PARENTS MATHS WORKSHOP

Year 6

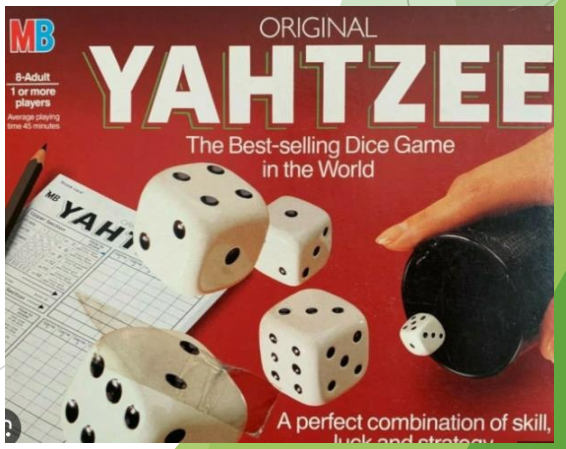
Aims of the Session:

- Share with you some of the things your child will be learning in school
- Improve your confidence in helping your child with maths
- Explore some games and activities you can play with your child at home to help them develop fluency and become more automatic with number facts.

Why engage with your child's learning?

Research evidence suggests that when parents are engaged in their children's learning, outcomes for children can be improved.

Games you can play at home!



Measurement…

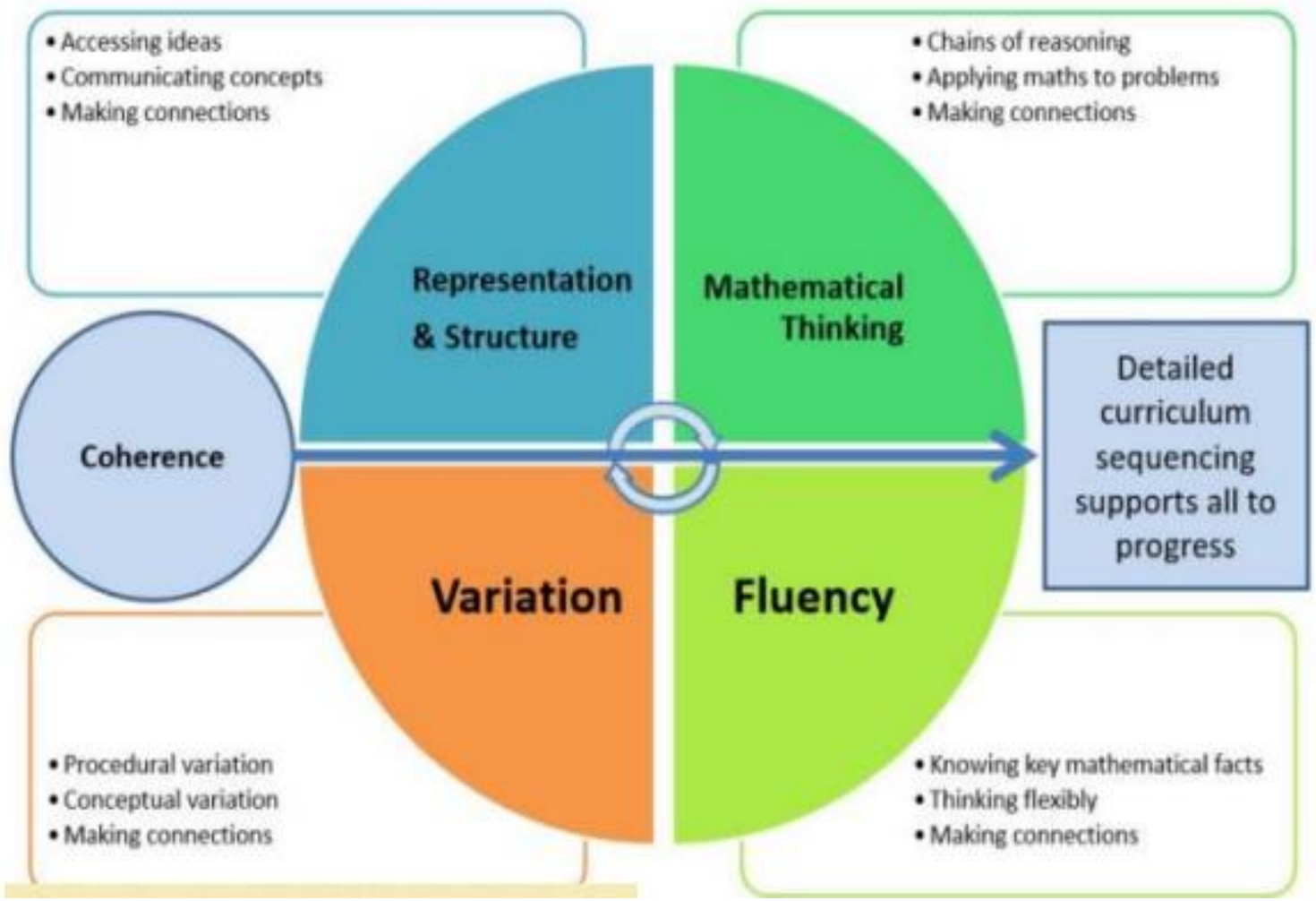
Telling the time!

Measuring capacity, weighing ingredients, measuring lengths/ heights…

100cm - 1 metre
1000m - 1km
1000ml - 1 litre
1000g - 1kg

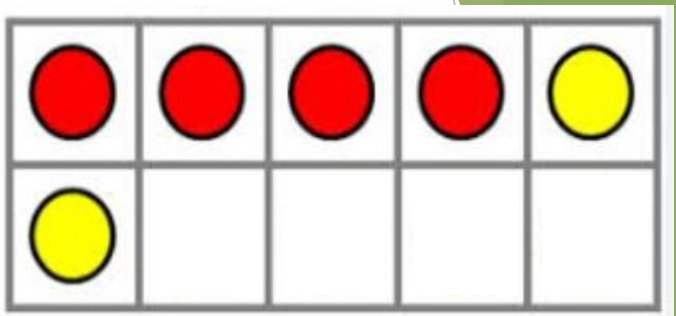
NCETM

Teaching for Mastery



White Rose Maths

In Year 6, we continue to build on previous knowledge.



I know that 6 is made of 4 and 2 so I will also know...

6 - 2

60 - 20

40 + 20

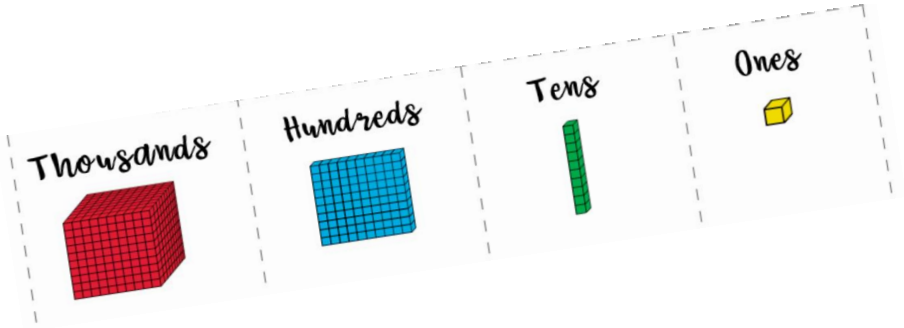
0.4 + 0.2

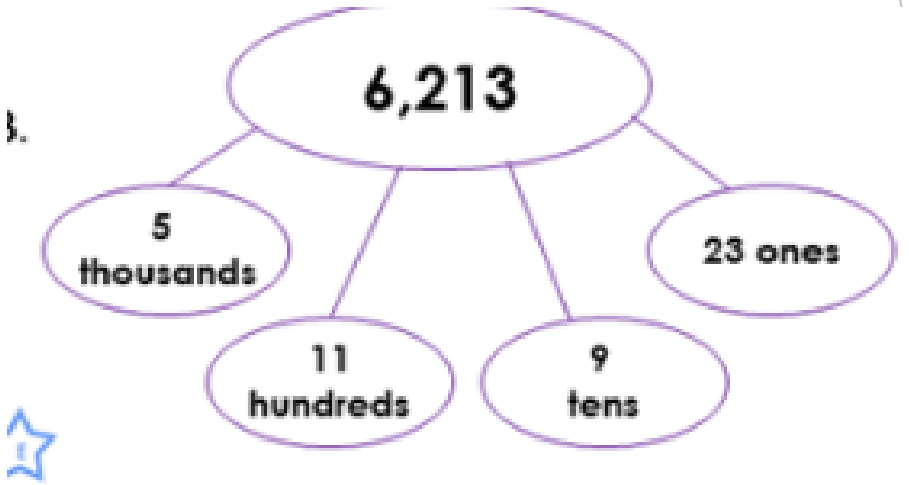
400 + 200

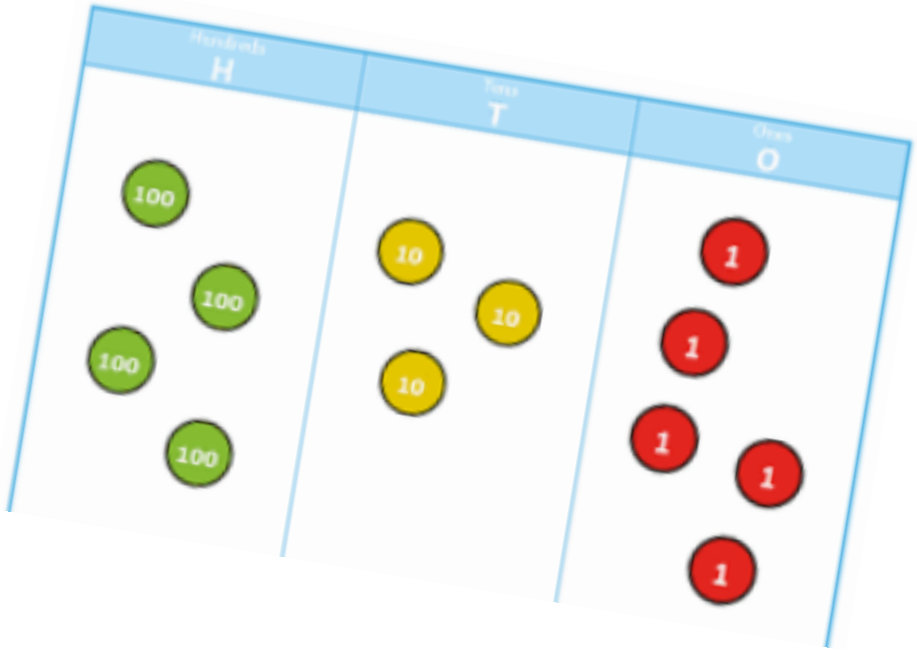
2458 + 5216 = 7674

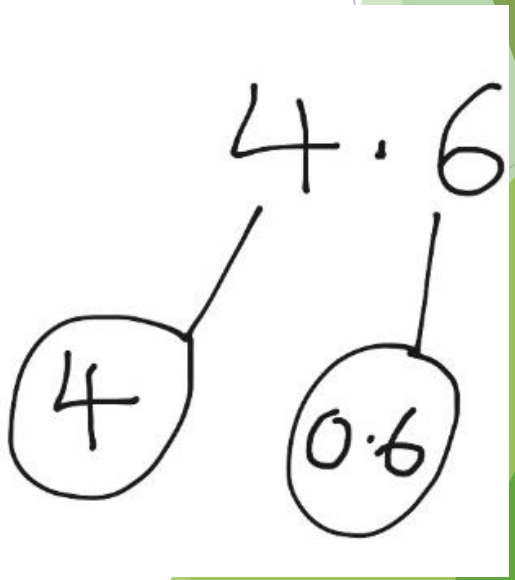
It is so important that the children are fluent in their number bonds to 10, 20 and 100.

We use partitioning…

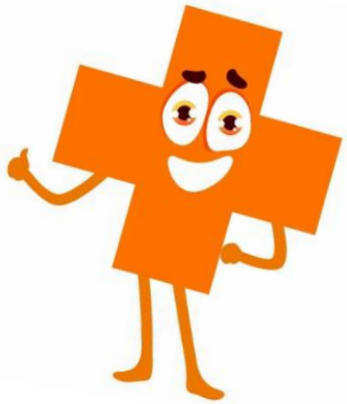








Developing Fluency:



Year 6	Autumn	* rounding any number to the nearest 10, 100 and 1000 * metric conversions * multiplication and division facts 12x12 * round decimals to the nearest whole number and to 1 or 2 decimal places
	Spring	* multiply and divide whole numbers and decimals by 10, 100, 1000 * common multiples and factors of numbers * convert between fractions, decimals and percentages * prime numbers to 50 * count up in cubed numbers Count up and back in multiples of 20, 30, 40, 50, 60, 70, 80, 90, 250, 500 * all four operations with fractions
	Summer	Revision of everything!

CPA - approach to maths!

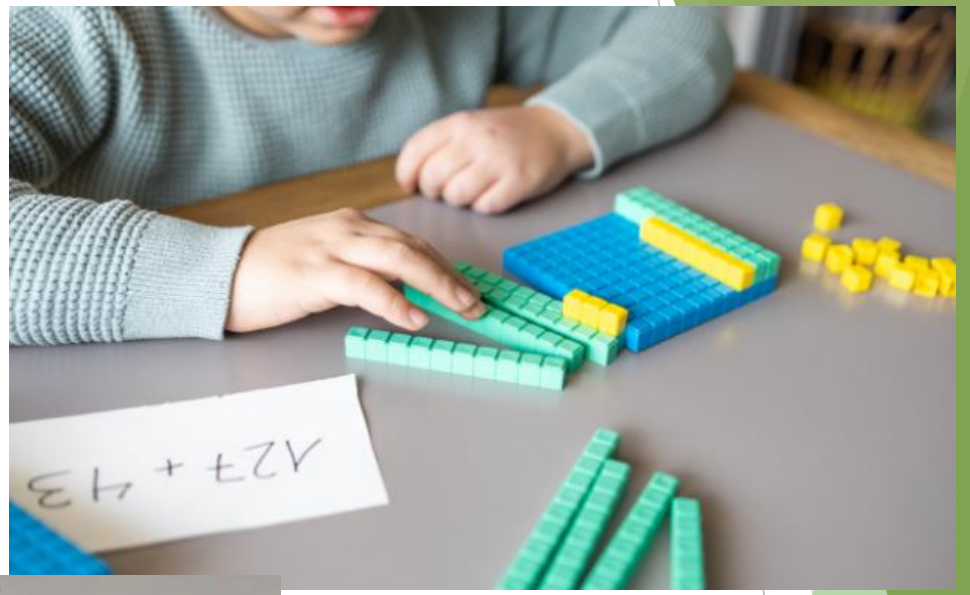
Concrete

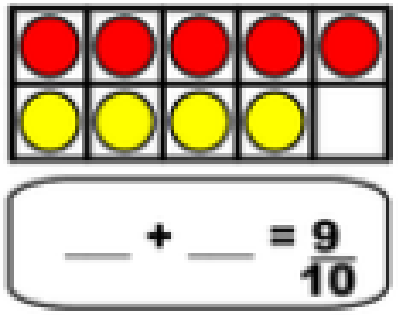
Pictorial

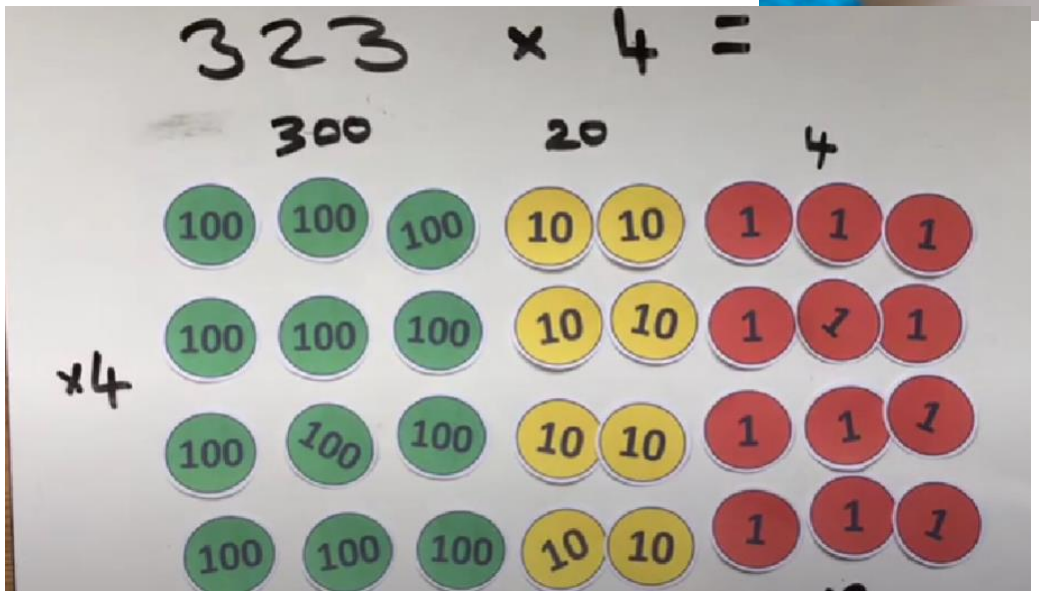
Abstract

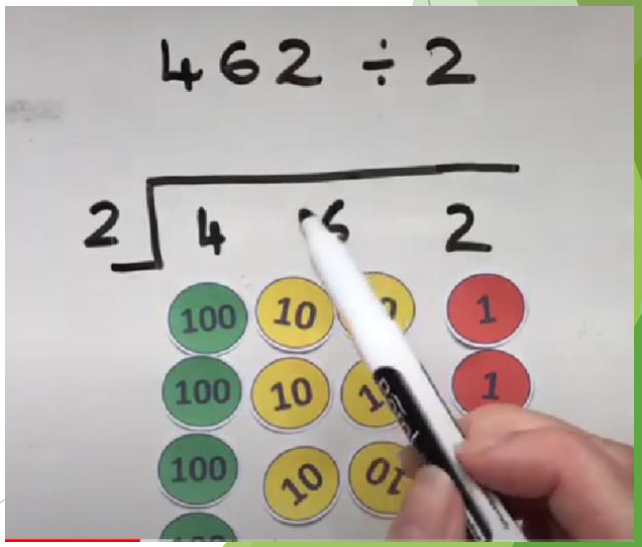
CPA - approach to maths!

Concrete





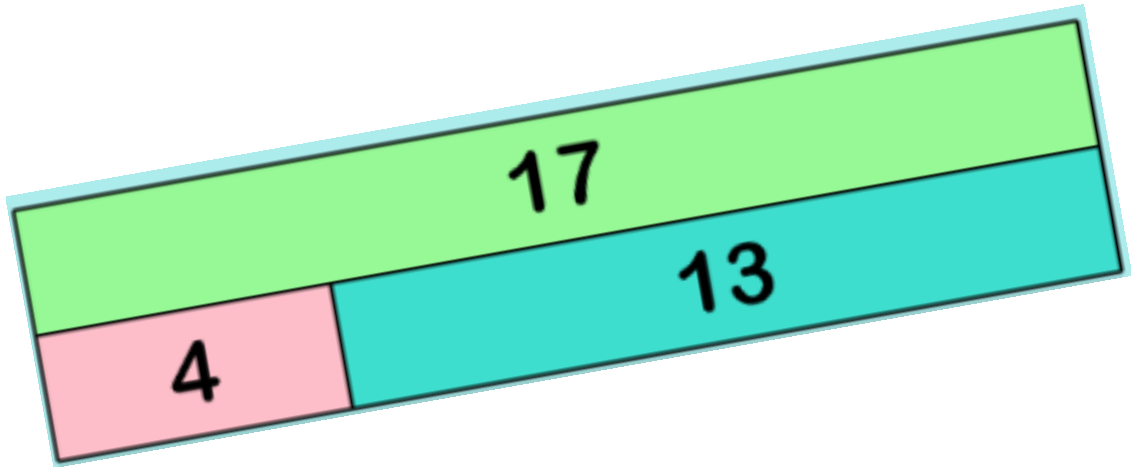




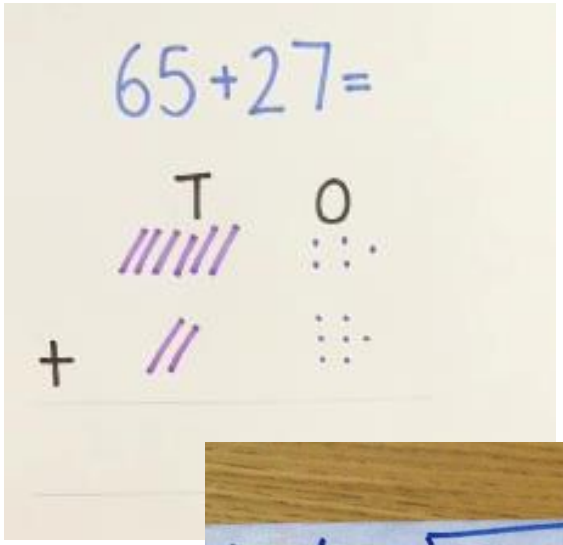
Tenths and Hundredths Place Value Grid

Hundreds	Tens	Ones	Tenths	Hundredths

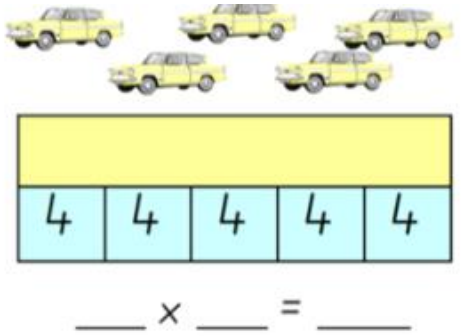
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

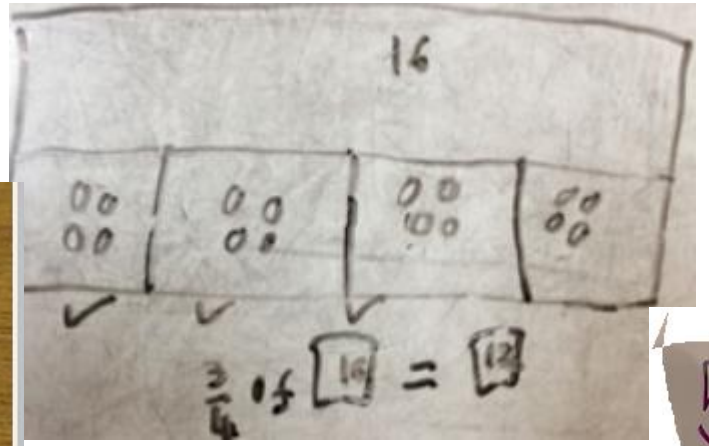


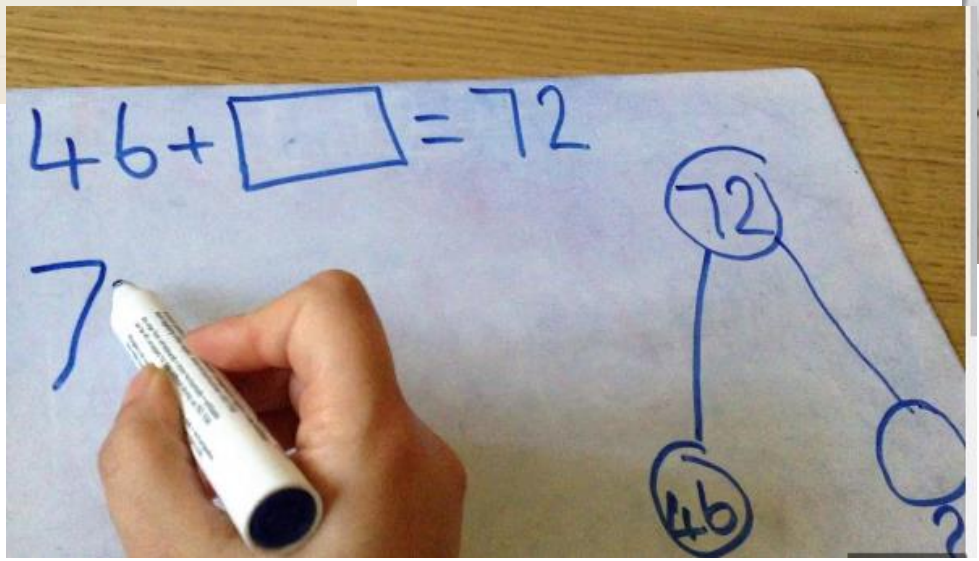
CPA - approach to maths!

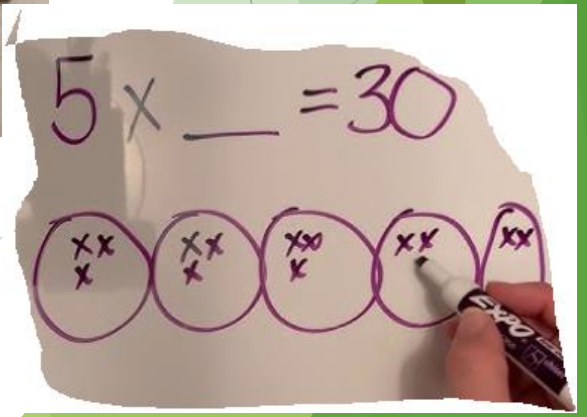


Pictorial









CPA - approach to maths!

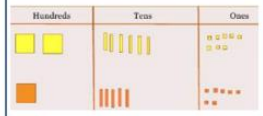
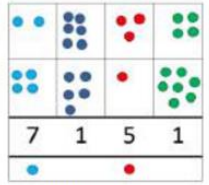
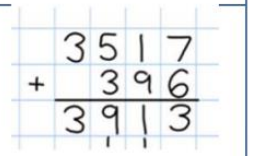
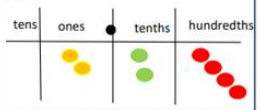
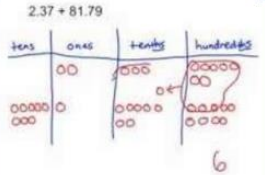
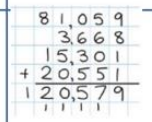
Abstract

209.8 + 24.28 =

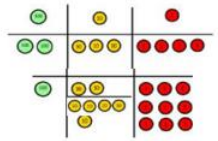
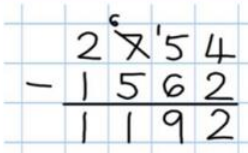
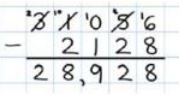
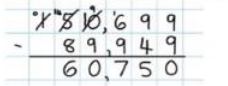
How we teach formal methods?

Addition & Subtraction:

Y4-6 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.		72.8 +54.6 127.4 1 1 
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. 

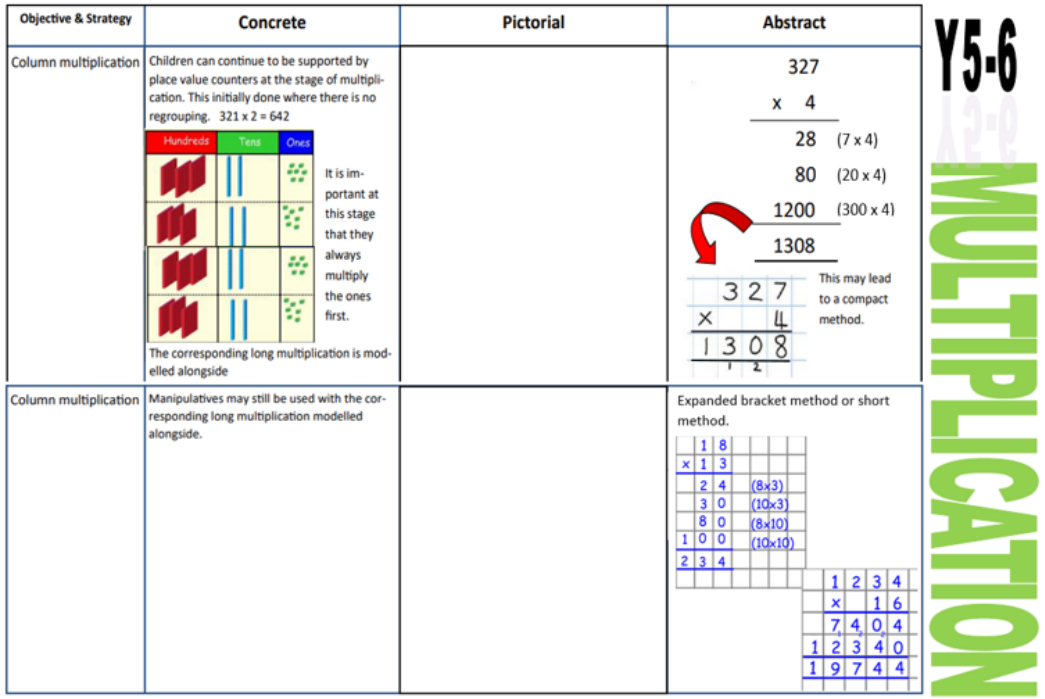
Y4-6 SUBTRACTION

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.			 

Can you make an exchange?

How we teach formal methods?

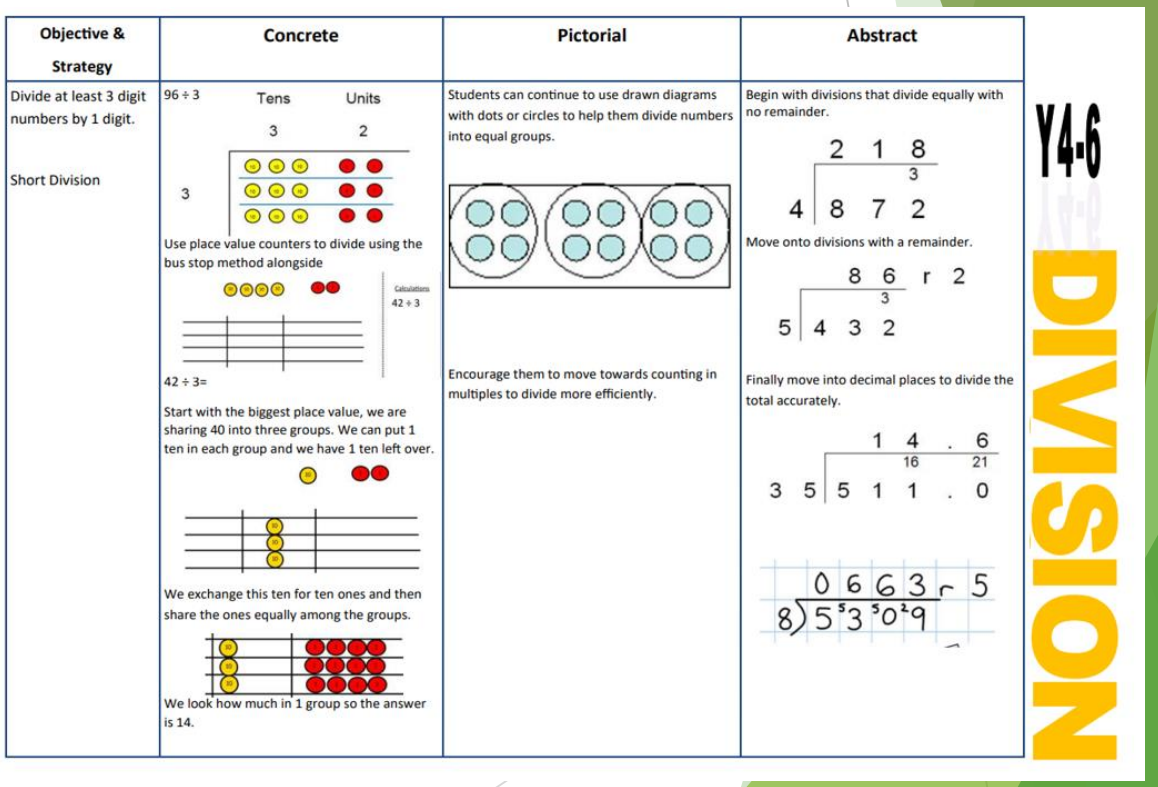
Division & Multiplication:



Objective & Strategy	Concrete	Pictorial	Abstract
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 Hundreds Tens Ones It is important at this stage that they always multiply the ones first. The corresponding long multiplication is modelled alongside		327 x 4 28 (7 x 4) 80 (20 x 4) 1200 (300 x 4) 1308 This may lead to a compact method.
Column multiplication	Manipulatives may still be used with the corresponding long multiplication modelled alongside.		Expanded bracket method or short method. 18 x 13 24 (8x3) 30 (10x3) 80 (8x10) 100 (10x10) 234 1234 x 16 7404 12340 19744

Y5-6 MULTIPLICATION

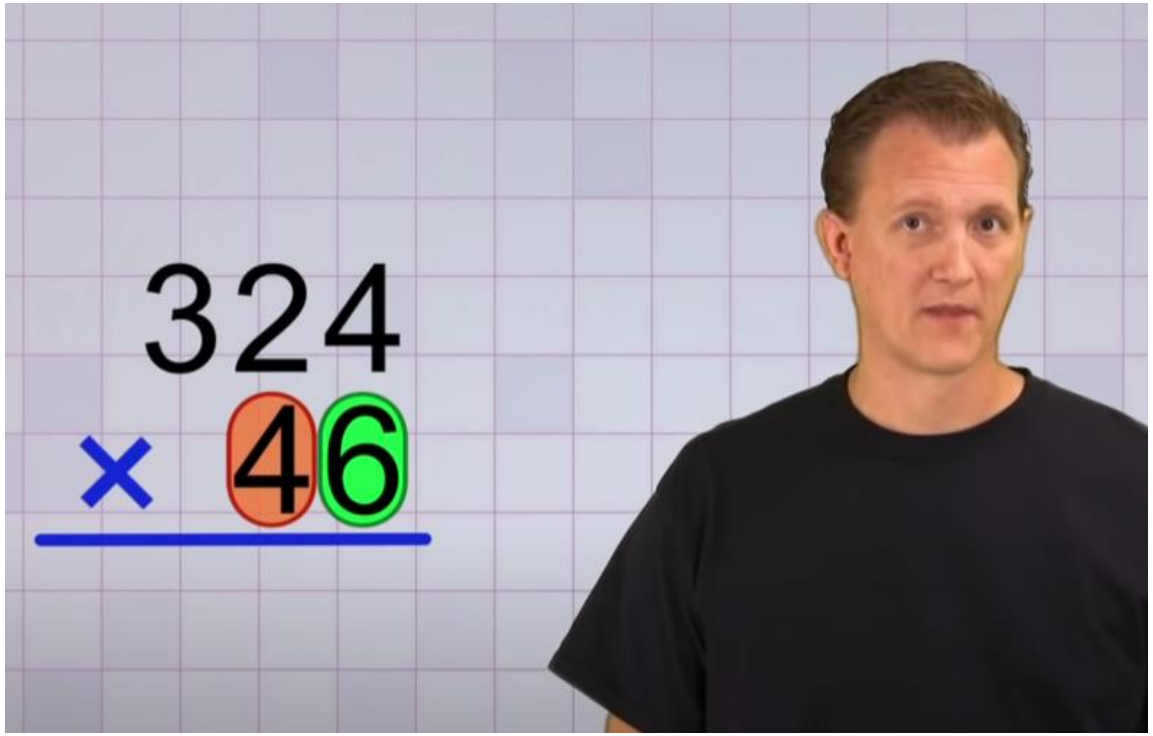
How large can the remainder be?



Objective & Strategy	Concrete	Pictorial	Abstract
Divide at least 3 digit numbers by 1 digit. Short Division	96 ÷ 3 Tens Units 3 2 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. 2 1 8 / 4 8 7 2 / 3 Move onto divisions with a remainder. 8 6 r 2 / 5 4 3 2 / 3 Finally move into decimal places to divide the total accurately. 14.6 / 35 5 1 1.0 / 16 21 0663 r 5 / 8 5 3 5 0 2 9

Y4-6 DIVISION

Using formal methods…



Video clips on YouTube - Math Antics!

https://www.youtube.com/watch?v=RVYwunbpMHA

Encourage the children to teach you!!! Develop their reasoning skills!

Arithmetic & Reasoning…

$7.8 + 6.953 =$

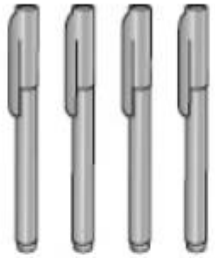
$\frac{1}{3} + \frac{2}{6} + \frac{5}{18} =$

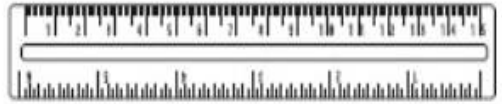
$$\begin{array}{r} 5\ 0\ 8 \\ \times\ \ 7\ 4 \\ \hline \end{array}$$

Show your method

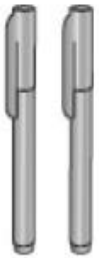
2 marks

Adam buys 4 pens and a ruler and pays £4.75 altogether.





Jack buys 2 pens and pays £1.98 altogether.



How much does a **ruler** cost?

Bar modelling…

ADDITION

3 + 4 = ?

3 + 4 = 7

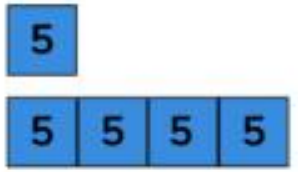
SUBTRACTION

18 - 3 = ?

18 - 3 = 15

MULTIPLICATION

4 x 5 = ?



4 x 5 = 20

DIVISION

27 ÷ 9 = ?

27 ÷ 9 = 3

The manager of a flower shop orders 4 boxes of red roses.

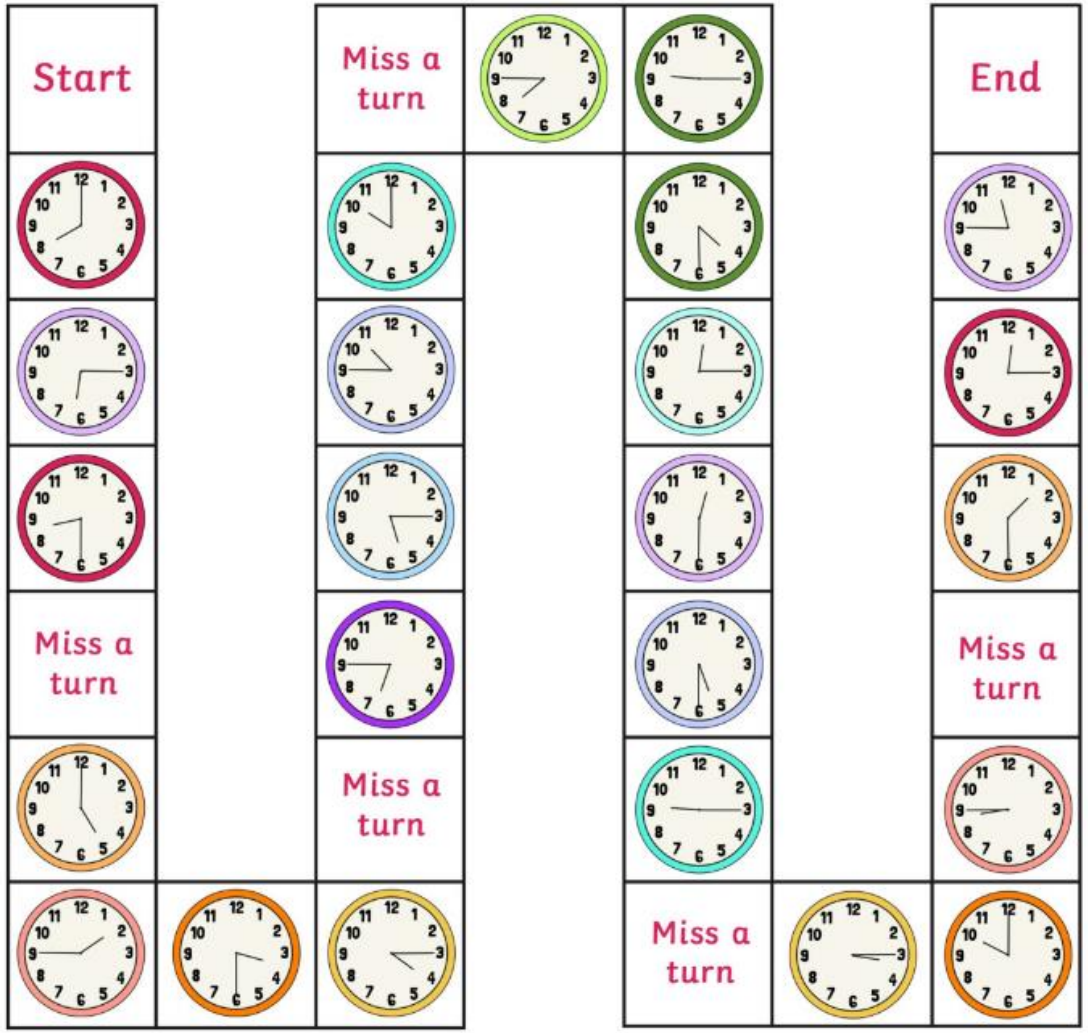
There are 50 roses in each box.

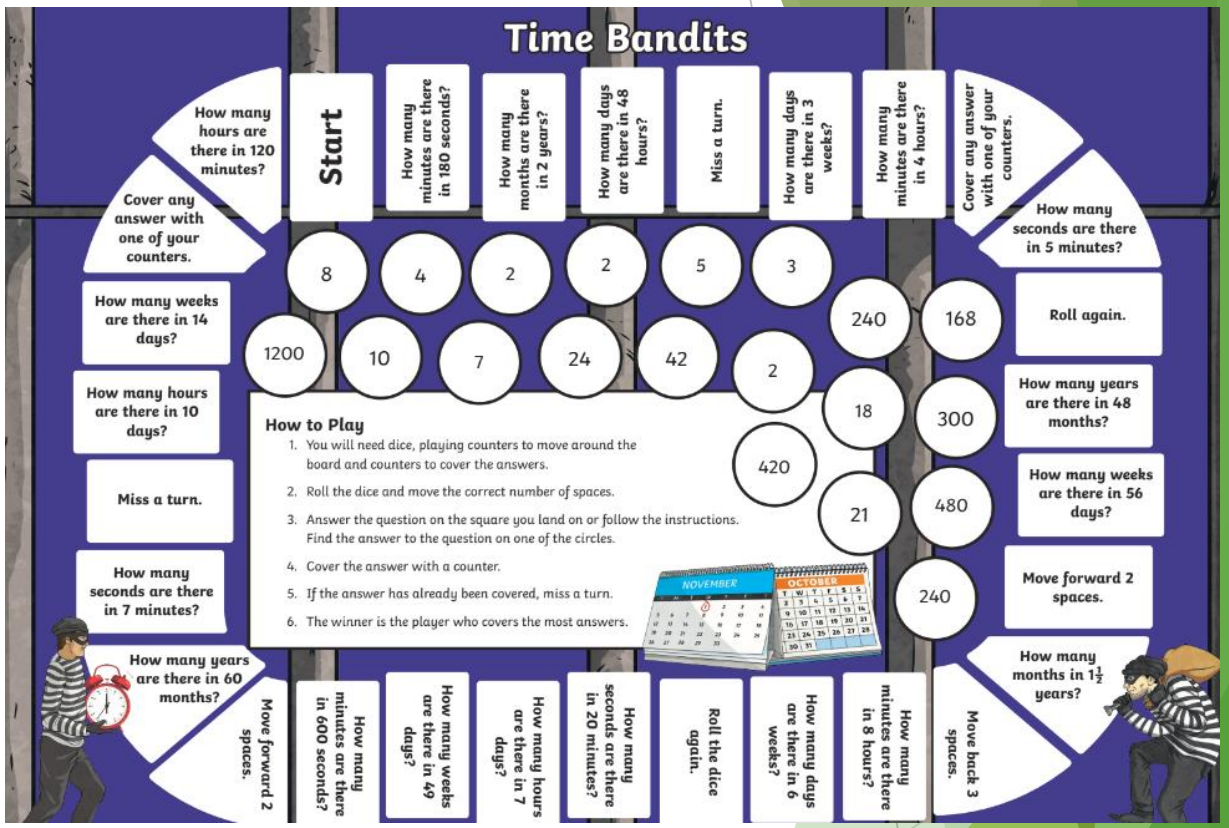
The manager makes bunches with 6 roses in each bunch.

What is the **greatest** number of bunches that can be made?

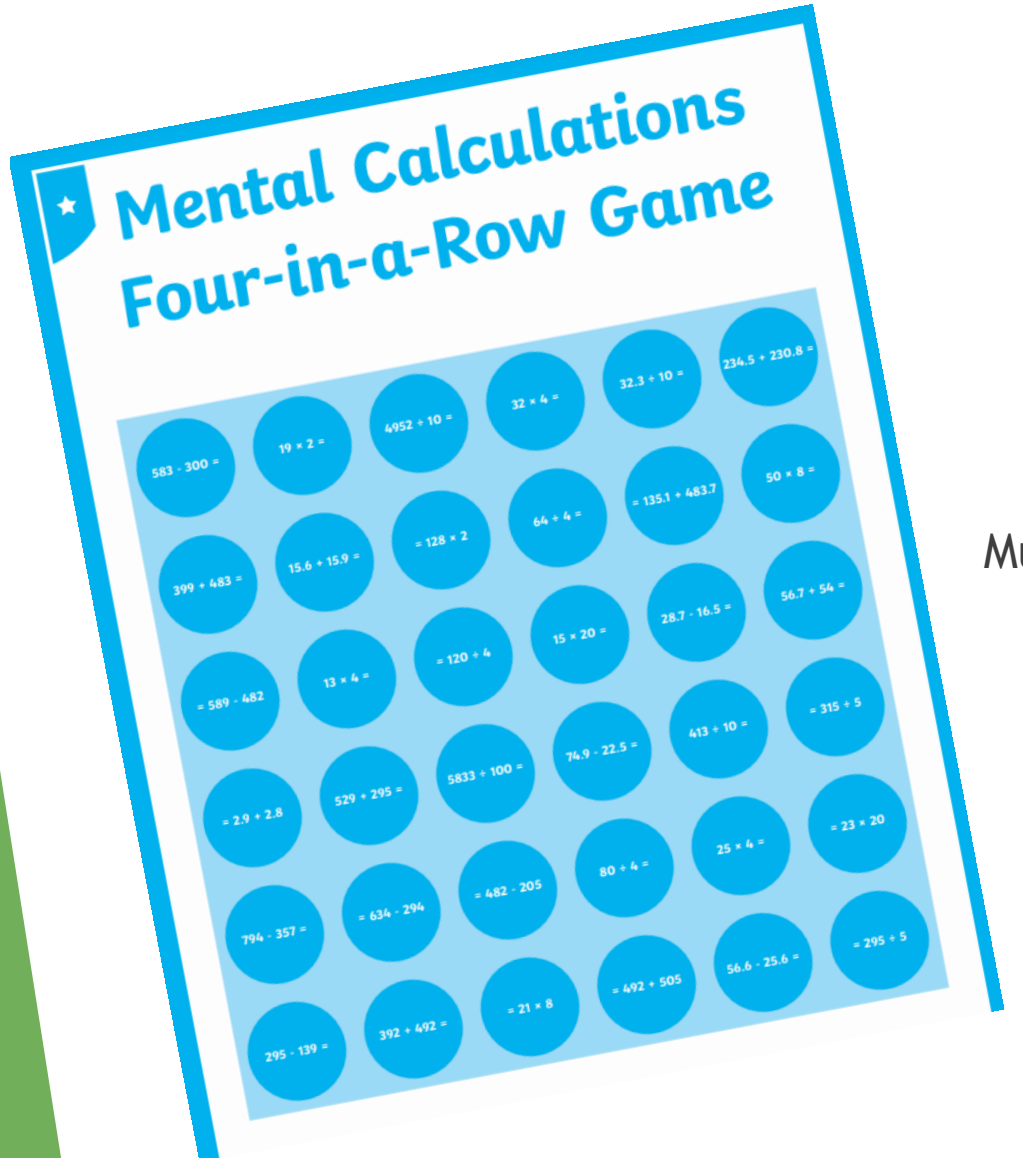
Let’s play some games with the children!

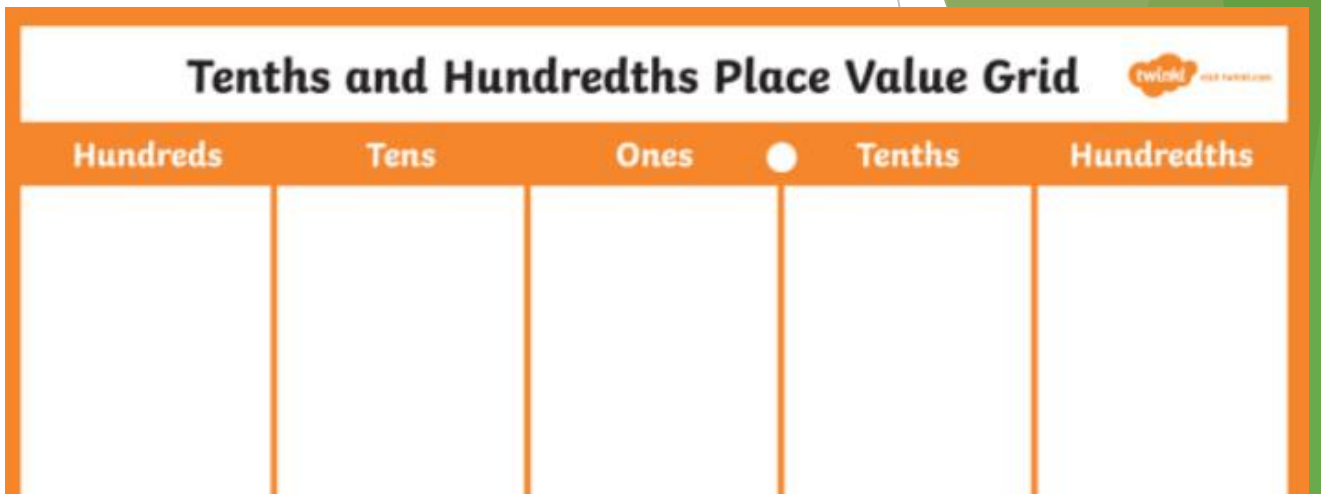
Telling the Time!





Developing mental strategies…





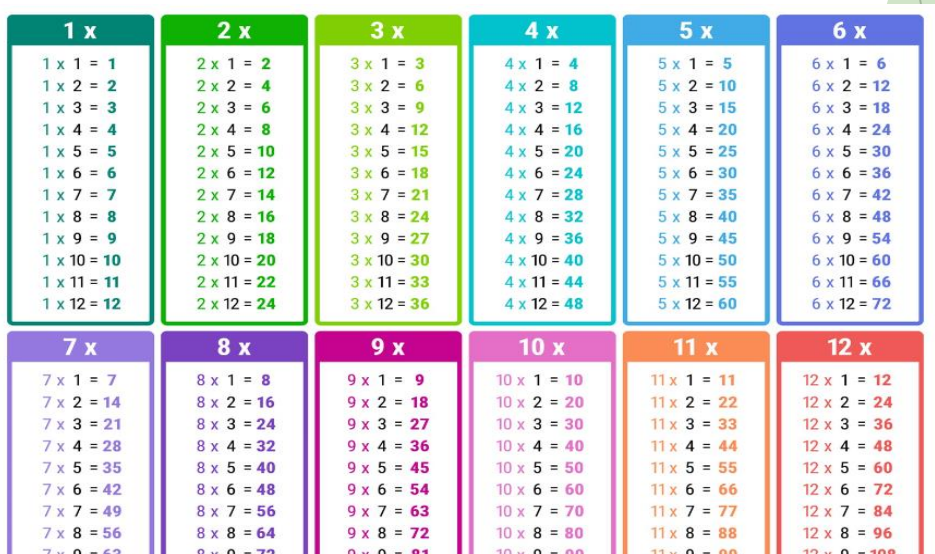
Multiplying and dividing by 10, 100 and 1000 (including decimals)

Knowing 1, 10, 100, 1000 more or less than any given number!

Developing multiplication knowledge

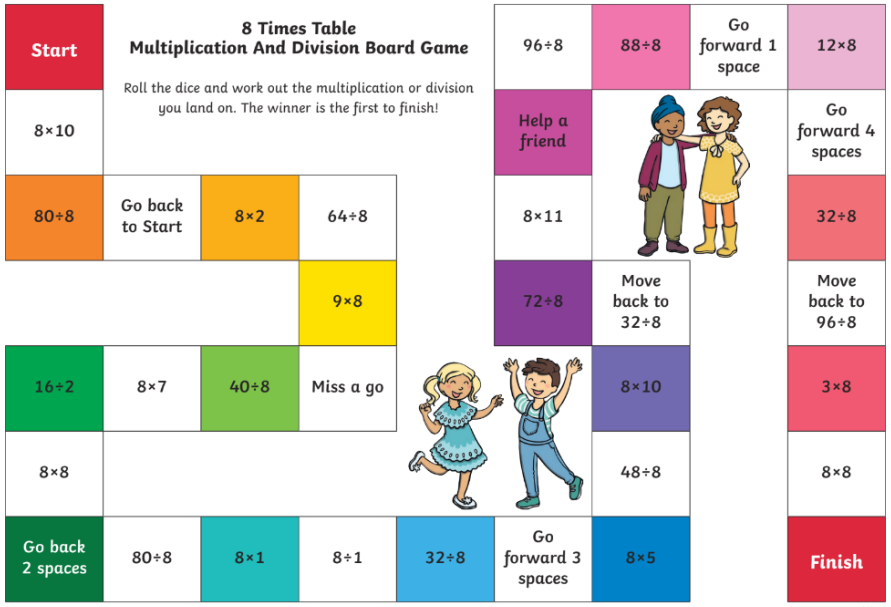
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

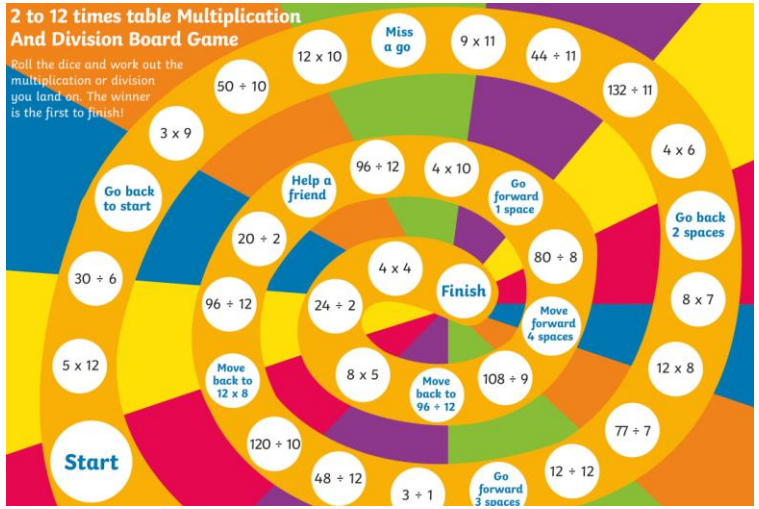
- Counting up
- Songs and using fingers
- chanting
- Referring to grids/ charts
- Dividing and multiplying by 10 and 100.

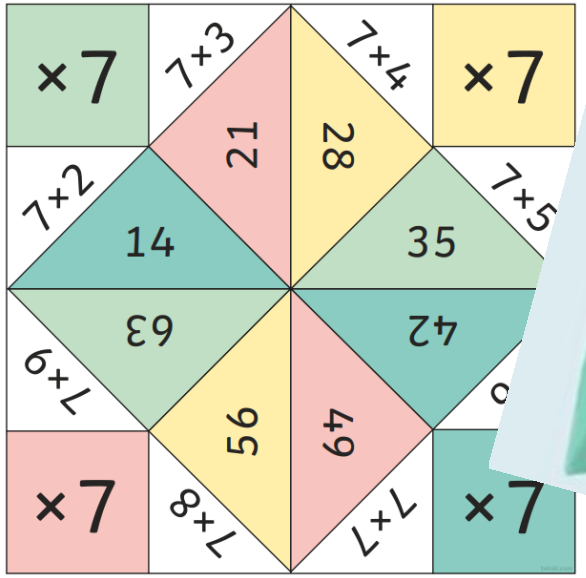


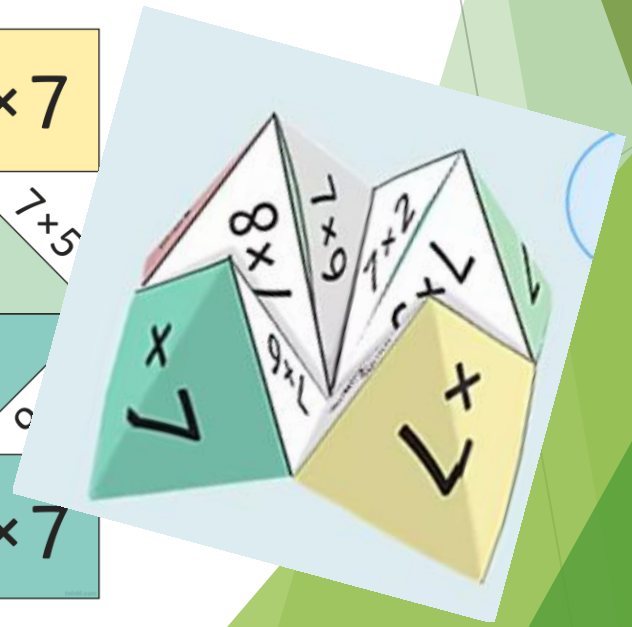
Using well known songs…

Times table games…

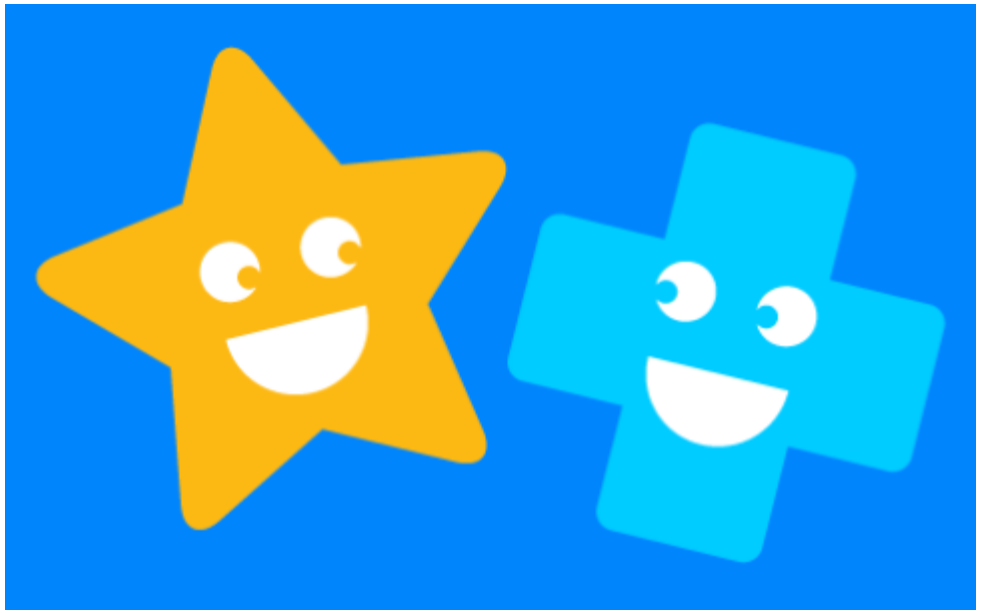








Doodle Maths - great for retrieval!



doodlemaths

TTRS


THANK YOU