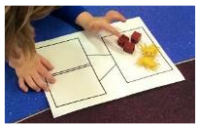
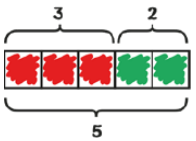
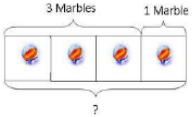
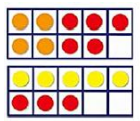
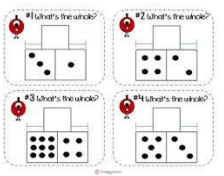
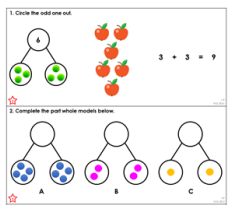
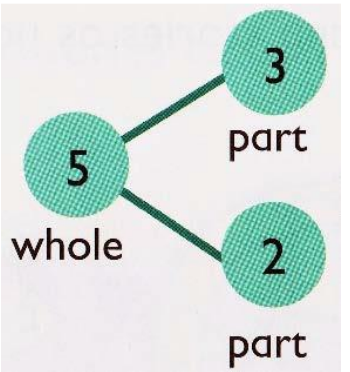
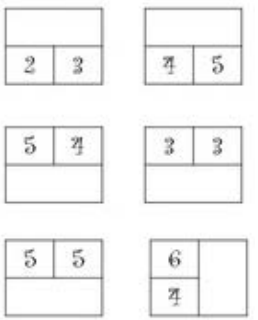
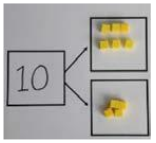
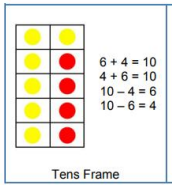
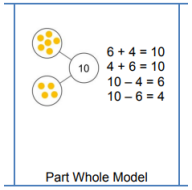
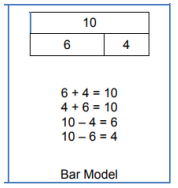
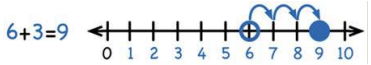
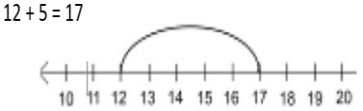
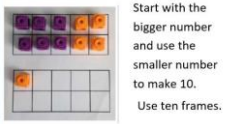
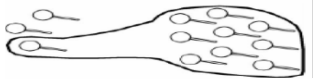
Addition

EYFS

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Knows that a group of things change in quantity when something is added. Find the total number of items in two groups by counting all of them. Says the number that is one more than a given number. Finds one more from a group of up to five objects, then ten objects. In practical activities and discussion, beginning to use the vocabulary involved in adding. Using quantities and objects, they add two single digit numbers and count on to find the answer. Solve problems including doubling.	   Use toys and general classroom resources for children to physically manipulate, group/regroup.   Use specific maths resources such as counters, snap cubes, Numicon etc.    Use visual supports such as ten frames, part part whole and addition mats, with the physical objects and resources that can be manipulated.	  Two groups of pictures so children are able to count the total.  Bar model using visuals, pictures/icons or colours.    Use visual supports such as ten frames, part part whole and addition mats with pictures/icons. 	A focus on symbols and numbers to form a calculation. $5+2=7$   * No expectation for children to be able to record a number sentence/addition calculation.	• **add** • **plus** • **and** • **altogether** • **more** • **make** • **total** • **how many more to make?** • **numbers (zero – twenty and beyond)** • **greater** • **subitise** • **part-whole** • **five/ten frame** • **group**

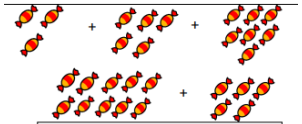
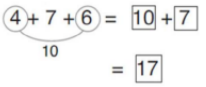
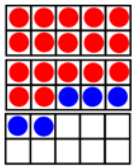
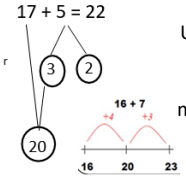
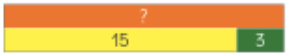
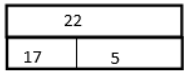
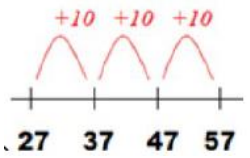
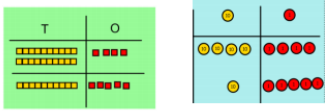
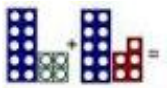
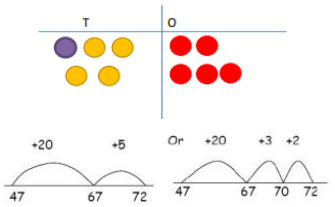
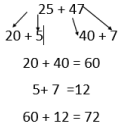
Addition

Year 1

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Combining two parts to make a whole: part- whole model	 Use cubes to add two numbers together as a group or in a bar. (Some children may still need to use real objects)  Use part-whole model	 Use pictures to add two numbers together as a group or in a bar.  The Bar Model will be continued from EYFS as a method to support problem solving involving addition, continuing with the concrete representations and moving onto using pictorial representations of objects.	 Use the part-part whole diagram as shown above to move into the abstract. 4 + 3 = 7 10= 6 + 4	• add • more • Plus • and • make • altogether • total • equal to • equals • double • most • count on • number line • balancing • part • Part-whole
Represent and use number bonds and related subtraction facts within 20			 Bar model and part-whole to be used alongside abstract	
Addition and subtraction of one-digit and two-digit numbers to 20 including 0.		 Use a number line to count on in ones.	4 + 11 = 15 15 = 11 + 4	
Start at the bigger number and counting on	Start with the larger number on the bead string and then count of to the smaller number 1 by 1 to find the answer.		Place the larger number in your head and count on the smaller number to find your answer.	
Regrouping to make 10	 	 Use pictures or a number line. Regroup or partition the smaller number using the part-whole model to make 10.	7 + 4= 11 If I am at seven, how many more do I need to make 10? How many more do I add on now?	

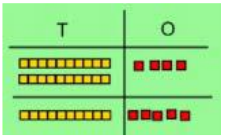
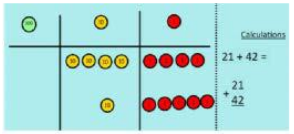
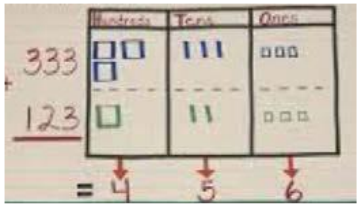
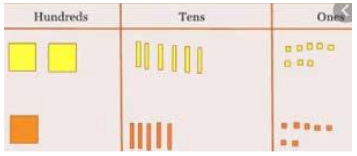
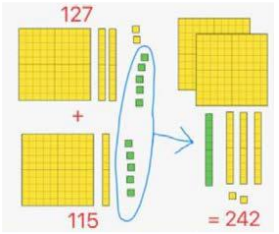
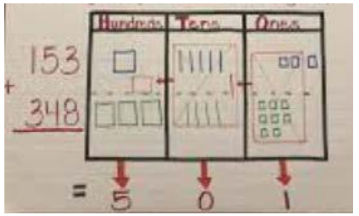
Addition

Year 2

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Adding 3 1-digit numbers	**4 + 7 + 6= 17** Put 4 and 6 together to make 10. Add on 7. 	 Add together three groups of objects. Draw a picture to recombine the groups to make 10.	 Combine the two numbers that make 10 and then add on the remainder.	• add • more • plus • and • make • altogether • total • equal to • equals • double • most • count on • number line • sum • tens • units • partition • addition • column • tens • boundary
Adding a 2-digit number and ones	 Children explore the pattern. 17 + 5 = 22 27 + 5 = 32	17 + 5 = 22  Using part-whole model and number line to model. Use of bar model. 	17 + 5 = 22 Explore related facts 17 + 5 = 22 5 + 17 = 22 22—17 = 5 22—5 = 17 	
Adding a 2-digit number and multiples of 10	 25 + 10 = 35 Explore that the ones digit does not change	**27 + 30**  The calculation will be shown alongside the number line to see the connection	27 + 10 = 37 27 + 20 = 47 27 + 30 = 57	
Adding two 2-digit numbers (No re-grouping)	**24 + 15=** Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters.   Numicon may also be used, especially for children not ready for place value counters.	 Use number line and bridge ten using part whole if necessary.	 Partitioning 40 + 7 30 + 5 70 + 12 Recording addition in columns supports place value and prepares for formal written methods with larger numbers.	

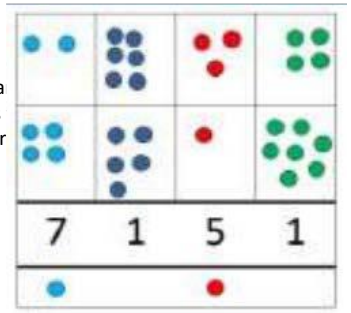
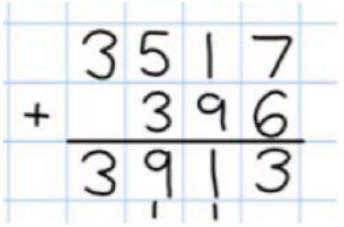
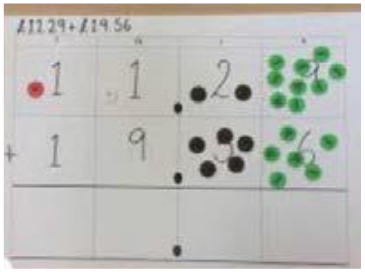
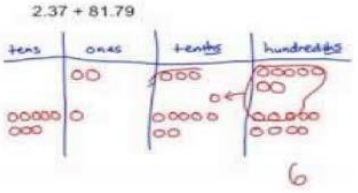
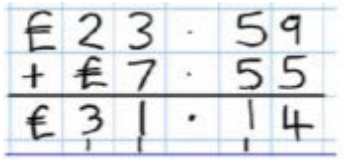
Addition

Year 3

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Add and subtract numbers with up to 3-digits, using formal written methods of columnar addition Column addition (no regrouping)	 Using manipulatives children are to line up hundreds, tens and ones.  Children should be secure with using PV counters before moving onto pictorial.	 Children are to draw, in a PV chart, the manipulatives, that they are using. Secure knowledge of representation with the PV columns.	2 2 3 + 1 1 4 3 3 7	• addition • add • more • and • make • sum • total • altogether • double • near double • half • halve • tens • hundreds • regrouping • carrying • exchange
Column addition (with regrouping)	  Exchange ten ones for a ten	 Children can draw a representation of the grid to further support their understanding, carrying the ten underneath the line.	536 + 85 621 1 1	

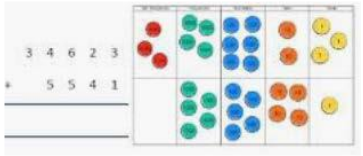
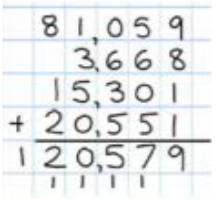
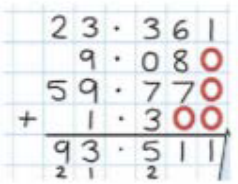
Addition

Year 4

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Using formal written methods of column addition where appropriate Add numbers with up to 4 digits (with exchange)	 Children continue to use place value charts to add, exchanging ten ones for a ten and ten tens for a hundred etc.	 Children can draw a pictorial representation of the columns and place value counters		• addition • add • more • and • make • sum • total • altogether • double • near double • half • halve • tens • Hundreds • thousands • regrouping • carrying • exchange • decimal • decimal point • tenths • hundredths
Add decimals with 2 decimal places, including money	 Introduce decimal place value counters and model exchange			

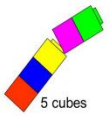
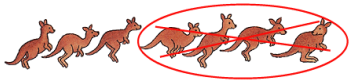
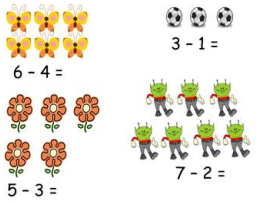
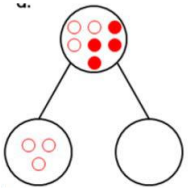
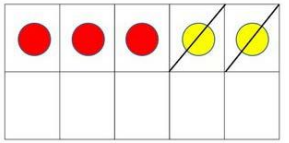
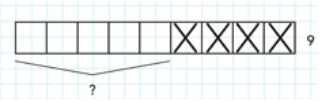
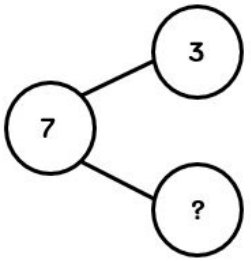
Addition

Year 5-6

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Add numbers with more than 4 digits.	As previous	As previous	 Children should have abstract supported by a pictorial or concrete if needed.	• addition • add • more • and • make • sum • total • altogether • double • near double • half • halve • tens • Hundreds • thousands • regrouping • carrying • exchange • decimal • decimal point • tenths • hundredths
Add several numbers of increasing complexity, including adding money, measure and decimals with different numbers of decimal points.	As previous	As previous	  Inserting zeros as place holders	

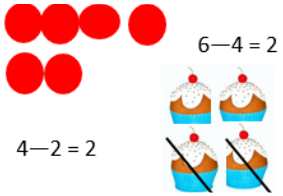
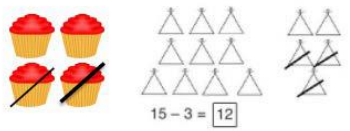
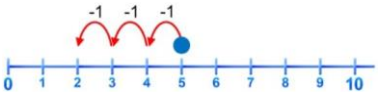
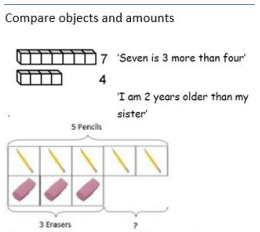
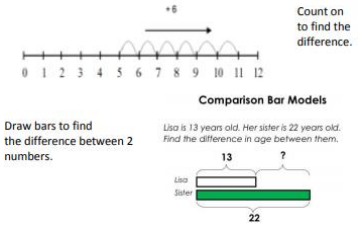
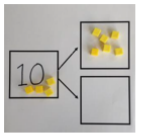
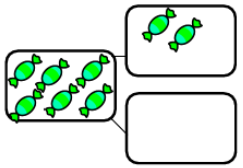
Subtraction

EYFS

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Knows that a group of things change in quantity when something is taken away Find one less from a group of five objects, then ten objects. In practical activities and discussion, beginning to use the vocabulary involved in subtracting. Using quantities and objects, they subtract two single digit numbers and count back.	   Use toys and general classroom resources for children to physically manipulate, group/regroup.  5 cubes 'take away' 2 cubes 3 are left  Use specific maths resources such as snap cubes, Numicon etc.   Use visual supports such as ten frames, part part whole and subtraction mats, with the physical objects and resources that can be manipulated.	  6 - 4 = 3 - 1 = 5 - 3 = 7 - 2 = A group of pictures for the children to cross out or cover up.    Use visual supports such as ten frames, part part whole and addition mats with pictures/icons.	A focus on symbols and numbers to form a calculation.  10 - 1 = ? 10 - 6 = 4 3 ? 7 7 - 3 = ?  3 7 ? * No expectation for children to be able to record a number sentence/addition calculation.	• subtract • take away • and • less than • make • total • how many less? • numbers (zero – twenty and beyond) • fewer • subitise • part-whole • five/ten frame • group

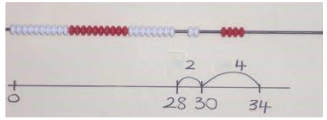
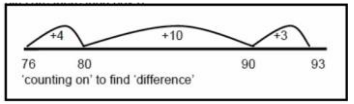
Subtraction

Year 1

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Subtract one-digit and two-digit numbers to 20, including 0. Taking away ones	 Use physical objects to show how objects can be taken away.	Cross out drawn objects to show what has been taken away. 	7—4 = 3 16—9 = 7	• **equal to** • **take-away** • **less** • **minus** • **subtract** • **leaves** • **distance between** • **how many more?** • **how many fewer/less than?** • **most** • **least count back** • **how many left?** • **how much less is…?**
Counting back	Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones. **13 – 4**  Use counters and move them away from the group as you take them away counting backwards as you go. 	 Count back on a number line or track Start at the bigger number and count back the smaller number showing the jumps on the number line.	Put 13 in your head, count back 4. What number are you at? (Use your fingers to help you)	
Find the difference	Compare objects and amounts  Lay objects to represent bar model.		Hannah has 12 sweets and her sister has 5. How many more does Hannah have than her sister?	
Represent and use number bonds and related subtraction facts within 20 Part-part whole model	 Link to addition. Use PPW model to model the inverse. If 10 is the whole and 6 is one of the arts, what s the other part? 10—6 = 4	 Use a pictorial representation of objects to show the part-part whole model	 Move to using numbers within the part whole model.	

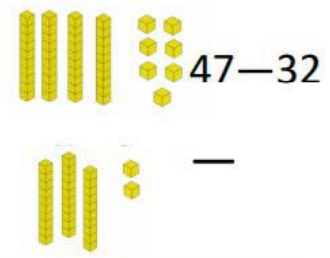
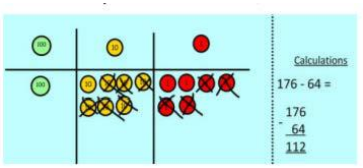
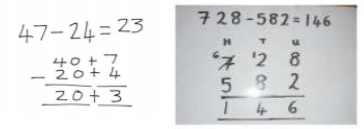
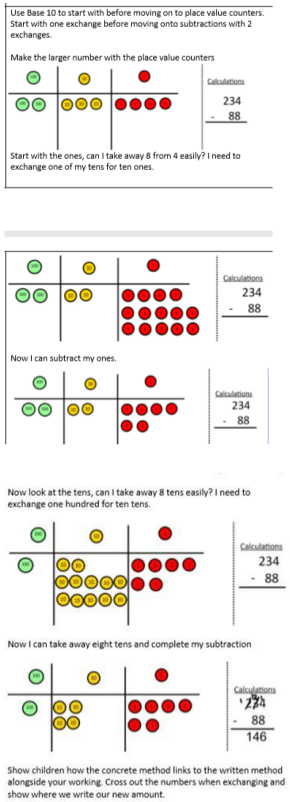
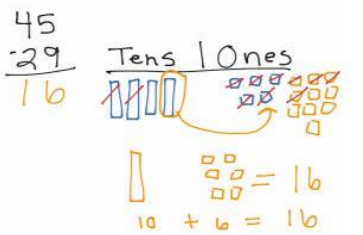
Subtraction

Year 2

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Subtract a two-digit number and ones, a two-digit number and tens, two two-digit numbers Partitioning to subtract without re-grouping: 'Friendly numbers'	34—13 = 21  Use dienes to show how to partition the number when subtracting without regrouping  	Children draw representations of Dienes and cross off.  43—21 = 22	**43—21 = 22** Recording subtraction in columns supports place value and prepares for formal written methods with larger numbers. Toward the end of the year, children move to more formal recording using partitioning method:	• **equal to** • **take-away** • **less** • **minus** • **subtract** • **leaves** • **distance between** • **how many more?** • **how many fewer/less than?** • **most** • **least count back** • **how many left?** • **how much less is…?** • **difference** • **count on** • **strategy** • **partition** • **tens** • **ones**
Make ten strategy	 34—28 Use a bead string to model counting to next ten and the rest	 'counting on' to find 'difference' Use a number line to model counting to next ten and the rest	93—76 = 17	

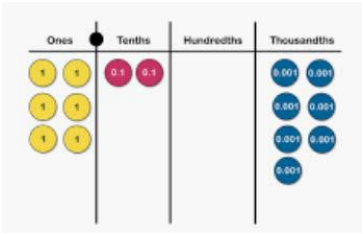
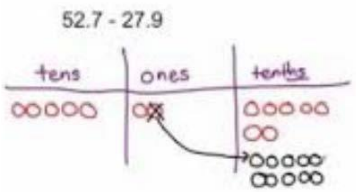
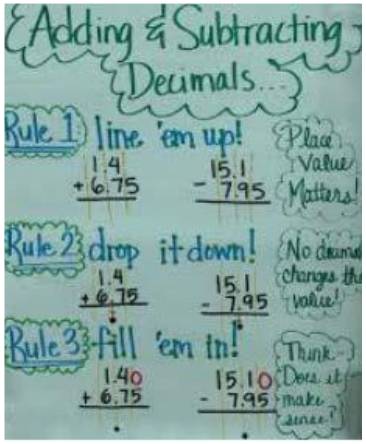
Subtraction

Year 3

Objectives	Concrete	Pictorial	Abstract	Vocabulary
To subtract numbers with up to three-digits, using formal written methods of column subtraction Column subtraction (without exchanging)	 Use base 10 or Numicon to model	 Secure knowledge of place value chart needed	Children should begin with the expanded form. Moving onto a more formal way as below.  	• **equal to** • **take-away** • **less** • **minus** • **subtract** • **leaves** • **distance between** • **how many more?** • **how many fewer/less than?** • **most** • **least count back** • **how many left?** • **how much less is…?** • **difference** • **count on** • **strategy** • **partition** • **tens** • **ones**
Column Subtraction (with exchanging)		 When confident, children can find their own way to record the exchange/regrouping	Children should begin with the expanded form. Moving onto a more formal way as below.  	

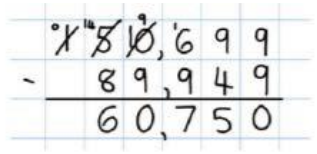
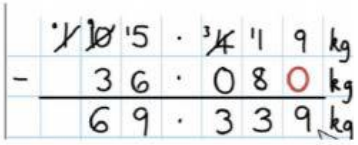
Subtraction

Year 4

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Subtract numbers with up to 4 digits using the formal written methods appropriate of column subtraction where appropriate	Model process of exchange using Numicon, base ten and then move to PV counters. Use the phrase 'take and make' for exchange- see Y3	Children to draw pv counters and show their exchange—see Y3	 This will lead to an understanding of subtracting any number including decimals	• equal to • take-away • less • minus • subtract • leaves • distance between • how many more? • how many fewer/less than? • most • least count back • how many left? • how much less is…? • difference • count on • strategy • partition • tens • ones
Introduce decimal subtraction through context of money	 Children to be encouraged to use counters to represent numbers and take counters away to subtract.	 When confident, children can find their own way to record the exchange/regrouping		

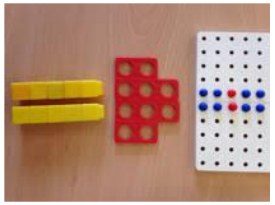
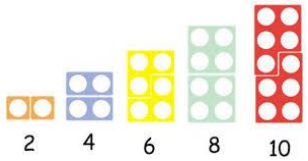
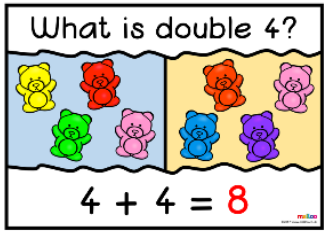
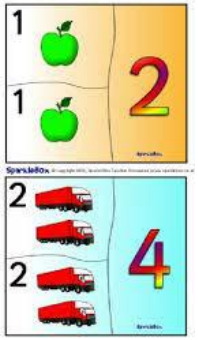
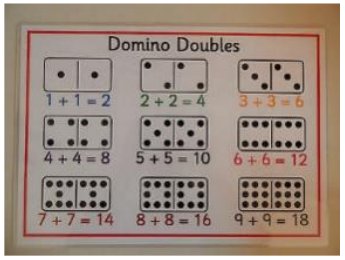
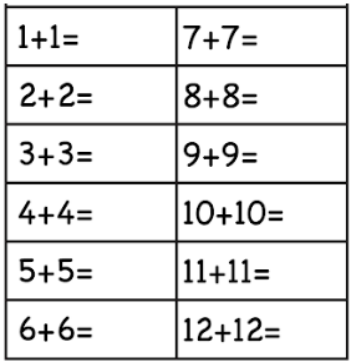
Subtraction

Year 5-6

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Subtract with at least 4 digits, including money and measures. Subtract with increasingly large and more complex numbers and decimal values (up to 3 decimal place).	See previous	See previous	  	• **equal to** • **take-away** • **less** • **minus** • **subtract** • **leaves** • **distance between** • **how many more?** • **how many fewer/less than?** • **most** • **least count back** • **how many left?** • **how much less is…?** • **difference** • **count on** • **strategy** • **partition** • **tens** • **ones**

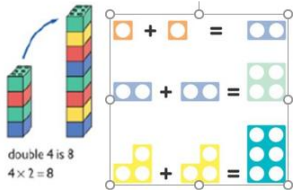
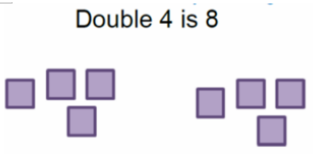
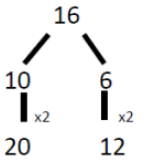
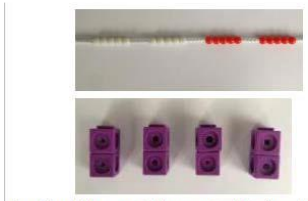
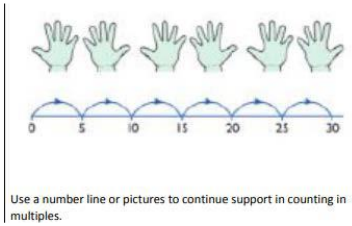
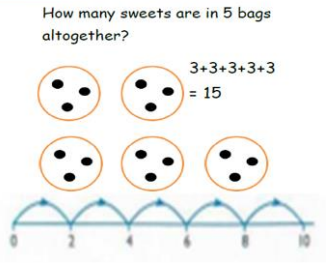
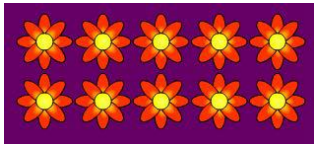
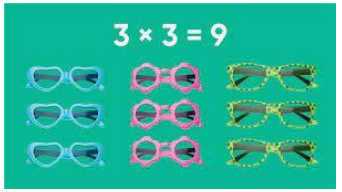
Multiplication

EYFS

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Solve problems including doubling	  Counting and other maths resources for children to make 2 equal groups.   Physical and real life examples that encourage children to see concept of doubling as adding two equal groups.	   Pictures and icons that encourage children to see concept of doubling as adding two equal groups.	 Addition calculations to model adding two equal groups..	• **groups of** • **lots of** • **times** • **array** • **altogether** • **multiply** • **double**

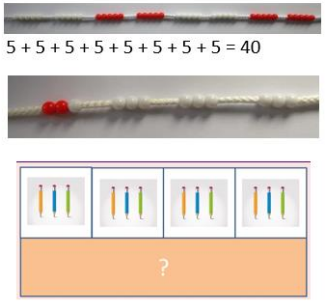
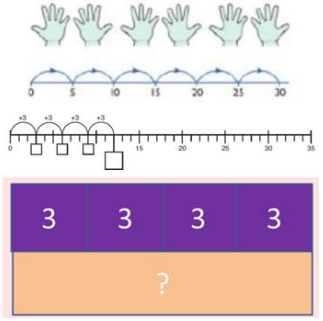
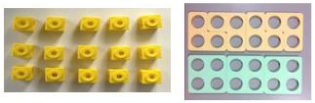
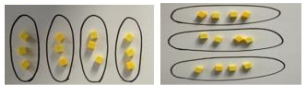
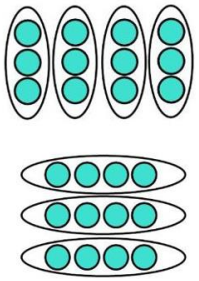
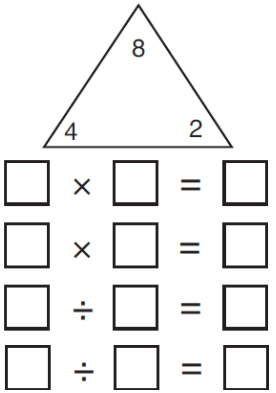
Multiplication

Year 1

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Doubling	 Use practical resources as manipulatives	 Draw pictures to show how to double numbers.	 Partition a number and then double each part before recombining.	• **groups of** • **lots of** • **times** • **array** • **altogether** • **multiply** • **double**
Counting in multiples	 Count in multiples supported by concrete objects in equal groups.	 Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. **2, 4, 6, 8, 10** **5, 10, 15, 20, 25, 30**	
Repeated addition	 Use different objects to add equal groups.		Write addition sentences to describe objects and pictures. 	
Understanding arrays	Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc. 		3 x 2 = 6 2 x 5 = 10	

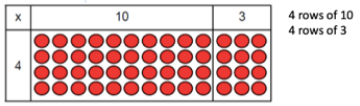
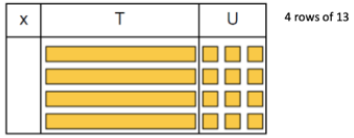
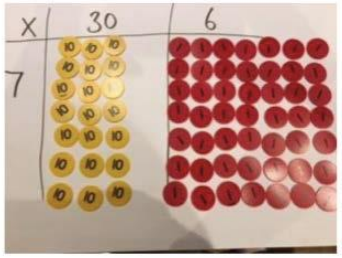
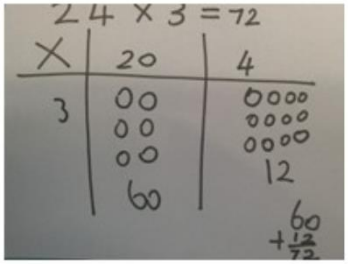
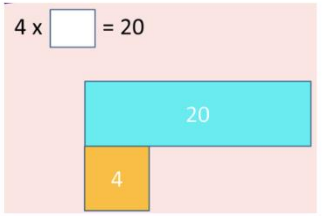
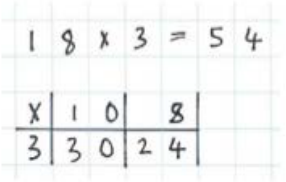
Multiplication

Year 2

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Counting in multiples of 2,3 4, 5 and 10 from 0 (repeated addition)			Count in multiples of a number aloud. Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25 , 30 $4 \times 3 = \square$	• groups of • lots of • times • array • altogether • multiply • double • multiplied by • repeated addition • sets of • equal groups • commutative
Multiplication is commutative	 Pupils should understand that an array can represent different equations, and that the order of multiplication does not affect the answer. 	Use representations of arrays to show different calculations and explore commutativity. 	12 = 3 × 4 12 = 4 × 3 Use an array to write multiplication sentences and reinforce repeated addition.  5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15	
Using the inverse (This should be taught alongside division)			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8÷ 2 Show all 8 related fact family sentences.	

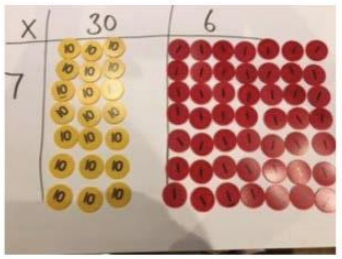
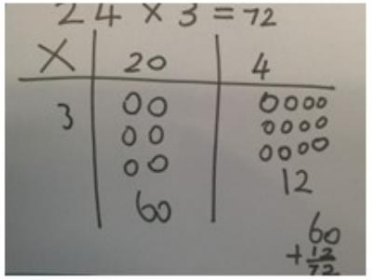
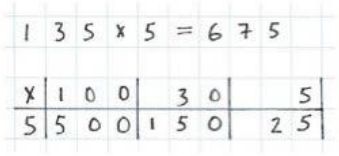
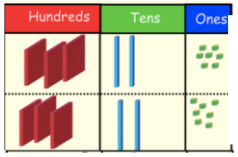
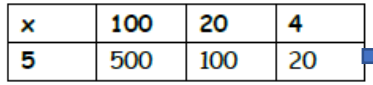
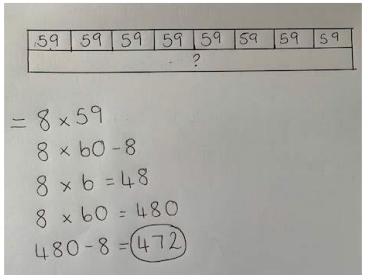
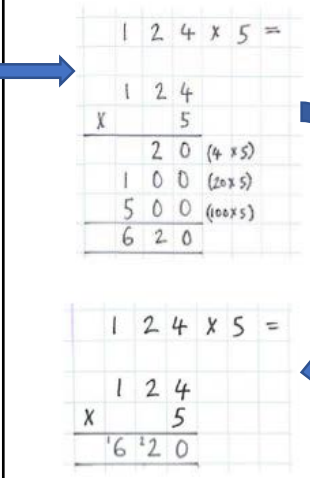
Multiplication

Year 3

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Multiply 2-digit number by a 1-digit number Grid method Solving problems including integer problems and scaling problems	Show the link with arrays to first introduce the grid method.  Move on to using Base 10 to move towards a more compact method.  Move on to place value counters to show how we are finding groups of a number  Add up each column, starting with the ones making any exchanges needed.	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.  Bar model are used to explore missing numbers 	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. 	• groups of • lots of • times • array • altogether • multiply • double • multiplied by • repeated addition • sets of • equal groups • commutative • product • scale

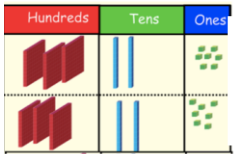
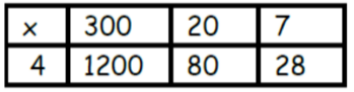
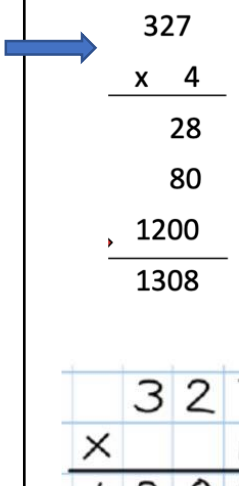
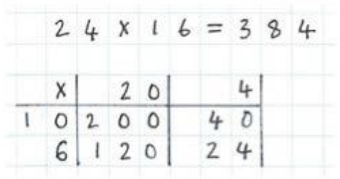
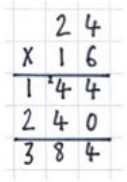
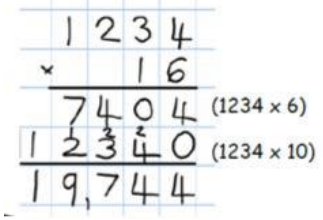
Multiplication

Year 4

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Grid method recap Multiplying numbers by 1 digit (year 4 expectation)	 Move on to place value counters to show how we are finding groups of a number.We are multiplying by 4 so we need 4 rows.  Calculations 4 x 126 Fill each row with 126.  Calculations 4 x 126 Add up each column, starting with the ones making any exchanges needed.	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.  	 	• groups of • lots of • times • array • altogether • multiply • double • multiplied by • repeated addition • sets of • equal groups • commutative • product • scale • multiples • scale • inverse • derive
Column multiplication	Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. 321 x 2 = 642  	  	 	

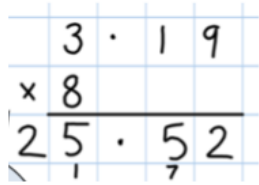
Multiplication

Year 5

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Multiply numbers up to 4-digits by a one-digit number using the format written method, including long multiplication for 2-digit numbers Column multiplication for 3 and 4 digits x 1 digit	Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. 321 x 2 = 642 	 	• groups of • lots of • times • array • altogether • multiply • double • multiplied by • repeated addition • sets of • equal groups • commutative • product • scale • factor pairs • composite • cubed • prime • squares
Column multiplication (long multiplication)	Manipulatives may still be used with the corresponding long multiplication modelled alongside	Moving forward, multiply by a 2 digit number showing the different rows within the grid method. 	 24 x 6 on the first row. (6 x 4 = 24, carrying the 2 for the 20, then 6 x 2) 24 x 10 on the second row. Show multiplying by 10 by putting zero in the units first. 	

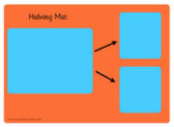
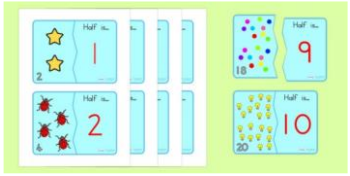
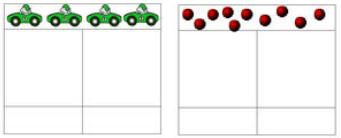
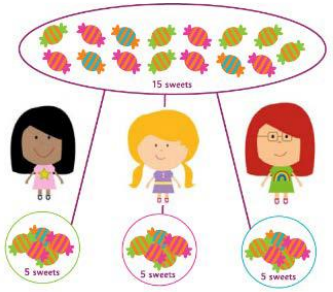
Multiplication

Year 6

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Multiply decimal up to 2 decimal place by a single digit.	See previous	See previous	Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer. 	• **groups of** • **lots of** • **times** • **array** • **altogether** • **multiply** • **double** • **multiplied by** • **repeated addition** • **sets of** • **equal groups** • **commutative** • **product** • **scale**

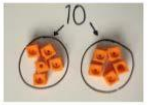
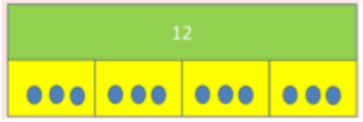
Division

EYFS

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Solve problems including halving and sharing. • Halving a whole, halving a quantity of objects. • Sharing a quantity of objects.	    Children have the opportunity to physically cut objects, food or shapes in half.   Use visual supports such as halving mats and part whole, with the physical objects and resources that can be manipulated.  Counting and other maths resources for children to explore sharing between 3 or more.	 Pictures and icons that encourage children to see concept of halving in relation to subitising, addition and subtraction knowledge. i.e. Knowing 4 is made of 2 groups of 2, so half of 4 is 2.   Pictures for children to create and visualise 3 or more equal groups.		

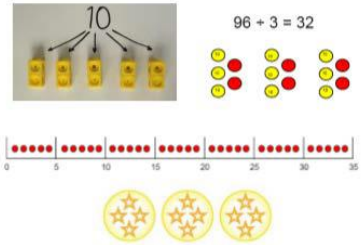
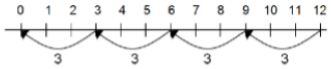
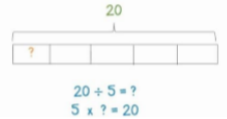
Division

Year 1

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Division as sharing	   I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  8 ÷ 2 = 4 Children use bar modelling to show and support understanding.  12 ÷ 4 = 3	**Share 9 buns between three people.** **9 ÷ 3 = 3**	• **share** • **share equally** • **one each** • **two each…** • **group** • **groups of** • **lots of** • **array**

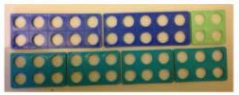
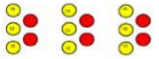
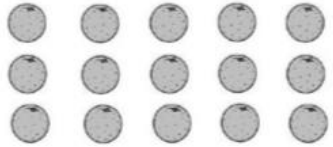
Division

Year 2

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding. 	Use a number line to show jumps in groups. The number of jumps equals the number of groups.  Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group. 	**28 ÷ 7 = 4** **Divide 28 into 7 groups. How many are in each group?**	• **share** • **share equally** • **one each** • **two each…** • **group** • **groups of** • **lots of** • **array** • **divide** • **divided by** • **divided into** • **division** • **grouping** • **number line** • **left** • **left over**

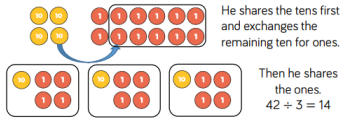
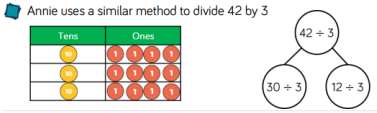
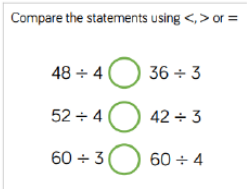
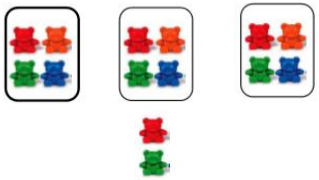
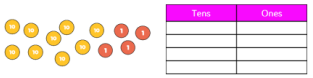
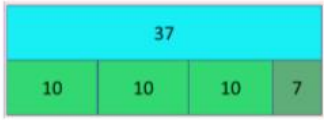
Division

Year 3 (1)

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Division as grouping	Use cubes, counters, objects or place value counters to aid understanding.  24 divided into groups of 6 = 4 96 ÷ 3 = 32 	Continue to use bar modelling to aid solving division problems.  20 ÷ 5 = ? 5 x ? = 20	How many groups of 6 in 24? 24 ÷ 6 = 4	• share • share equally • one each • two each… • group • groups of • lots of • array • divide • divided by • divided into • division • grouping • number line • left • left over • product
Division with arrays	 Link division to multiplication by creating an array and thinking about the number sentenc-es that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15	Draw an array and use lines to split the array into groups to make multiplication and division sentences 	Find the inverse of multiplication and division sentences by creating eight linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 28 = 7 x 4 28 = 4 x 7 4 = 28 ÷ 7 7 = 28 ÷ 4	
Divide 2-digit numbers by a 1-digit number by partitioning	Eva uses a place value grid and part-whole model to solve 66÷ 3  			

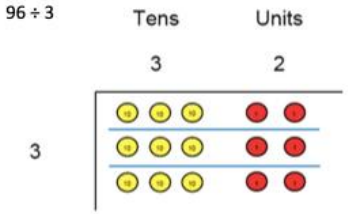
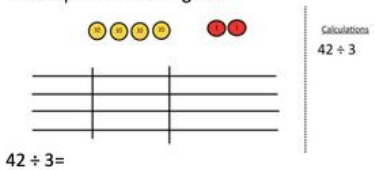
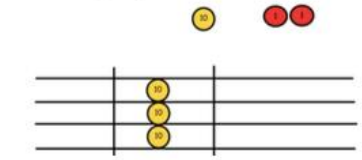
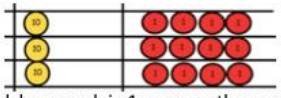
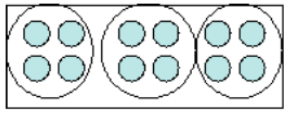
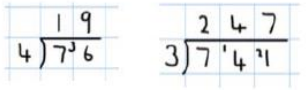
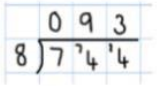
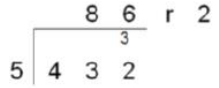
Division

Year 3 (2)

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Divide numbers that involve exchanging between the tens and ones. The answers do not have remainders.	Ron uses place value counters to divide 42 into three equal groups.  He shares the tens first and exchanges the remaining ten for ones. Then he shares the ones. 42 ÷ 3 = 14	Children may use pictorial representation for the pv counters, alongside the part-whole model Children use their times-tables to partition the number into multiples of the divisor. Annie uses a similar method to divide 42 by 3  	96 ÷ 8 96 ÷ 4 96 ÷ 3 96 ÷ 6  	• share • share equally • one each • two each… • group • groups of • lots of • array • divide • divided by • divided into • division • grouping • number line • left • left over • product
Division with remainders	14 ÷ 3 = Divide objects between groups and see how much is left over  Use place value counters to work out 94 ÷ 4 Did you need to exchange any tens for ones? Is there a remainder?  29	Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.  Draw dots and group them to divide an amount and clearly show a remainder.  Use bar models to show division with remainders.  	Complete written divisions and show the remainder using r.  	

Division

Year 4

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Divide up to 3 digit numbers by 1 digit. Short Division	96 ÷ 3  Use place value counters to divide using the bus stop method alongside  42 ÷ 3= Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.  We exchange this ten for ten ones and then share the ones equally among the groups.  We look how much in 1 group so the answer is 14.	Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.  Encourage them to move towards counting in multiples to divide more efficiently.	Begin with divisions that divide equally with no remainder  Children should be aware that a 0 is used to keep place value, if the number is not divisible.  Move onto divisions with a remainder.  	• share • share equally • one each • two each… • group • groups of • lots of • array • divide • divided by • divided into • division • grouping • number line • left • left over • product • division facts • inverse • derive

Division

Year 5

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Divide at least 4 digit numbers by 1 digit. Interpret remainders appropriately for the context Short Division	96 ÷ 3 Tens Units 3 2 3 Use place value counters to divide using the bus stop method alongside Calculations 42 ÷ 3 42 ÷ 3= Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over. We exchange this ten for ten ones and then share the ones equally among the groups. We look how much in 1 group so the answer is 14.	Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups. Encourage them to move towards counting in multiples to divide more efficiently.	0 6 6 3 r 5 8)5 5 3 5 0 2 9 Finally move into decimal places to divide the total accurately. 1 4 . 6 16 21 3 5 5 1 1 . 0	• share • share equally • one each • two each… • group • groups of • lots of • array • divide • divided by • divided into • division • grouping • number line • left • left over • product • division facts • inverse • derive

Division

Year 6 (1)

Objectives	Concrete	Pictorial	Abstract	Vocabulary
Long division			h t o 0 4 1 R1 4) 1 6 5 4 does not go into 1 (hundred). So combine the 1 hundred with the 6 tens (160). 4 goes into 16 four times. 4 goes into 5 once, leaving a remainder of 1. th h t o 0 4 0 0 R7 8) 3 2 0 7 8 does not go into 3 of the thousands. So combine the 3 thousands with the 2 hundreds (3,200). 8 goes into 32 four times (3,200 ÷ 8 = 400) 8 goes into 0 zero times (tens). 8 goes into 7 zero times, and leaves a remainder of 7. h t o 0 6 1 4) 2 4 7 − 4 3 When dividing the ones, 4 goes into 7 one time. Multiply 1 × 4 = 4, write that four under the 7, and subract. This finds us the remainder of 3. Check: 4 × 61 + 3 = 247 th h t o 0 4 0 2 4) 1 6 0 9 − 8 1 When dividing the ones, 4 goes into 9 two times. Multiply 2 × 4 = 8, write that eight under the 9, and subract. This finds us the remainder of 1. Check: 4 × 402 + 1 = 1,609	• share • share equally • one each • two each… • group • groups of • lots of • array • divide • divided by • divided into • division • grouping • number line • left • left over • product • division facts • inverse • derive

Division

Year 6 (2)

Objectives	Concrete	Pictorial	Abstract	Vocabulary

Long division

1. Divide.	2. Multiply & subtract.	3. Drop down the next digit.
t o 2 2) 5 8	t o 2 2) 5 8 - 4 1	t o 2 9 2) 5 8 - 4 ↓ 1 8
Two goes into 5 two times, or 5 tens ÷ 2 = 2 whole tens -- but there is a remainder!	To find it, multiply 2 × 2 = 4, write that 4 under the five, and subtract to find the remainder of 1 ten.	Next, drop down the 8 of the ones next to the leftover 1 ten. You combine the remainder ten with 8 ones, and get 18.

1. Divide.	2. Multiply & subtract.	3. Drop down the next digit.
t o 2 9 2) 5 8 - 4 1 8	t o 2 9 2) 5 8 - 4 1 8 - 1 8 0	t o 2 9 2) 5 8 - 4 1 8 - 1 8 0
Divide 2 into 18. Place 9 into the quotient.	Multiply 9 × 2 = 18, write that 18 under the 18, and subtract.	The division is over since there are no more digits in the dividend. The quotient is 29.

1. Divide.	2. Multiply & subtract.	3. Drop down the next digit.
h t o 1 2) 2 7 8	h t o 1 2) 2 7 8 - 2 0	h t o 1 8 2) 2 7 8 - 2 ↓ 0 7
Two goes into 2 one time, or 2 hundreds ÷ 2 = 1 hundred.	Multiply 1 × 2 = 2, write that 2 under the two, and subtract to find the remainder of zero.	Next, drop down the 7 of the tens next to the zero.
Divide.	**Multiply & subtract.**	**Drop down the next digit.**
h t o 1 3 2) 2 7 8 - 2 0 7	h t o 1 3 2) 2 7 8 - 2 0 7 - 6 1	h t o 1 3 2) 2 7 8 - 2 0 7 - 6 1 8
Divide 2 into 7. Place 3 into the quotient.	Multiply 3 × 2 = 6, write that 6 under the 7, and subtract to find the remainder of 1 ten.	Next, drop down the 8 of the ones next to the 1 leftover ten.
1. Divide.	**2. Multiply & subtract.**	**3. Drop down the next digit.**
h t o 1 3 9 2) 2 7 8 - 2 0 7 - 6 1 8	h t o 1 3 9 2) 2 7 8 - 2 0 7 - 6 1 8 - 1 8 0	h t o 1 3 9 2) 2 7 8 - 2 0 7 - 6 1 8 - 1 8 0
Divide 2 into 18. Place 9 into the quotient.	Multiply 9 × 2 = 18, write that 18 under the 18, and subtract to find the remainder of zero.	There are no more digits to drop down. The quotient is 139.

- share
- share equally
- one each
- two each…
- group
- groups of
- lots of
- array
- divide
- divided by
- divided into
- division
- grouping
- number line
- left
- left over
- product
- division facts
- inverse
- derive