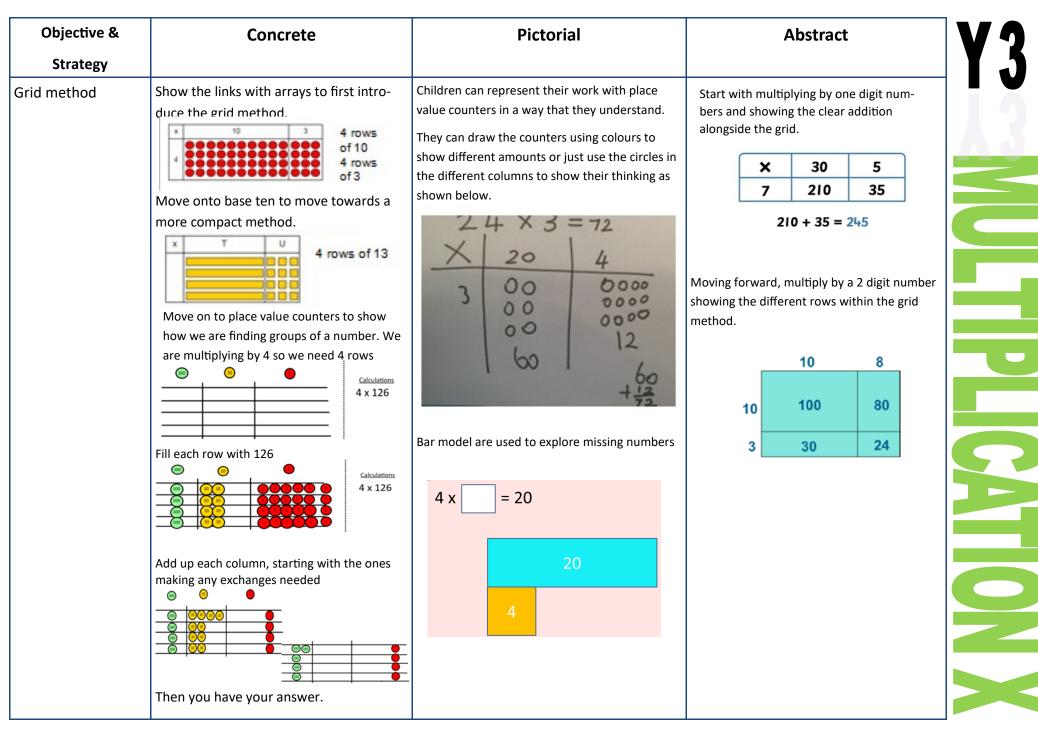
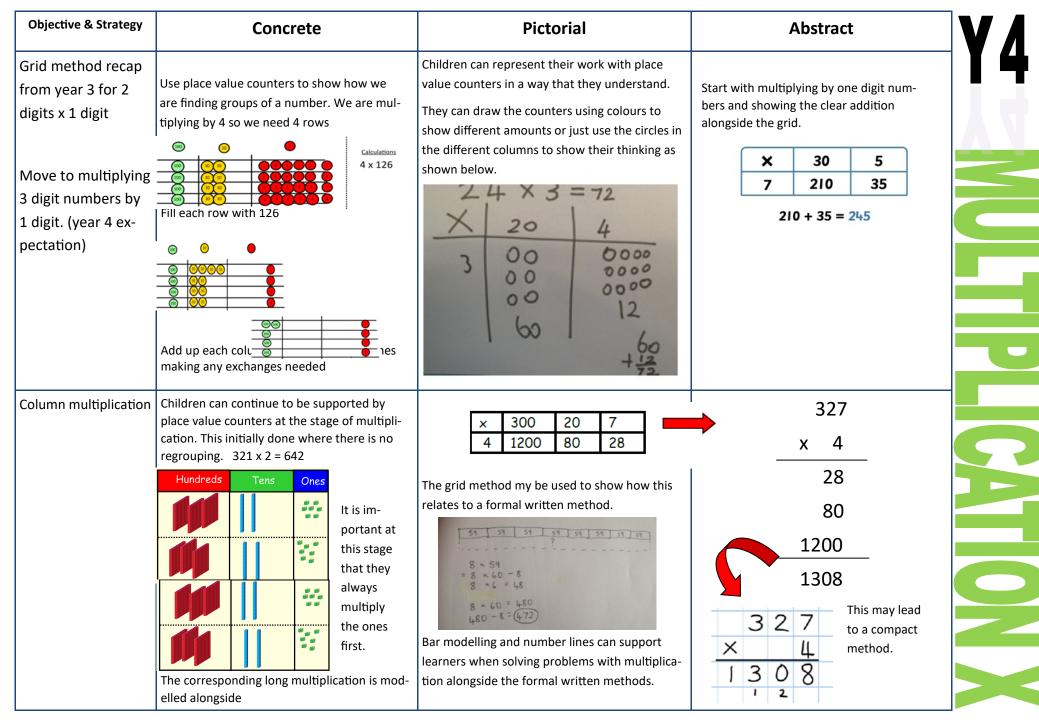
Objective &	Concrete	Pictorial	Abstract
Strategy			
Doubling	Use practical activities using manip- ultives including cubes and Numicon to demonstrate doubling + = = = + = = = double 4 is 8 $4 \times 2 = 8$ $+ = = = =$	Draw pictures to show how to double numbers	Partition a number and then double each 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. $\frac{2}{10} \frac{2}{2} \frac{2}{4} \frac{2}{5} \frac{2}{8} \frac{2}{10} \frac{2}{12} \frac{2}{14} \frac{2}{16} \frac{2}{18} \frac{2}{20}$	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
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

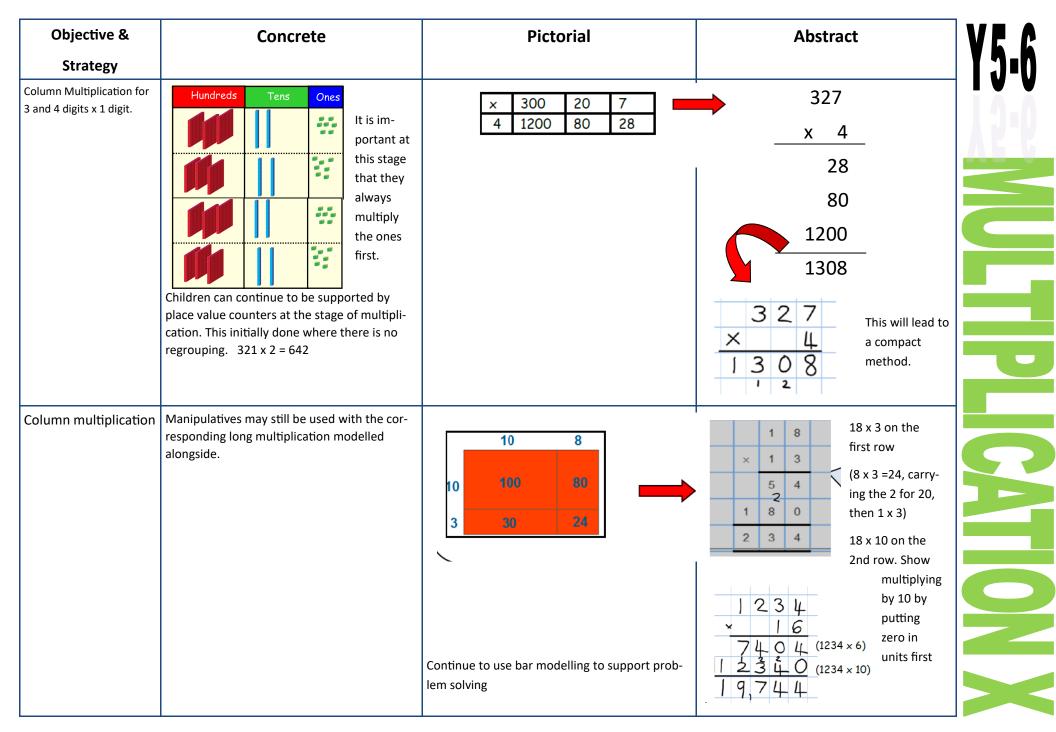
Objective &	Concrete	Pictorial	Abstract
Strategy			
Repeated addition	Use different objects to add equal groups	Use pictorial including number lines to solve prob There are 3 sweets in one bag. How many sweets are in 5 bags altogether?	Write addition sentences to describe objects and pictures. $\underbrace{\begin{array}{c} \hline \\ \hline $
Understanding ar- rays	Use objects laid out in arrays to find the an- swers 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. 40 + 12 = 52	Draw pictures and representations to show how to double numbers	Partition a number and then double each part before recombining it back together. 16 10 10 10 12 20 + 12 = 32
Counting in multi- ples of 2, 3, 4, 5, 10 from 0 (repeated addition)	Count the groups as children are skip counting, children may use their fin- gers as they are skip counting. Use bar models. 5+5+5+5+5+5+5=40	Number lines, counting sticks and bar models should be used to show repre- sentation of counting in multiples.	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 $4 \times 3 =$

Objective &	Concrete	Pictorial	Abstract	
Strategy				
Multiplication is commutative	Create arrays using counters and cubes and Numicon. Image: Constraint of the state	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. 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 \\ \hline \times 1 & = 1 \\ \hline \times 1 & = 1 \\ \hline \times 1 & = 1 \\ \hline \div 1 & = 1 \\ \hline $	$2 \times 4 = 8$ $4 \times 2 = 8$ $8 \div 2 = 4$ $8 \div 4 = 2$ $8 = 2 \times 4$ $8 = 4 \times 2$ $2 = 8 \div 4$ $4 = 8 \div 2$ Show all 8 related fact family sentences.	SATION X





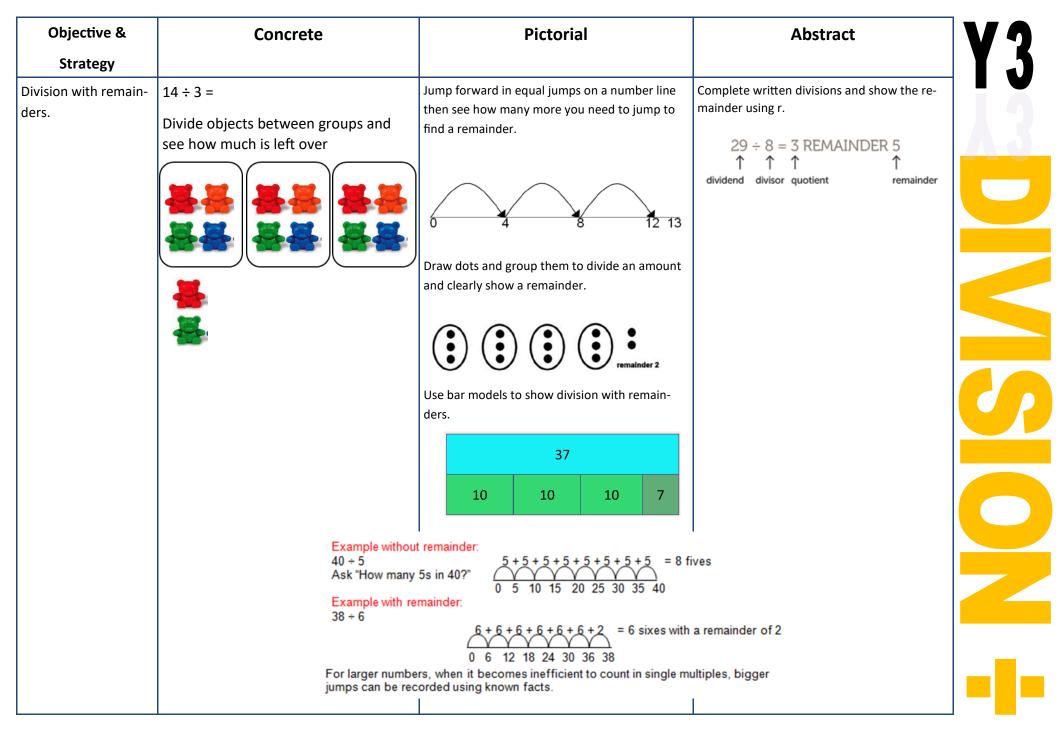


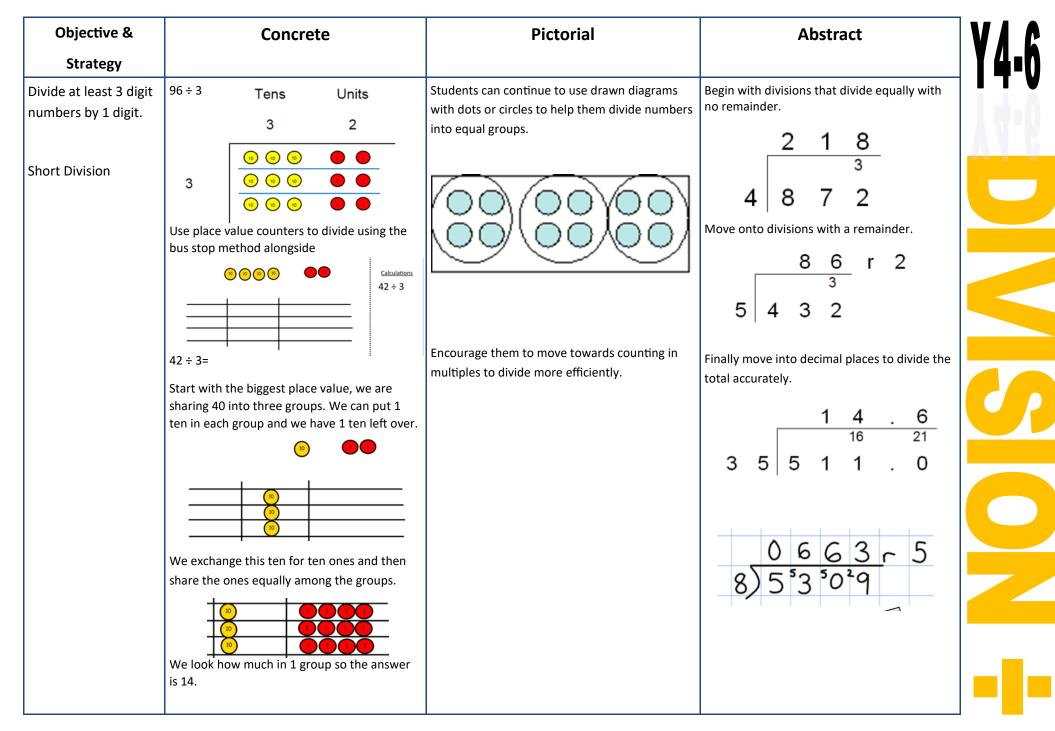
Objective &	Concrete	Pictorial	Abstract
Strategy			
Multiplying decimals up to 2 decimal plac- es by a single digit.			Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer. $\begin{array}{c ccccccccccccccccccccccccccccccccccc$
			25.52

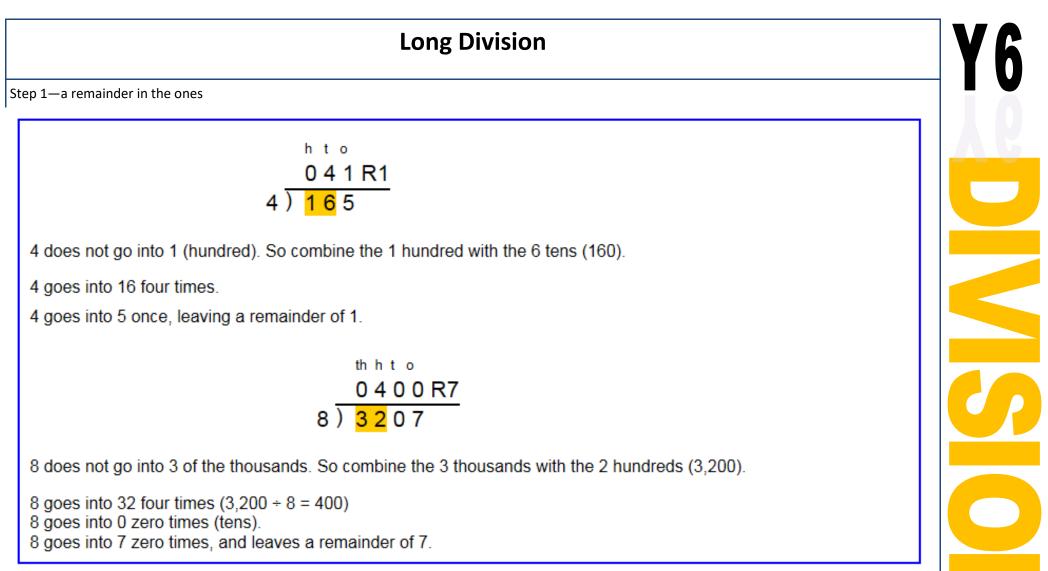
Objective &	Concrete	Pictorial	Abstract V
Strategy			
Division as sharing		Children use pictures or shapes to share quanti- ties.	12 shared between 3 is
Use Gordon ITPs for		\$\$ \$ \$ \$ \$ \$ \$ \$	4
modelling	ECC. C.	8 shared between 2 is 4	
		Sharing:	
		12 shared between 3 is 4	
	_10		
	I have 10 cubes, can you share them equally in 2 groups?		

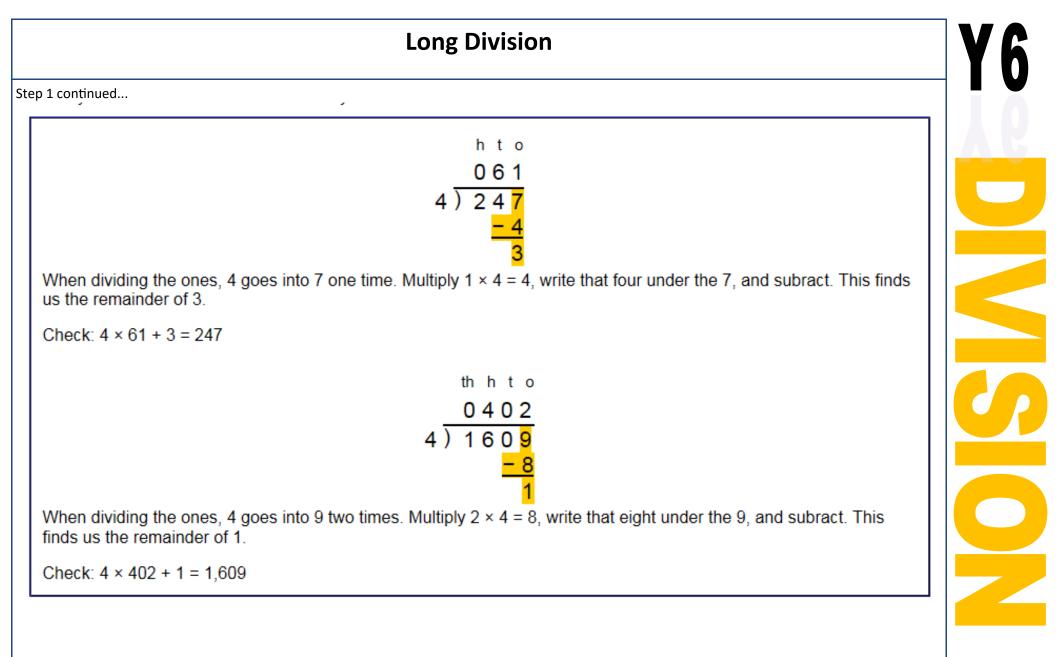
Objective &	Concrete	Pictorial	Abstract	V
Strategy				
Division as sharing	Image: here the equal in 2 groups?	Children use pictures or shapes to share quanti- ties.	12 ÷ 3 = 4	
		12 ÷ 4 = 3		
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding. $\int_{0}^{1} \int_{0}^{1} \int_$	Use number lines for grouping $ \begin{array}{c} $	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?	

Objective &	Concrete	Pictorial	Abstract
Strategy			
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 24?
		20	24 ÷ 6 = 4
	24 divided into groups of 6 = 4	20 ÷ 5 = ? 5 x ? = 20	
	96 ÷ 3 = 32		
Division with arrays		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
	Link division to multiplication by creating an		4 x 7 = 28
	array and thinking about the number sentenc-		28 ÷ 7 = 4
	es that can be created.		28 ÷ 4 = 7
			28 = 7 x 4
	Eg 15 ÷ 3 = 5 5 x 3 = 15		28 = 4 x 7
	15 ÷ 5 = 3 3 x 5 = 15		4 = 28 ÷ 7
			7 = 28 ÷ 4









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) <mark>5</mark> 8 <u>- 4</u> 1	t ∘ 2 9 2) 5 <mark>8</mark> <u>- 4 ↓</u> 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 2 <mark>9</mark> 2) 5 8 - 4 1 8	t o 29 2)58 -4 18 -18 0	t o 29 2)58 <u>-4</u> 18 <u>-18</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.

Y6

	Long Divi	sion	
Step 2—a remainder in any of the place values	1. Divide.	2. Multiply & subtract.	3. Drop down the next digit.
	h t o <mark>1</mark> 2)278	h t o 1 2) <mark>2</mark> 7 8 <u>- 2</u> 0	h t o 1 8 2) 2 <mark>7</mark> 8 <u>- 2</u> ↓ 0 <mark>7</mark>
	Two goes into 2 one time, or 2 hundreds ÷ 2 = 1 hundred.	Multiply $1 \times 2 = 2$, 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 Divide 2 into 7. Place 3 into the quotient.	h t o $ \begin{array}{r} 1 3 \\ 2 \overline{) 2 7 8} \\ \underline{-2} \\ 0 7 \\ \underline{-6} \\ 1 \end{array} $ Multiply 3 × 2 = 6, write that 6 under the 7, and subtract to find the remainder of 1 ten.	h t o 13 2)278 -2 07 -6 18 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 <mark>9</mark> 2) 2 7 8 <u>- 2</u> 0 7 <u>- 6</u> 18	h t o <u>1 3 9</u> 2) 2 7 8 <u>- 2</u> 0 7 <u>- 6</u> <u>1 8</u> <u>- 18</u> 0	1 3 9 2) 2 7 8 <u>- 2</u> 0 7 <u>- 6</u> 1 8 <u>- 18</u> 0
	Divide 2 into 18. Place 9 into the quotient.	Multiply $9 \times 2 = 18$, 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.