Mornington Primary Calculation Policy

Objective & Strategy	Concrete	Pictorial	Abstract	V
Combining two parts to make a whole: part- whole model	Use part part whole model. Use cubes to add two numbers together as a group or in a bar.	3 yart yhole 2 3 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Balls 2 Bals	4 + 3 = 7 5 3 $10 = 6 + 4$ Use the part-part whole diagram as shown above to move into the abstract.	
Starting at the big- ger number and counting on	Start with the larger number on the bead string and then count on to the smaller num- ber 1 by 1 to find the answer.	12 + 5 = 17 10 11 12 13 14 15 16 17 18 19 20 Start at the larger number on the number line and count on in ones or in one jump to find the answer.	5 + 12 = 17 Place the larger number in your head and count on the smaller number to find your answer.	
Regrouping to make 10. This is an essential skill for column addition later.	6+5=11 Start with the bigger number and use the smaller number to make 10. Use ten frames.	3 + 9 = Use pictures or a number line. Regroup or partition the smaller number using the part part whole model to make 10. $9 + 5 = 14$	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?	
Represent & use number bonds and related subtraction facts within 20	2 more than 5.	$ \begin{array}{c} $	Emphasis should be on the language '1 more than 5 is equal to 6.' '2 more than 5 is 7.' '8 is 3 more than 5.'	

Mornington Primary Calculation Policy

Objective &	Concrete	Pictorial	Abstract
Strategy			
Adding multiples of ten	50= 30 = 20	3 tons + 5 tons = tons 30 + 50 = Use representations for base ten.	20 + 30 = 50 70 = 50 + 20 40 + \Box = 60
Use known number facts Part part whole	Children explore ways of making numbers within 20	20 < 0 = 0 $+ 0 = 20 - 0 = 0$ $+ 0 = 20 - 0 = 0$	+ 1 = 16 $16 - 1 =1 + = 16 $ $16 - = 1$
Using known facts		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3 + 4 = 7 leads to 30 + 40 = 70 leads to 300 + 400 = 700
Bar model	 3 + 4 = 7 	7 + 3 = 10	23 25 ? 23 + 25 = 48

Mornington Primary Calculation Policy

Objective &	Concrete	Pictorial	Abstract	
Strategy				V
Add a two digit number and ones	17 + 5 = 22 Use ten frame to make 'magic ten Children explore the pattern. $17 + 5 = 22$ $27 + 5 = 32$	17 + 5 = 22 Use part part whole and number line to model. 17 + 5 = 22 $3 2$ $16 + 7$ $+4$ $+3$ $16 = 20$ 16	17 + 5 = 22 Explore related facts $17 + 5 = 22$ $5 + 17 = 22$ $22 - 17 = 5$ $17 - 5$ $22 - 5 = 17$	
Add a 2 digit num- ber and tens	25 + 10 = 35 Explore that the ones digit does not change	27 + 30 +10 +10 +10 27 37 47 57	27 + 10 = 37 27 + 20 = 47 27 + □ = 57	
Add two 2-digit numbers	Model using dienes , place value counters and numicon	+20 +5 Or +20 +3 +2 47 67 72 47 67 70 $72Use number line and bridge ten using partwhole if necessary.$	25 + 47 $20 + 5$ $40 + 7$ $20 + 40 = 60$ $5 + 7 = 12$ $60 + 12 = 72$	
Add three 1-digit numbers	Combine to make 10 first if possible, or bridge 10 then add third digit	Regroup and draw representation. + $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$	4 + 7 + 6 = 10 + 7 $= 17$ Combine the two numbers that make/bridge ten then add on the third.	2

[Type here]

Objective &	Concrete	Pictorial	Abstract] _
Strategy				
Column Addition—no regrouping (friendly numbers)	TOModel usingImage: Display blackDisplay blackDisplay blackImage: Display blackImage: Display blackDisplay blackImage: Display blackImage: Display blackDisplay blackImage: Display black<	Children move to drawing the counters using a tens and one frame.	223	
Add two or three 2 or 3- digit numbers.	Add together the ones first, then the tens. 45 34 7 9 Calculations 21+42 = 21	tens ones	+ 1 1 4 3 3 7 Add the ones first, then the tens, then the hundreds.	
Column Addition with regrouping.	Image: Weight of the second se	Children can draw a representation of the grid to	20 + 5	
	15 5 4 8	further support their understanding, carrying the ten <u>underneath</u> the line	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	
	using numicon and pv counters.	5 1	the numbers before formal column to show the exchange. 536 + 85	
			$\frac{621}{11}$	

Objective &	Concrete	Pictorial	Abstract	
Strategy	Children continue to use dienes or pv			Y 4.6
Y4—add numbers with up to 4 digits	counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand.			1 7 7
	Hundreds Tens Ones			AL P
		7 1 5 1		
	IIII ::***	Draw representations using pv grid.	Continue from previous work to carry hundreds as well as tens. Relate to money and measures.	
Y5—add numbers with	As year 4	2.37 + 81.79	72.8	
more than 4 digits. Add decimals with 2 dec- imal places, including money.	tens ones tenths hundredths Image: tens Image: tens Image: tens Image: tens Image: tens Introduce decimal place value counters and model exchange for addition. Image: tens Image: tens	tens ones tents hundredtes 00 000 00000 000 0000 00000 000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000 00000	$ \begin{array}{r} + 54.6 \\ \underline{127.4} \\ 1 1 \\ \underline{127.4} \\ \underline{11} \\ \underline{11} \\ \underline{127.4} \\ \underline{11} \\ \underline{11} \\ \underline{11} \\ \underline{127.4} \\ \underline{11} \\ \underline{11} \\ \underline{127.4} \\ \underline{11} \\ \underline{11} \\ \underline{11} \\ \underline{127.4} \\ \underline{11} \\ \underline{11} \\ \underline{127.4} \\ \underline{11} \\ $	
Y6—add several num- bers of increasing com- plexity	As Y5	As Y5	81,059 3,668 15,301 +20,551 120,579	
measure and decimals with different numbers of decimal points.			Insert zeros for place holders. 2 3 \cdot 3 6 1 9 \cdot 0 8 0 9 \cdot 7 70 + 1 \cdot 3 00 9 3 \cdot 5 1 1 2 1 2	

Objective & Strategy	Concrete	Pictorial	Abstract
Taking away ones.	Use physical objects, counters , cubes etc to show how objects can be taken away. 6-4=2 4-2=2	$\begin{array}{c} & & & & & & \\ & & & & & & \\ & & & & & $	7—4 = 3 16—9 = 7
Counting back		been taken away. $-1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -$	Put 13 in your head, count back 4. What number are you at?
	Move objects away from the group, counting backwards. Move the beads along the bead string as you count backwards.	Count back in ones using a number line.	
Find the Difference	Compare objects and amounts 7 'Seven is 3 more than four' 4 'I am 2 years older than my	Count on using a number line to find the difference.	Hannah has12 sweets and her sister has 5. How many more does Hannah have than her sister.?
	SISTER S Pencils S Pencils S Pencils S Erasers 3 Erasers 2 Lay objects to represent bar model.	$\begin{array}{c} +6 \\ \hline \\ 0 \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 11 \\ 12 \\ 12 \\ 11 \\ 12 \\ 12 \\ 12 \\ 10 \\ 11 \\ 12 \\ 12$	

Objective &	Concrete	Pictorial	Abstract
Strategy			
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 pictorial representations to show the part.	Move to using numbers within the part whole model. 5 12 7
Make 10	14—9	13-7 13-7=6 3 3 3 4 3 3 4 3 4 3 4 4 4 4 4 4 4 4 4 4	16—8 How many do we take off first to get to 10? How many left to take off?
Bar model	5-2 = 3		8 2 10 = 8 + 2 10 = 2 + 8 10-2 = 8 10-8 = 2

Objective & Strategy	Concrete	Pictorial	Abstract	
Regroup a ten into ten ones	Use a PV chart to show how to change a ten into ten ones, use the term 'take and make'	20 - 4 =	20—4 = 16	Y2
Partitioning to sub- tract without re- grouping. 'Friendly numbers'	34-13 = 21	Children draw representations of Dienes and cross off. Children draw representations of Dienes and diamondation of Dienes and diamond the descent fraction of Dienes and diamond the descent fracti	43—21 = 22	UBTR
Make ten strategy Progression should be crossing one ten, crossing more than one ten, cross- ing the hundreds.	34-28 Use a bead bar or bead strings to model counting to next ten and the rest.	4+4 $+10$ $+376$ 80 90 93 'counting on' to find 'difference' Use a number line to count on to next ten and then the rest.	93—76 = 17	C
Column subtraction without regrouping (friendly numbers)	Use base 10 or Numicon to model	Darw representations to support under- standing	$47 - 24 = 23$ $-\frac{40 + 74}{20 + 3}$ Intermediate step may be needed to lead to clear subtraction under- standing. 32 -12 20	

Objective &	Concrete	Pictorial	Abstract	_
Strategy				
Column subtraction without regrouping (friendly numbers)	47—32	$\begin{array}{c} \hline \hline$	47 - 24 = 23 $-\frac{20 + 7}{20 + 3}$	Y 3
	Use base 10 or Numicon to model	Darw representations to support under- standing	Intermediate step may be needed to lead to clear subtraction under- standing.	2
Column subtraction with regrouping	Tens Units	45 -29 Tens lones 16 HALL DE	836 - 254 = 582 Begin by parti- tioning into pv - 200 50 4 500 80 2	
	Begin with base 10 or Numicon. Move to pv counters, modelling the exchange of a ten into tten ones. Use the phrase 'take and make' for exchange.	Children may draw base ten or PV counters and cross off.	728-582=146 Then move to formal method. 4^{+} 7^{-} 5^{-} 8^{-} 1^{-} 4^{-}	R

Objective &	Concrete	Pictorial	Abstract	
Subtracting tens and ones Year 4 subtract with up to 4 digits. Introduce decimal subtrac- tion through context of money	234 - 179	Children to draw pv counters and show their exchange—see Y3	$\begin{array}{c c} & & & & \\ & & & & \\ \hline & & & & \\ \hline & & & &$	
Year 5- Subtract with at least 4 dig- its, including money and measures. Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal	As Year 4	Children to draw pv counters and show their exchange—see Y3	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	STRAC
Year 6—Subtract with increasingly large and more complex numbers and decimal values.			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	

Objective &	Concrete	Pictorial	Abstract
Strategy			
Doubling	Use practical activities using manip- ultives including cubes and Numicon to demonstrate doubling $+ \square = \square$ $+ \square = \square$ double 4 is 8 $4 \times 2 = 8$	Draw pictures to show how to double numbers	Partition a number and then double each part before recombining it back together. 16 10 10 10 10 10 10 10 10 10 10 12 12 = 32
Counting in multi- ples	Count the groups as children are skip counting, children may use their fin- gers as they are skip counting.	Children make representations to show counting in multiples. $2 \begin{array}{c} 2 \\ 2 \\ 2 \\ 4 \end{array} \begin{array}{c} 2 \\ 6 \\ 8 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 12 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \\ 10 \\ 10 \end{array} \begin{array}{c} 2 \\ 10 \end{array} \begin{array}{c} 2$	Count in multiples of a number aloud. Write sequences with multiples of num- bers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30



	n	Mornington Primary School Calculation	
Making equal groups and counting the total	Use manipulatives to create equal groups.	Draw to show 2 x 3 = 6 Draw and make representations	2 x 4 = 8



Objective &	Concrete	Pictorial	Abstract	
Strategy				
Repeated addition	Use different objects to add equal groups	Use pictorial including number lines to solve prote There are 3 sweets in one bag. How many sweets are in 5 bags altogether? 3+3+3+3+3 = 15 	Write addition sentences to describe objects and pictures. $\underbrace{\begin{array}{c} \hline \\ \hline $	
Understanding ar- rays	Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc.	Draw representations of arrays to show under- standing	3 x 2 = 6 2 x 5 = 10	

Objective &	Concrete	Pictorial	Abstract
Strategy			
Doubling	Model doubling using dienes and PV counters.	Draw pictures and representations to show how to double numbers	Partition a number and then double each part before recombining it back together.
	40 + 12 = 52		$ \begin{array}{c} 10 \\ 10 \\ 1 \\ x_2 \\ 20 \\ + 12 \\ = 32 \end{array} $
Counting in multi-	Count the groups as children are skip	Number lines, counting sticks and bar	Count in multiples of a number aloud.
ples of 2, 3, 4, 5, 10 from 0 (repeated addition)	counting, children may use their fin- gers as they are skip counting. Use bar models.	models should be used to show repre- sentation of counting in multiples.	Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10
	5+5+5+5+5+5+5=40	$\begin{array}{c} & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\$	0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25 , 30
	III IIII IIII ? ?	3 3 3 3 ?	4 × 3 =

Objective &	Concrete	Pictorial	Abstract	V9
Strategy				
Multiplication is commutative	Create arrays using counters and cubes and Numicon.	Use representations of arrays to show different calculations and explore commutativity.	$12 = 3 \times 4$ $12 = 4 \times 3$ Use an array to write multiplication sentences and reinforce repeated addition. 00000 $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$	
Using the Inverse This should be taught alongside division, so pupils learn how they work alongside each other.		$\begin{vmatrix} 4 & 2 \\ 4 & 2 \\ \end{vmatrix} \times \end{vmatrix} = \end{vmatrix}$ $\begin{vmatrix} \times \\ \times \\ 0 & \times \end{vmatrix} = \end{vmatrix}$ $\begin{vmatrix} \times \\ 0 & \times \end{vmatrix} = \end{vmatrix}$ $\begin{vmatrix} \times \\ 0 & \times \\ 0 & \times \end{vmatrix} = \end{vmatrix}$ $\begin{vmatrix} \times \\ 0 & \times \\ 0 & \times \end{vmatrix} = \end{vmatrix}$	2 x 4 = 8 4 x 2 = 8 8 \div 2 = 4 8 \div 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 \div 4 4 = 8 \div 2 Show all 8 related fact family sentences.	GATION X







Objective &	Concrete	Pictorial	Abstract	VC
Strategy				
Multiplying decimals up to 2 decimal plac- es by a single digit.			Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer.	
				MULTIPL CATION



Objective &	Concrete	Pictorial	Abstract	ังว
Strategy				ľΖ
Division as sharing	I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quanti- ties. 3 + 2 = 4 Children use bar modelling to show and support understanding.	12 ÷ 3 = 4	
		12 ÷ 4 = 3		
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.	Use number lines for grouping $\begin{array}{c} & & & & & & & & & & & & & & & & & & &$	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?	
	0 5 10 15 20 25 30 35	20 ÷ 5 = ? 5 x ? = 20		

Objective &	Concrete	Pictorial	Abstract	
Strategy				V2
Division as grouping	Use cubes, counters, objects or place value counters to aid understanding.	Continue to use bar modelling to aid solving division problems.	How many groups of 6 in	I J
	24 divided into groups of 6 = 4	20 ? 20 \div 5 = ? 5 x ? = 20	24 ! 24 ÷ 6 = 4	
	96 ÷ 3 = 32			
Division with arrays	Link division to multiplication by creating an array and thinking about the number sentences that can be created.	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	
	Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15		28 = 4 x 7 4 = 28 ÷ 7 7 = 28 ÷ 4	









Y6

Long Division

Step 2—a remainder in the tens

1. Divide.	2. Multiply & subtract.	3. Drop down the next digit.
t o <mark>2</mark> 2) <mark>5</mark> 8	t o 2 2) <u>5</u> 8 - 4 1	t ∘ 2 9 2) 5 <mark>8</mark> - 4 ↓ 1 <mark>8</mark>
Two goes into 5 two times, or 5 tens ÷ 2 = 2 whole tens but there is a remainder!	To find it, multiply $2 \times 2 = 4$, 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 20	t o 20	t o
2)58	2)58	2)58
<u>- 4</u> <mark>1 8</mark>	<u>- 4</u> <u>1 8</u>	<u>-4</u> 18
	<u>- 1 8</u> 0	<u>- 1 8</u> 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.

