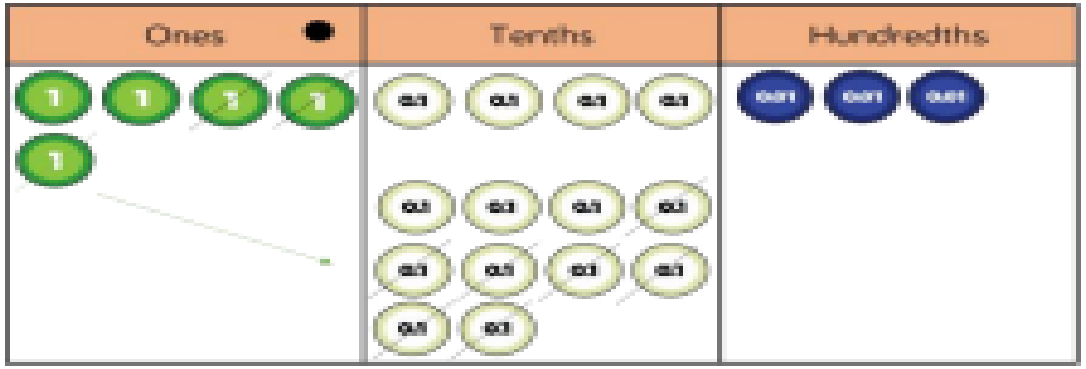
Skill: Subtract with up to 3 decimal places

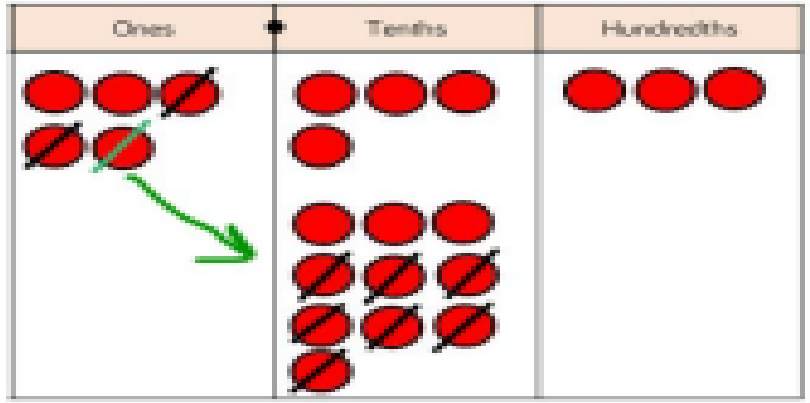


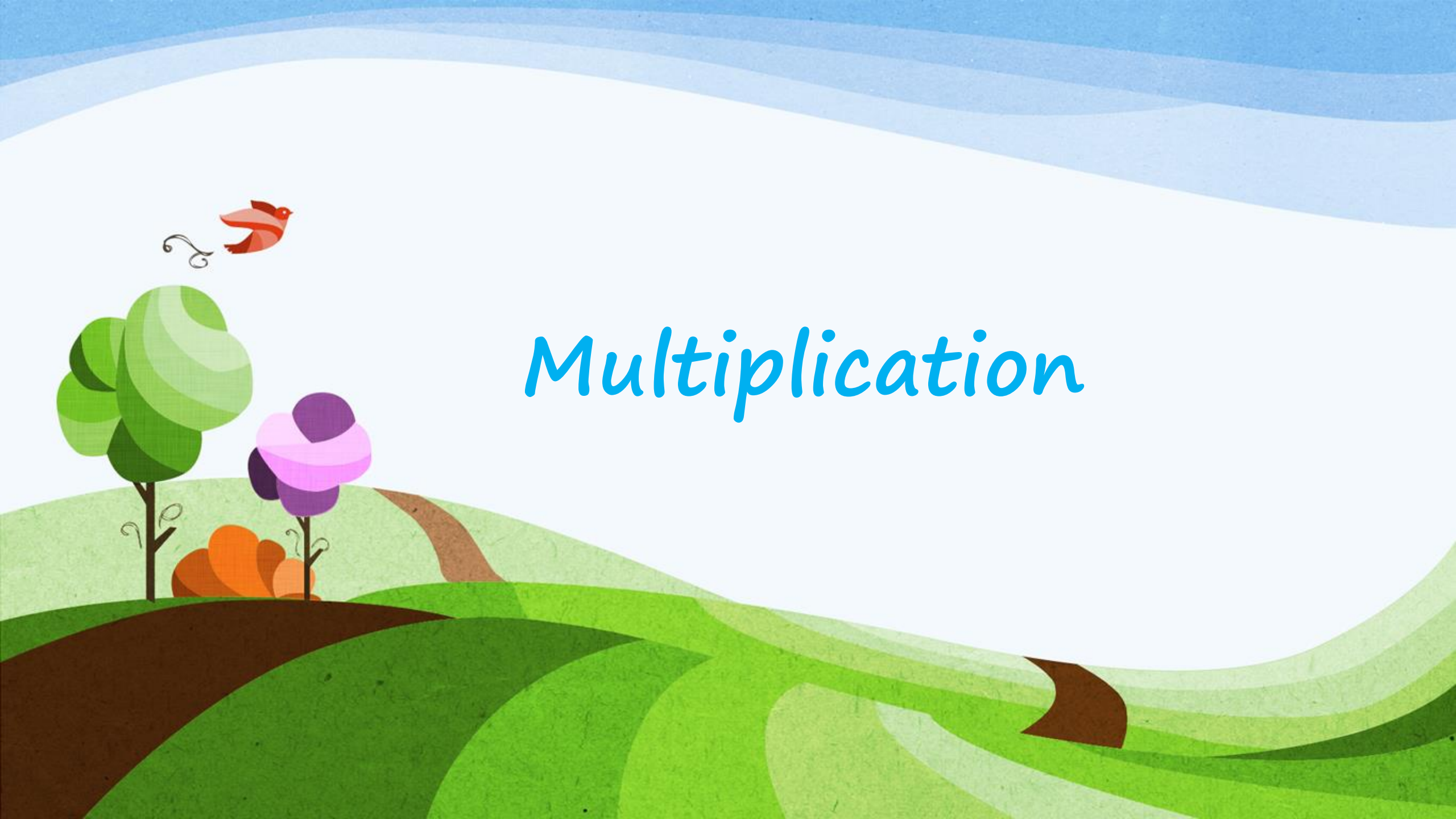


$$\begin{array}{r} {}^{4}\cancel{5}.{}^{1}43 \\ -\ 2.7 \\ \hline 2.73 \end{array}$$

$$5.43 - 2.7 = 2.73$$






Multiplication

Multiplying by powers of 10

Multiplying Decimals by 10, 100 or 1000

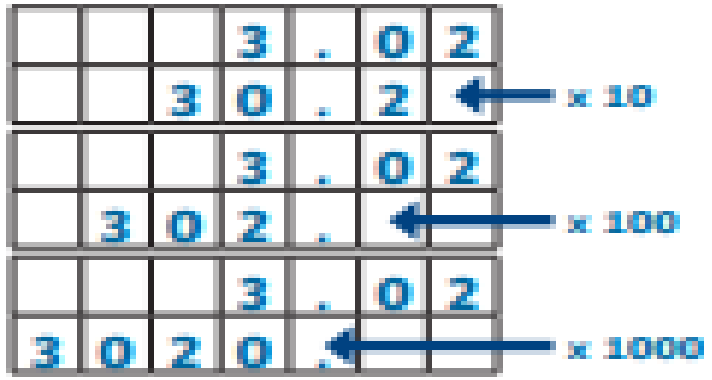
When multiplying a decimal number by 10, 100 or 1000, the value of each digit is multiplied.

$3.02 \times 10 = 30.2$

$3.02 \times 100 = 302$

$3.02 \times 1000 = 3020$

Each digit moves the necessary number of places to the left because multiplying by 10, 100 or 1000 increases the number.



Remember:

1. Keep the digits together.

Don't let any 0s jump in!

$3.02 \times 100 = 300.2$ ✗

$3.02 \times 100 = 302$ ✓

2. Round to check:

$3.02 \times 1000 = 3020$

use $3 \times 1000 = 3000$

Times Tables

Year Two – 2s, 5s and 10s

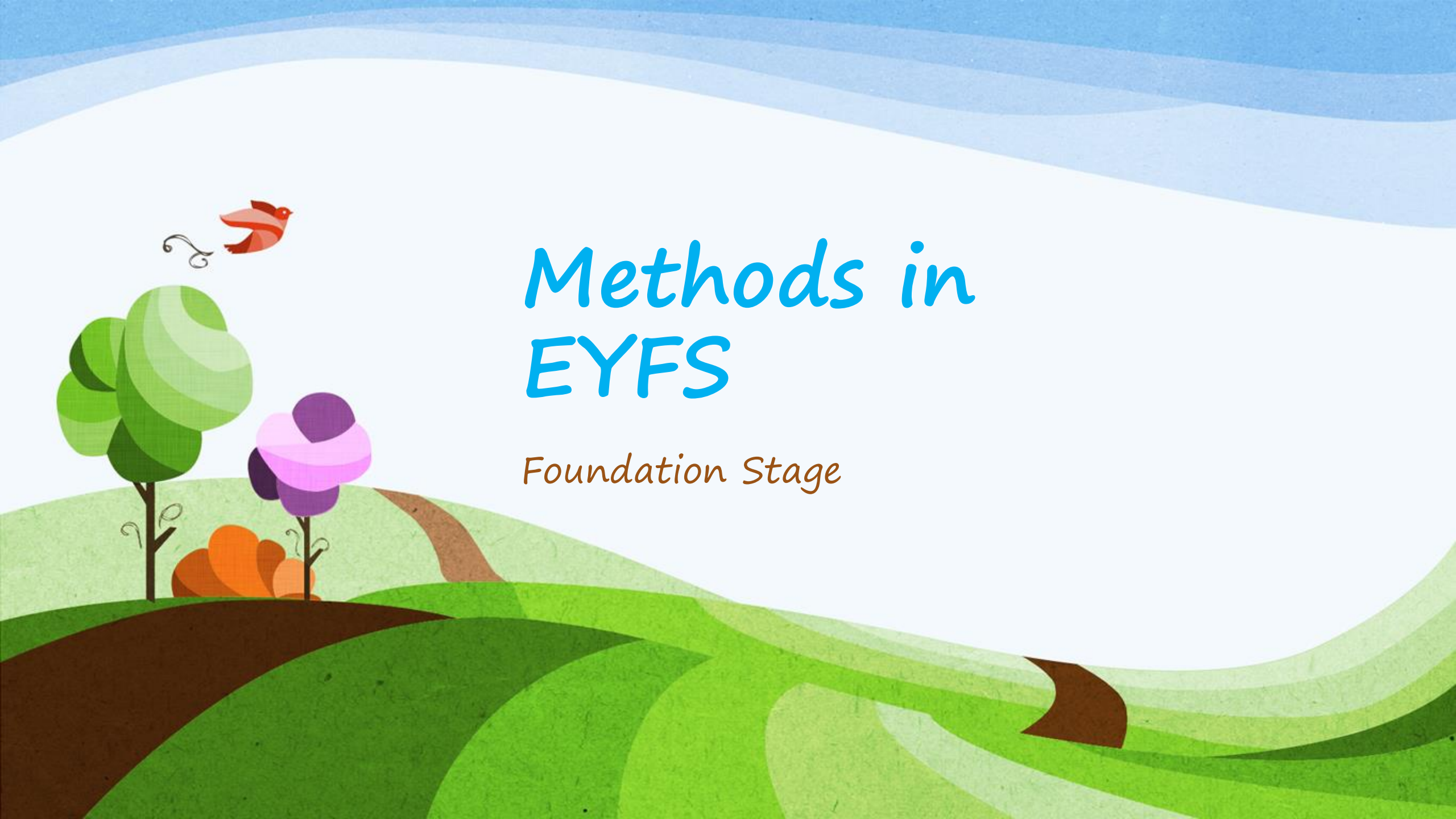
Year 3 – 3s, 4s and 8s

Year 4 – all to 12 x 12 - MTC

Times Tables

Taught to recognise patterns

- 2s are even (end in 0, 2, 4, 6, 8)
- 4s are double 2s
  - Last 2 digits divisible by 4
- 8s are double 4s
  - Last 3 digits divisible by 8
- 3s have a …



Methods in EYFS

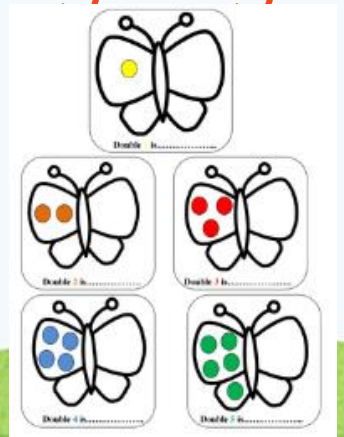
Foundation Stage

Foundation Stage

Doubling

In reception your child will begin to learn doubling facts. For example, double 2 is 4. This is often built upon their subitizing skills as the year progresses. We will ask what they notice and how they see patterns. "I know there are 4 because double 2 is 4".

We also use socks and put them into pairs. This is a good way to start counting in groups of 2 ready for Year One.

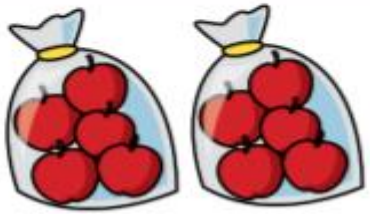


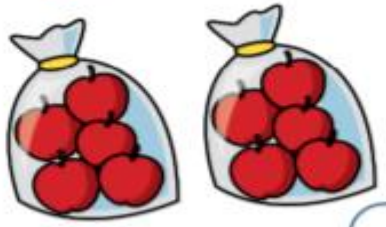
Methods in Key Stage One

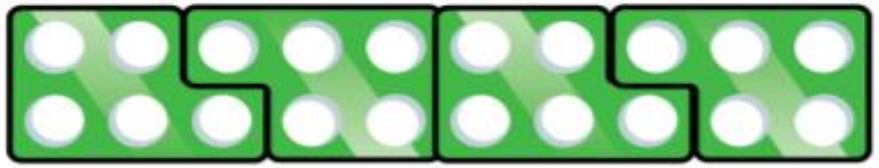
Years 1 and 2

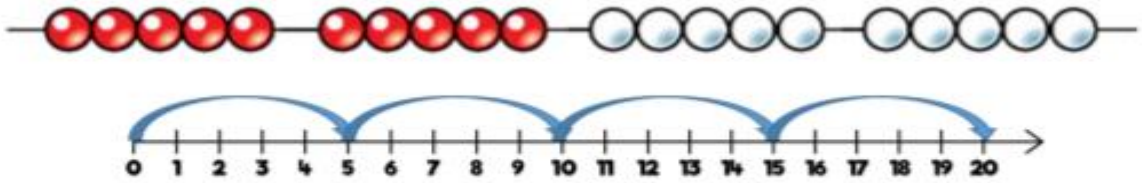
Year One (into Year Two)

Skill: Solve 1-step problems using multiplication

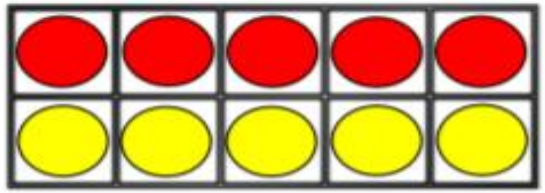


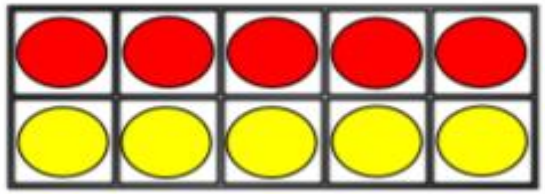


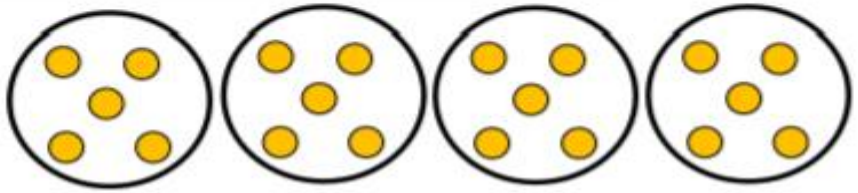


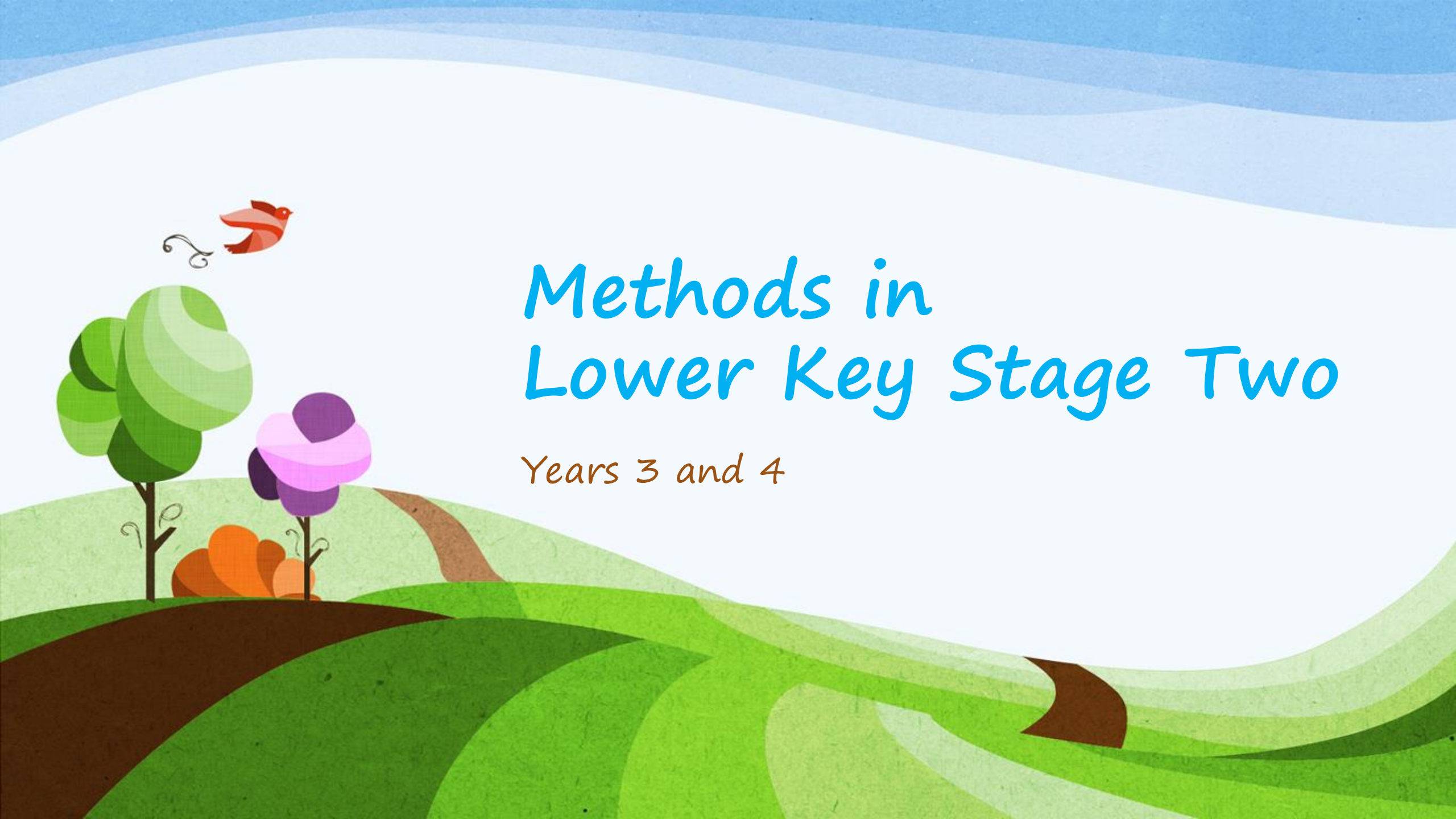


One bag holds 5 apples.
How many apples do 4 bags hold?







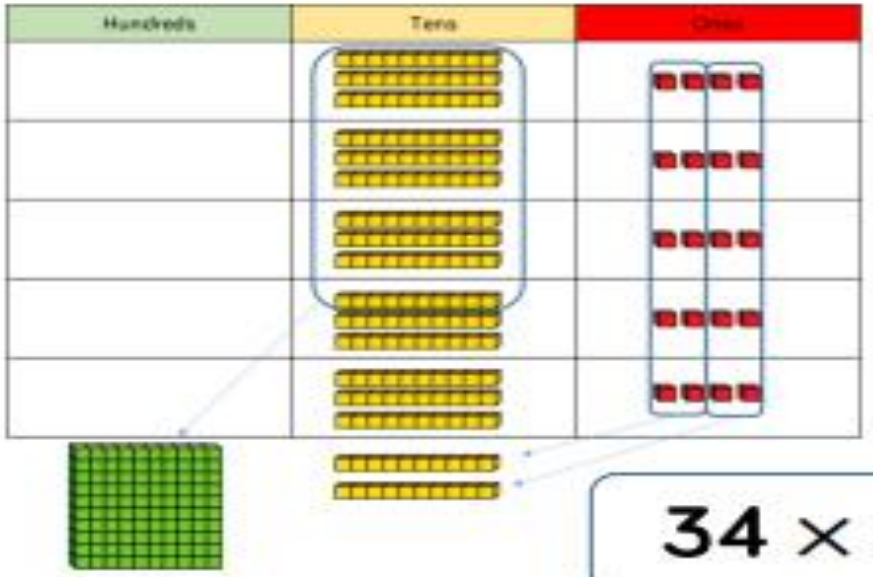


Methods in Lower Key Stage Two

Years 3 and 4

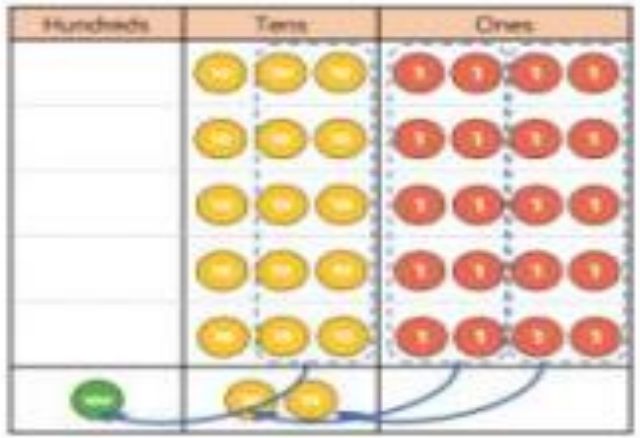
Year Three

Skill: Multiply 2-digit numbers by 1-digit numbers



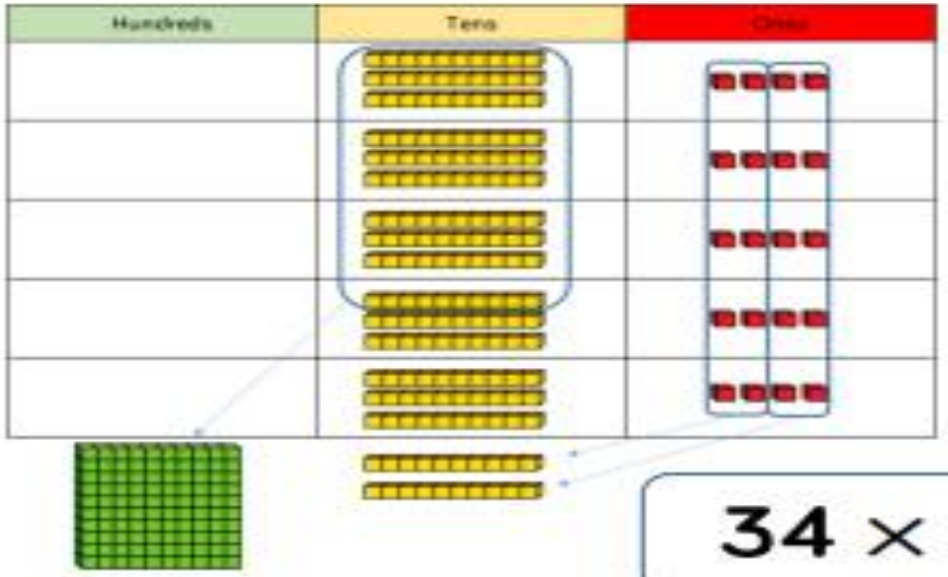
	H	T	O	
		3	4	
×			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	

$$34 \times 5 = 170$$



Year Four

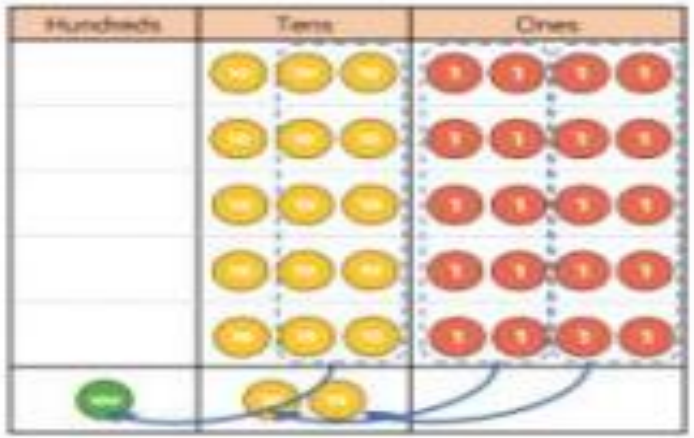
Skill: Multiply 2-digit numbers by 1-digit numbers

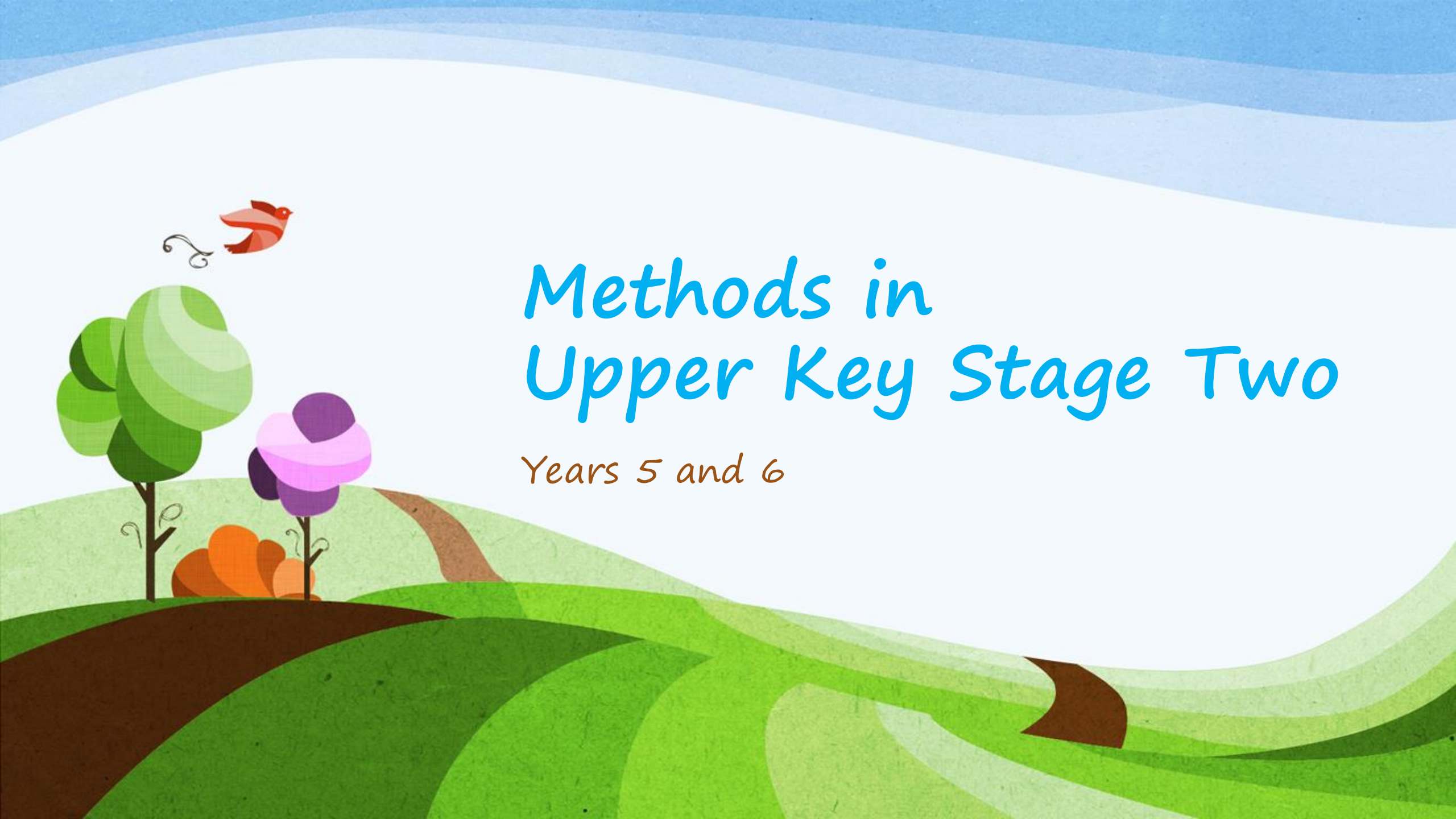


	H	T	O	
		3	4	
×			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	

$$34 \times 5 = 170$$

	H	T	O	
		3	4	
×			5	
	1	7	0	
	1	2		



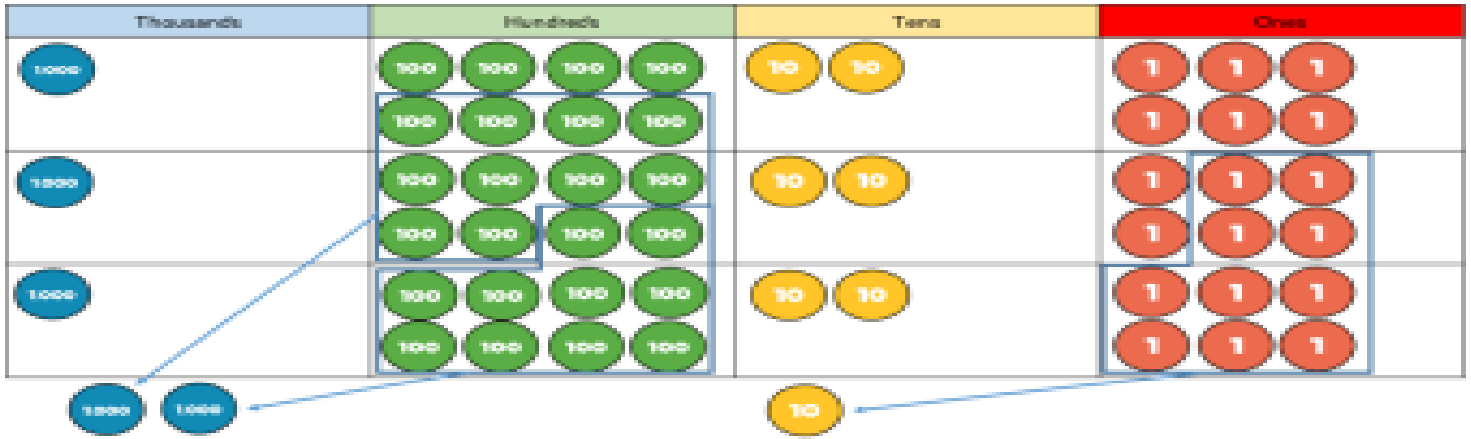


Methods in Upper Key Stage Two

Years 5 and 6

Year Five

Skill: Multiply 4-digit numbers by 1-digit numbers

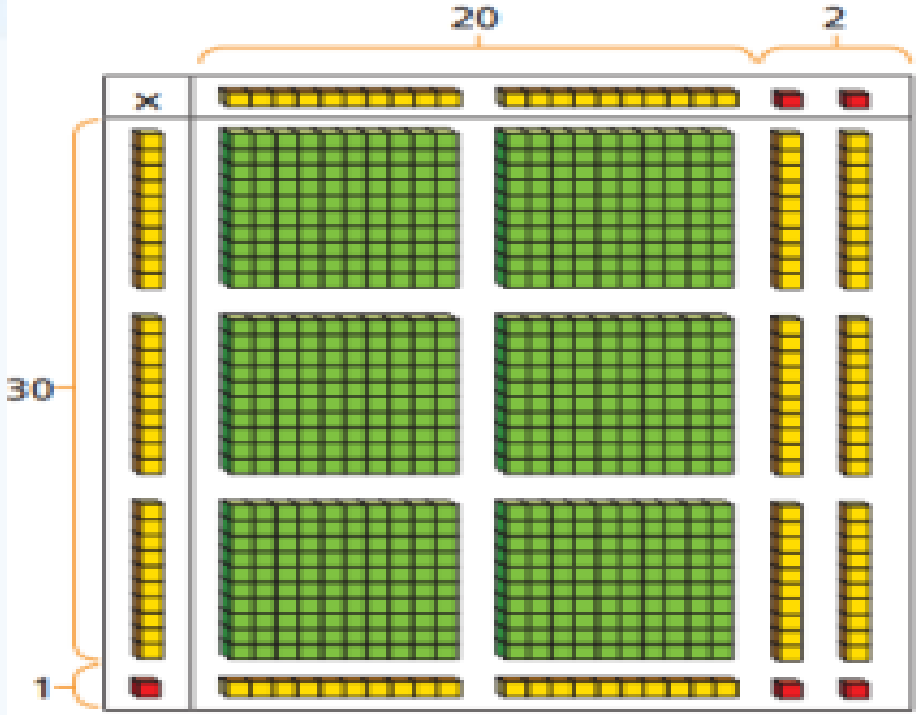


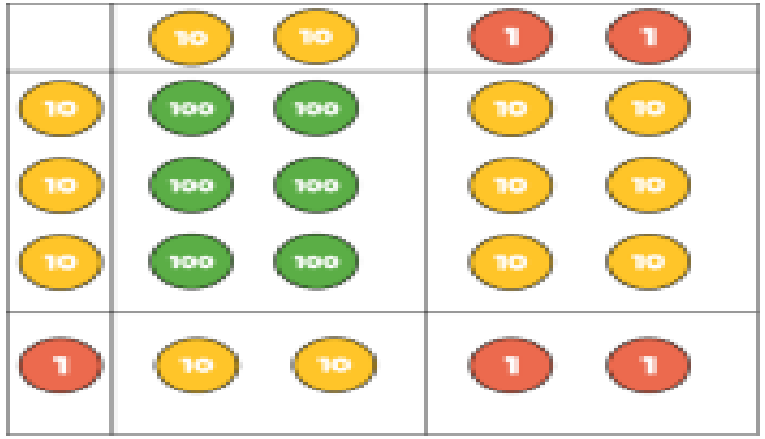
$$1{,}826 \times 3 = 5{,}478$$

	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

Year Five

Skill: Multiply 2-digit numbers by 2-digit numbers





×	20	2
30	600	60
1	20	2

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

$$22 \times 31 = 682$$

Year Five (into Year Six)

Skill: Multiply 4-digit numbers by 2-digit numbers

TTh	Th	H	T	O
	2	7	3	9
×			2	8
$^{2}2_{2}$	$^{1}1_{5}$	$^{9}9_{3}$	$^{1}1_{7}$	2
$^{1}5_{1}$	4	$^{1}7_{1}$	8	0
7	6	6	9	2
		1		

$$2{,}739 \times 28 = 76{,}692$$

Division

Dividing by powers of 10

Dividing by 10, 100 or 1,000 Where Answers Are Decimals

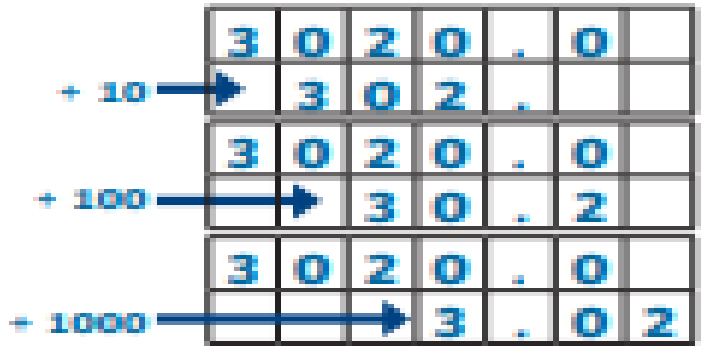
When dividing a number by 10, 100 or 1,000 the value of each digit is divided sometimes giving a decimal answer.

Each digit moves the necessary number of place to the right because dividing by 10 decreases the number.

$3020 \div 10 = 302$

$3020 \div 100 = 30.2$

$3020 \div 1000 = 3.02$



Remember:

1. Keep the digits together. Don't let any 0's jump in!

   $34 \div 10 = 3\cancel{0}.4$

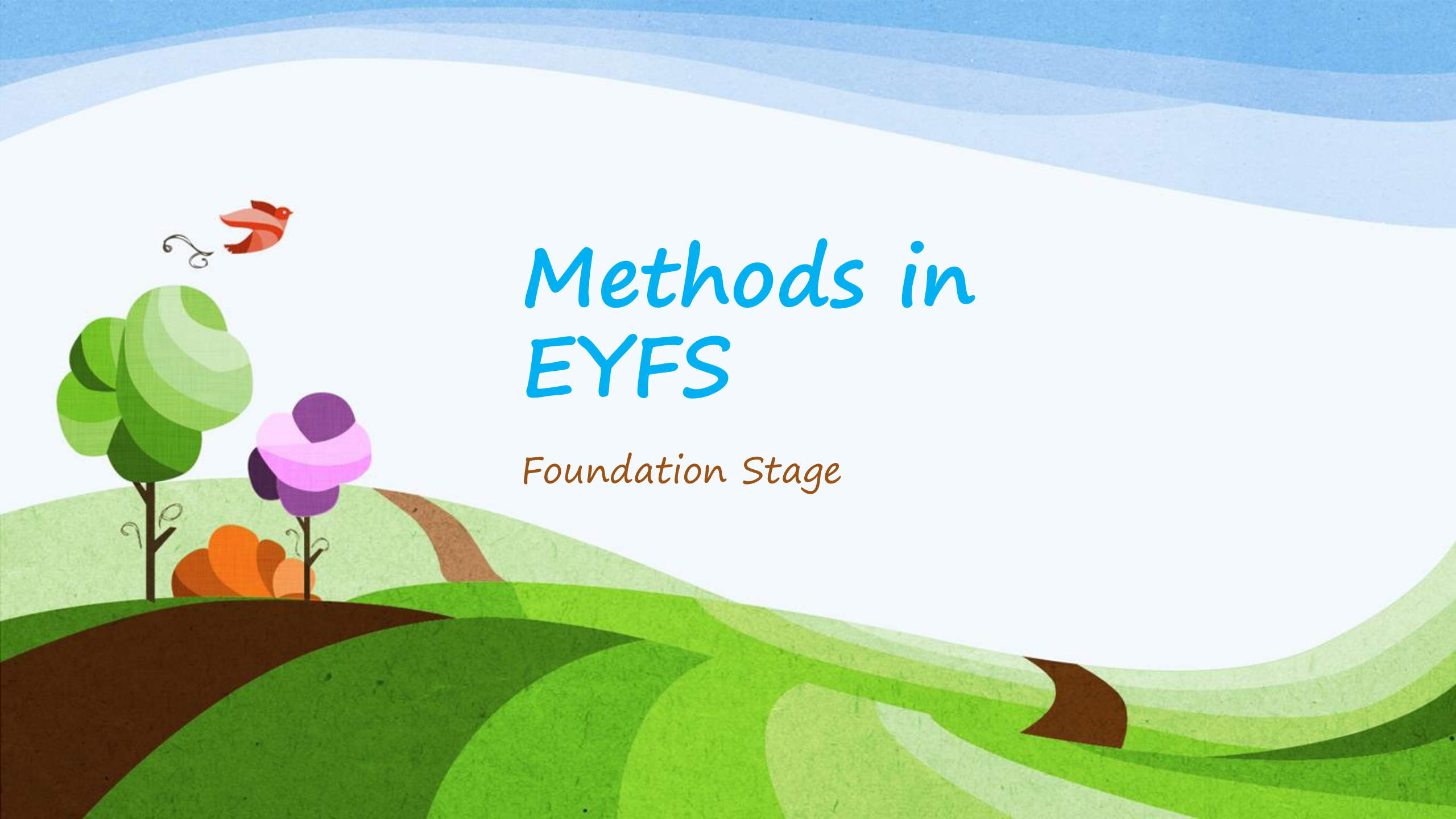
2. Round to check:

   $340 \div 100 = 3.4$

   use $300 \div 100 = 3$

3. Use the inverse to check:

   $3.4 \times 1000 = 3400$



Methods in EYFS

Foundation Stage

Foundation Stage

Sharing

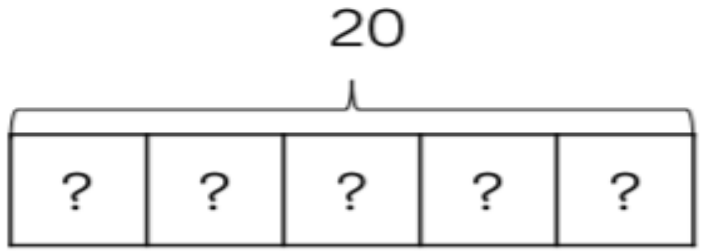
In reception we learn how to share objects fairly. We will use snack to do this or a Teddy Bear Picnic. We will share a total amount, 1 at a time to make sure it is fair.

Methods in Key Stage One

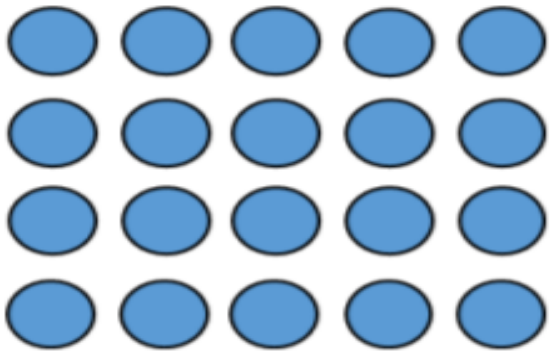
Years 1 and 2

Year One (into Year Two)

Skill: Solve 1-step problems using multiplication (sharing)

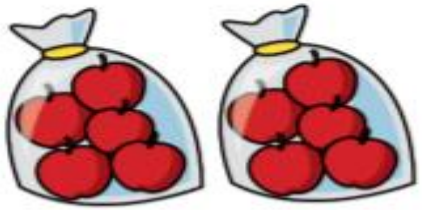


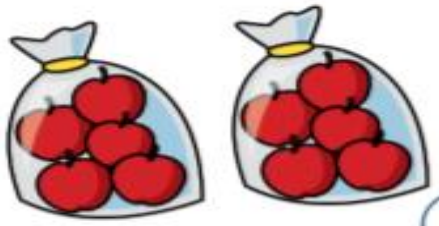
There are 20 apples altogether.
They are shared equally between 5 bags.
How many apples are in each bag?

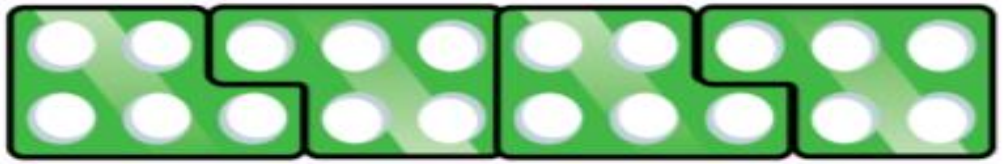


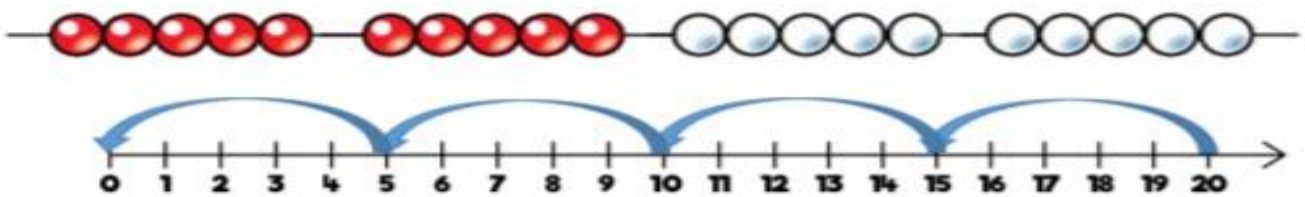
Year One (into Year Two)

Skill: Solve 1-step problems using division (grouping)

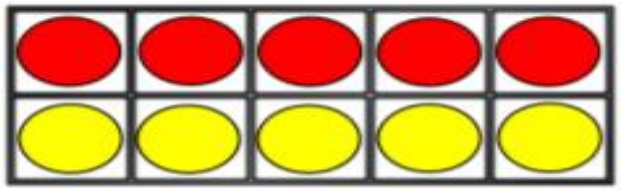


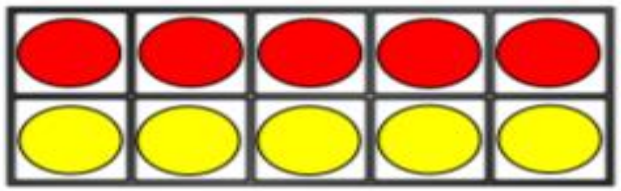


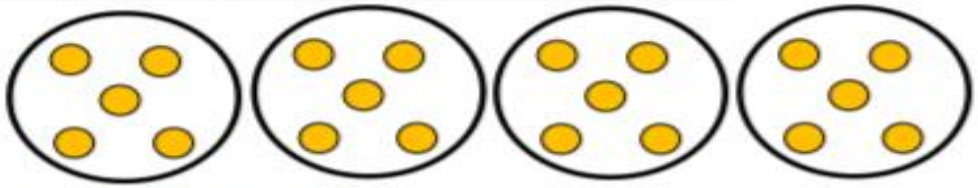




There are 20 apples altogether.
They are put in bags of 5.
How many bags are there?



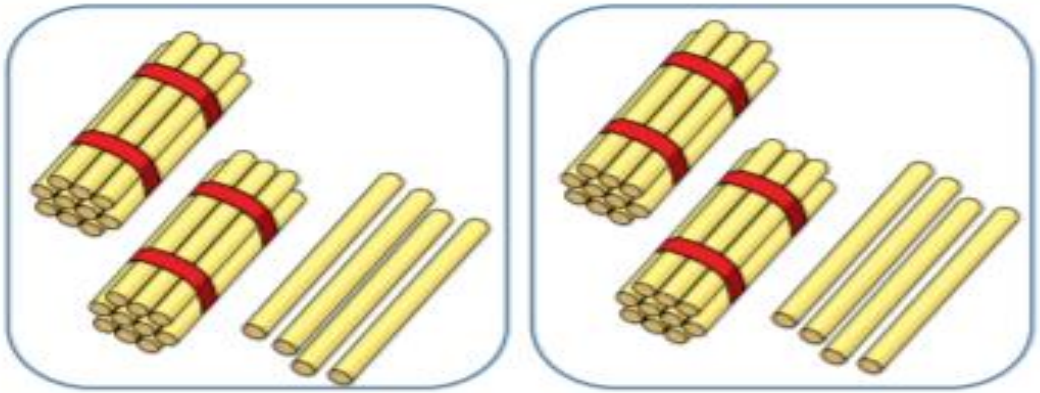


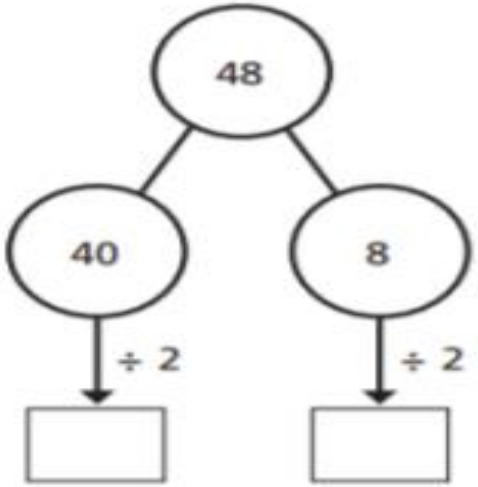


Year One (into Year 2)

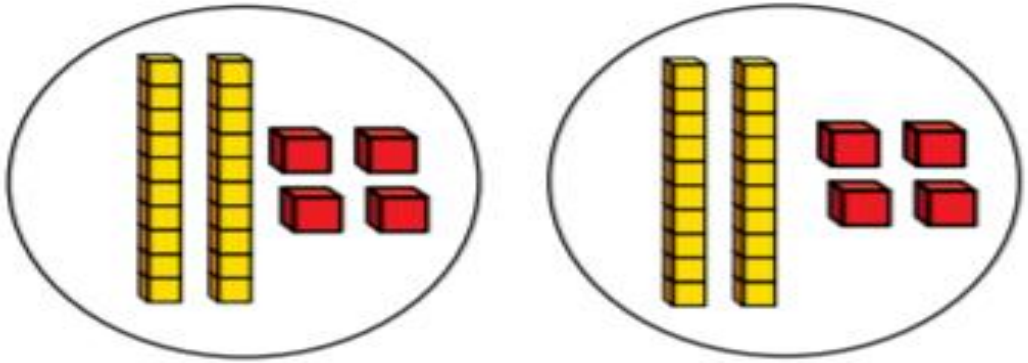
Skill: Divide 2-digits by 1-digit (sharing with no exchange)

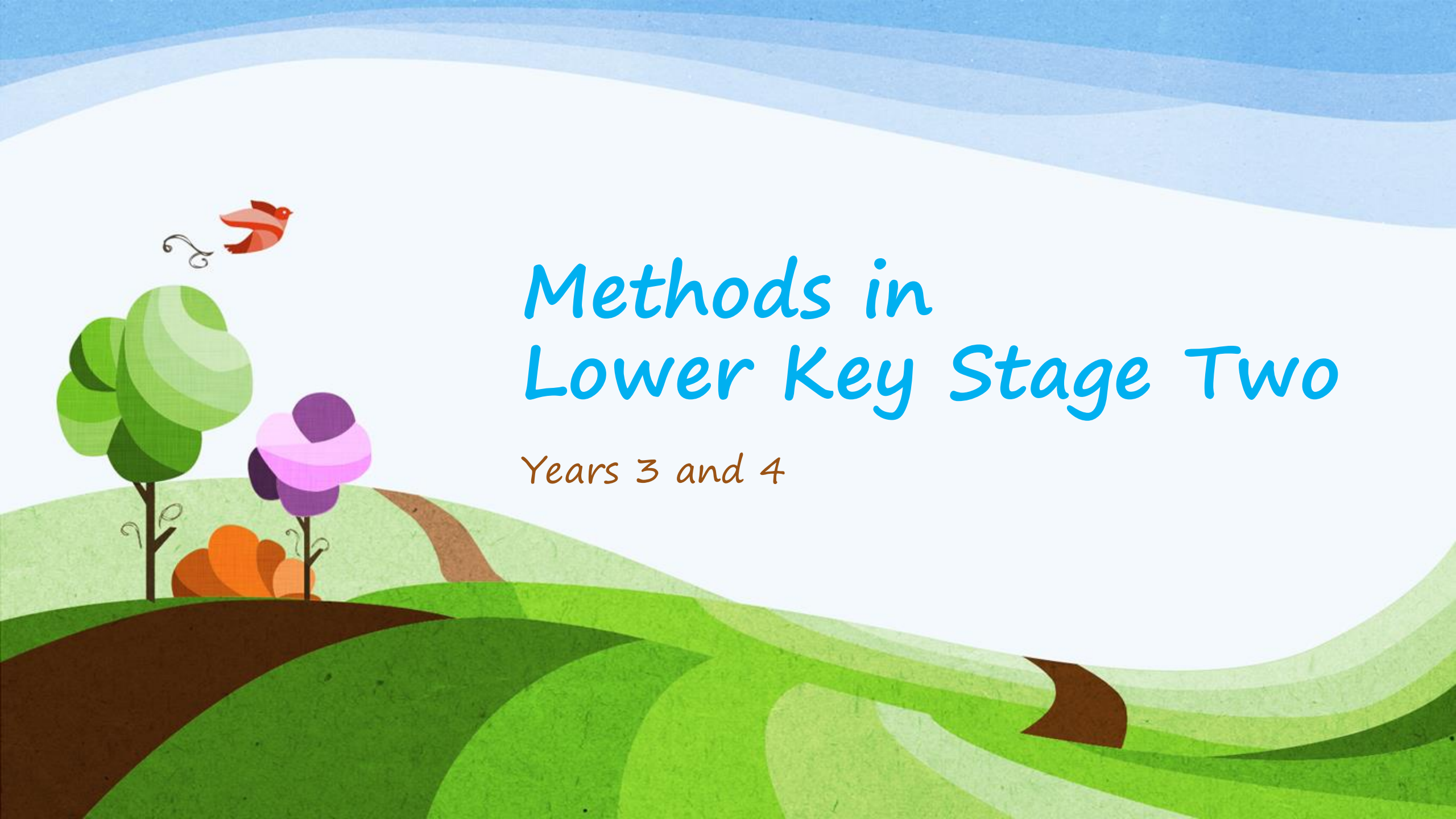
Tens	Ones
10 10	1 1 1 1
10 10	1 1 1 1





$$48 \div 2 = 24$$





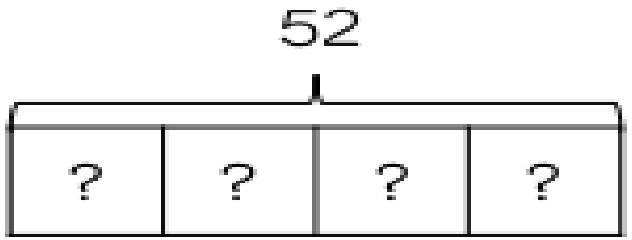
Methods in Lower Key Stage Two

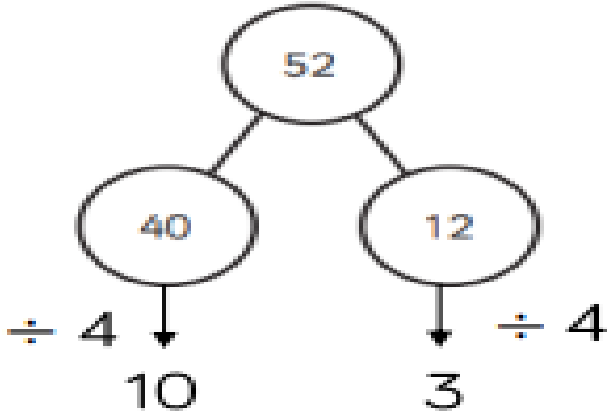
Years 3 and 4

Year Three

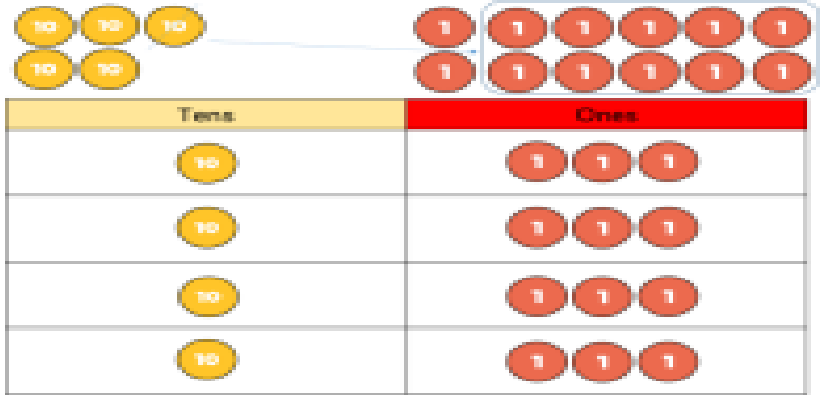
Skill: Divide 2-digits by 1-digit (sharing with exchange)

Tens	Ones





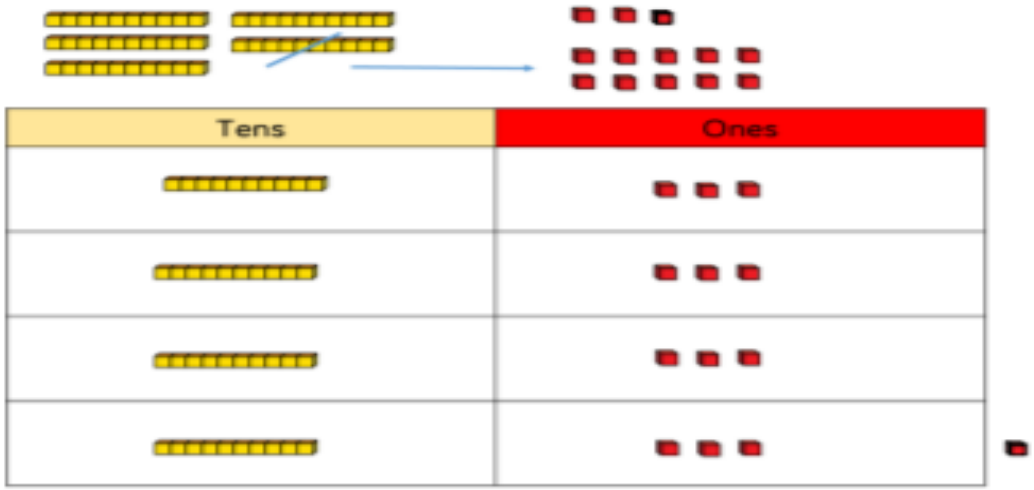
$$52 \div 4 = 13$$

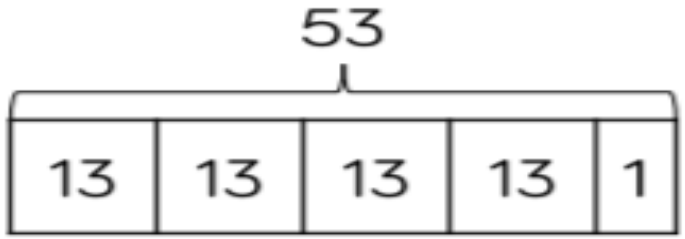


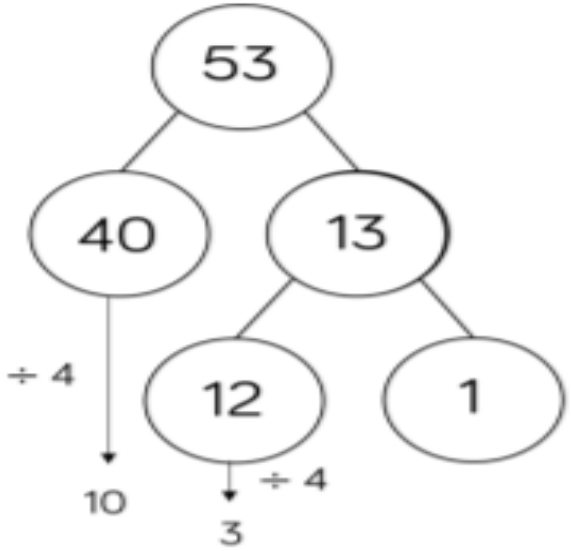
Tens	Ones

Year Three

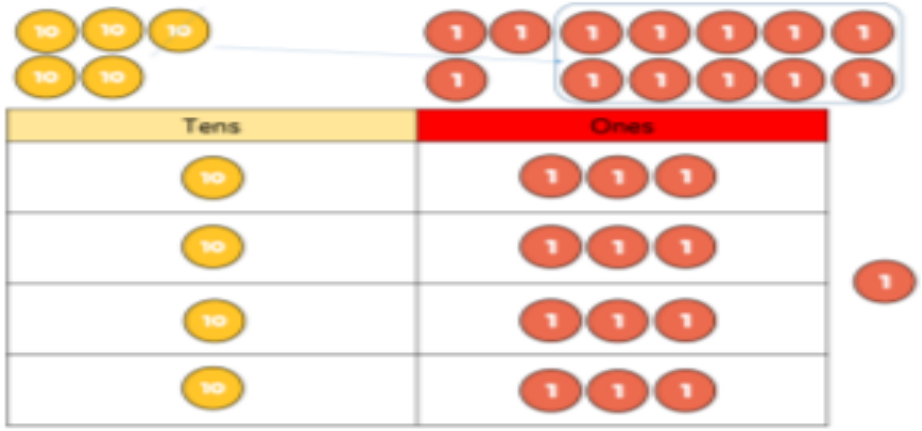
Skill: Divide 2-digits by 1-digit (sharing with remainders)







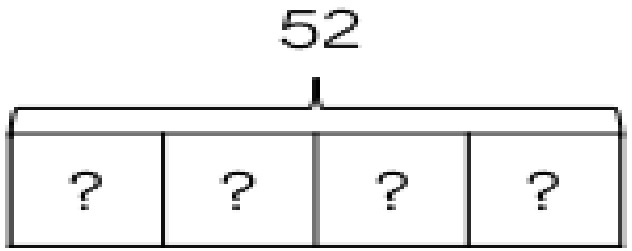
$$53 \div 4 = 13 \text{ r}1$$

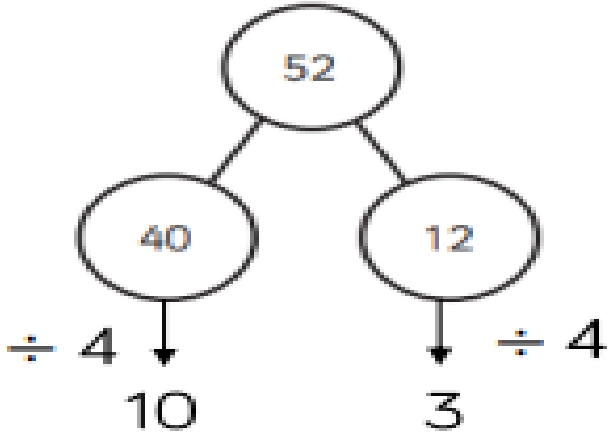


Year Four

Skill: Divide 2-digits by 1-digit (sharing with exchange)

Tens	Ones





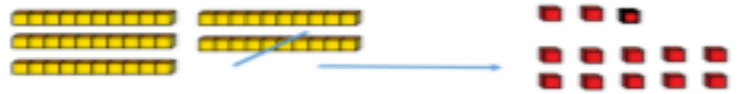
$10 + 3 = 13$

$52 \div 4 = 13$

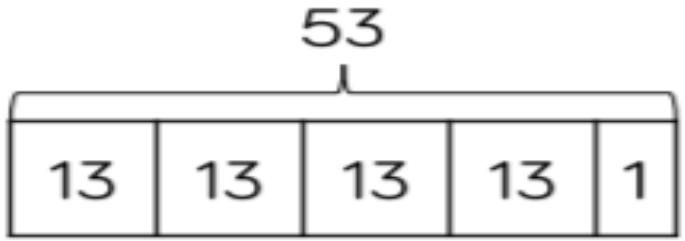
Tens	Ones
10	1 1 1
10	1 1 1
10	1 1 1
10	1 1 1

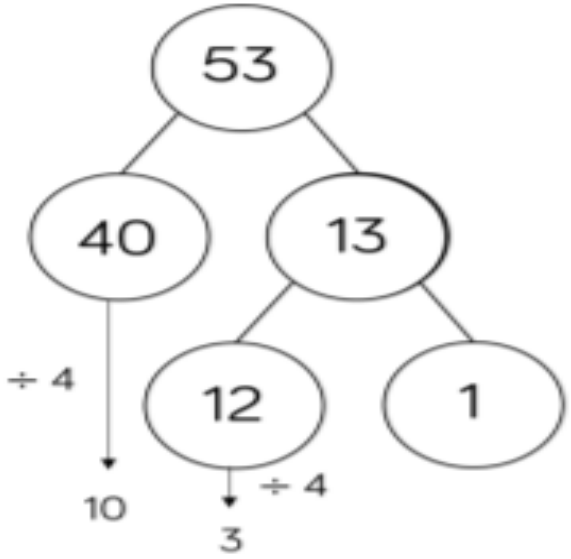
Year Four

Skill: Divide 2-digits by 1-digit (sharing with remainders)



Tens	Ones





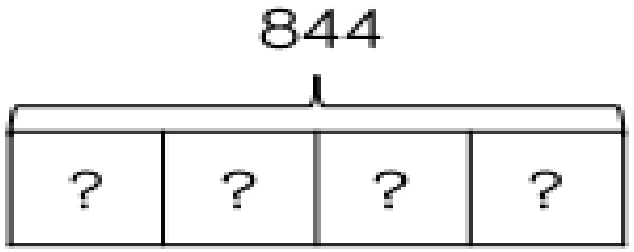
$$53 \div 4 = 13 \text{ r}1$$

Tens	Ones

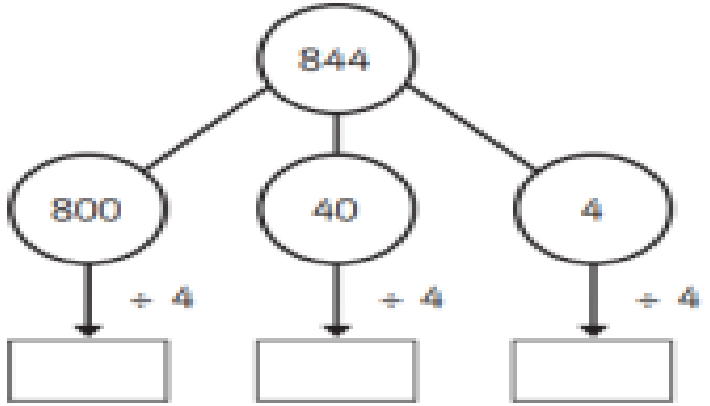
Year Four

Skill: Divide 3-digits by 1-digit (sharing)

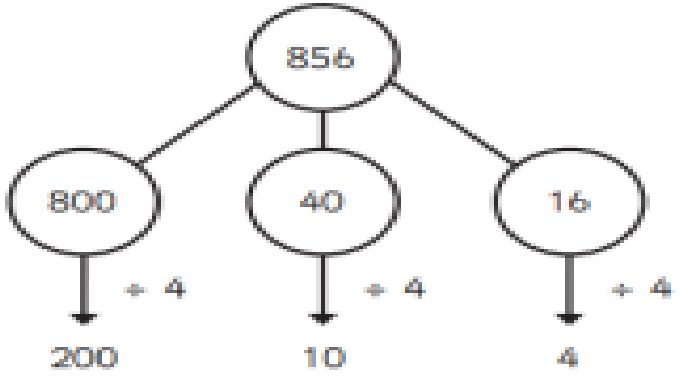
844 ÷ 4 = 211

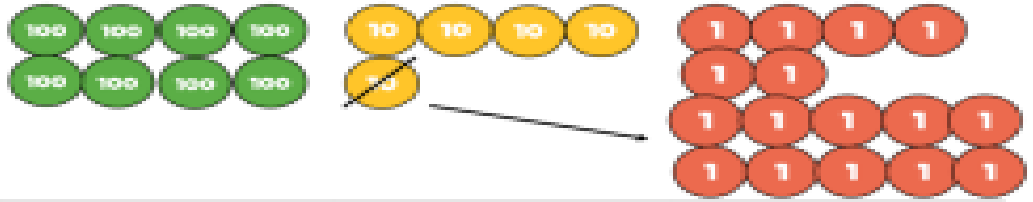


H	T	O
100 100	10	1
100 100	10	1
100 100	10	1
100 100	10	1



856 ÷ 4 = 214

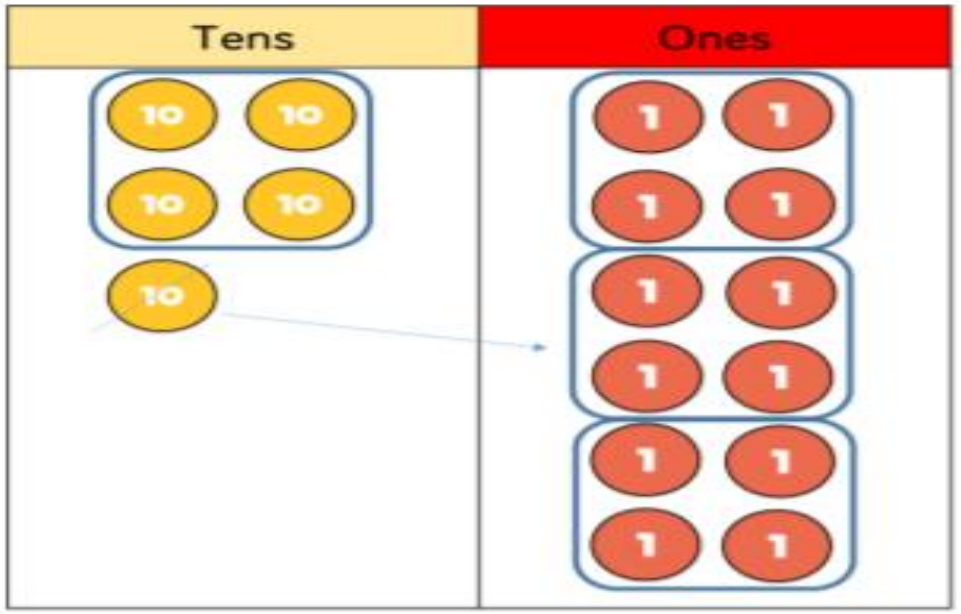




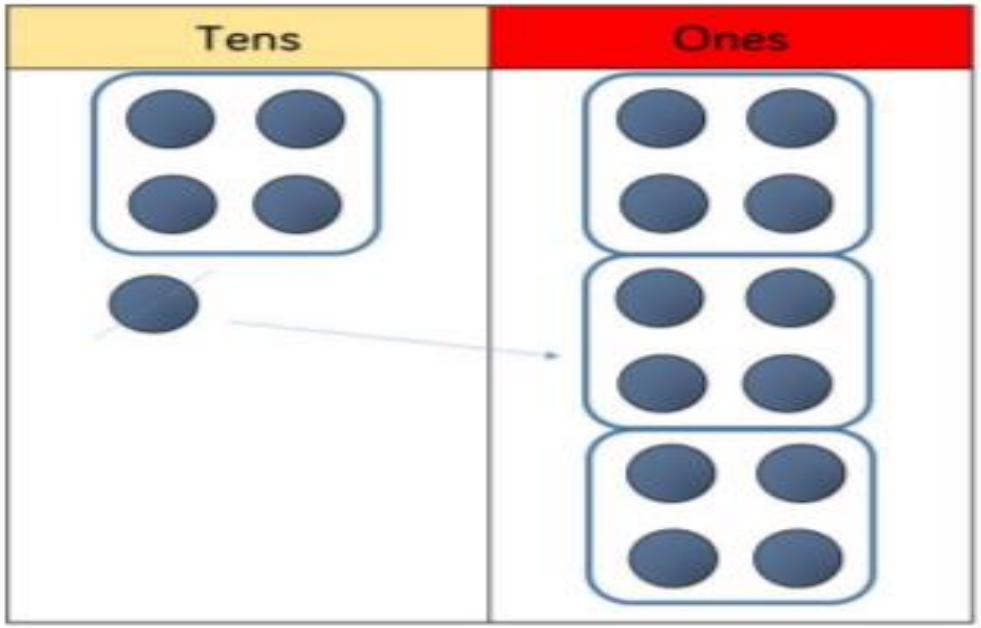
Hundreds	Tens	Ones
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1

Year Four (into Year Five)

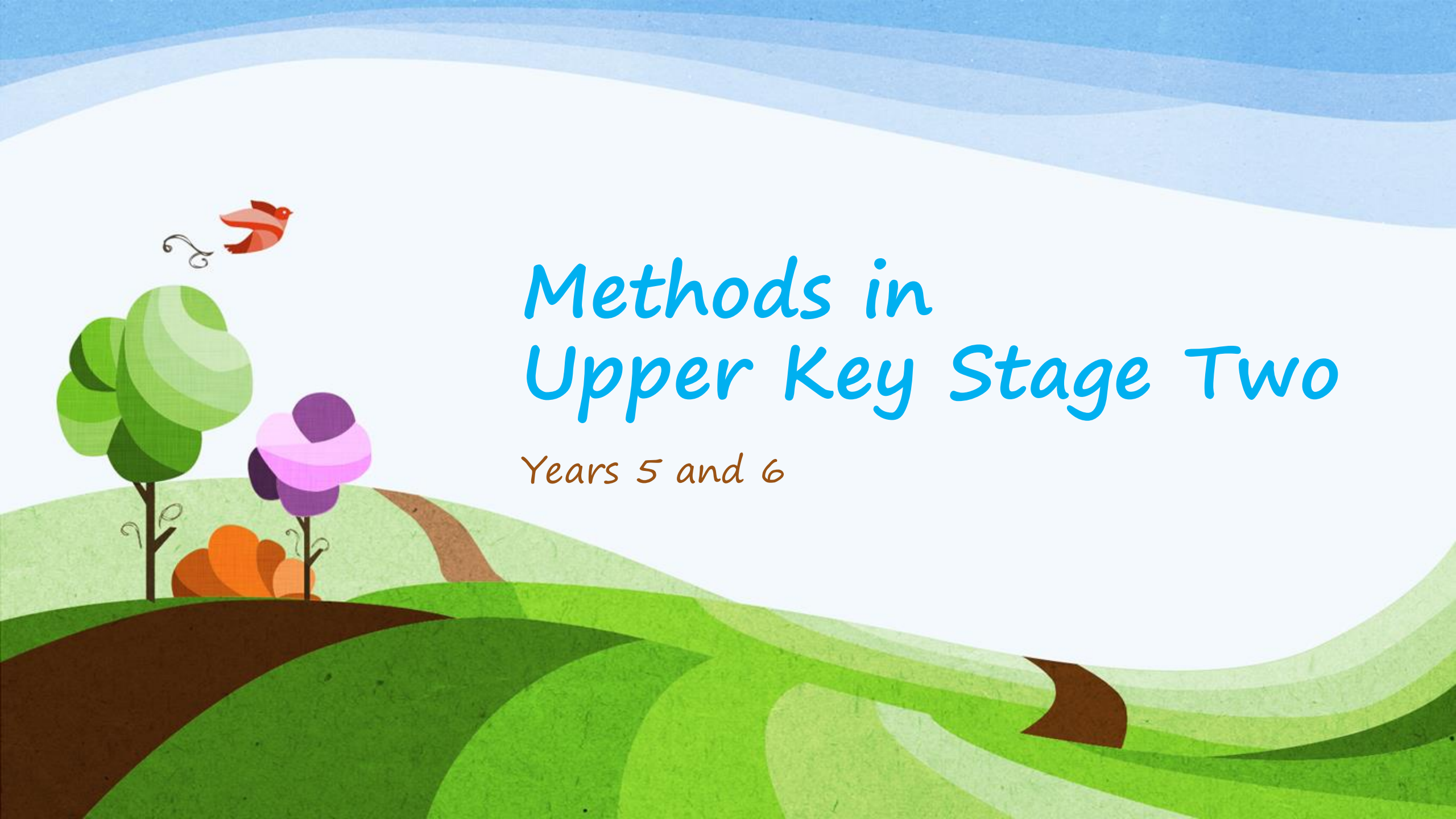
Skill: Divide 2-digits by 1-digit (grouping)



		1	3	
	4	5	$^{1}2$	



$$52 \div 4 = 13$$

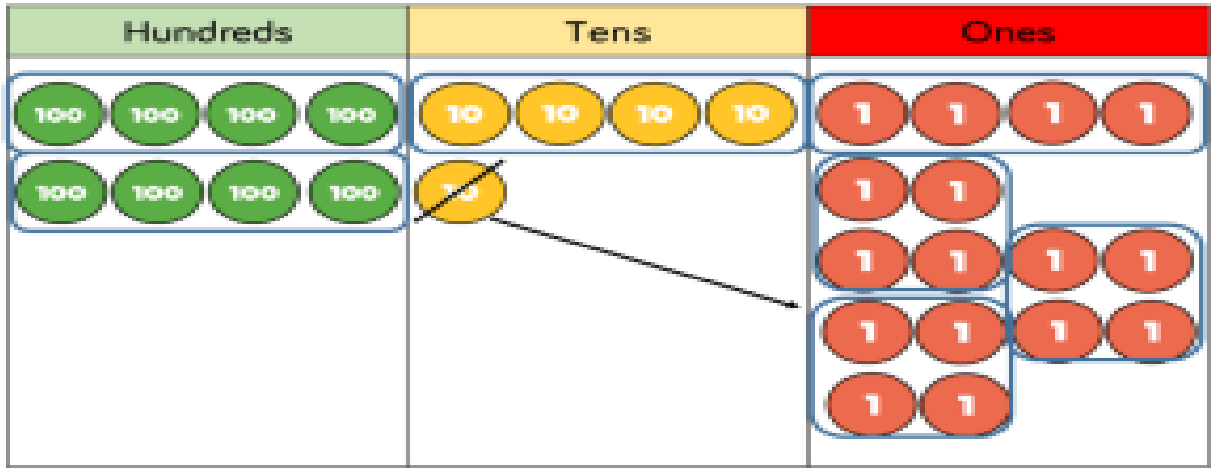


Methods in Upper Key Stage Two

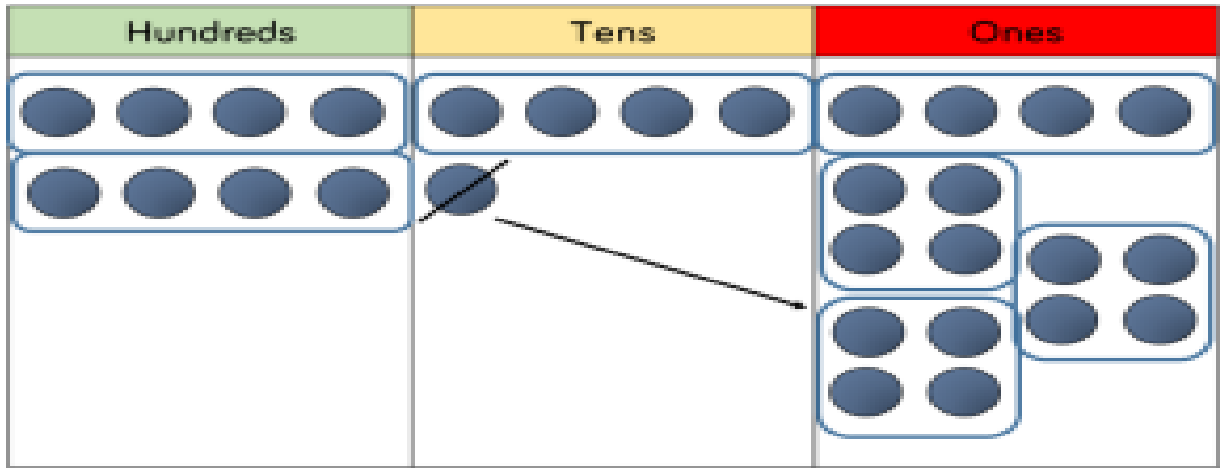
Years 5 and 6

Year Five

Skill: Divide 3-digits by 1-digit (grouping)



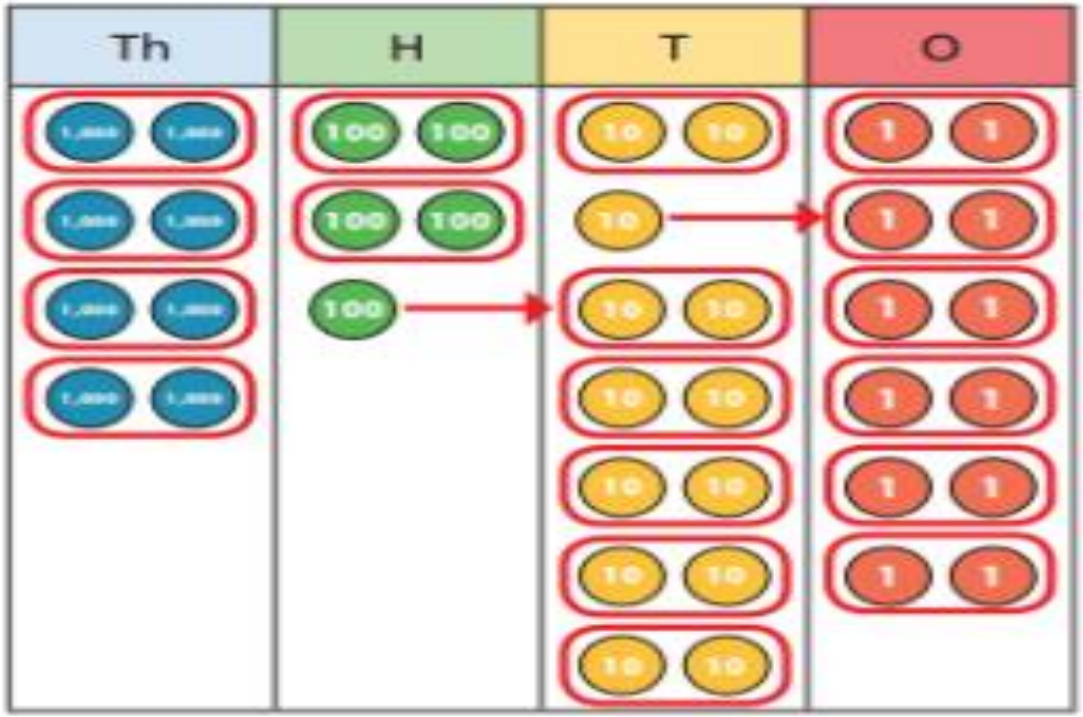
		2	1	4
	4	8	5	$^{1}6$



$$856 \div 4 = 214$$

Year Five (into Year Six)

Skill: Divide 4-digits by 1-digit (grouping)



	4	2	6	6
2	8	5	$^{1}3$	$^{1}2$

$$8{,}532 \div 2 = 4{,}266$$

Year Six

Skill: Divide multi digits by 2-digits (short division)

		0	3	6
	12	4	$^{4}3$	$^{7}2$

$$432 \div 12 = 36$$

$$7{,}335 \div 15 = 489$$

	0	4	8	9
15	7	$^{7}3$	$^{13}3$	$^{13}5$

15	30	45	60	75	90	105	120	135	150

How to support maths at home…

- Play games – suggestions can be found on Facebook on Monday Maths
- Use online resources (provided by the school)
- Always refer to the handbook we have sent home.
- When on MyMaths, use the lesson which can be accessed in the top right corner.
- Times Tables Games
  - TTRockstars
  - 'Tennis'
- Allow children to work through multi-step, day-to-day problems on their own.
  - Encourage them to break it into small steps
- Have discussions about working things out
  - Everyone has to do it – we don't just know the answer

Thank you for revisiting our Maths Workshop