Calculation Policy

Beaconside Primary and Nursery School

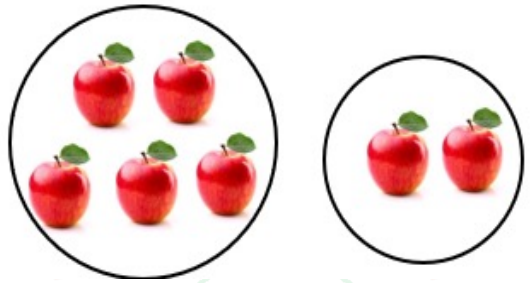
Addition

Nursery and Reception

Recognise numbers 0 to 10

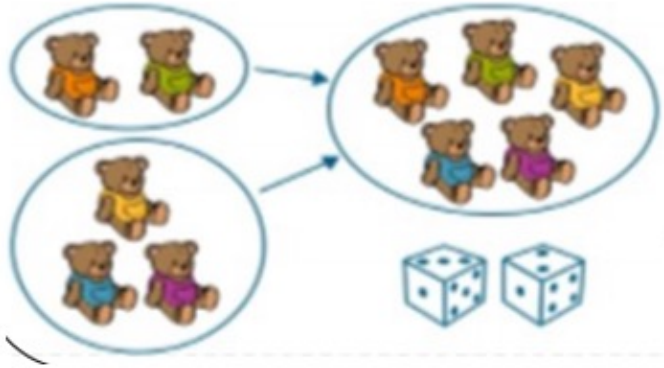
0 1 2 3 4 5 6 7 8 9 10

Use language 'more' – which pile has more apples?



Count reliably up to 10 everyday objects

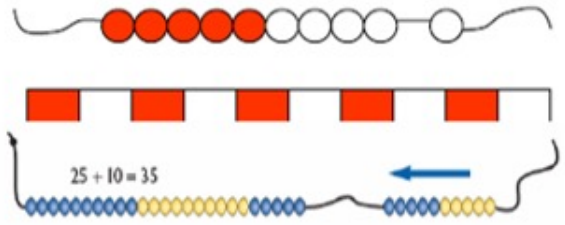
Find the total number of items in two groups by counting them.

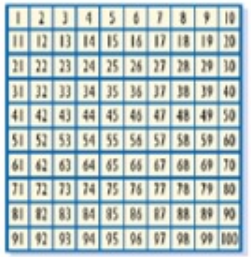


3 bears and 2 bears is 5 bears altogether.

3 + 2 = 5

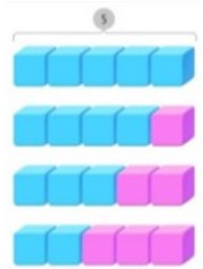
Reception and Year 1

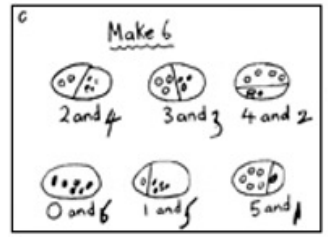


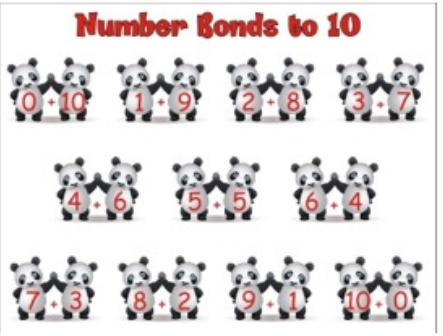


Count in ones and tens

Recognise and use number bonds up to 20.







3 + 2 = 5

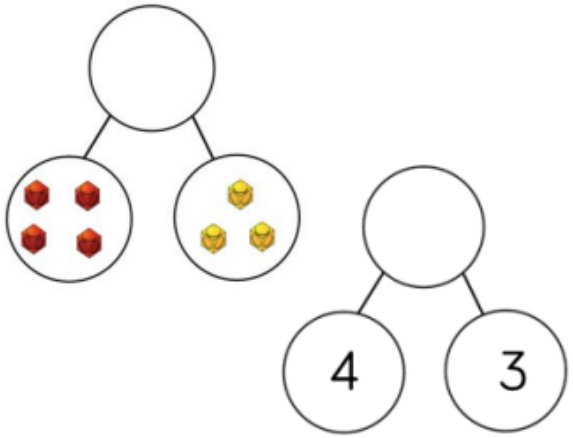
Count along a number line to add numbers together

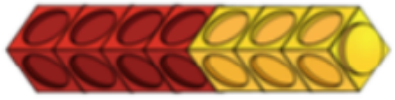
Begin to use the + and = signs to record mental calculations in a number sentence

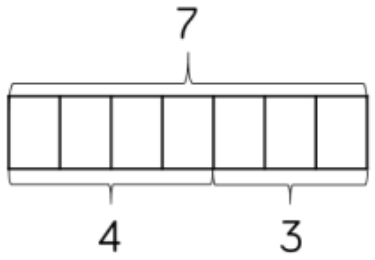
6 + 4=10

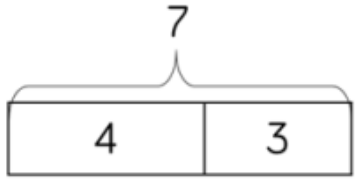
Year 1

Skill: Add 1-digit numbers within 10

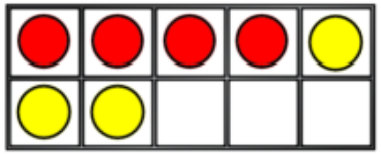


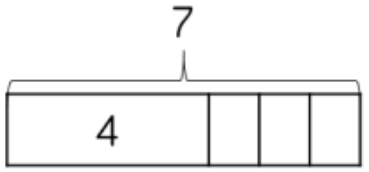


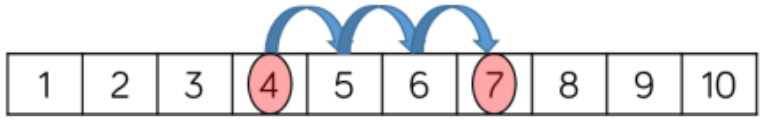




$4 + 3 = 7$

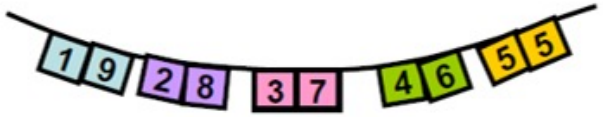


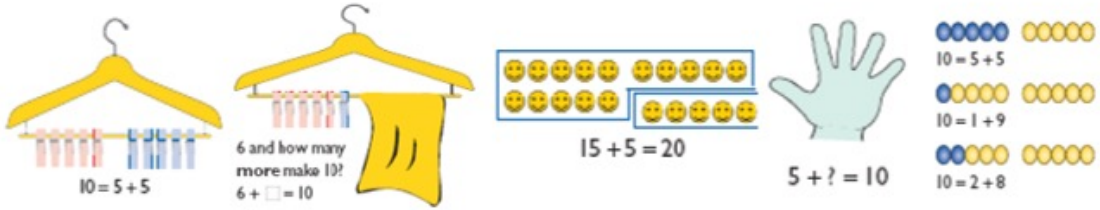




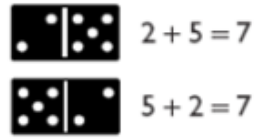
Year 1 and Year 2

Know by heart all pairs of numbers with a total of 10 and 20





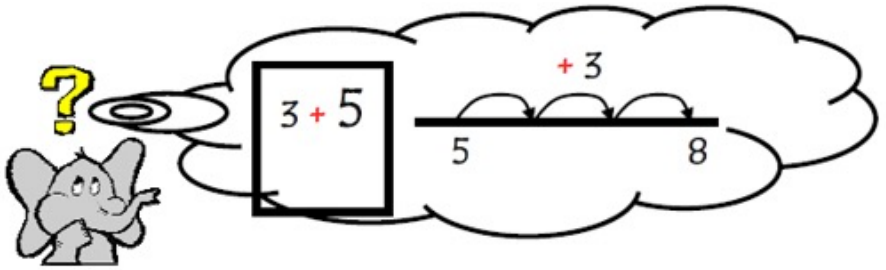
Know addition can be completed in any order.



Add three one-digit numbers.

Can you add to find out how many flowers there are in total?

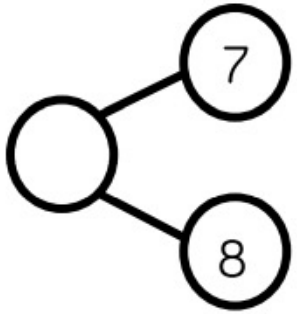
Put the biggest number first and count on

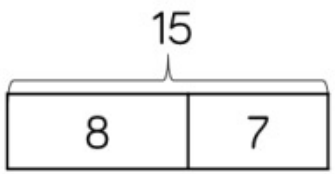


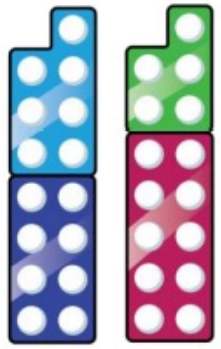
Understand the place value of each digit in a 2-digit number.

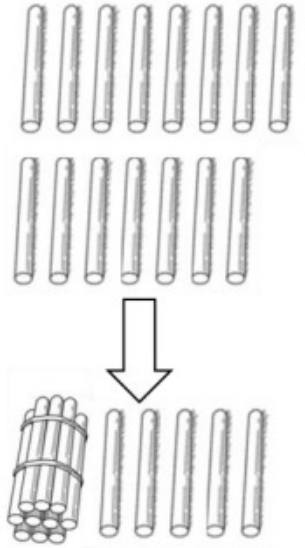
Year 1 and Year 2

Skill: Add 1 and 2-digit numbers to 20

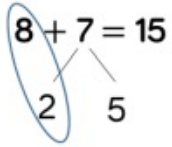


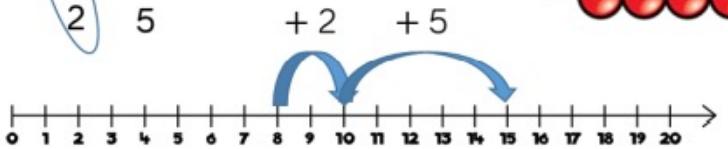


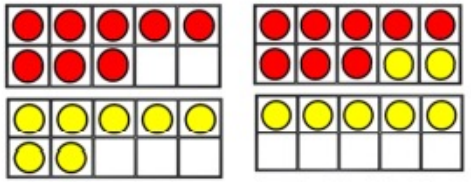


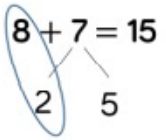


$$8 + 7 = 15$$



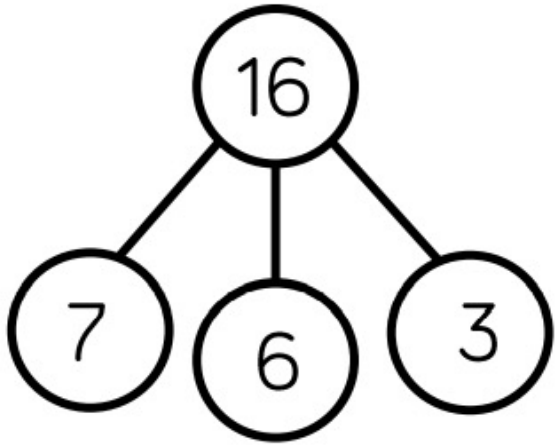


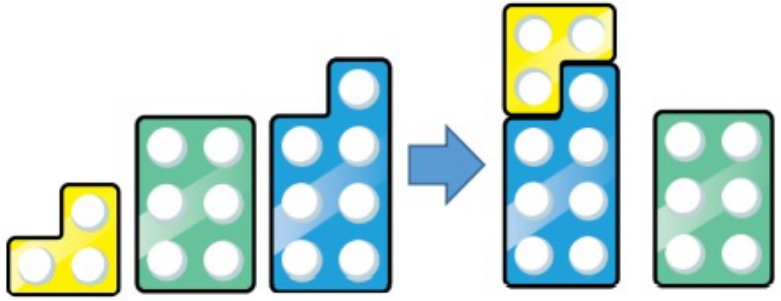




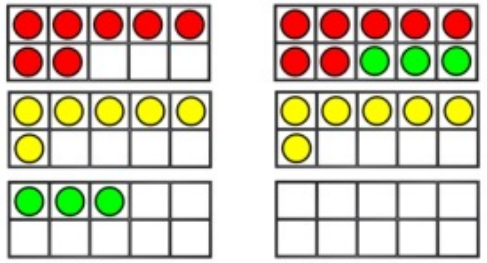
Year 2

Skill: Add three 1-digit numbers



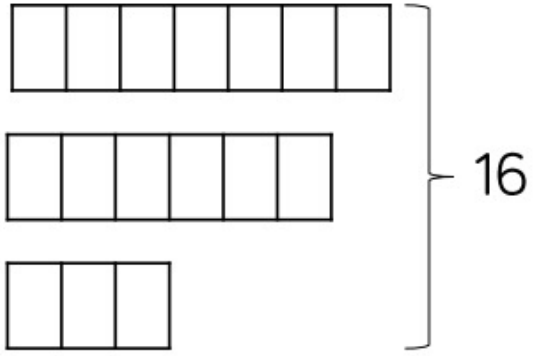


$$7 + 6 + 3 = 16$$



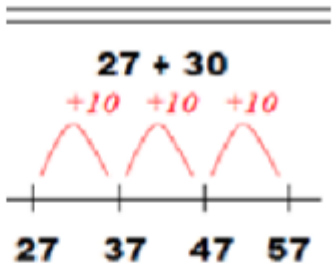
$$7 + 6 + 3 = 16$$

10



Year 2

Mental addition – count on in 10s.



Add two 2-digit numbers using column method (if children have tried the column method and cannot complete this due to a lack of understanding of place value – use the expanded column method).

Always start with the ones column.

	7	6
+	2	5
1	0	1
	1	

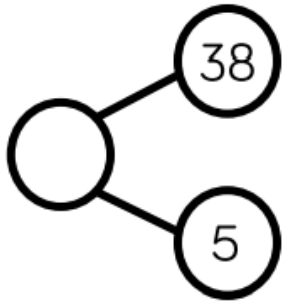
	8	4
+	3	3
1	1	7

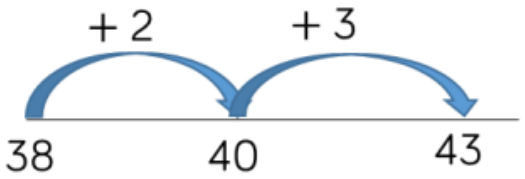
Expanded column method.

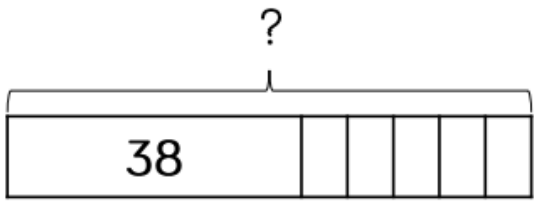
	2	3
+	3	4
		7
	5	0
	5	7

Year 2 and Year 3

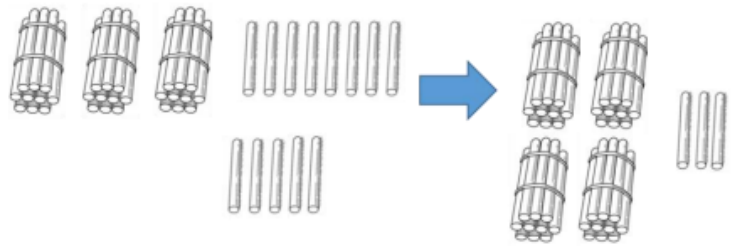
Skill: Add 1-digit and 2-digit numbers to 100







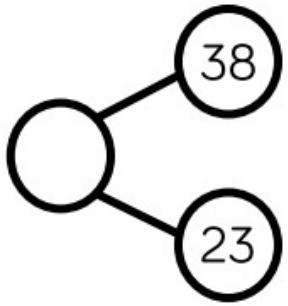
$$38 + 5 = 43$$

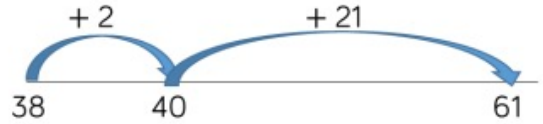


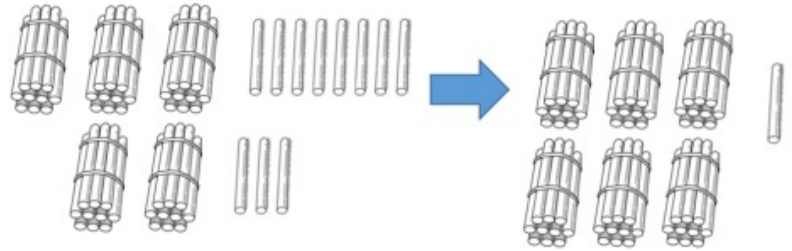
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

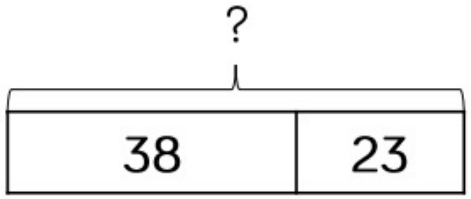
Year 2 and Year 3

Skill: Add two 2-digit numbers to 100

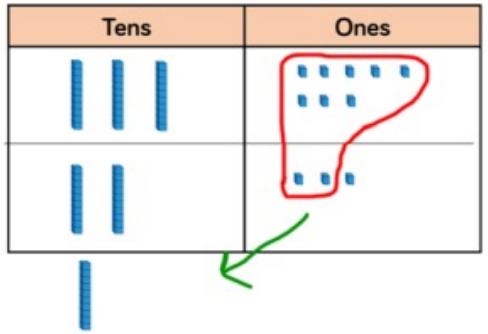




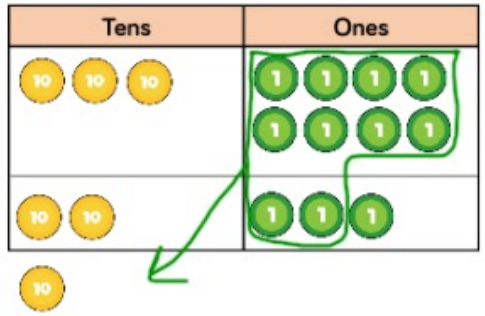




$$38 + 23 = 61$$

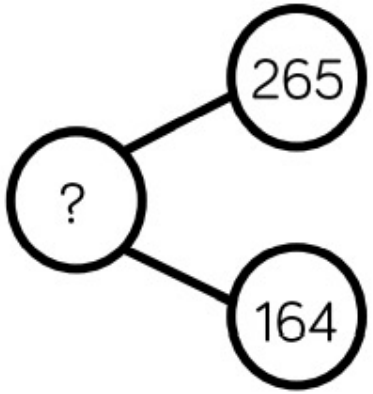


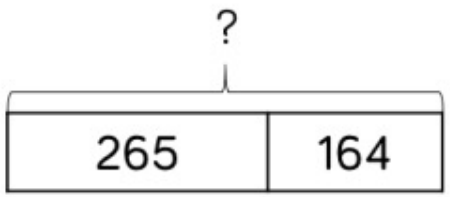
$$\begin{array}{r} 38 \\ +\ 23 \\ \hline 61 \\ \hline 1 \end{array}$$



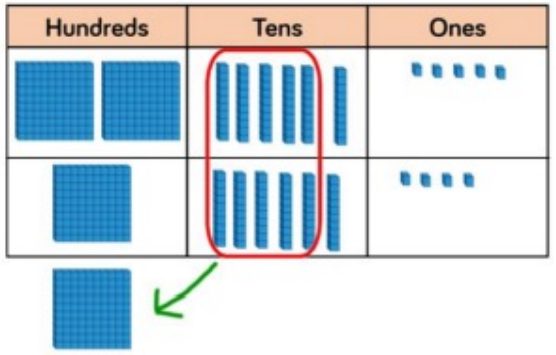
Year 3

Skill: Add numbers with up to 3 digits

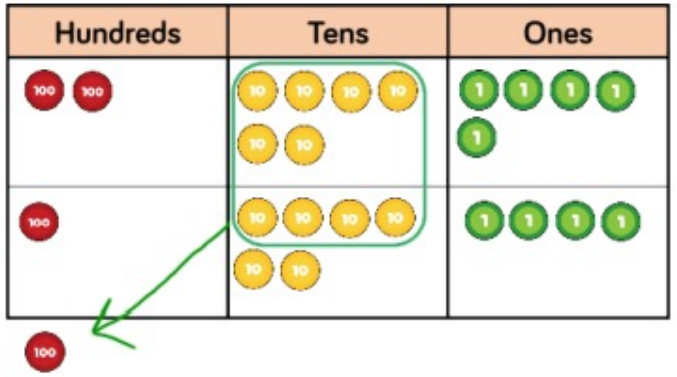




$$265 + 164 = 429$$

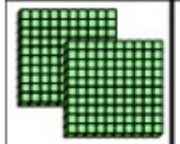
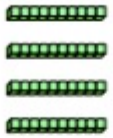


$$\begin{array}{r} 265 \\ +\ 164 \\ \hline 429 \\ \hline 1 \end{array}$$

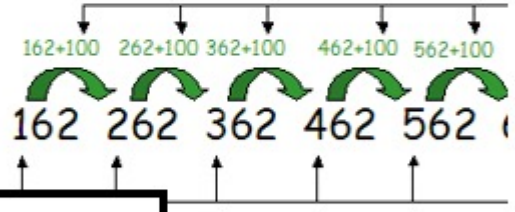


Year 3

Understand the place value of each digit in a 3-digit number.

hundreds	tens	ones
		
2	4	7
200	40	7

Mental addition – count on in 10s and 100s.



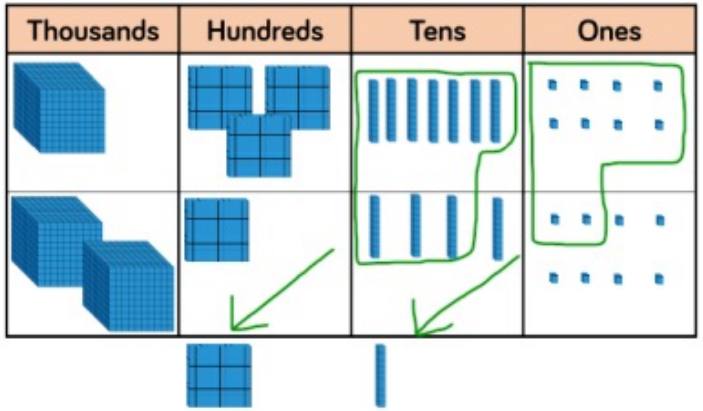
Add two 3-digit numbers using the column method.

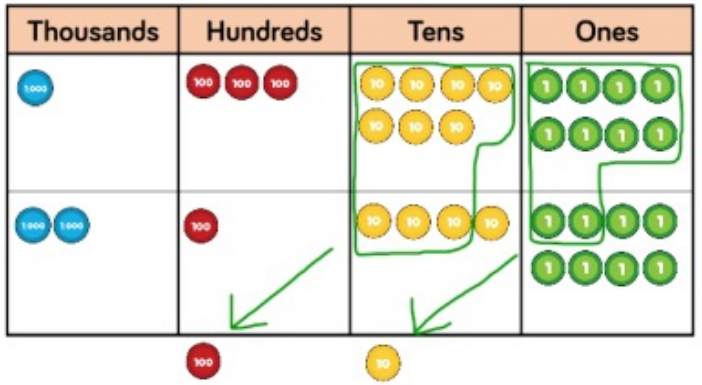
	7	2	4
+	1	9	6
	9	2	0

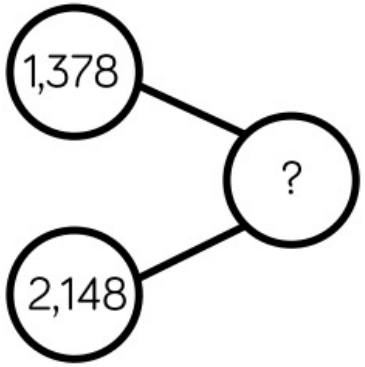
Year 4

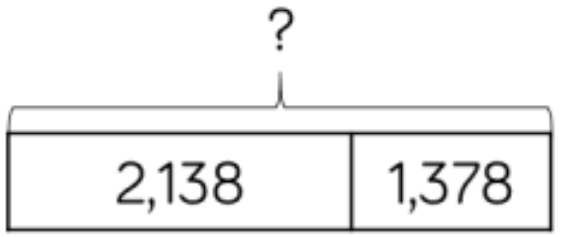
Skill: Add numbers with up to 4 digits

$$1{,}378 + 2{,}148 = 3{,}526$$









Year 4

Understand the place value of each digit in a 4-digit number.

Place Value Chart for 4 digit Numbers			
Thousands	Hundreds	Tens	Ones
1	4	8	9

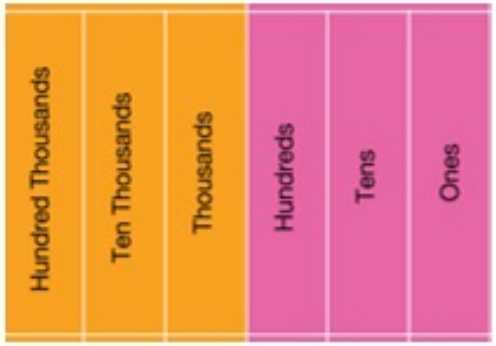
Mental addition – count on in 10s, 100s and 1000s.

Add two 4-digit numbers using the column method.

$$\begin{array}{rcccc} & 4 & 0 & 5 & 9 \\ + & 3 & 7 & 6 & 7 \\ \hline & 7 & 8 & 2 & 6 \\ & & {\scriptstyle 1} & {\scriptstyle 1} & \end{array}$$

Year 5

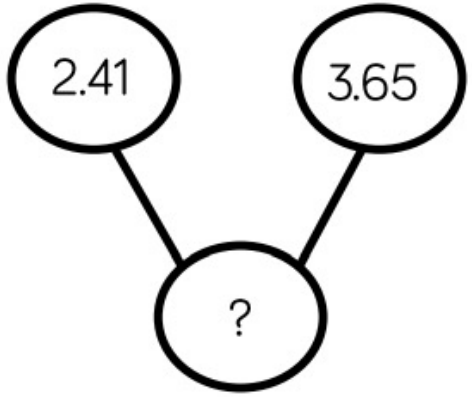
Understand the place value of each digit in a 5-digit and 6-digit number.

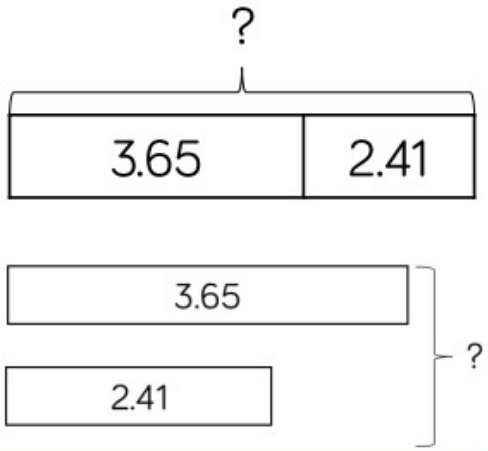


Mental addition – count on in 10s, 100s, 1000s, 10,000s and 100,000s.

Year 5

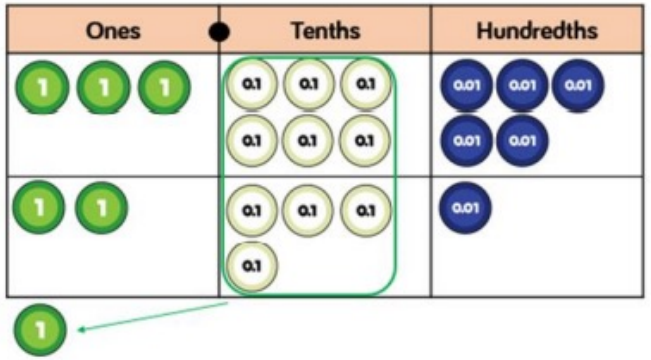
Skill: Add with up to 3 decimal places

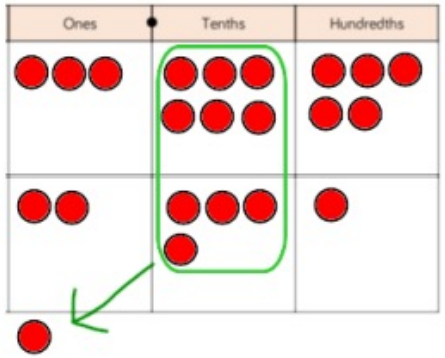




$$\begin{array}{r} 3.65 \\ +\ 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$

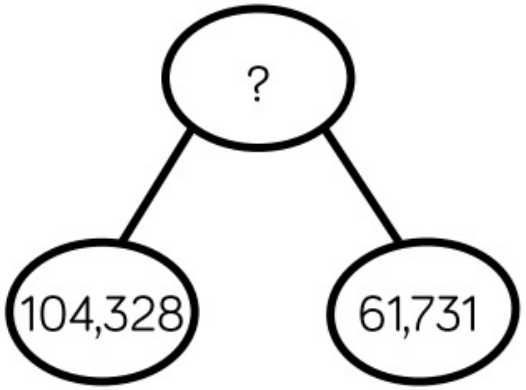
3.65 + 2.41 = 6.06

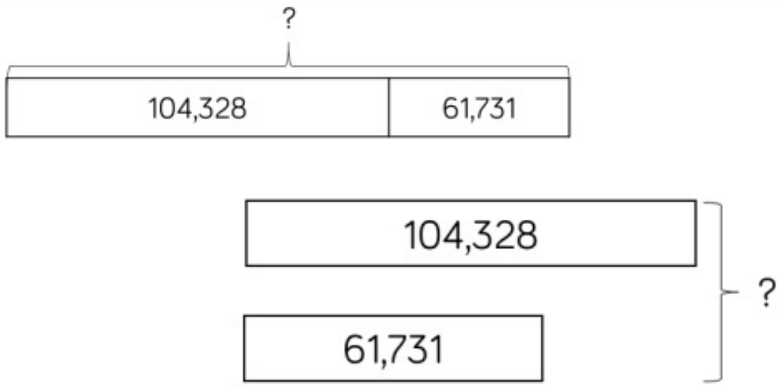




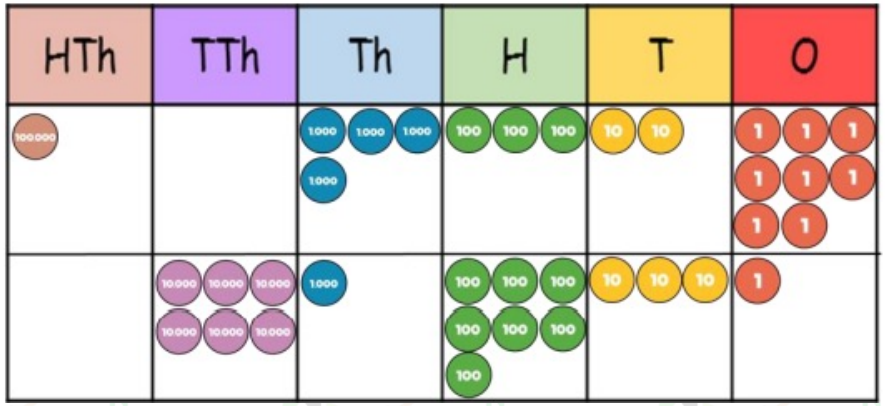
Year 5 and Year 6

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 6

Understand the place value of each digit in a 7-digit and 8-digit number.

Add decimals using the column method.

	6	8	.	4
+	2	6	.	8
	9	5	.	2
	1	1		

	2	5	4	.	2	6
+	3	6	8	.	8	0
	6	2	3	.	0	6
	1	1	1			

Subtraction

Nursery and Reception

Recognise numbers 0 to 10

0 1 2 3 4 5 6 7 8 9 10

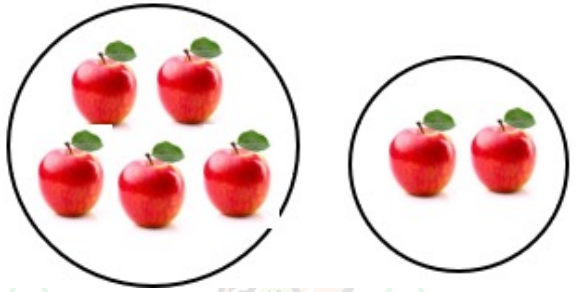
1, 2, 3, 4, 5, 6 … there are 6 teddies

Count reliably up to 10 everyday objects

Count on or back from any number.

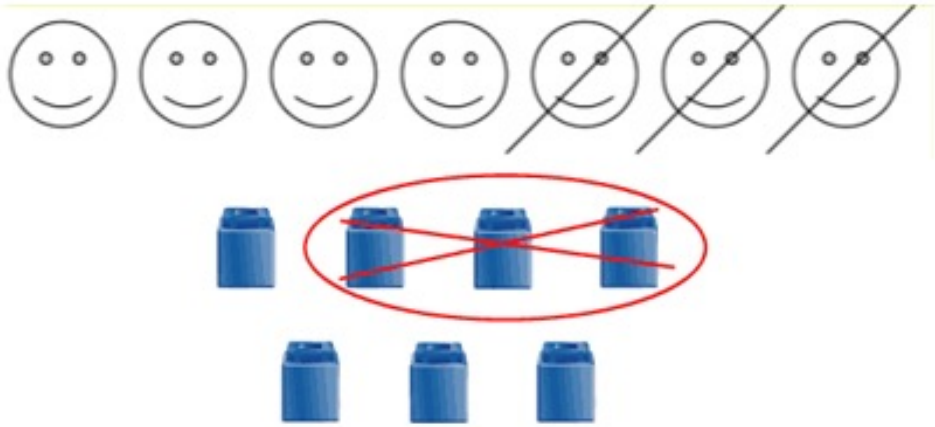
Ten green bottles standing on the wall…

Use language 'fewer' – which pile has fewer apples?



Nursery and Reception

Understand taking away – remove objects and count.

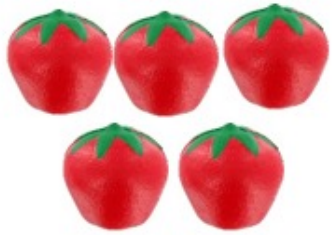


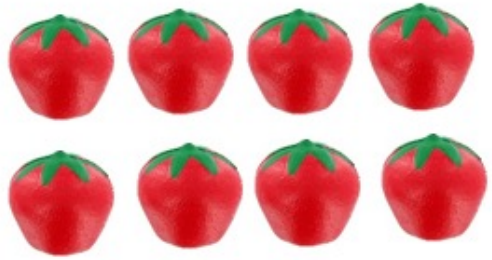
Reception

Understand subtraction – finding the difference.

Counting up or counting back.

How many more than 5 is 8?





Reception

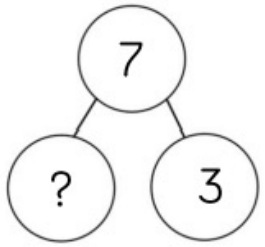
5 frogs subtract 2 frogs is 3 frogs.

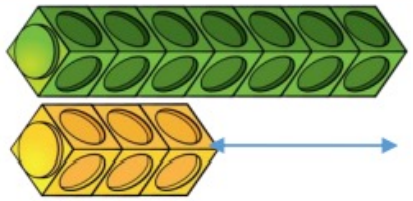
5 - 2 = 3

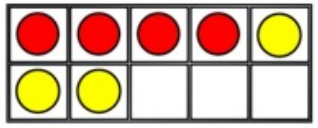
Begin to use the – and = signs to record mental calculations in a number sentence.

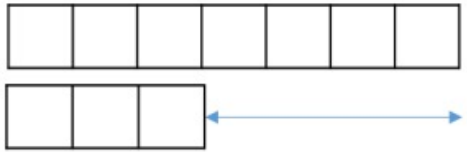
Year 1

Skill: Subtract 1-digit numbers within 10

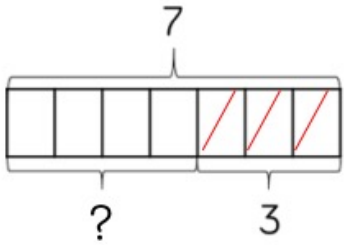


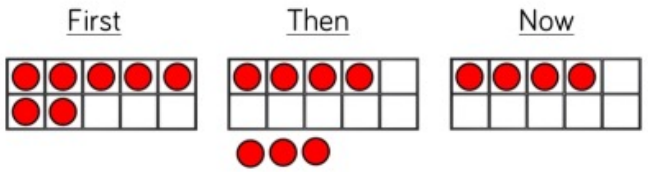


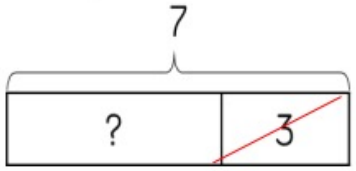


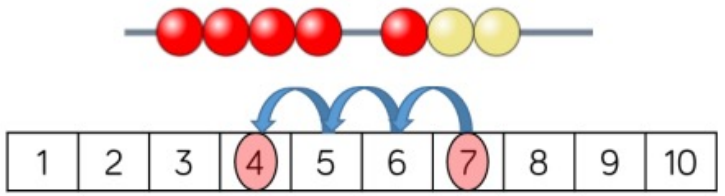


$$7 - 3 = 4$$



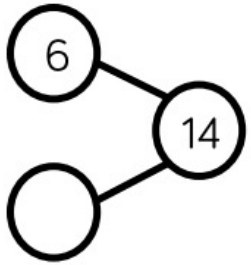


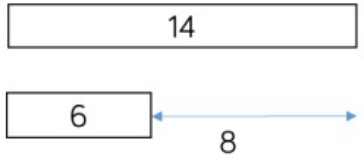


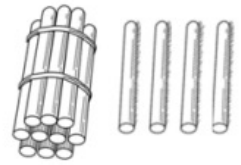


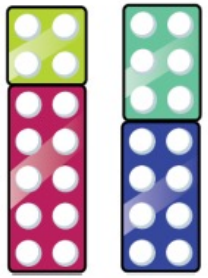
Year 1 and Year 2

Skill: Subtract 1 and 2-digit numbers to 20

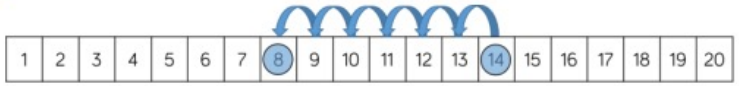


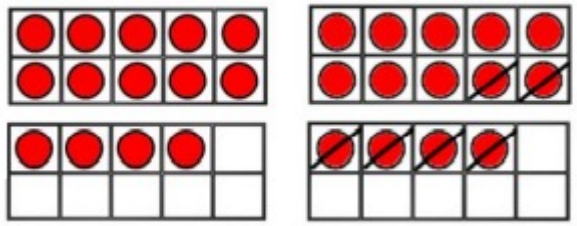






$$14 - 6 = 8$$



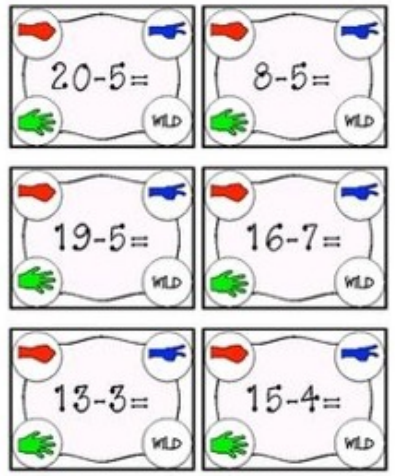


$$14 - 6 = 8$$

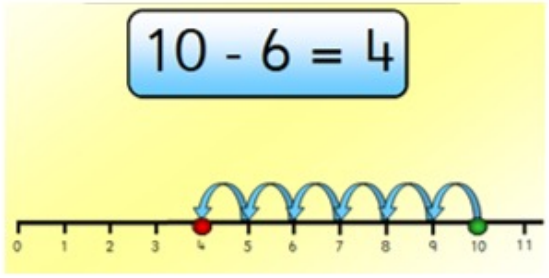
4 2

Year 1 and Year 2

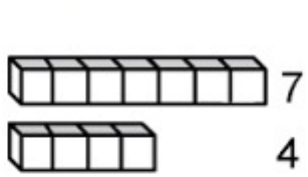
Know subtraction facts within 20.

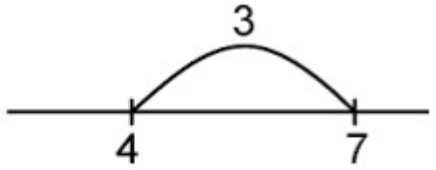


Subtract one and two digit numbers.



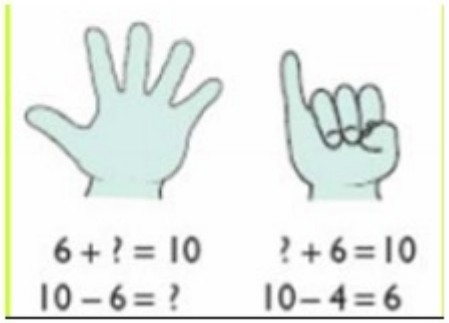
Year 1 and Year 2





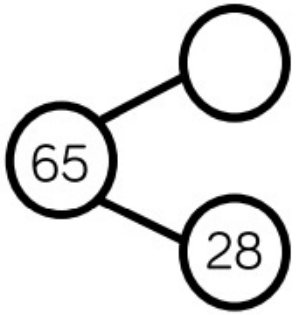
The difference between 7 and 4 is 3.

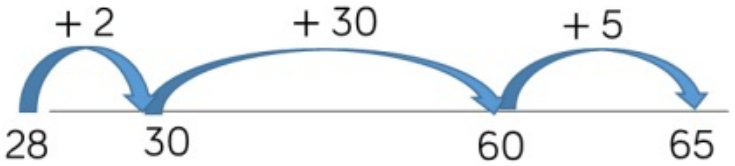
Solve problems involving missing numbers.

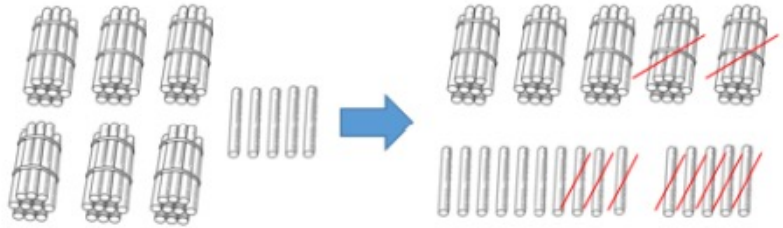


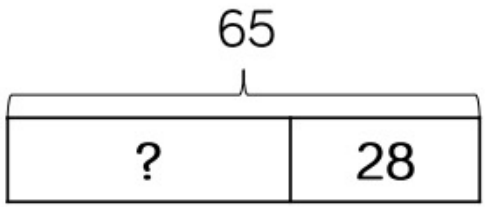
Year 2

Skill: Subtract 1 and 2-digit numbers to 100

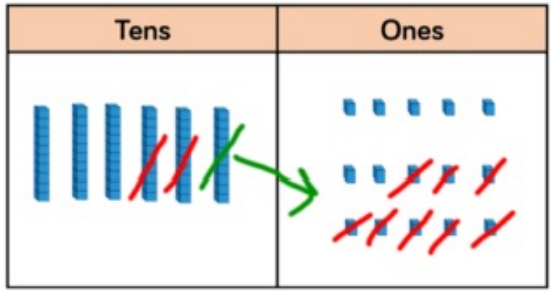




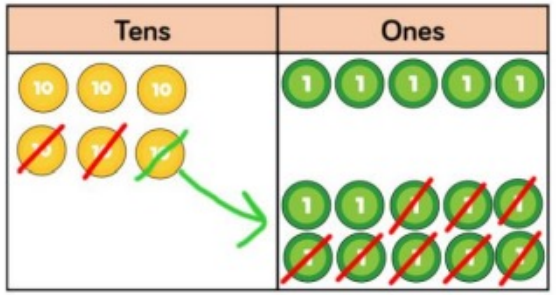




$65 - 28 = 37$



$$\begin{array}{r} {}^{5}\not{6}\,{}^{1}\not{5} \\ -\ 28 \\ \hline 37 \end{array}$$



Year 2

Mental subtraction – count back in 10s.

100, 90, 80, 70, ?

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

76...66, 56, 46

96 – 10 = 86
86 – 10 = 76
76 – 10 = 66
etc.

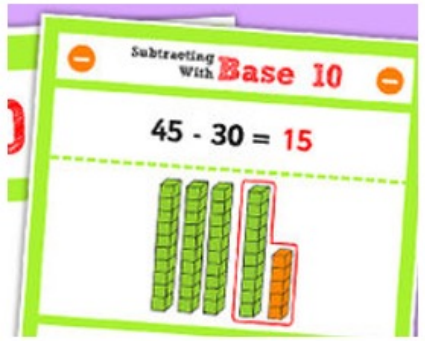
76 – 30 = 46

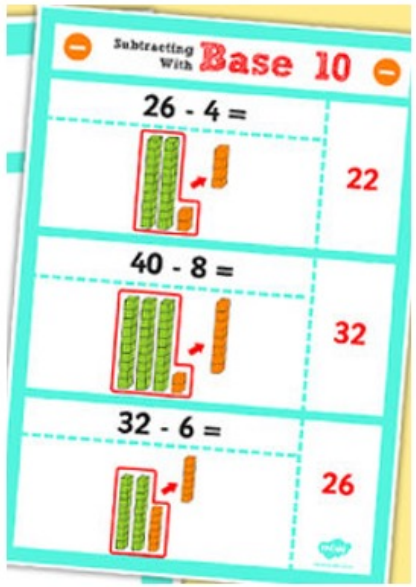
Subtract two 2-digit numbers using column method.

	7	9
-	4	6
	3	3

Always start with the ones column.

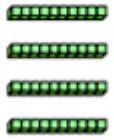
Use base 10 equipment to subtract.





Year 3

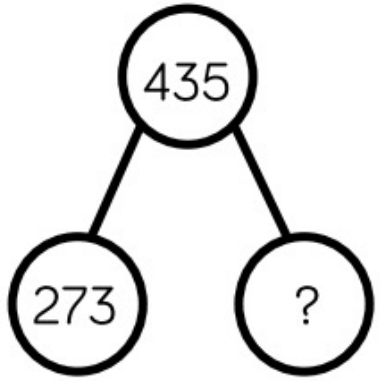
Understand the place value of each digit in a 3-digit number.

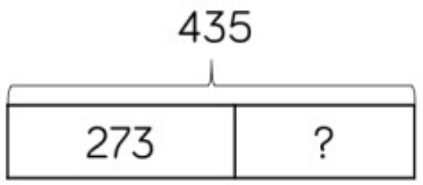
hundreds	tens	ones
		
2	4	7
200	40	7

Mental subtraction – count back in 10s and 100s.

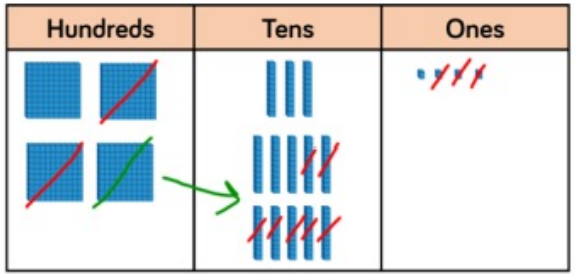
Year 3

Skill: Subtract numbers with up to 3 digits

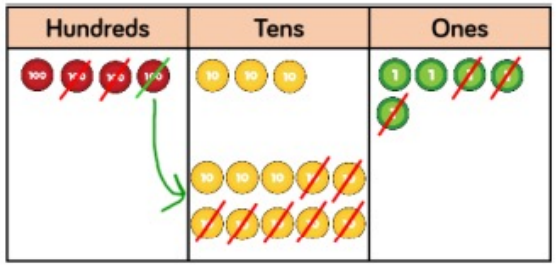




$$435 - 273 = 262$$



$$\begin{array}{r} {}^{3}{}^{1}\not{4}\not{3}\not{5} \\ -\ 273 \\ \hline 262 \end{array}$$



Year 3

Subtract two 2-digit numbers in the column method using decomposition.

Exchange 1 ten for ten ones.

	$^{6}\not{7}$	$^{1}3$
-	4	6
	2	7

Exchange 1 ten for ten ones.

Then exchange 1 hundred for ten tens.

Subtract two 3-digit numbers in the column method.

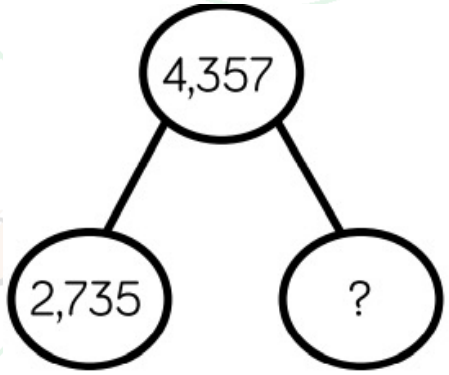
	9	7	3
-	3	4	2
	6	3	1

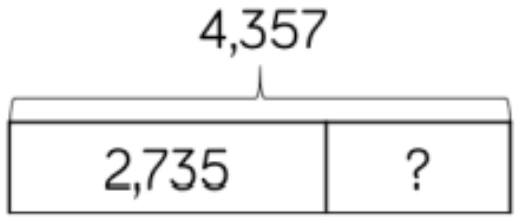
	3	$^{8}\not{9}$	$^{1}5$
-	2	6	7
	1	2	8

	$^{7}\not{8}$	$^{14}\not{5}$	$^{1}6$
-	2	9	8
	5	5	8

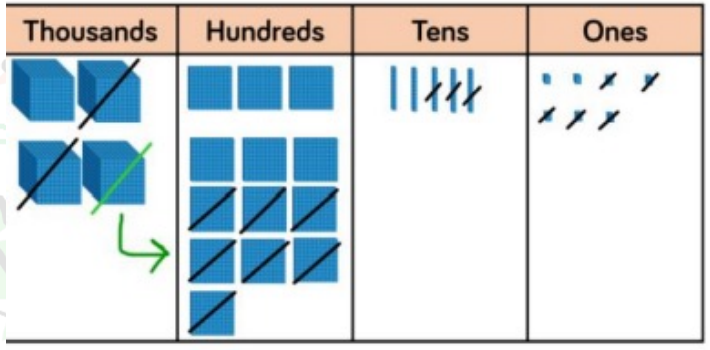
Year 4

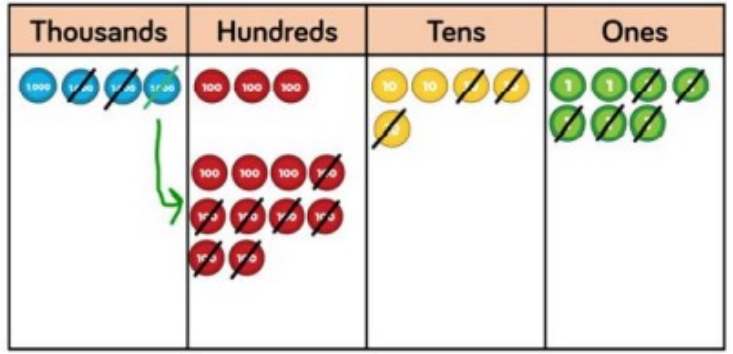
Skill: Subtract numbers with up to 4 digits





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





Year 4

Understand the place value of each digit in a 4-digit number.

Place Value Chart for 4 digit Numbers			
Thousands	Hundreds	Tens	Ones
1	4	8	9

Mental subtraction – count back in 10s, 100s and 1000s.

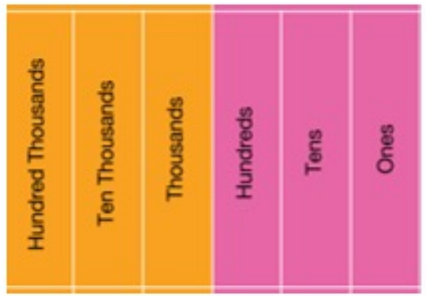
Subtract two 4-digit numbers using the column method.

	5	$^{13}\not{4}$	$^{1}2$	9
-	3	6	8	2
	2	7	4	7

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

Year 5

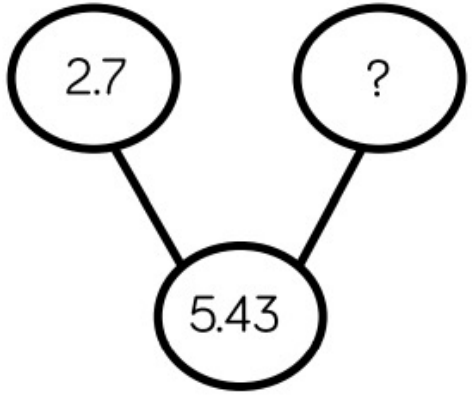
Understand the place value of each digit in a 5-digit and 6-digit number.

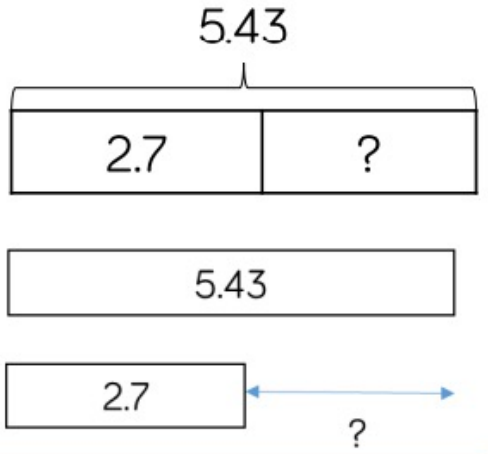


Mental subtraction – count back in 10s, 100s, 1000s, 10,000s and 100,000s.

Year 5

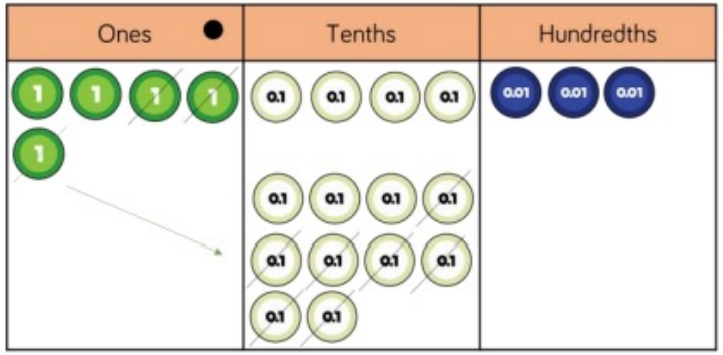
Skill: Subtract with up to 3 decimal places

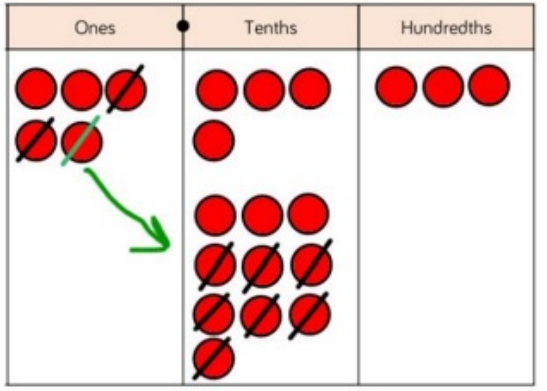




$$\begin{array}{r} {}^{4}\cancel{5}.{}^{1}43 \\ -\ 2.7 \\ \hline 2.73 \end{array}$$

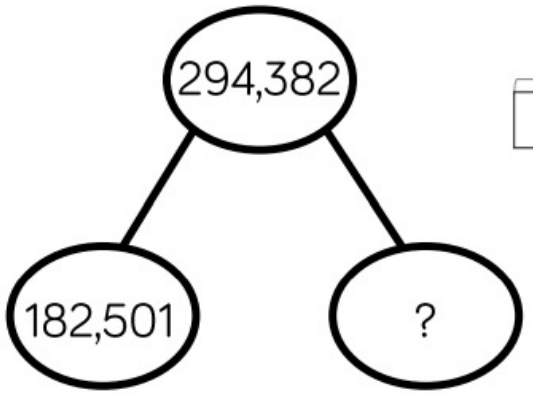
$$5.43 - 2.7 = 2.73$$

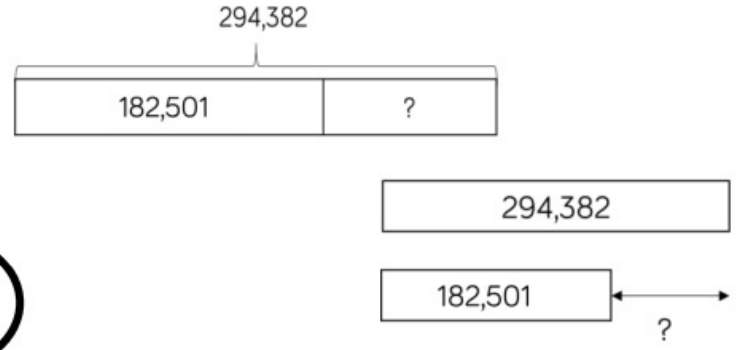




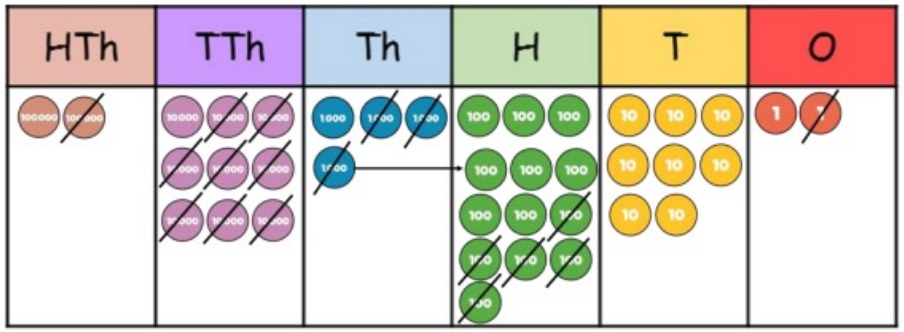
Year 5 and Year 6

Skill: Subtract numbers with more than 4 digits





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



	2	9	$\cancel{3}^{2}$	$^{1}3$	8	2
−	1	8	2	5	0	1
	1	1	1	8	8	1

Year 6

Understand the place value of each digit in a 7-digit and 8-digit number.

Subtract decimals using the column method.

	$^{8}\not{9}$	$^{1}4$	$^{4}\not{5}$	$^{1}7$
-	3	6	4	8
	5	8	0	9

	4	$^{6}\not{7}$	$^{1}6$	8	$^{8}\not{9}$ $^{1}0$
-	3	5	8	0	1 2
	1	1	8	8	7 8

Multiplication

Nursery and Reception

Use practical activities to explore doubling.

3 lollipops for me.

3 lollipops for you.

How many altogether?

Use objects and pictorial representations to solve problems involving multiplication.

6 pairs of socks. How many are there altogether?

2, 4, 6, 8, 10, 12

3 pots of 10 crayons. How many altogether?

10, 20, 30

Year 1

Use arrays to support multiplication.

5 groups of 2 faces. How many faces altogether?

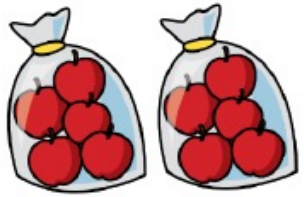
2, 4, 6, 8, 10.

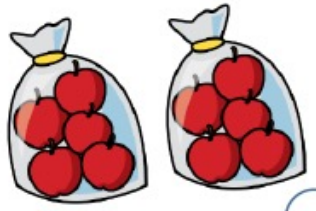
2 groups of 5 faces. How many faces altogether?

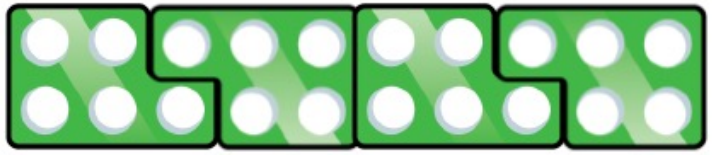
5, 10.

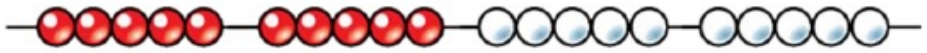
Year 1and Year 2

Skill: Solve 1-step problems using multiplication

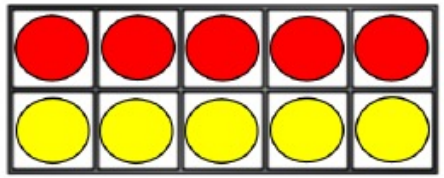


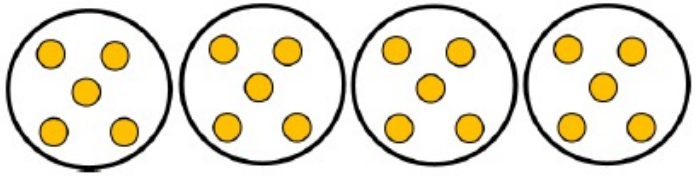


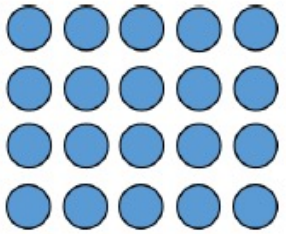




One bag holds 5 apples.
How many apples do 4 bags hold?







$5 + 5 + 5 + 5 = 20$

$4 \times 5 = 20$

$5 \times 4 = 20$

Year 2

Recall 2, 5 and 10 multiplication facts.

Use materials, arrays, repeated addition and mental methods to solve problems involving multiplication.

3 groups of 5. 3 lots of 5.

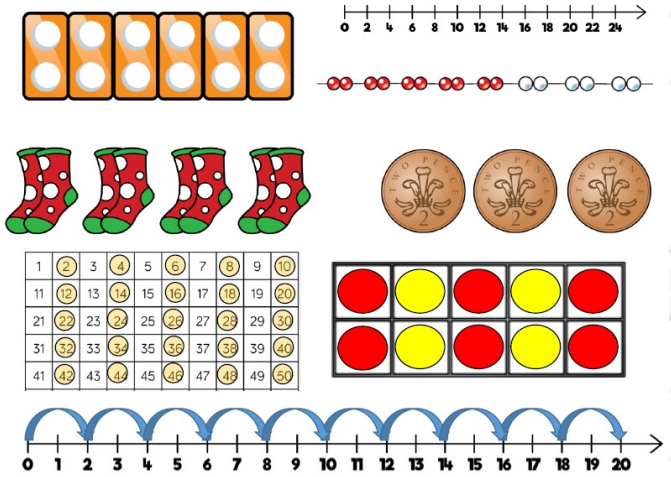
5 + 5 + 5 = 15

4 rows of 3. 4 groups of 3. 3 groups of 4.

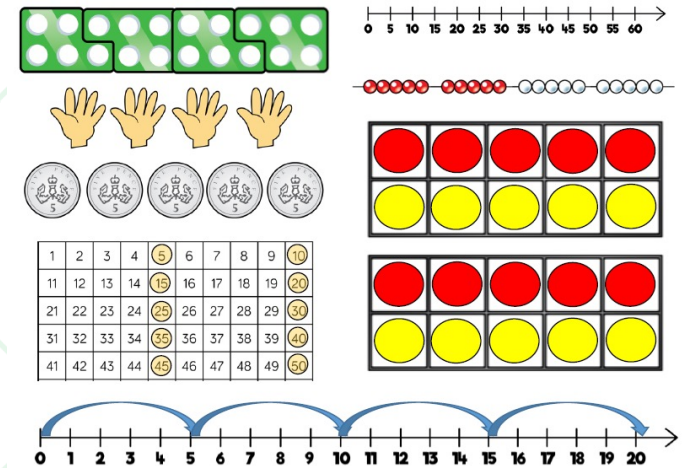
4 X 3 = 12 and 3 X 4 = 12.

Year 2

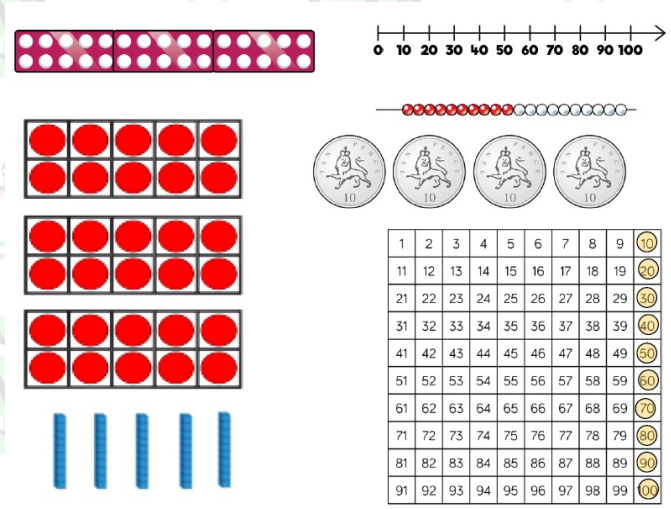
2 times table



5 times table

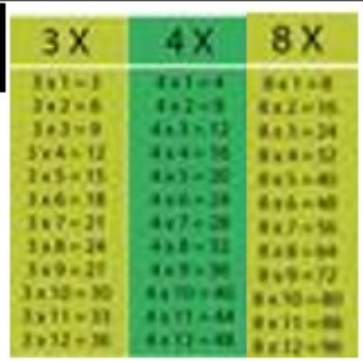


10 times table



Year 3

Recall 2, 5, 10, 3, 4 and 8 multiplication facts.



5 X 8 =

3 X 4 =

12 X 4 =

10 X 8 =

3 X 11 =

Use multiplication tables to solve calculations.

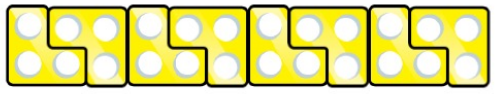
I can count up in the times table to calculate these.

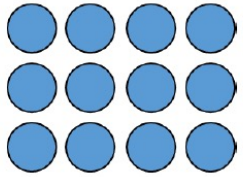
Multiplication can be completed in any order.

12 X 4 = 48 and 4 X 12 = 48.

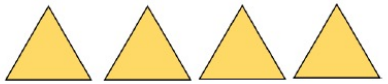
Year 3

3 times table

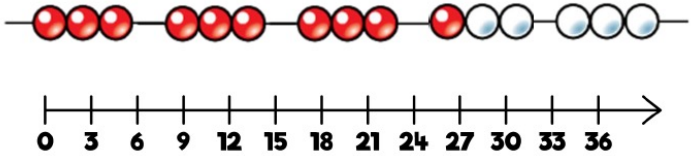




1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

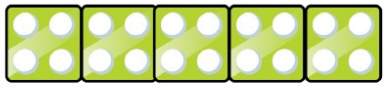


3 6 9 12

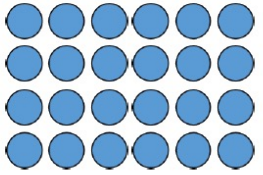


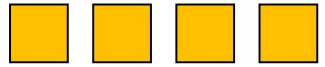
0 3 6 9 12 15 18 21 24 27 30 33 36

4 times table



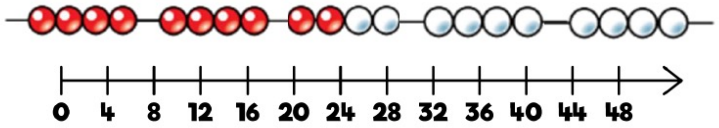
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50





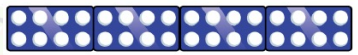
4 8 12 16

4	8	12	16	20
24	28	32	36	40
44	48	52	56	60



0 4 8 12 16 20 24 28 32 36 40 44 48

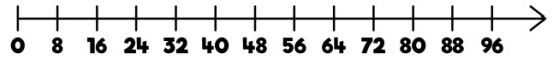
8 times table



8 16 24 32

8	16	24	32	40
48	56	64	72	80

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



0 8 16 24 32 40 48 56 64 72 80 88 96

Year 3 and Year 4

Multiply a 2-digit number by a 1-digit number.

	5	3
X		4
2	1	2

Multiply any whole number by 10 and develop awareness of related facts.

If 4 X 8 is 32 **then** 40 X 8 is 320.

If 3 X 5 is 15 **then** 30 X 5 is 150.

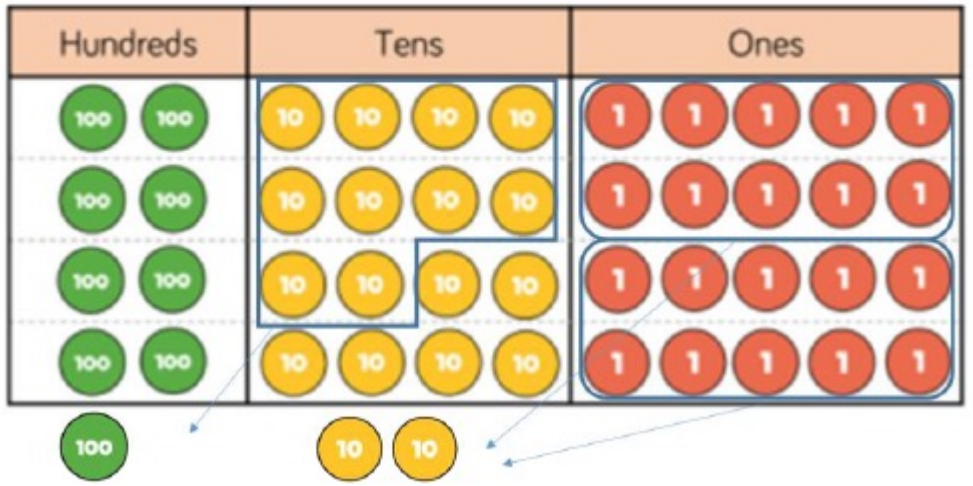
If 6 X 4 is 24 **then** 60 X 4 is 240.

Year 3 and Year 4

Skill: Multiply 3-digit numbers by 1-digit numbers

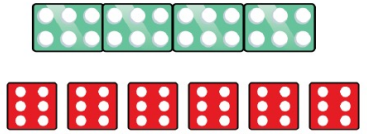
	H	T	O
	2	4	5
×			4
	9	8	0
	1	2	

$$245 \times 4 = 980$$



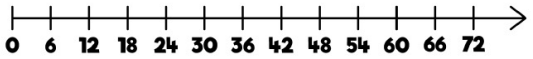
Year 4

6 times table



6	12	18	24	30
36	42	48	54	60
66	72	78	84	90

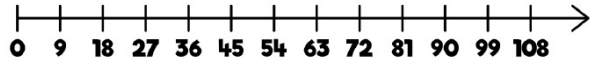
1	2	3	4	5	(6)	7	8	9	10
11	(12)	13	14	15	16	17	(18)	19	20
21	22	23	(24)	25	26	27	28	29	(30)
31	32	33	34	35	(36)	37	38	39	40
41	(42)	43	44	45	46	47	(48)	49	50
51	52	53	(54)	55	56	57	58	59	(60)
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97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



9 times table

9	18	27	36	45
54	63	72	81	90

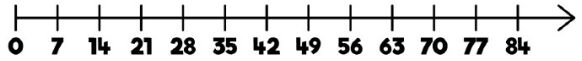
1	2	3	4	5	6	7	8	(9)	10
11	12	13	14	15	16	17	(18)	19	20
21	22	23	24	25	26	(27)	28	29	30
31	32	33	34	35	(36)	37	38	39	40
41	42	43	44	(45)	46	47	48	49	50
51	52	53	(54)	55	56	57	58	59	60
61	62	(63)	64	65	66	67	68	69	70
71	(72)	73	74	75	76	77	78	79	80
(81)	82	83	84	85	86	87	88	89	(90)
91	92	93	94	95	96	97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



7 times table

7	14	21	28	35
42	49	56	63	70

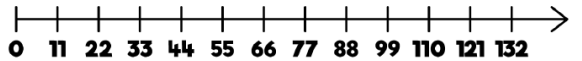
1	2	3	4	5	6	(7)	8	9	10
11	12	13	(14)	15	16	17	18	19	20
(21)	22	23	24	25	26	27	(28)	29	30
31	32	33	34	(35)	36	37	38	39	40
41	(42)	43	44	45	46	47	48	(49)	50
51	52	53	54	55	(56)	57	58	59	60
61	62	(63)	64	65	66	67	68	69	(70)
71	72	73	74	75	76	(77)	78	79	80
81	82	83	(84)	85	86	87	88	89	90
(91)	92	93	94	95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



11 times table

11	22	33	44	55	66
77	88	99	110	121	132

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



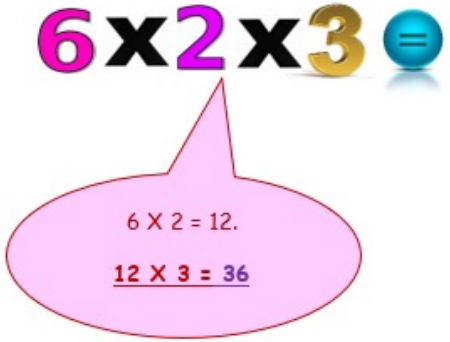
Year 4

Recall all multiplication facts up to and including the 12 times table.

Multiply any whole number by 10 and 100.

Multiply by 0 and 1.

Multiply 3 numbers together.



Multiply 2-digit and 3-digit numbers by a 1-digit number.

	7	8	
X		6	
4	6	8	
	4		

	6	8	5	
X			4	
2	7	4	0	
	3		2	

Year 5

Multiply numbers up to a 4-digit number by a 1-digit number.

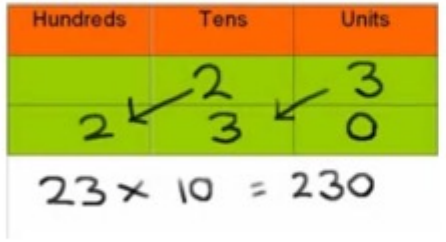
	7	2	0	6
X				7
5	0	4	4	2
	1		4	

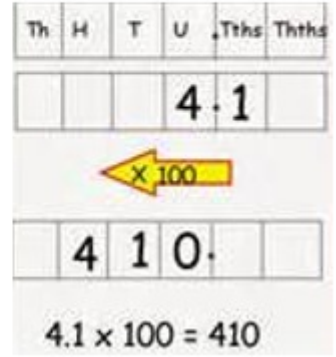
Multiply numbers up to a 4-digit number by a 2-digit number.

		4	5	2
	X		2	7
	3	1	6	4
	9	0	4	0
1	2	2	0	4

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

Multiply whole numbers and decimals by 10,100 and 1000.





Year 6

Multiply decimals by a 1-digit number or a 2-digit number.

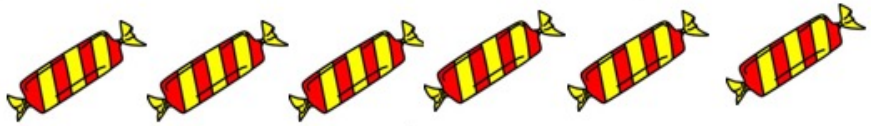
	9	7	6	2 .	2	3
x				6		
5	8	5	7	3 ·	3	8

		6	7	3 ·	2	9
	x		8	3		
	2	0	1	9 ·	8	7
5	3	8	6	3 ·	2	0
5	5	8	8	3 ·	0	7

Division

Nursery and Reception

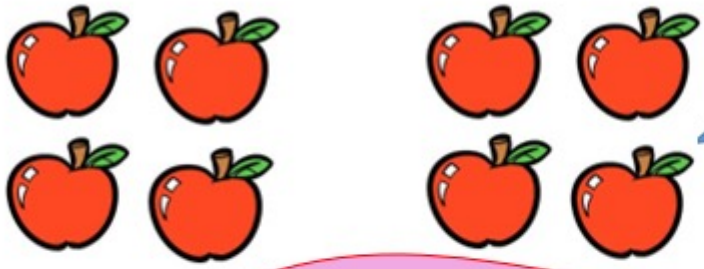
Use practical activities to explore halving and sharing.



Half of these sweets are for me and half are for you.

Share these sweets between two people.

Use objects and pictorial representations to solve problems involving division.



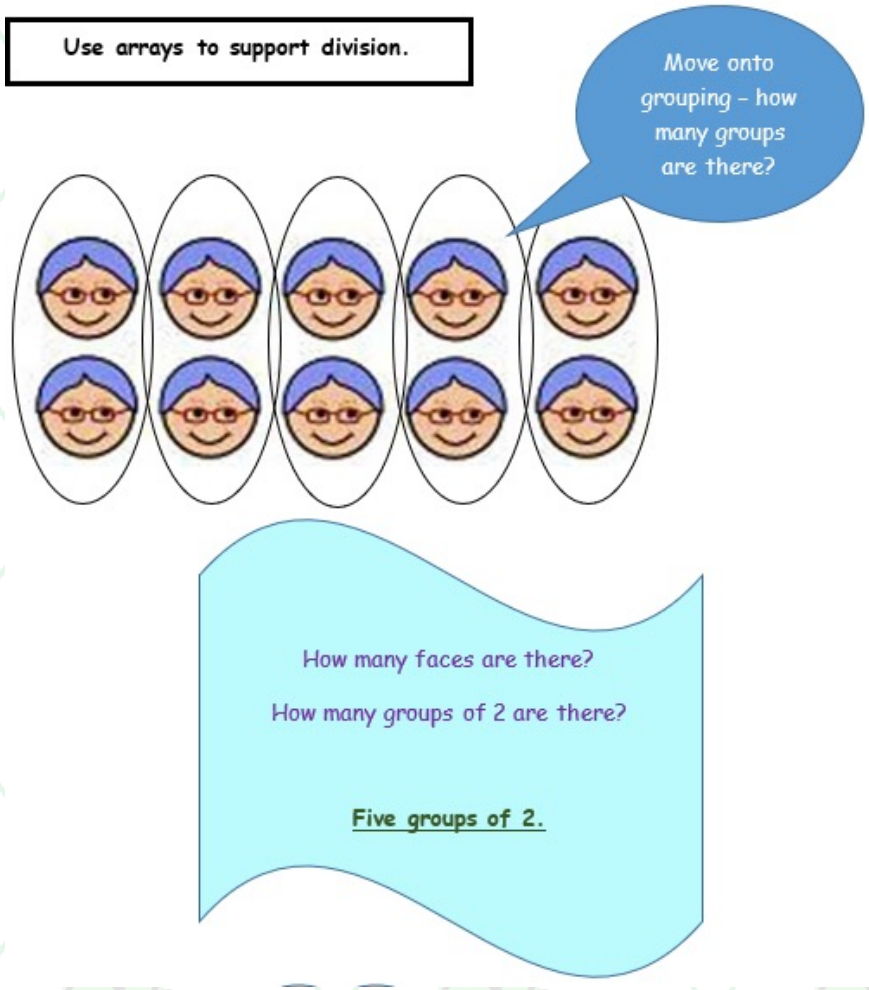
Share into equal groups.

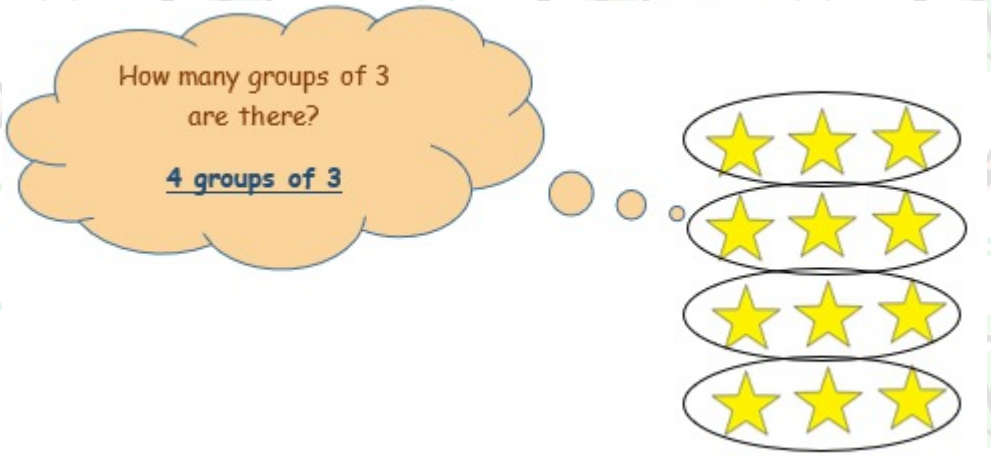
Share these 8 apples equally between 2 children. How many apples will each child have?

Share 20 crayons between 2 pots. How many crayons will be in each pot?

Year 1

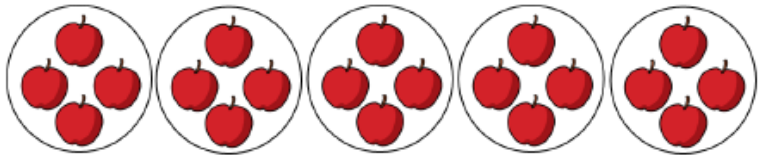
Use arrays to support division.

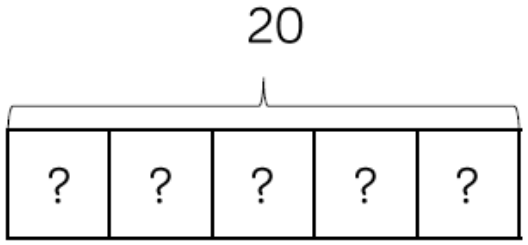




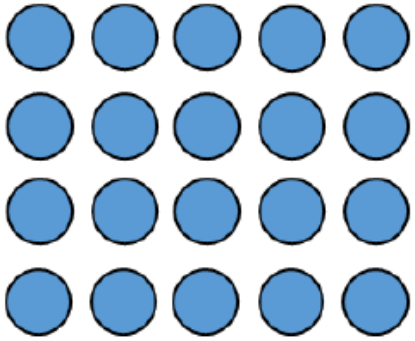
Year 1 and Year 2

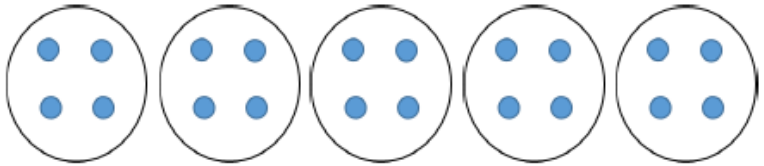
Skill: Solve 1-step problems using multiplication (sharing)





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

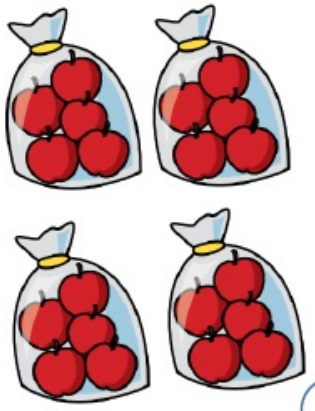


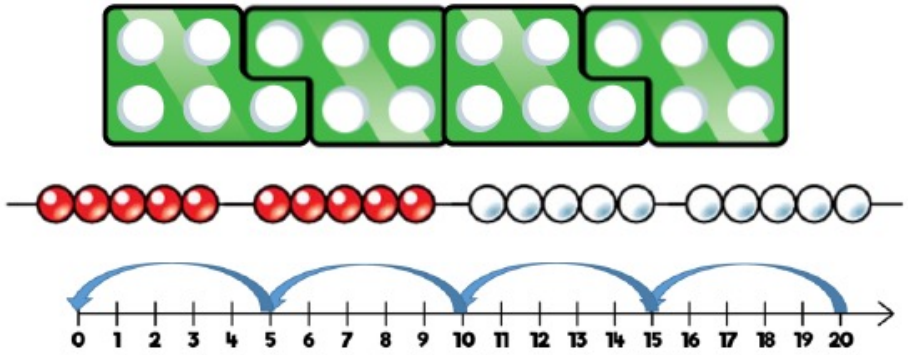


$20 \div 5 = 4$

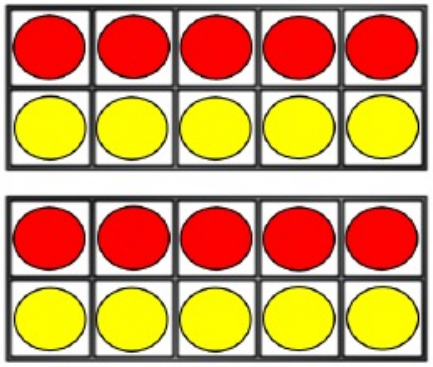
Year 1 and Year 2

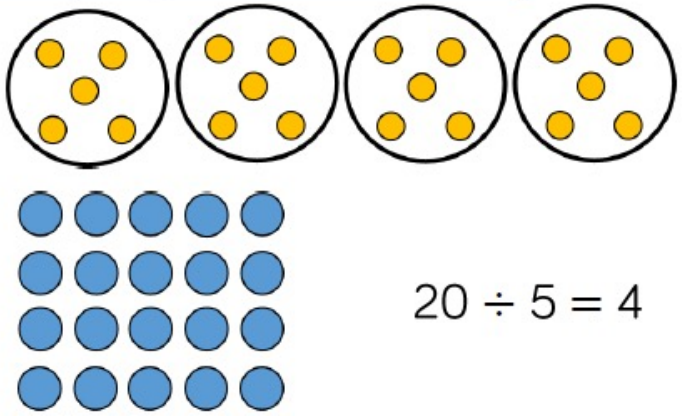
Skill: Solve 1-step problems using division (grouping)





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



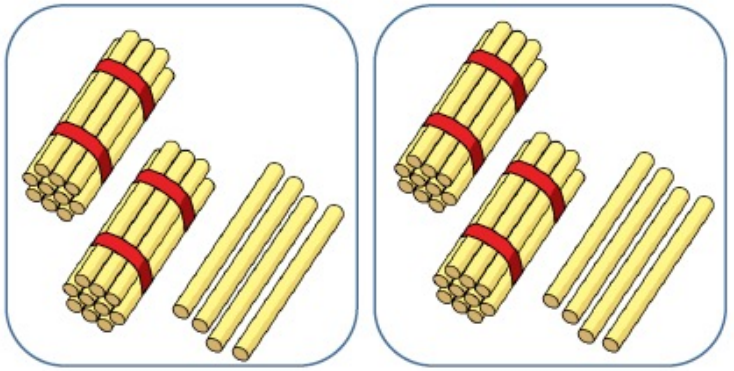


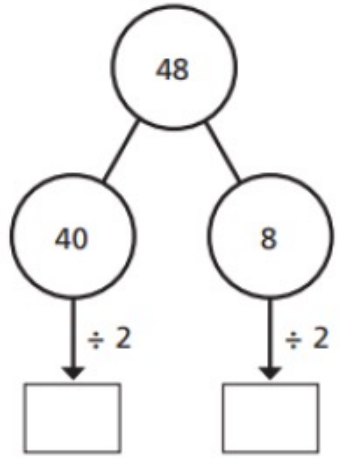
$20 \div 5 = 4$

Year 1 and Year 2

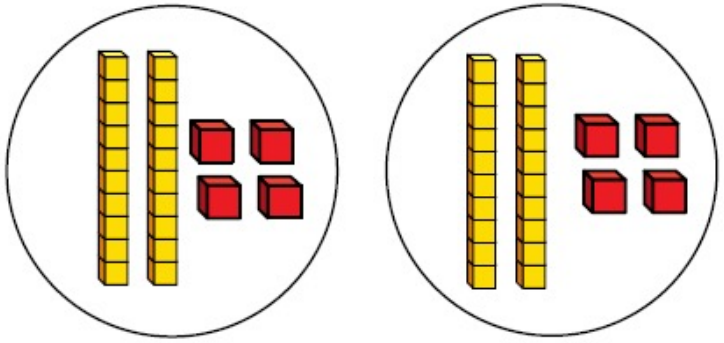
Skill: Divide 2-digits by 1-digit (sharing with no exchange)

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





$$48 \div 2 = 24$$



Year 2

Recall 2, 5 and 10 division facts.

Use materials, arrays and mental methods to solve problems involving division.

30 crayons are shared equally between 3 pots.

How many in each pot? (Sharing)

We have 30 crayons and put 10 crayons in each pot.

How many pots do we need? (Grouping)

30 divided by 3 is 10.

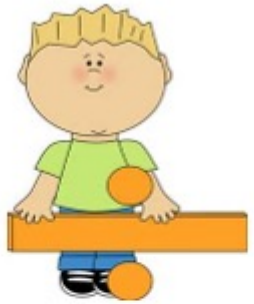
30 divided by 10 is 3.

30 ÷ 3 = 10

30 ÷ 10 = 3

Year 3

Recall 2, 5, 10, 3, 4 and 8 division



Divide any whole number by 10.

Use mental knowledge of times tables to solve division calculations.

40 ÷ 8 =

12 ÷ 4 =

15 ÷ 3 =

80 ÷ 8 =

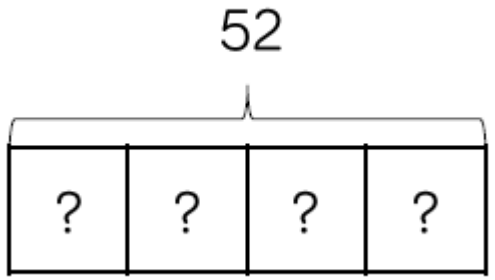
25 ÷ 5 =

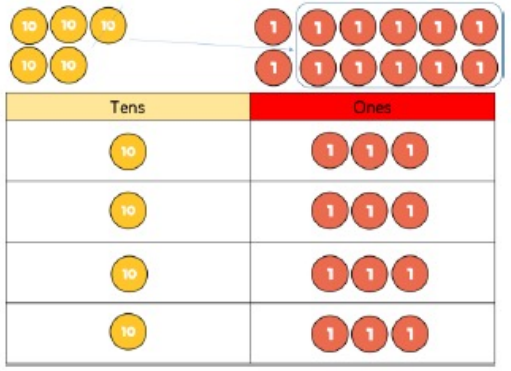
I can count up in the times table to calculate these.

Year 3 and Year 4

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

$52 \div 4 = 13$

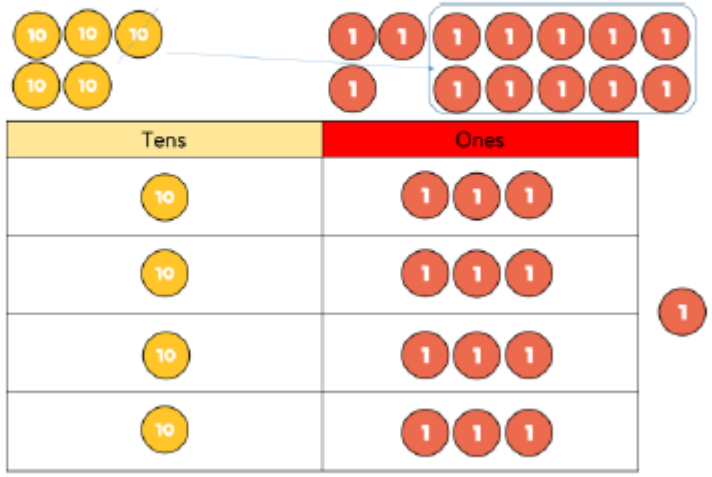




Year 3 and Year 4

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

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



Year 4

Recall all division facts up to and including the 12 times table.

Divide by 1.

Divide any whole number by 10, 100 and develop awareness of related facts.

If 9 ÷ 3 = 3 **then** 90 ÷ 30 = 3

If 42 ÷ 6 = 7 **then** 420 ÷ 60 = 7

If 15 ÷ 5 = 3 **then** 150 ÷ 50 = 3

Divide 2-digit numbers and 3-digit numbers by a 1-digit number.

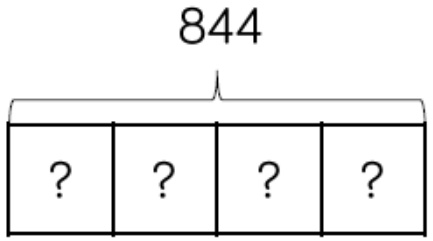
		3	2
3	)	9	6

		1	2	4
4	)	4	9	$^{1}6$

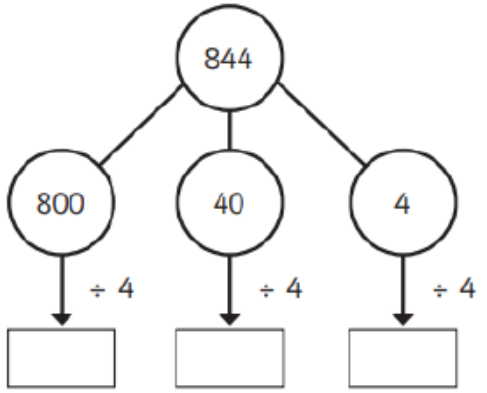
Year 4

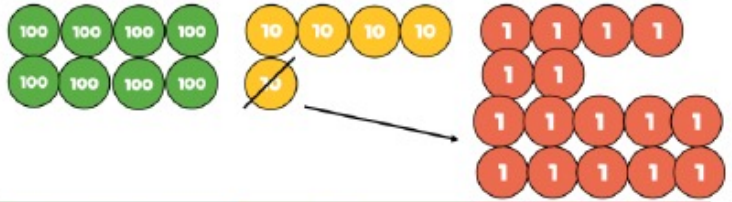
Skill: Divide 3-digits by 1-digit (sharing)

844 ÷ 4 = 211



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

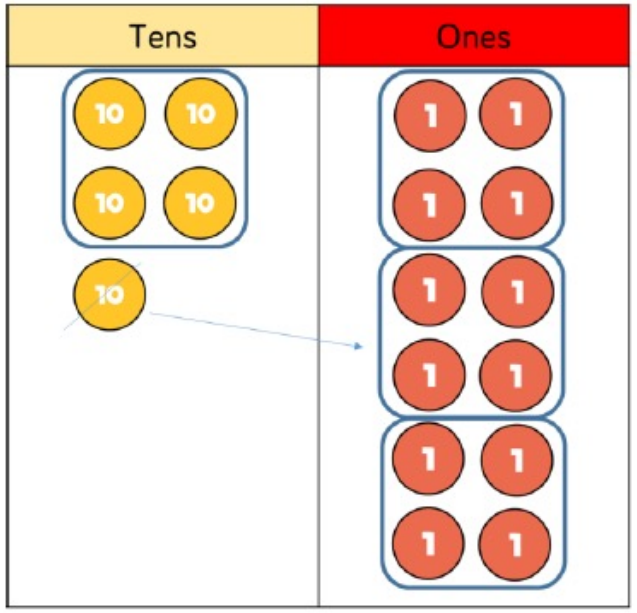




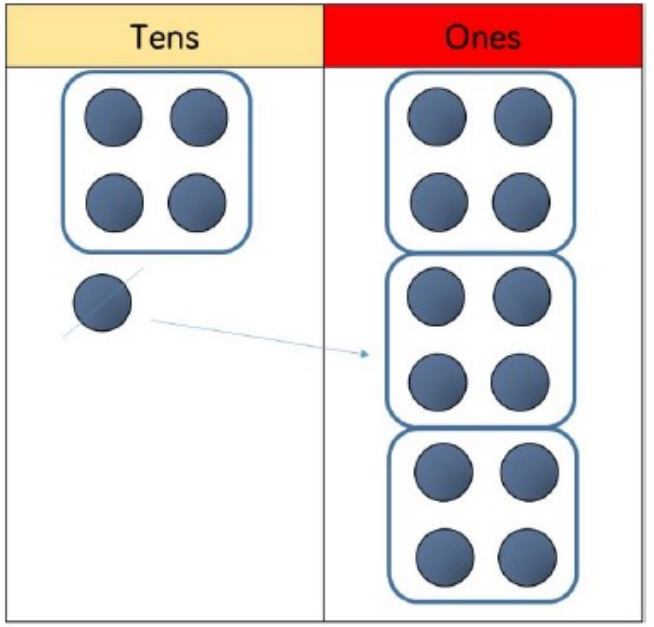
Hundreds	Tens	Ones
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1

Year 4 and Year 5

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



		1	3	
	4	5	1 2	



$$52 \div 4 = 13$$

Year 5

Divide numbers up to a 4-digit number by a 1-digit number.

	1	5	2	1	r 2
6	9	$^{3}1$	$^{1}2$	8	

	0	9	6	5
8	7	$^{7}7$	$^{5}2$	$^{4}0$

Divide whole numbers and decimals by 10,100 and 1000.

Th	H	T	U	. Tths	Thths
		3	2 .		
			3 .	2	

10 ÷

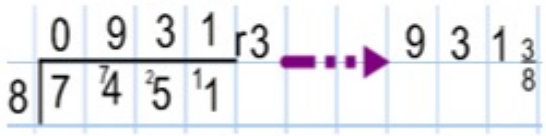
32 ÷ 10 =

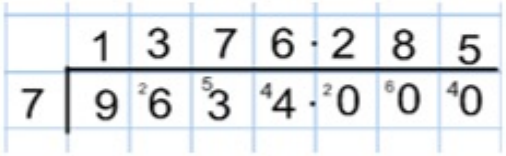
	6	.			
		.	0	0	6

÷100

Year 6

Divide numbers up to a 4-digit number by a 1-digit number changing remainders to fractions and decimals.





Divide numbers up to a 4-digit number by a 2-digit number.