Calculation Policy

At Rose Hill Primary School we use the White Rose scheme of work to ensure all strands of the curriculum are taught. We adapt these plans to ensure that we prioritise the skills and key concepts identified by the DfE as essential for children to be able to understand future mathematical material.

This calculation policy shows how we develop skills throughout the school.

We focus on developing understanding of foundational concepts and building on these concepts throughout the school years. Where possible, representations of concrete resources and / or pictorial representations are used across the school. We believe that it is important pupils of all ages have the opportunity to use concrete, pictorial, and abstract representations of mathematics.

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Adding and Subtracting Teaching Concepts

Mental methods before written methods when solving problems.

Strategies used for whole numbers can be applied to decimals in the same way.

Understanding the relationship between addition and subtraction.

Correct terminology: regrouping (addition) and exchanging (subtraction).

Seeing subtraction as finding the difference, not just take-away.

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Mental methods before written methods when solving problems.

When tackling addition and subtraction problems, pupils should always be encouraged to see if they can complete the calculation in their heads or with jottings first before they go straight to a formal written methods. It may be quicker and more efficient as formal written methods can be time consuming and do not help develop conceptual understanding.

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Understanding the relationship between addition and subtraction.

It is important pupils understand that rather than there being 4 operations (+, −, x, ÷), there are 2 relationships. The relationship between addition and subtraction and the relationship between multiplication and division, We want to encourage pupils to use the inverse when solving addition or subtraction calculations mentally.

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Seeing subtraction as finding the difference, not just take-away.

Often, pupils will only see subtraction as 'take-away'. This can lead to inefficient methods when subtracting. If pupils understand that 'subtraction' means 'difference' they can use addition to 'count on to find the difference'. Many pupils find addition easier than subtraction.

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Correct terminology: regrouping and exchanging.

The vocabulary we use with pupils when modelling the column method is really important so that it builds on the pupils' place value understanding.

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Strategies used for whole numbers can be applied to decimals too.

It is good educational practice to have consistency in methods using whole numbers and decimal numbers. When using terminology, we can also use it in the same way for decimals as we do for whole numbers.

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Addition and Subtraction

Number Facts

Concepts

Number pairs within 10

Pupils learns about number pairs within 10.

Introduction in Year 1.

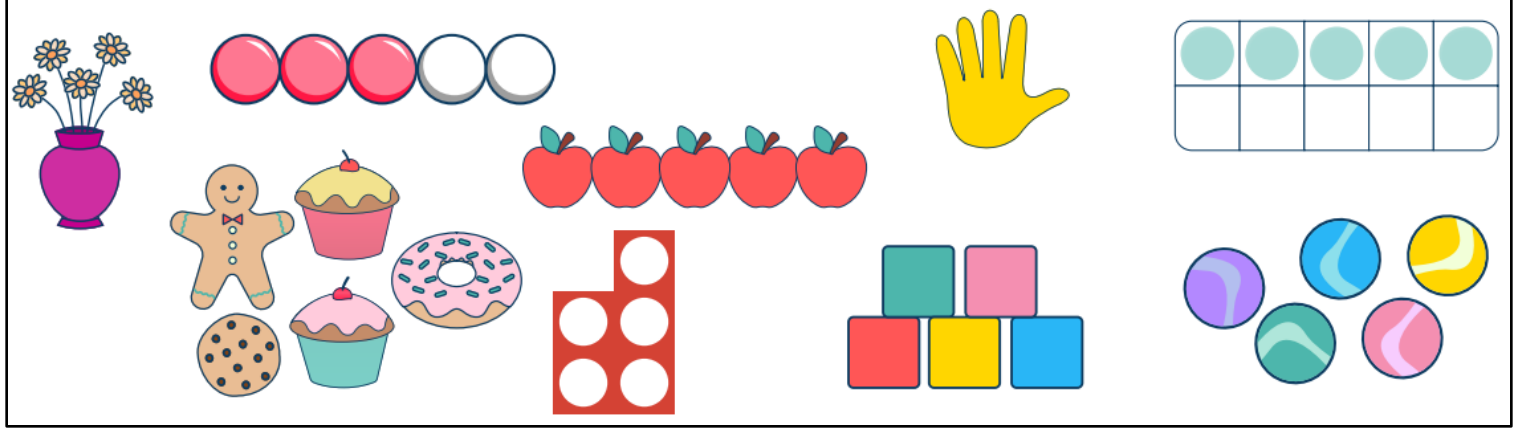
Number pairs that make 10

Pupils apply their prior learning to find number pairs that make 10. This involves finding fact families.

Introduction in Year 1.

Toys

Pupils should understand different ways to make a number. All the representations are different, but they all show the same number.

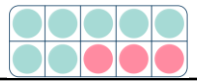


Counters

Counters can be used on their own, this can relate to subitising.

Tens frame

Using the tens frames can help pupils identify patterns when making ten.

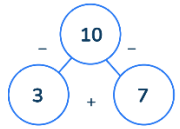


Numicon

Numicon can be used to show number bonds to ten.

Part-whole model

Language of 'whole' and 'parts' are used, and the model can be drawn to help identify this.



Written form

Addend + addend = sum

Minuend – subtrahend = difference

Addition and Subtraction

Number Facts

Concepts

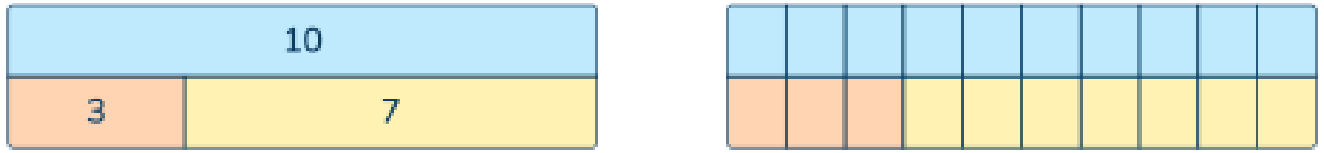
Number pairs within 10 and
Number pairs that make 10

Continued

Bar model

Bar models can be shown as both discrete or continuous bars.

These bars should (as far as possible) be in proportion, particularly in the lower year groups to secure concept.



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Addition and Subtraction

Number Facts

Concepts

Adding and subtracting by making 10

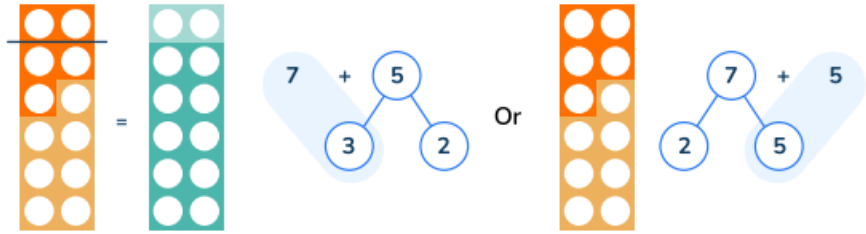
Crossing a tens boundary through addition or subtraction, pupils can use number pairs to help make the calculation easier.

Pupils should use their understanding of number pairs within 10 to help partitioning a number to make 10.

Introduction in Year 2.

Numicon and part-whole models

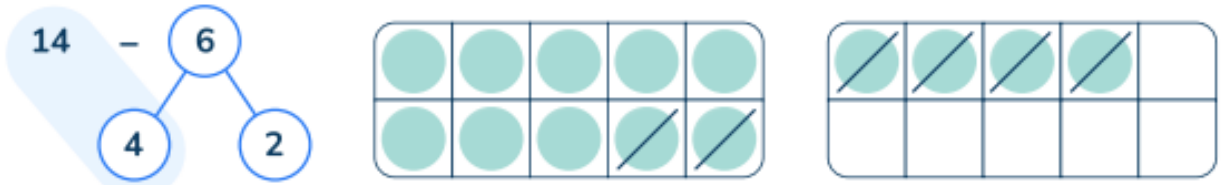
The examples below use number pairs to 5 to make 10. Pupils should identify the number pairs to 5 and identify that some of them will help them to make 10.



Tens frames and part-whole models

To solve questions within subtraction.

E.g., 14 – 6 = 8



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Addition and Subtraction

Number Facts

Concepts

Number pairs within and to 20

Number pairs to 10 are used to support this concept

Introduction in Year 2.

Number pairs to add and subtract

Exploring relationships between number pairs using addition and subtraction.

Introduction in Year 1.

Tens frame

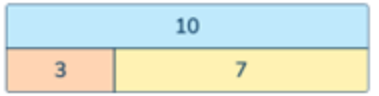
These can be used to show the link between number pairs that make 10 and the pairs that make 20. These show pupils how to apply their prior knowledge to other calculations.

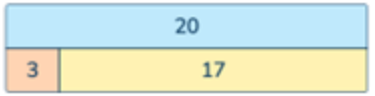
If we know 7 + 3 = 10

Then we can work out 17 + 3 = 20

Part-whole and bar models

Comparing part-whole and bar models to show shape is still the same and it is just numbers that are slightly changing.





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Addition and Subtraction

Number Facts

Concepts

Number pairs to 100

Using prior knowledge of pairs to 20 to find pairs to 100. Pupils use number pairs to 10 to relate to pairs to 100.

Use knowledge and understanding of partitioning numbers into tens and ones.

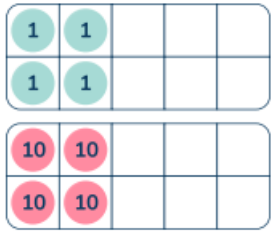
Introduced in Year 2

Pupils can also apply this understanding to number pairs beyond 100.

Introduced in Year 3

Tens frame and PV counters

Use to clearly show relationships between number pairs to 10 and links to pairs to 100.



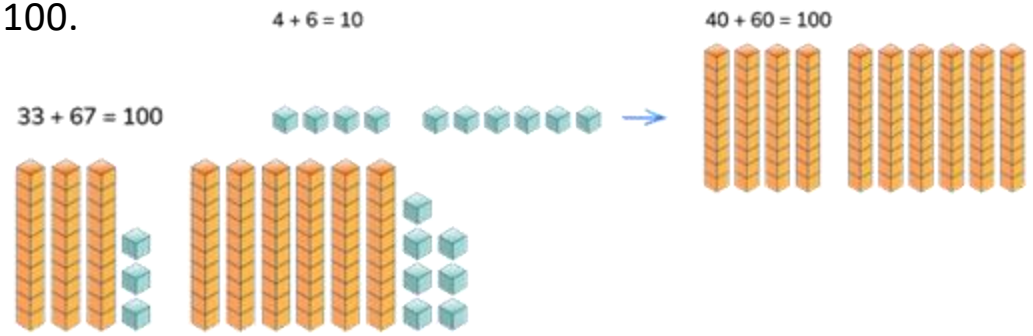
Hundred square

Using numbered hundred square to show number pairs to 100.

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

Base 10

Base 10 can identify number pairs with tens and ones to 100.



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Addition and Subtraction

Mental and Written

Concepts

Count on to add and back to subtract

Introduced to commutativity. Pupils are taught that they can count on from either addend to find the total.

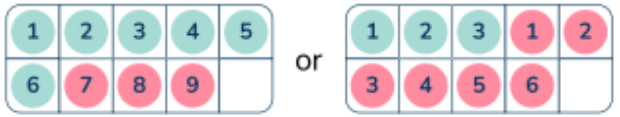
Explore counting on from the larger addend to find the total.

Subtracting by counting back is also introduced.

Introduced in Year 1

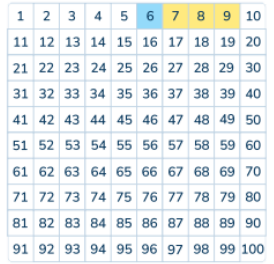
Tens frame

Use to help pupils identify if their answer is greater/less than 10.



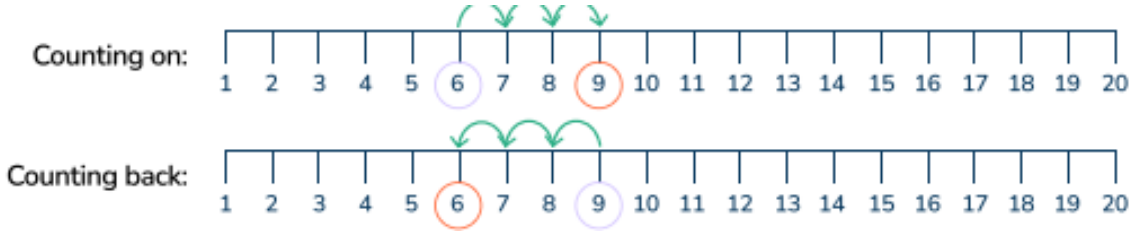
Hundred square

Can identify the larger addended or minuend and count on/back, rather than individually.



Number lines

Can help pupils to work efficiently by counting on from the larger addend or identify the minuend and count back. When they work with negative numbers to count on and back, number lines can help pupils understand the numbers.



Addition and Subtraction

Mental and Written

Concepts

Counting on to find a difference

Introduced to concept of subtracting being the difference.

Important that pupils understand the – symbol mean difference AND take away AND subtract AND reduce, not just one of them.

Introduced in Year 1

Part-whole model

Can be used for smaller and larger numbers.

Abstract

15 – 8 can also be read as what is the difference between 8 and 15?

Bar model as the difference

Number lines

Identify with counting on is the most efficient strategy.

Number lines can help identify when numbers are close so counting on will be easier than the formal method.

41 – 38 = 3

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Addition and Subtraction

Mental and Written

Concepts

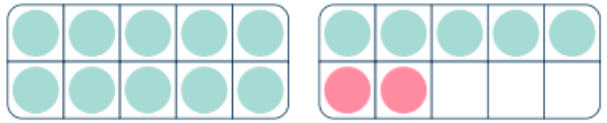
Partitioning

Use understanding of tens and ones to add the ones, then add the tens. Adding or subtracting the lowest value column first will make it easier for pupils when regrouping or exchanging.

Introduced in Year 2

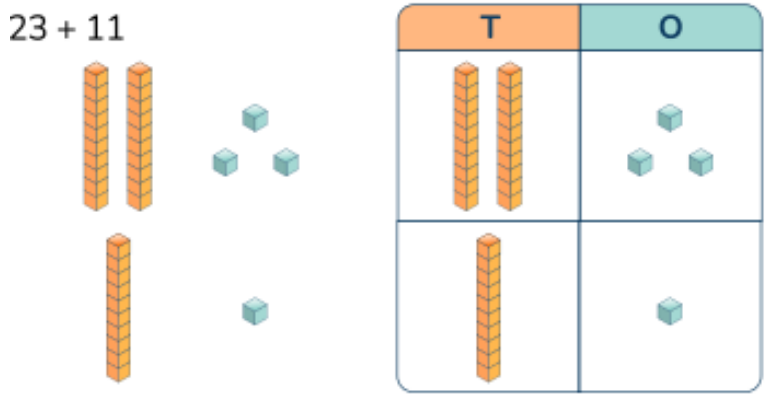
Tens frame and counters

Work well with lower value calculations



Base 10

Works well for larger numbers, clear groups of ten make process easier.

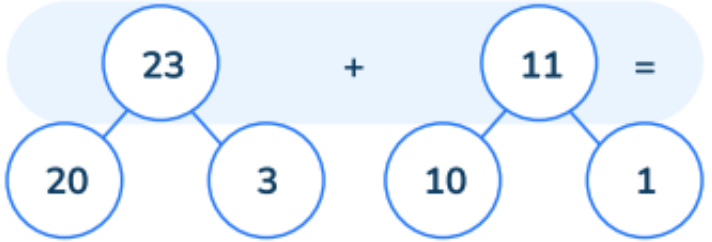


Numicon

Full tens and then ones separately.

Part-whole model

Partition each number.



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Addition and Subtraction

Mental and Written

Concepts

Inverse Operations

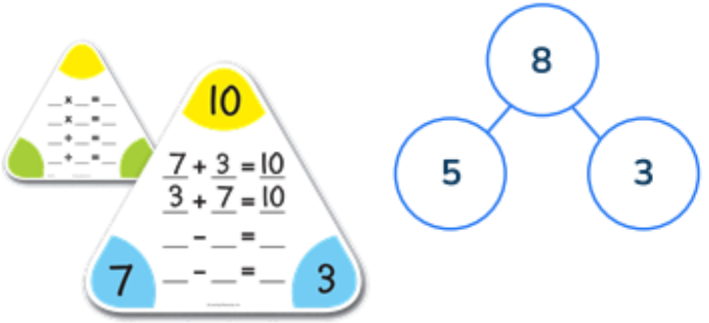
Should understand that there is a link between addition and subtraction. Explore how to use the inverse operation to develop checking strategies.

Builds upon learning about fact families

Introduced in Year 3

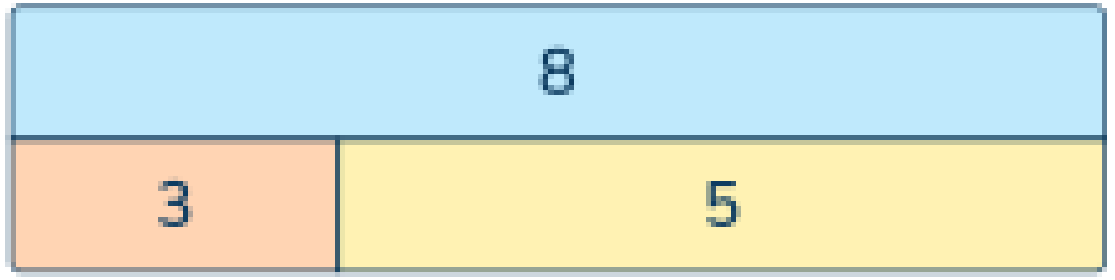
Numicon

Part-whole model



Bar model

Bar models and part-whole models clearly show the parts and wholes in each calculation, allowing the children to see clearly the links between the numbers.



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Addition and Subtraction

Mental and Written

Concepts

Rounding and adjusting

Build on the concept of doubling and adjusting, pupils learn to round numbers then adjust

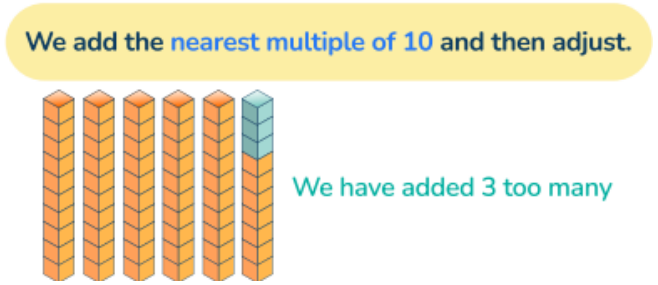
Introduced in Year 3

(Language of 'estimate' and 'estimation' are used instead of rounding).

Base 10

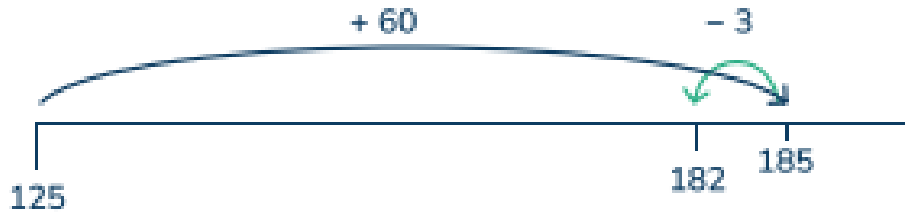
Using resources that clearly show groups of ten so children can round with ease.

125 + 57
125 + 60 = 185
185 – 3 = 182



Number line

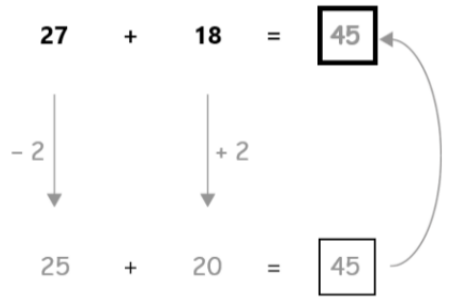
Can be used to clearly show that there are 3 too many so we need to subtract 3.



Adjusting

Adjusting addends for same sum different question.

27 + 18 = 25 + 20 = 45



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Addition and Subtraction

Mental and Written

Concepts

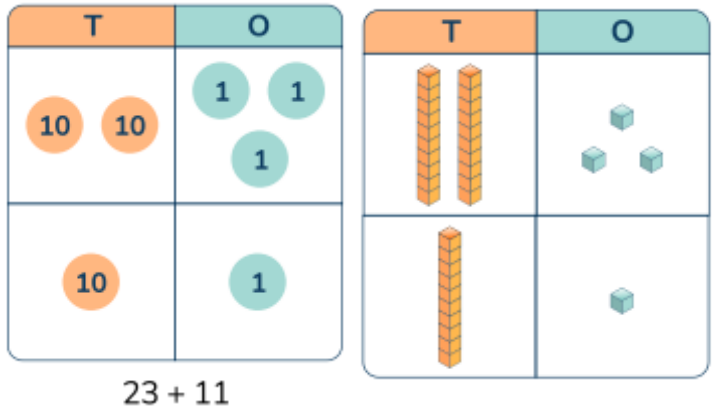
Formal written methods

First introduced using concreate resources. Pupils start by adding without regrouping and subtracting without exchanging then move to regrouping and exchanging.

Introduced in Year 3

Place value Charts

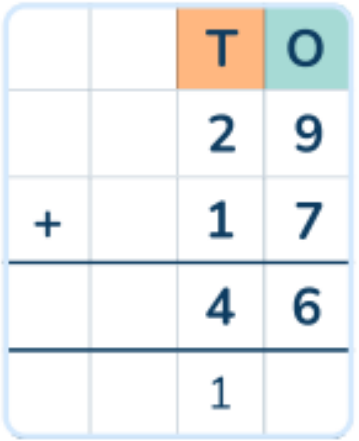
Clearly show the place value of each digit within the calculation. Both base 10 and PV counters can be used to help pupils understand the abstract representation.

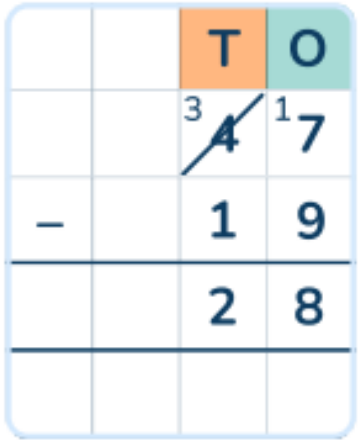


23 + 11

Column method

Using concreate resources can help pupils to understand when they need to regroups or exchange within a calculation





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Addition and Subtraction

Mental and Written

Concepts

Same sum and same difference

Builds upon the concept of rounding and adjusting. Pupils should understand that they can adjust a calculation to make it easier.

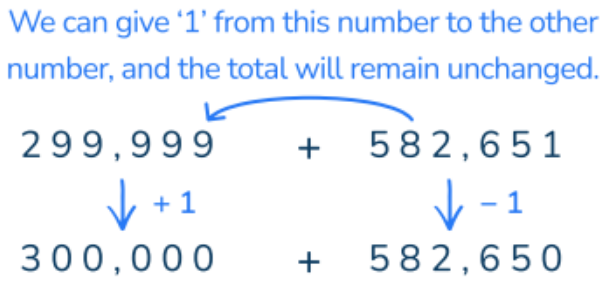
Introduced in Year 5

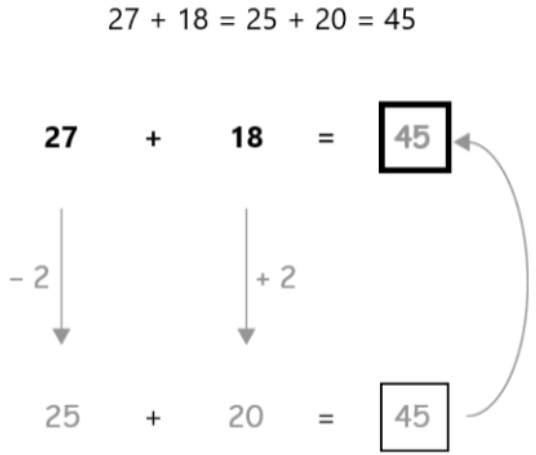
When confidence they can extend this to subtraction calculations.

Introduced in Year 6

Jottings

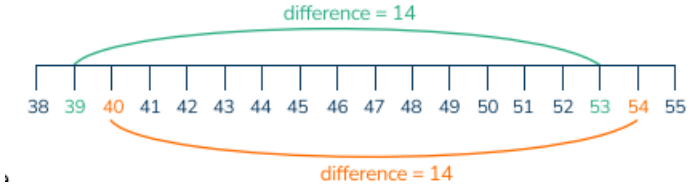
These can be used to show how a calculation has been adjusted,





Number line

Used to show the calculation has been adjusted but the sum/difference is still the same.



Bar Models

Show why the same difference works in making a calculation simpler.

16,000 – 4,469 = 15,999 – 4,468

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Mental/informal methods before written methods when solving problems.

Multiplication and Division Teaching Concepts

Correct terminology: regrouping (multiplication) and exchanging (division).

Understanding the relationship between multiplication and division.

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Mental/informal methods before written methods when solving problems.

When solving multiplication or division calculations, it is important for pupils to consider whether they can solve it in their heads with jottings rather than using a formal written method. There are a few different strategies pupils may choose. Encouraging pupils to talk through the method they are using when approaching a problem. This will help develop their mathematical language and reasoning skills. It is important when teaching and modelling the formal method of multiplication and division that the correct language is used, and we focus on the value of the digits throughout. As with addition and subtraction, people should not think they are only ever working with ones.

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Understanding the relationship between multiplication and division

It is important that pupils don't see multiplication and so vision as two separate things. Instead, we want to draw attention to the relationship between them. We can help pupils to see the connections by using arrays, fact triangles or diagrams and these are used throughout the sessions. To reinforce the knowledge of the relationship between multiplication and division, you can encourage pupils to check division calculations by using multiplication and vice versa. Use of this strategy becomes particularly useful when solving missing number problems and will help students to solve more complex calculations, such as working backwards problems.

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Correct terminology: regrouping (multiplication) and exchanging (division)

As with addition and subtraction, he is useful to use consistent language with multiplication and division. Using regrouping in multiplication an exchanging in division helps reinforce the concept of multiplication as repeated addition and division as repeated subtraction. It is important when teaching and modelling the formal method of division that the correct language is used, and we focus on the value of the digits throughout. Division is the only operation where we start with the most significant digit first.

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Multiplication and Division

X and ÷ facts

Concepts

Multiplication as repeated addition (equal groups)

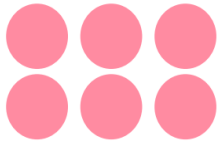
multiplication is initially taught through recognising and adding equal groups.

Introduced in Year 1

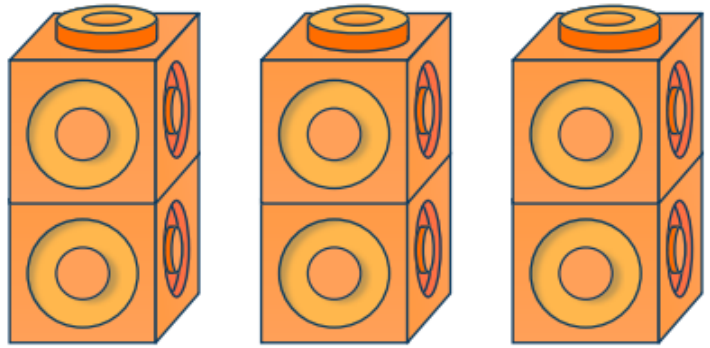
When pupils are familiar with adding equal groups, they can relate this to multiplication calculations. *Introduced in Year 2.*

Arrays

Can be introduced to begin to explore the commutative nature of multiplication.



Multi-link

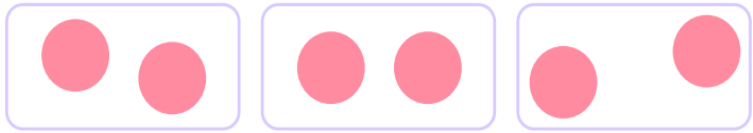


Toys or everyday objects

Use familiar resources to make and count equal groups.

Counters

Manipulatives can then be used instead of the above.



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Multiplication and Division

X and ÷ facts

Concepts

Multiplication as scaling

Pupils are taught that multiplication means [number] times the size.

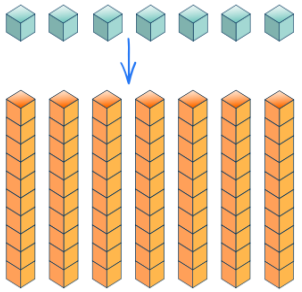
Initially, pupils look at doubling and ten times to understand scaling.

Concept introduced in Year 1 Term scaling introduced in Year 3

Base 10 and Place Value Counters

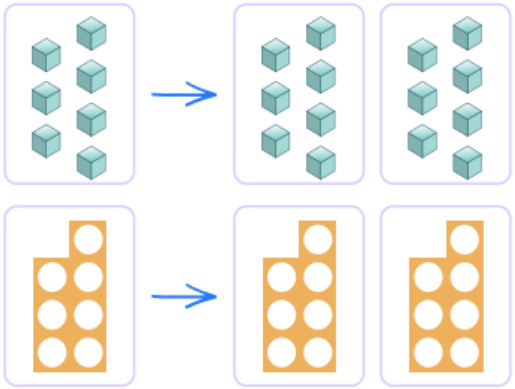
Multiplying by 10 (7 x 10)

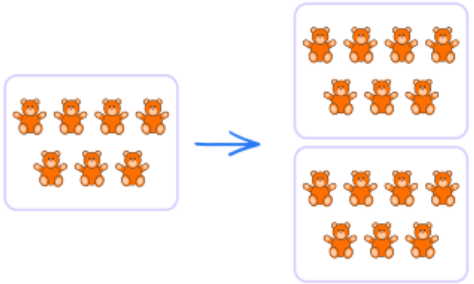
Pupils can use these manipulatives to show that we are making ten times the size.



Everyday objects

Doubling (7 x 2)





Pupils can use various resources (including toys and everyday objects) to show that the original number is twice the size.

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Multiplication and Division

X and ÷ facts

Concepts

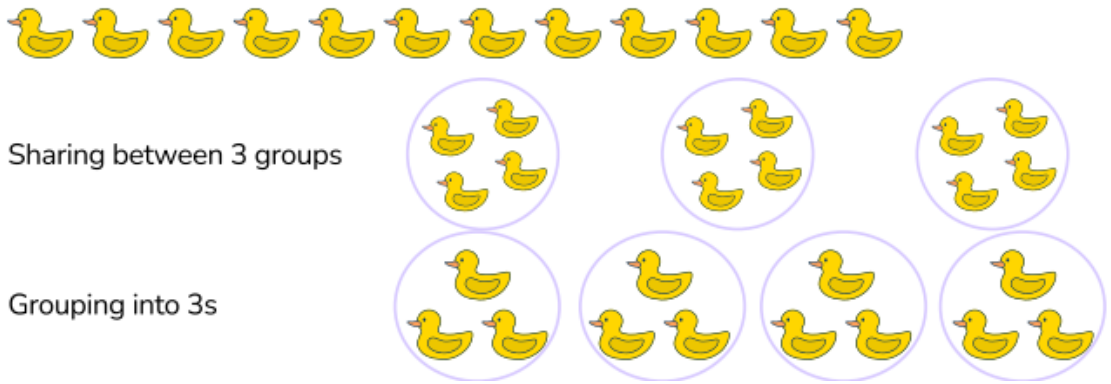
Division as sharing and grouping

Pupils look at how division can either be thought of as sharing or grouping. This also reinforces that division involves equal groups.

Sharing and grouping are introduced in Year 1. Division with the division symbol is introduced in Year 2.

Physical resources being shared

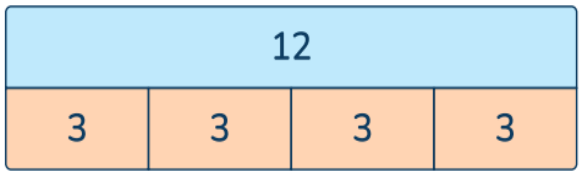
Toys, counters, cubes, multilink, can all be used to model and explore between sharing and grouping.



Simple pictorial representations

Bar models

The bar model shows there are 4 groups of 3 or that 12 has been



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Multiplication and Division

X and ÷ facts

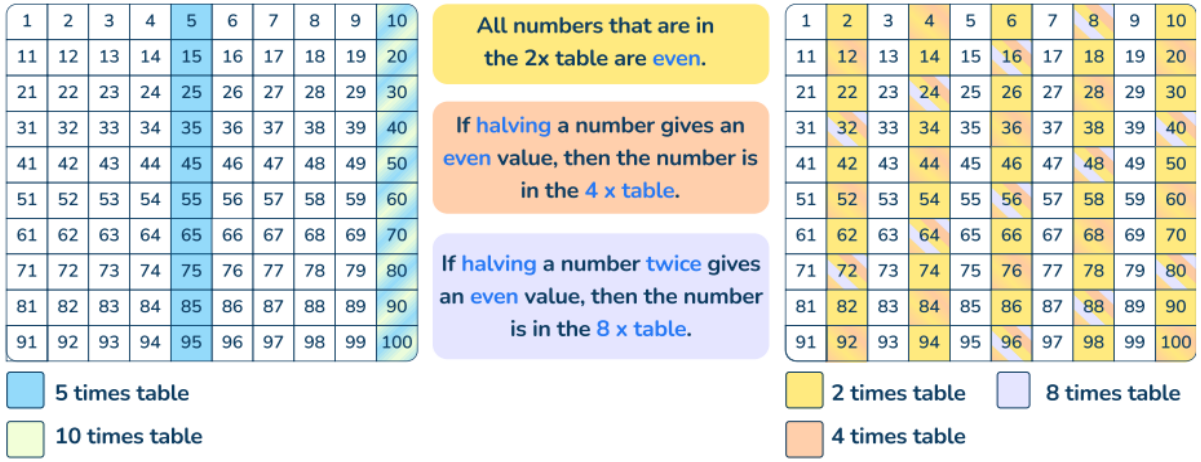
Concepts

Developing multiplication and division facts

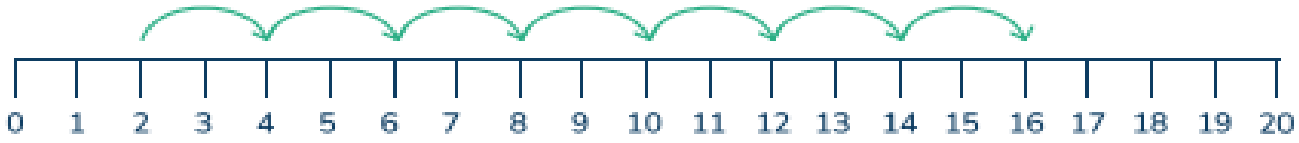
(up to 12 x 12)

In our times tables lessons, we focus on teaching different methods to learn the multiplication tables. These methods involve finding patterns in a hundred square, skip counting and identifying / using relationships.

Hundred square



Number lines (skip counting)



Pupils can use the number line to count in multiples of a given number.

Can be used for early long division lessons.

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Multiplication and Division

X and ÷ facts

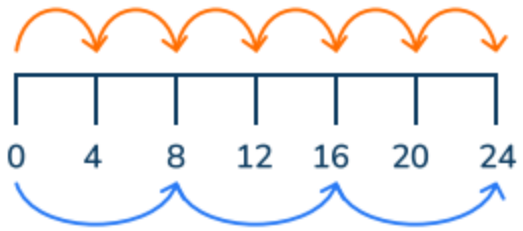
Concepts

Continued.

Relationships

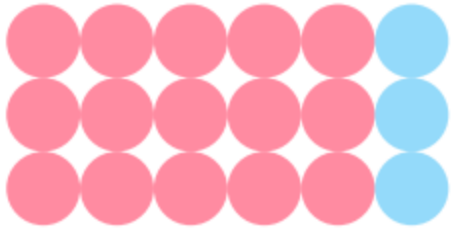
$\overset{6}{\ldots\ldots} \times 4 = 24$

$\overset{3}{\ldots\ldots} \times 8 = 24$



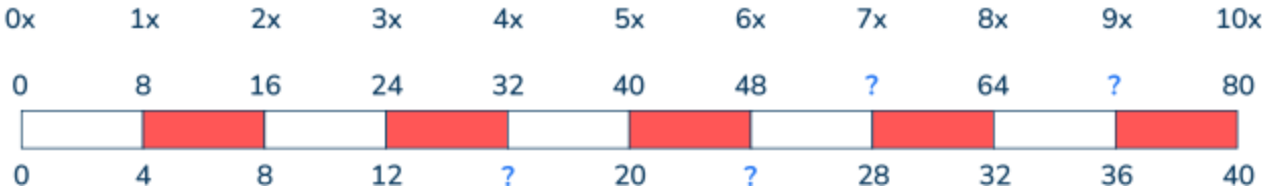
Arrays

Arrays can be used to show a fact family. Pupils can use this to identify all the calculations related to the given array. Arrays can be created using concrete resources or represented pictorially.



I know 5 × 3 = 15 so 6 × 3 = 5 × 3 + 3 = 18

Counting Stick



Using a counting stick in times tables showing connections between multiples.

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Multiplication and Division

Informal

Concepts

Partitioning using an area model to multiply and divide

This is where we split one of the numbers into two parts and then multiply and / or divide each part. *Introduced in Year 3*

Initially, pupils multiply or divide by 1-digit numbers then they move on to 2-digit numbers. *Introduced in Year 4*

Arrays

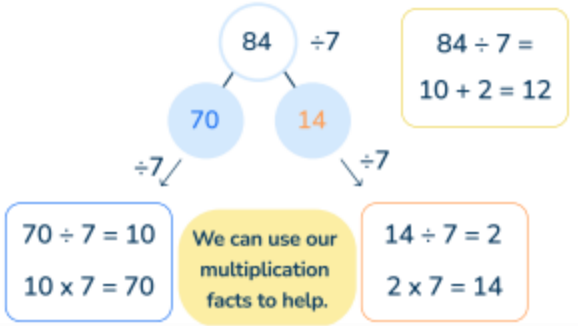
Can be used to partition a number into more manageable parts to multiply or divide.

Part grid

This builds on partitioning numbers to multiply and divide.

Part-whole models

When pupils are confident with partitioning to multiply and divide, they can use the pictorial representation of a part-whole model to partition a number then multiply or divide.



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Multiplication and Division

Informal

Concepts

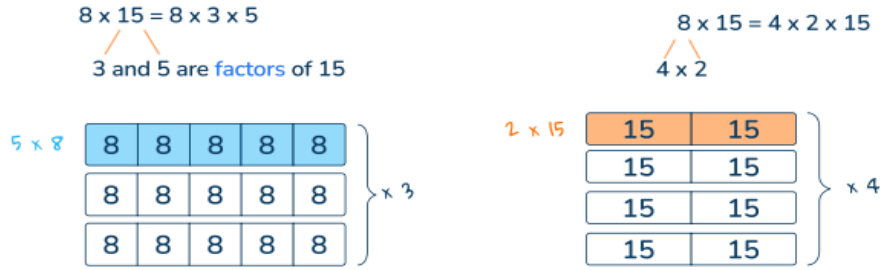
Using factors to multiply and divide

Once pupils have a secure understanding of factors, they can use factors to break one number then multiply or divide. Pupils need to have a secure understanding of factors to avoid confusion with partitioning and finding factors.

Introduced in Year 5

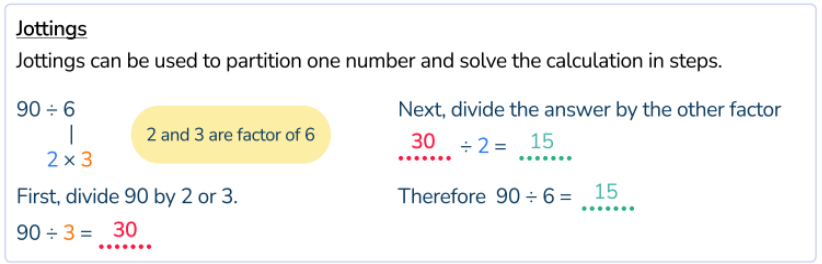
Arrays

Arrays can be used to represent the factors of one number. The arrays can be created using concrete resources (such as counters) or bar models, although the bar models are slightly clearer for larger numbers than an array would be.



Jottings

Jottings can be used to partition one number and solve the calculation .



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Multiplication and Division

Formal

Concepts

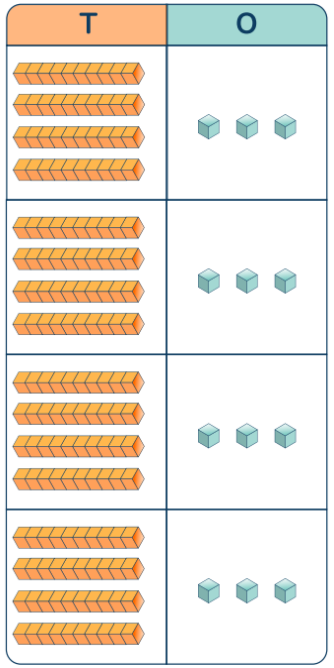
Expanded method

The expanded method of multiplication encourages the understanding of place value when multiplying.

Introduced in Year 4 for 1-digit x 2 or more digits

Place Value/Base 10

Place value charts can be used with mathematical manipulatives to reinforce the understanding of place value when first introducing formal written multiplication.



Formal written method

		T	O	
		4	3	
x			4	
		1	2	(4 x 3)
+	1	6	0	(4 x 40)
	1	7	2	

		2	3	1	
x			3	4	
				4	(4 x 1)
		1	2	0	(4 x 30)
		8	0	0	(4 x 200)
			3	0	(30 x 1)
		9	0	0	(30 x 30)
+	6	0	0	0	(30 x 200)
	7	8	5	4	
	1				

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Multiplication and Division

Formal

Concepts

Short multiplication

Short multiplication is used when multiplying large numbers by a single digit number. Pupils need to remember to multiply each digit in turn.

Introduced in Year 4

Formal written method

		T	O
		4	3
x			4
	1	7	2
	1	1	

	H	T	O
	3	5	2
x			4
1	4	0	8
1	2		

Steps for 43 x 4

1) 4 x 3 ones = 12 ones (we can regroup 10 ones for 1 ten)

2) 4 x 4 tens = 16 tens

16 tens + 1 ten = 17 tens

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Multiplication and Division

Formal

Concepts

Long multiplication

Long multiplication is used when multiplying by larger numbers. As with short multiplication, it is important pupils understand the place value of each digit in the calculation. This ensures pupils understand the reason for their answers. For example, putting a place holder on the second line of the calculation shows multiplying in the tens.

Introduced in Year 5

Formal written method

		3	1	2
x			2	6
	1	8	7 (1)	2
+	6	2	4	0
	8	1	1	2
	1	1		

Steps to solve 312 x 26

Start with the ones in the multiplicand (26).

1) 6 x 2 ones = 12 ones (we can regroup 10 ones for 1 ten)

2) 6 x 1 ten = 6 tens

6 tens + 1 ten = 7 tens

3) 6 x 3 hundreds = 18 hundreds

Then, multiply by the tens in the multiplicand (26)

4) 2 (tens) x 2 ones = 4 tens

5) 2 (tens) x 1 ten = 2 hundreds

6) 2 (tens) x 3 hundreds = 6 thousands

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Multiplication and Division

Formal

Concepts

Short division (with and without exchanging)

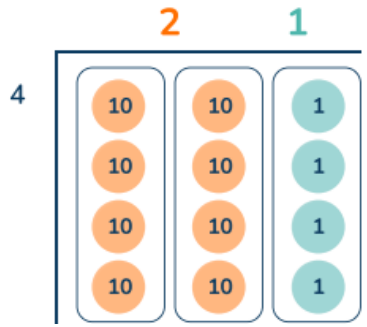
Short division is used when dividing by a single digit number or a number that a pupil knows its multiplication tables for. Pupils start with the largest value digit and should use the correct place value language. For example, we are not dividing 6, we are dividing 6 hundreds.

Introduced in Year 5

Place value counters or Base 10

Place value counters can be used to help pupils identify the place value of the digits in the calculation.

84 ÷ 4 = 21



Formal written method

	H	T	O	
	1	3	7	r. 2
5)	6	$^{1}8$	$^{3}7$	

Steps to solve 687 ÷ 5

1) Divide the hundreds:

6 hundreds ÷ 5 = 1 hundred r 1 hundred

2) Exchange the hundreds for tens: 1 hundred = 10 tens

10 tens + 8 tens = 18 tens

3) Divide the tens: 18 tens ÷ 5 = 3 tens r 3 tens

4) Exchange the tens for ones: 3 tens = 30 ones

30 ones + 7 ones = 37 ones

5) Divide the ones: 37 ones ÷ 5 = 7 ones r 2 ones

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Multiplication and Division

Formal

Concepts

Long Division

Long division is used when dividing by a 2-digit number. Pupils start with the largest value digit and pupils may need to exchange. It is important to maintain the value of the digits throughout. For example, we are not dividing 4, we are dividing 4 hundreds.

Introduced in Year 6

Formal written method

Listing multiples of the divisor in a fact box can help with division.

Steps to solve 434 ÷ 31

1) Divide the hundreds:

4 hundreds ÷ 31 = 0 hundred

2) Exchange the hundreds for tens:

4 hundred = 40 tens

40 tens + 3 tens = 43 tens

3) Divide the tens:

43 tens ÷ 31 = 1 ten r 12 tens

4) Exchange the tens for ones:

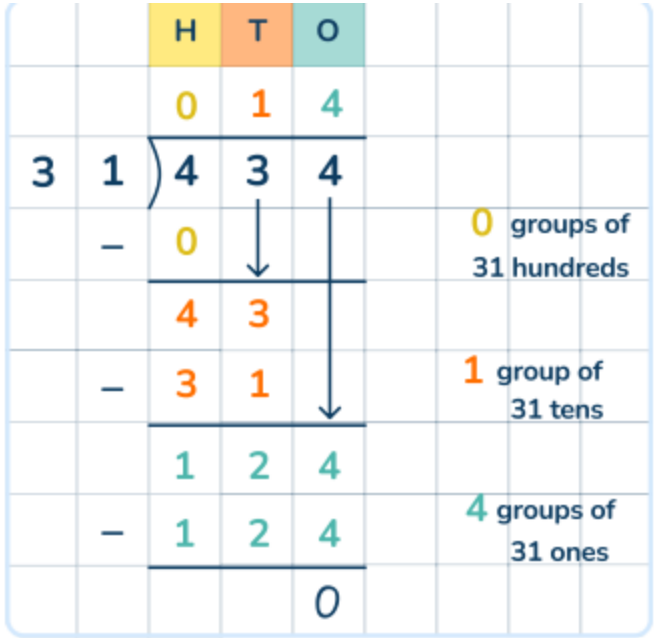
12 tens = 120 ones

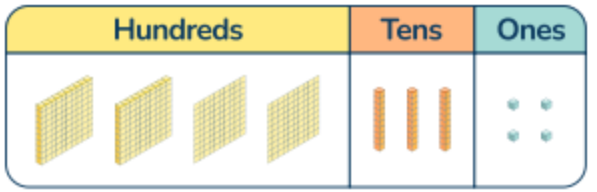
120 ones + 4 ones = 124 ones

5) Divide the ones:

124 ones ÷ 31 = 4 ones

(We can use a list of multiples of 31 to find this fact.)





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Times Tables

12 x 12

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Times Tables

2's

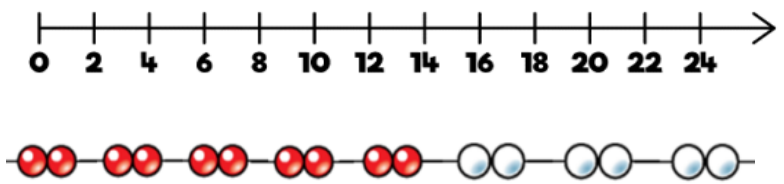
How?

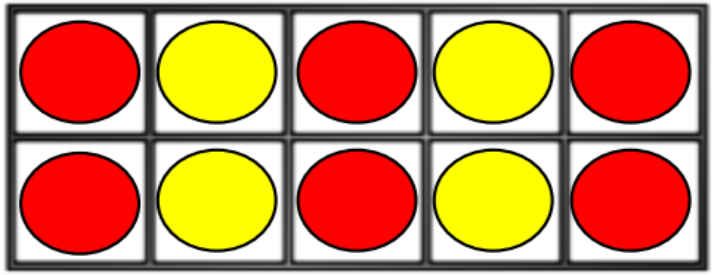
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones.

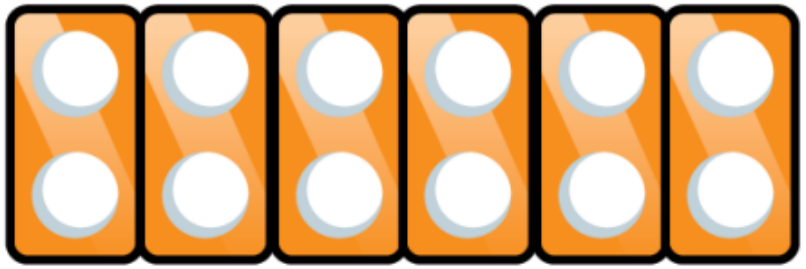
Use different models to develop fluency.

Resources





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



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Times Tables

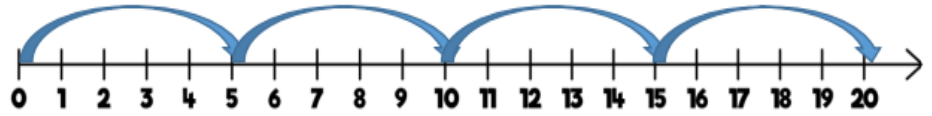
5's

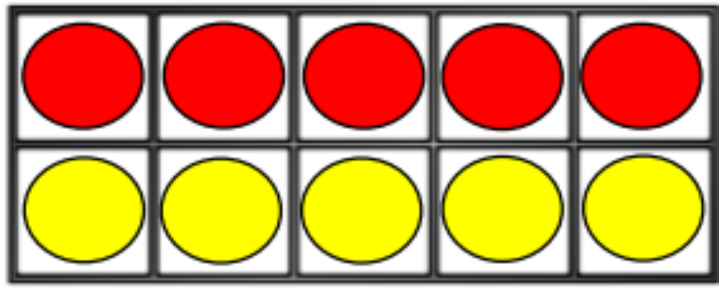
How?

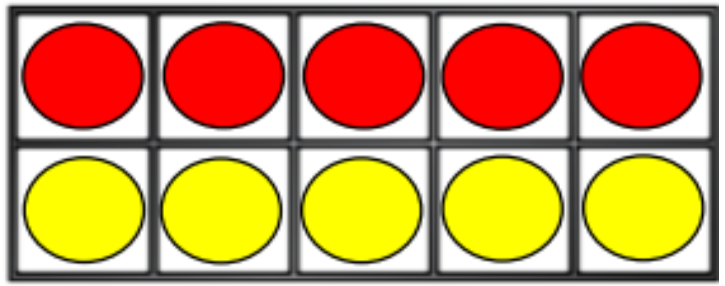
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the five times table, using concrete manipulatives to support. Notice the pattern in the ones as well as highlighting the odd, even, odd, even pattern.

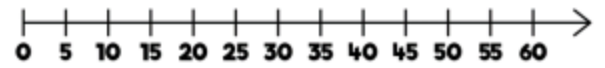
Resources

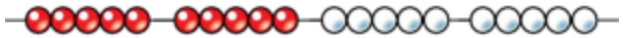






1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50





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Times Tables

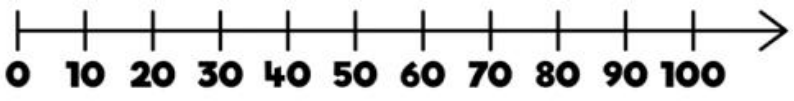
10's

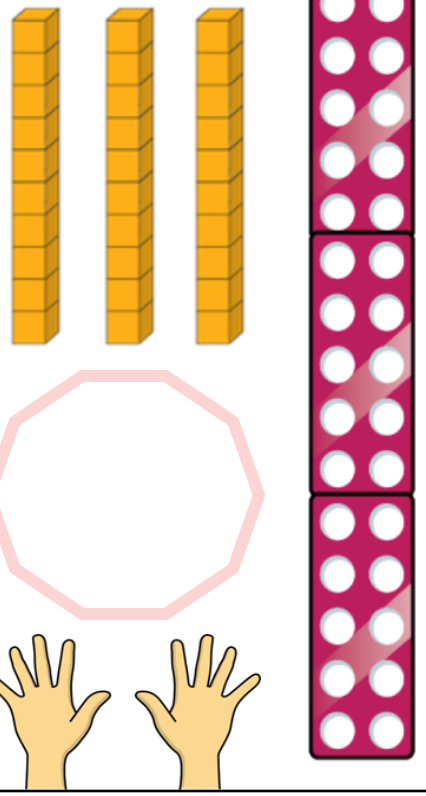
How?

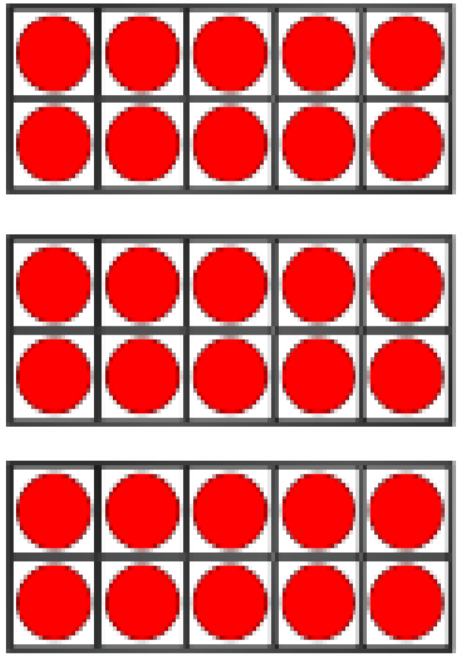
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the ten times table, using concrete manipulatives to support. Notice the pattern in the digits - the ones are always 0, and the tens increase by 1 ten each time.

Resources







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

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Times Tables

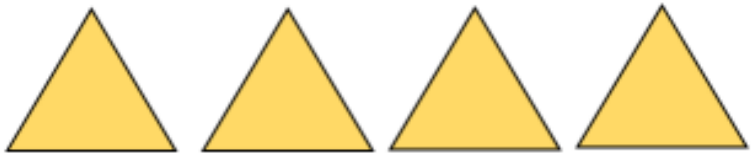
3's

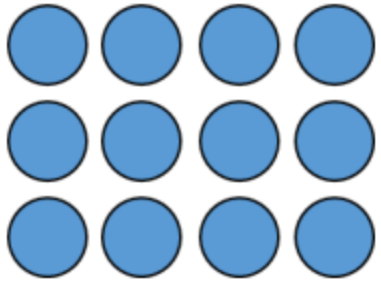
How?

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the three times table, using concrete manipulatives to support. Notice the odd, even, odd, even pattern using number shapes to support. Highlight the pattern in the ones using a hundred square.

Resources





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

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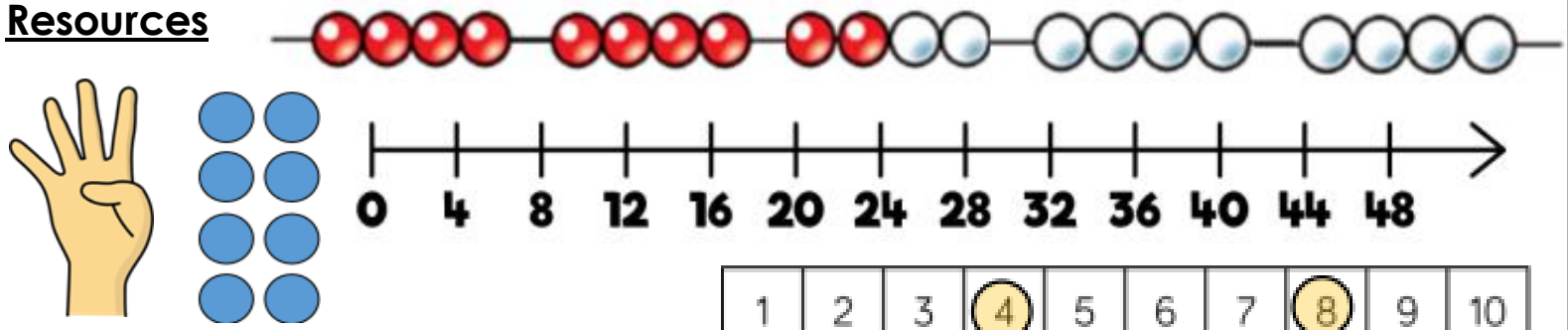
Times Tables

4's

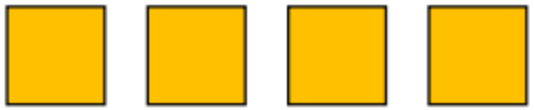
How?

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the twos. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Resources



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	20
24	28	32	36	40
44	48	52	56	60

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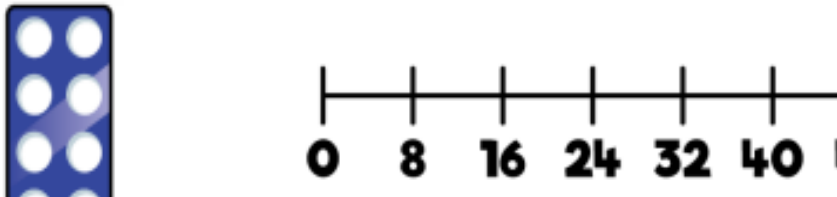
Times Tables

8's

How?

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Resources



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

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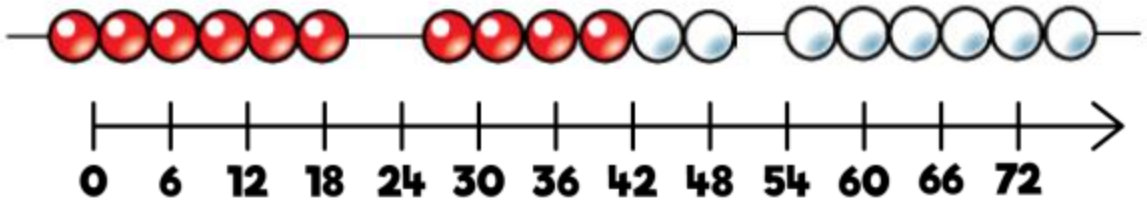
Times Tables

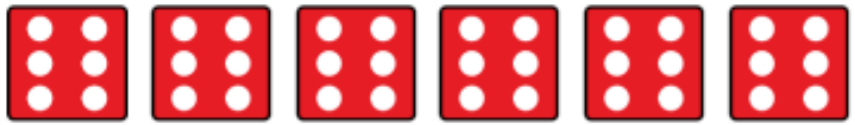
6's

How?

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the six times table, using manipulatives to support. Make links to the 3 times table, seeing how each multiple is double the threes. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Resources





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

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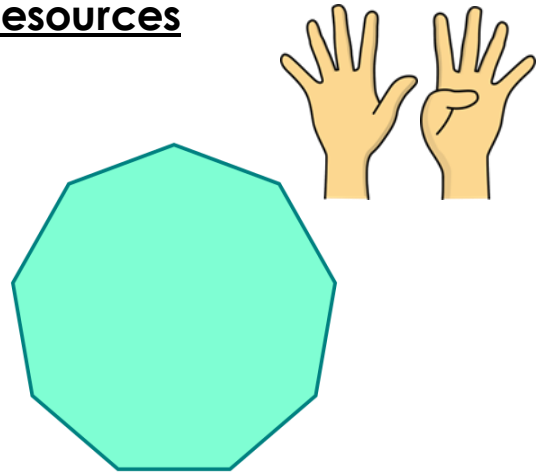
Times Tables

9's

How?

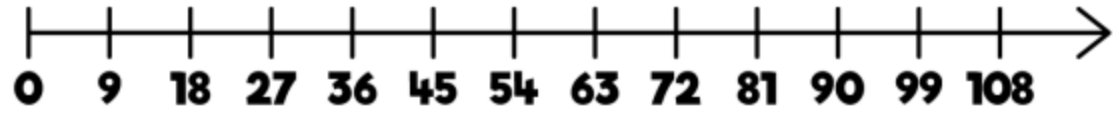
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as noting the odd, even pattern within the multiples.

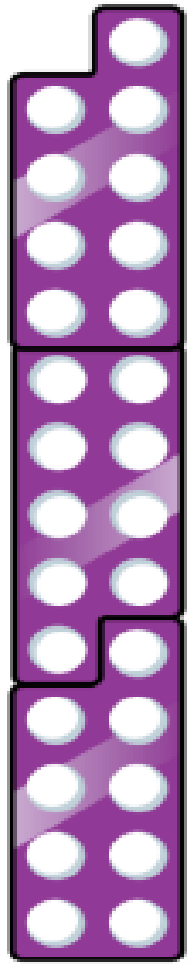
Resources



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





Rose Hill Primary School

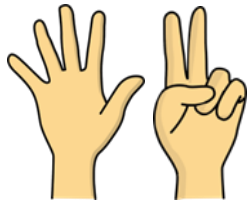
Times Tables

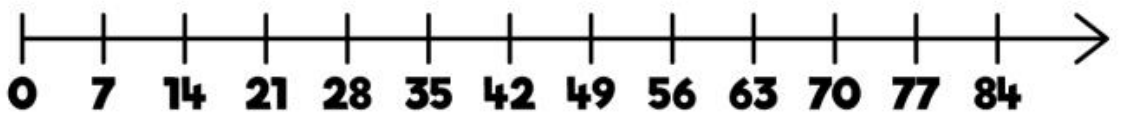
7's

How?

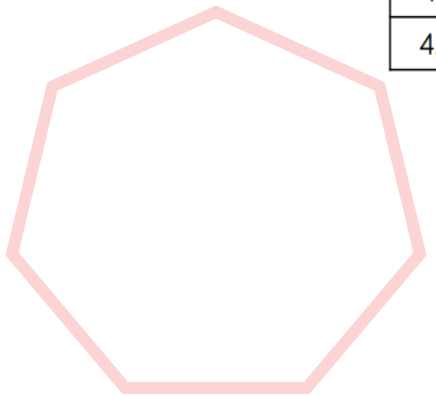
Encourage daily counting in multiples both forwards and backwards, supported by a number line or a hundred square. The seven times table can be trickier to learn due to the lack of obvious pattern in the numbers, however they already know several facts due to commutativity. Children can still see the odd, even pattern in the multiples using number shapes to support.

Resources





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

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Times Tables

11's

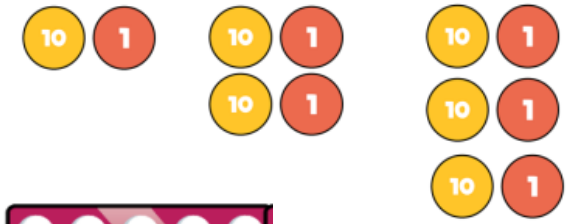
How?

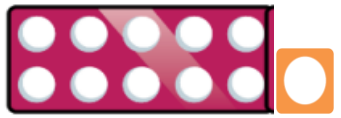
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after crossing 100.

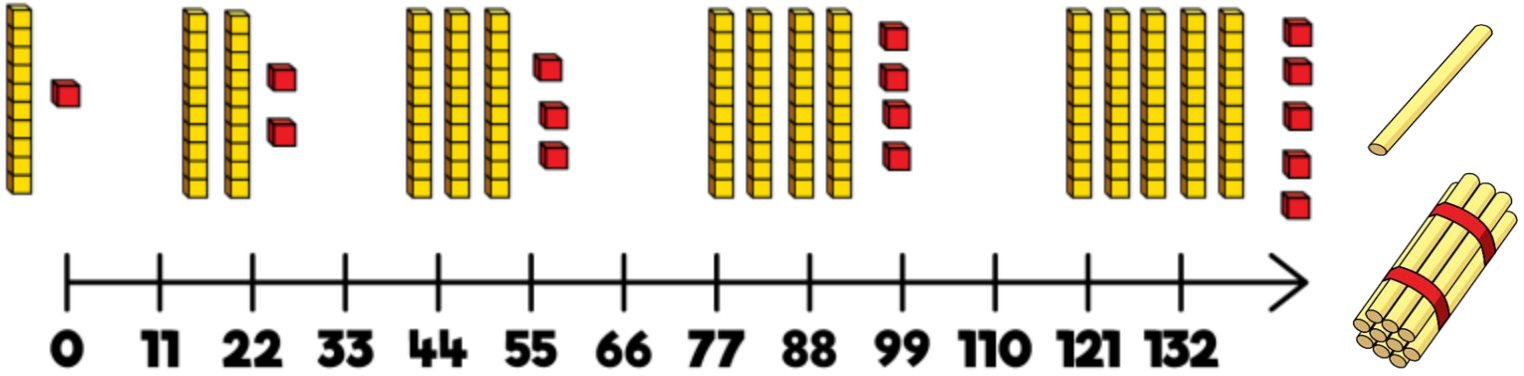
Resources

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



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Times Tables

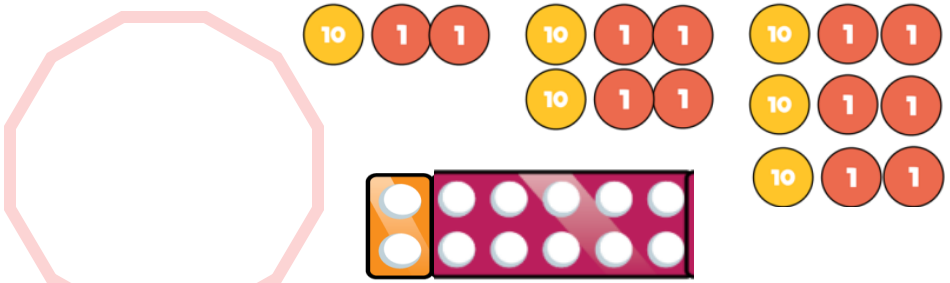
12's

How?

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the 12 times table, using manipulatives to support. Make links to the 6 times table, seeing how each multiple is double the sixes. Notice the pattern in the ones within each group of five multiples. The hundred square can support in highlighting this pattern.

Resources

12	24	36	48	60
72	84	96	108	120
132	144			



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