Vocabulary

Number	Addition & Subtraction	Multiplication & Division	Fractions	Measurement	Geometry	Statistics
rule	altogether	multiply	equivalent	imperial/ metric unit	parallel/ perpendicular	represent
relationship	ones boundary	dividing	numerator	perimeter/ area	reflect/ translate	survey
formula	tenths boundary	factor	denominator	millimetre/ centimetre/ kilometre/ yard/mile	x-axis/ y-axis/ quadrant	most/least common
prime number	inverse	product	percentage	currency	oblong/ rectilinear	line graph
square number	left over	remainder	decimal place	square metre	axis of symmetry	bar line chart
factor pair	equivalent	column/row	proportion	width/ breadth	congruent	axis
ascending/ descending	near double	squared	proper/ improper fraction	leap year/ millennium	obtuse/ acute/ right angle	outcome
last but one	difference	cubed	mixed number	pint/gallon	radius/ diameter	database

Order for learning the times tables

Step 1
Fire just 1 x 6, 2 x 6, 5 x 6, 10 x 6 at them first.
This will build up on their most secure existing table facts

Step 2
Add in 3 x 6, 4 x 6 when step 1 is frequently recalled correctly and instantly

Step 3
Build up with 6 x 6, 7 x 6, 8 x 6
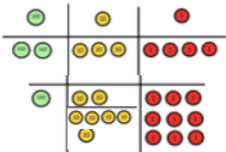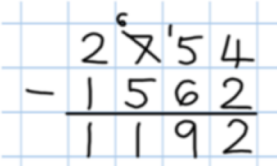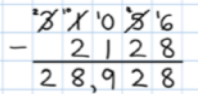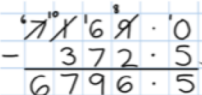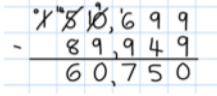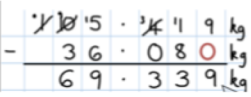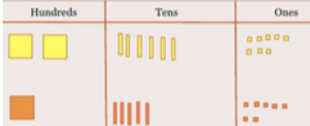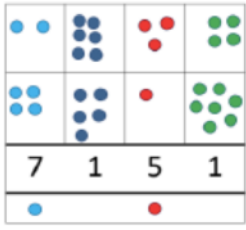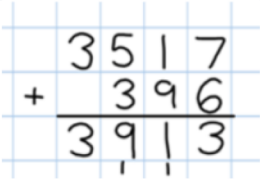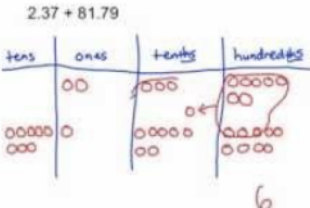
Step 4
When looking at 9 x 6, 11 x 6 and 12 x 6, children should look at finding 10 x 6 and adjust
When they're ready, try learning related facts up to 20!
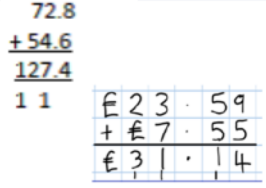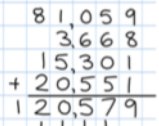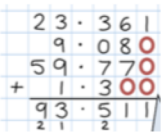
CPA approach to: **Subtraction**

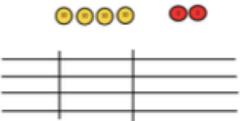| Objective & Strategy	Concrete	Pictorial	Abstract
Subtracting tens and ones Year 4 subtract with up to 4 digits. *Introduce decimal subtraction through context of money*	234 - 179 Model process of exchange using Numicon, base ten and then move to PV counters.	Children to draw pv counters and show their exchange—see Y3	 Use the phrase 'take and make' for exchange
Year 5- Subtract with at least 4 digits, 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	 Use zeros for place-holders.
Year 6—Subtract with increasingly large and more complex numbers and decimal values.			
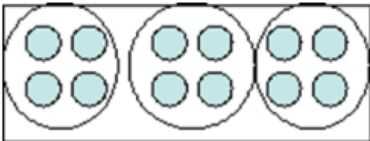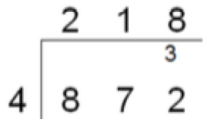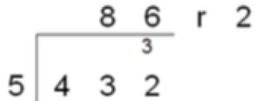
CPA approach to: **Addition**

Objective & Strategy	Concrete	Pictorial	Abstract
Y4—add numbers with up to 4 digits	Children continue to use dienes or pv counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand. 	 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 more than 4 digits. Add decimals with 2 decimal places, including money.	As year 4 Introduce decimal place value counters and model exchange for addition.	2.37 + 81.79 	
Y6—add several numbers of increasing complexity Including adding money, measure and decimals with different numbers of decimal points.	As Y5	As Y5	 Insert zeros for place holders.

CPA approach to: Multiplication

Objective & Strategy	Concrete	Pictorial	Abstract
Column Multiplication for 3 and 4 digits x 1 digit.	It is important at this stage that they always multiply the ones first. 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	 | x	300	20	7
4	1200	80	28		327 x 4 ——— 28 80 1200 ——— 1308 $\begin{array}{r}327\\ \times\quad 4\\ \hline 1308\end{array}$ This will lead to a compact method.
Column multiplication	Manipulatives may still be used with the corresponding long multiplication modelled alongside.	 Continue to use bar modelling to support problem solving	18 x 3 on the first row (8 x 3 =24, carrying the 2 for 20, then 1 x 3) 18 x 10 on the 2nd row. Show multiplying by 10 by putting zero in units first $\begin{array}{r}1234\\ \times\quad 16\\ \hline 7404\\ 12340\\ \hline 19,744\end{array}$ (1234 x 6) (1234 x 10)
Multiplying decimals up to 2 decimal places 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. $\begin{array}{r}3\cdot19\\ \times\quad 8\\ \hline 25\cdot52\end{array}$

CPA approach to: **Division**

Objective & Strategy	Concrete	Pictorial	Abstract
Divide at least 3 digit numbers by 1 digit. Short Division	$96 \div 3$ Use place value counters to divide using the bus stop method alongside $42 \div 3 =$ 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. $$4 \overline{\smash{\big)}\, 8\ 7\ 2} = 2\ 1\ 8$$ Move onto divisions with a remainder. $$5 \overline{\smash{\big)}\, 4\ 3\ 2} = 8\ 6\ r\ 2$$ Finally move into decimal places to divide the total accurately. $$3\ 5 \overline{\smash{\big)}\, 5\ 1\ 1\ .\ 0} = 1\ 4\ .\ 6$$ $$8 \overline{\smash{\big)}\, 5\ 3\ 0\ 9} = 0\ 6\ 6\ 3\ r\ 5$$