PARENTS MATHS WORKSHOP

Year 3

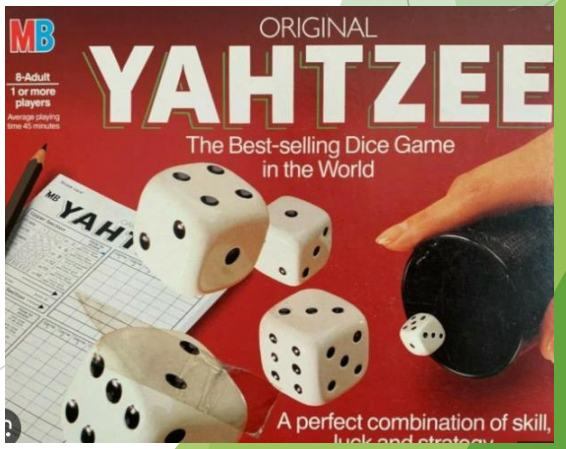
Aims of the Session:

- 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.

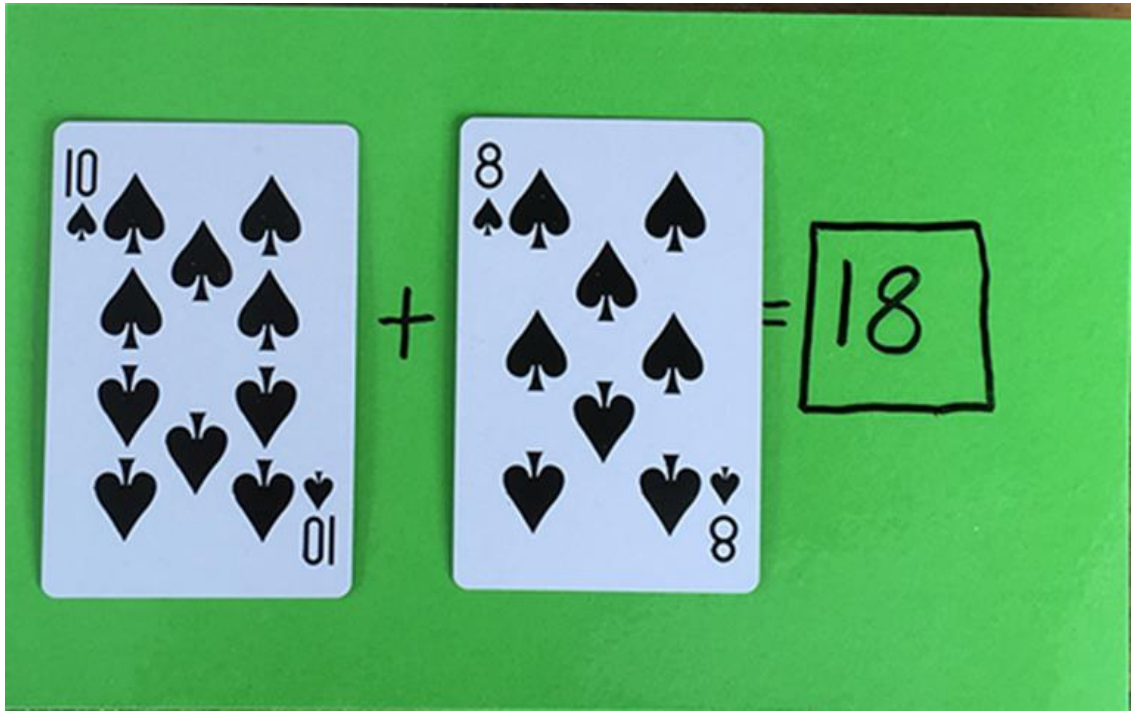
Why engage with your child's learning?

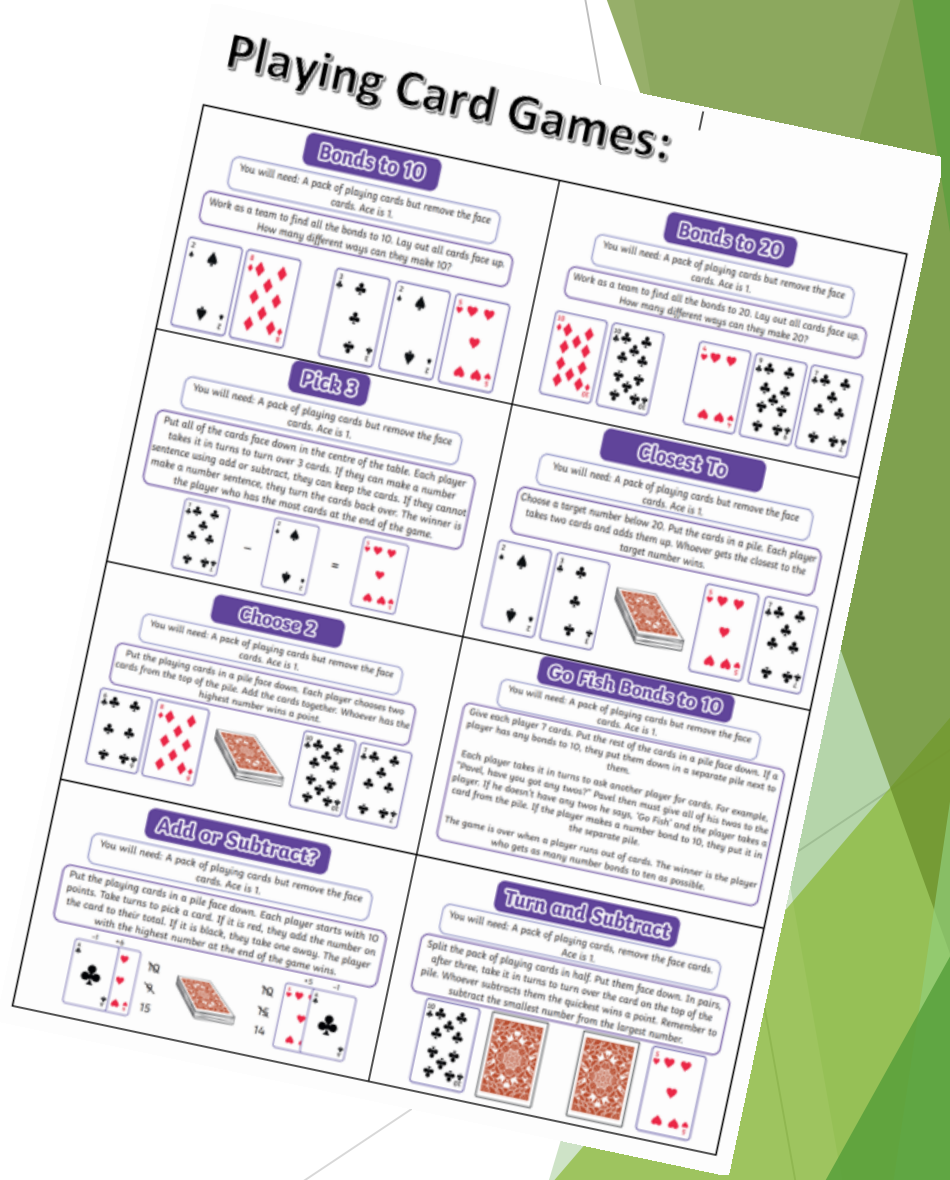
Research evidence suggests that when parents are engaged in their children's learning, outcomes for children can be improved.

Games you can play at home!



Card Games:


10
01
+
8
8
=
18


Playing Card Games:
Bonds to 10
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Work as a team to find all the bonds to 10. Lay out all cards face up. How many different ways can they make 10?
Bonds to 20
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Work as a team to find all the bonds to 20. Lay out all cards face up. How many different ways can they make 20?
Pick 3
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Put all of the cards face down in the centre of the table. Each player takes it in turns to turn over 3 cards. If they can make a number sentence using add or subtract, they can keep the cards. If they cannot make a number sentence, they turn the cards back over. The winner is the player who has the most cards at the end of the game.
Closest To
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Choose a target number below 20. Put the cards in a pile. Each player takes two cards and adds them up. Whoever gets the closest to the target number wins.
Choose 2
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Put the playing cards in a pile face down. Each player chooses two cards from the top of the pile. Add the cards together. Whoever has the highest number wins a point.
Go Fish Bonds to 10
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Give each player 7 cards. Put the rest of the cards in a pile face down. If a player has any bonds to 10, they put them down in a separate pile next to them.
Each player takes it in turns to ask another player for cards. For example, "Pavel, have you got any twos?" Pavel then must give all of his twos to the player. If he doesn't have any twos he says, 'Go Fish' and the player takes a card from the pile. If the player makes a number bond to 10, they put it in the separate pile.
The game is over when a player runs out of cards. The winner is the player who gets as many number bonds to ten as possible.
Add or Subtract?
You will need: A pack of playing cards but remove the face cards. Ace is 1.
Put the playing cards in a pile face down. Each player starts with 10 points. Take turns to pick a card. If it is red, they add the number on the card to their total. If it is black, they take one away. The player with the highest number at the end of the game wins.
Turn and Subtract
You will need: A pack of playing cards, remove the face cards. Ace is 1.
Split the pack of playing cards in half. Put them face down. In pairs, after three, take it in turns to turn over the card on the top of the pile. Whoever subtracts them the quickest wins a point. Remember to subtract the smallest number from the largest number.

Measurement…

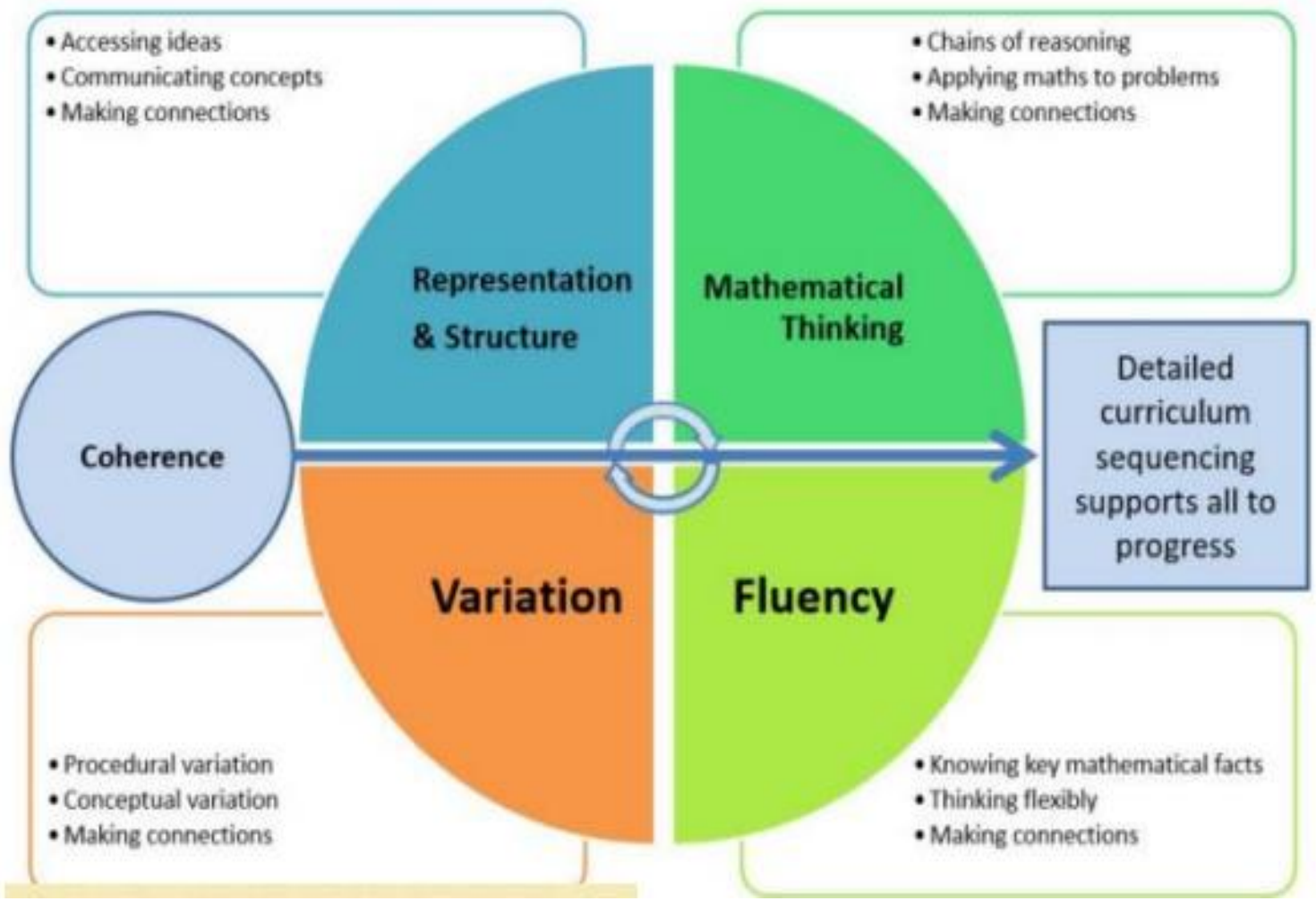
Telling the time!

Measuring capacity, weighing ingredients, measuring lengths/ heights…

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

NCETM

Teaching for Mastery

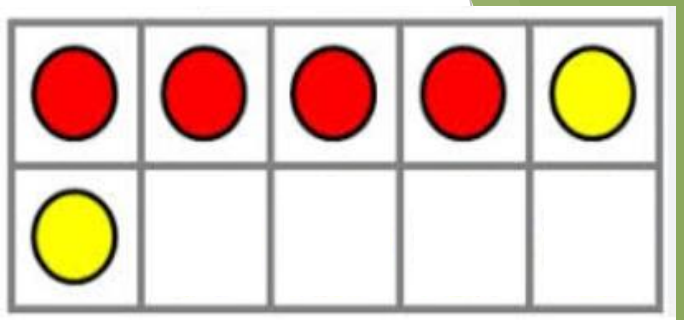


White Rose Maths

Not racing up a ladder!

When the children learn a concept in maths, they need time to embed the skills and apply them to problems.

In Year 3, we build on KS1 knowledge…



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

6 - 2

60 - 20

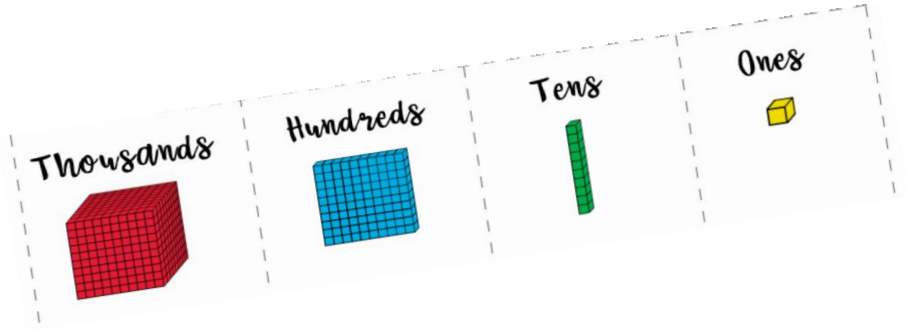
40 + 20

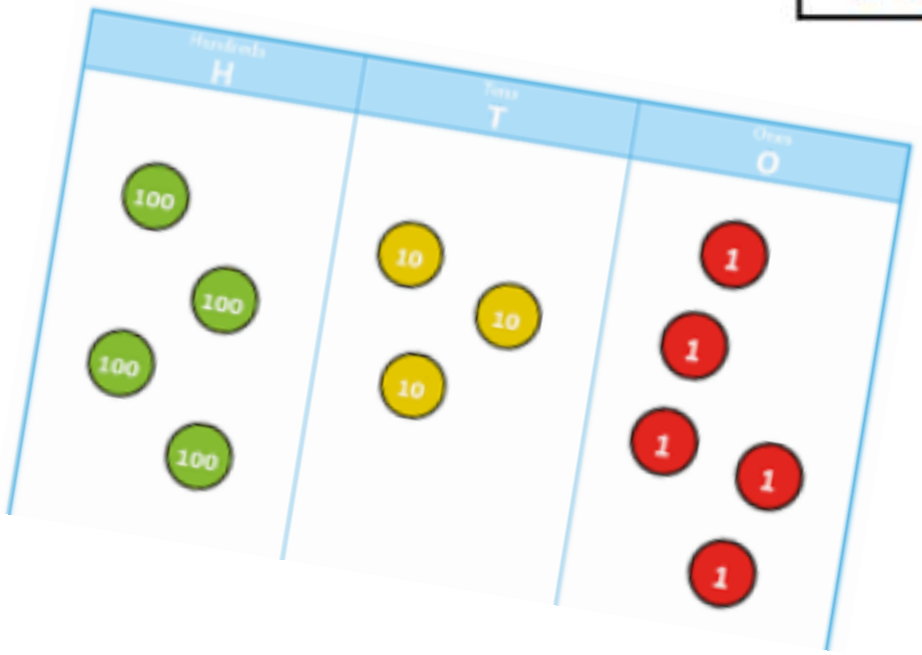
0.4 + 0.2

400 + 200

58 + 6 = 64

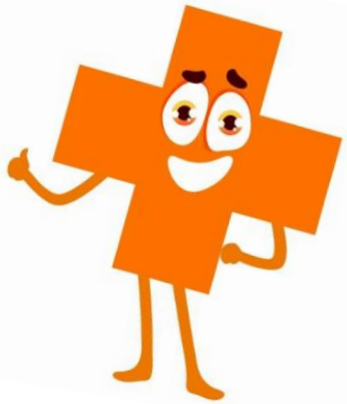
Build on KS1 knowledge…





partitioning

Developing Fluency:



* know my 2, 5 and 10x table (multiplication and division facts).
* Count on and back in 2s, 5s or 10s from any 3 digit number.
* tell the time using 5 minute intervals.

* addition and subtraction facts to 100 (not just multiples).
* add and subtract a 2 and 3 digit number with a 1 digit number mentally
* know my multiplication and division facts for the 4 & 8 times tables

* count in steps of 50 and 100
* know my multiplication and division facts for the 3, 4, and 8 times tables
* count in multiples of 6 and 9
* count up in thirds and tenths.

CPA - approach to maths!

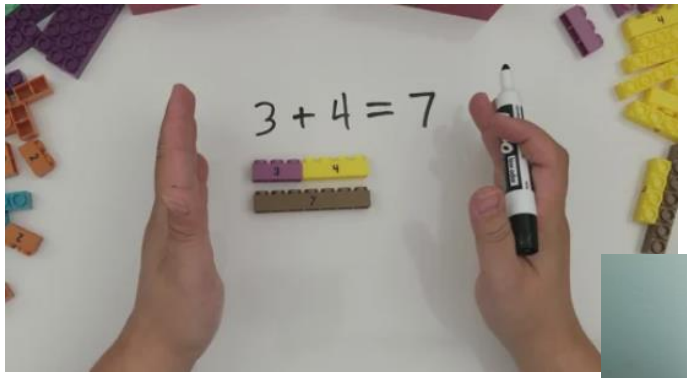
Concrete

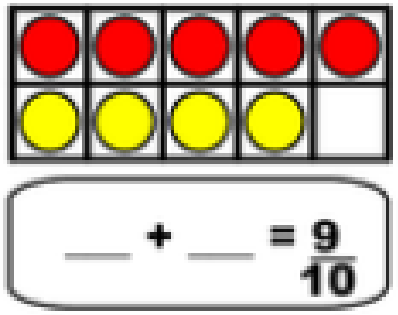
Pictorial

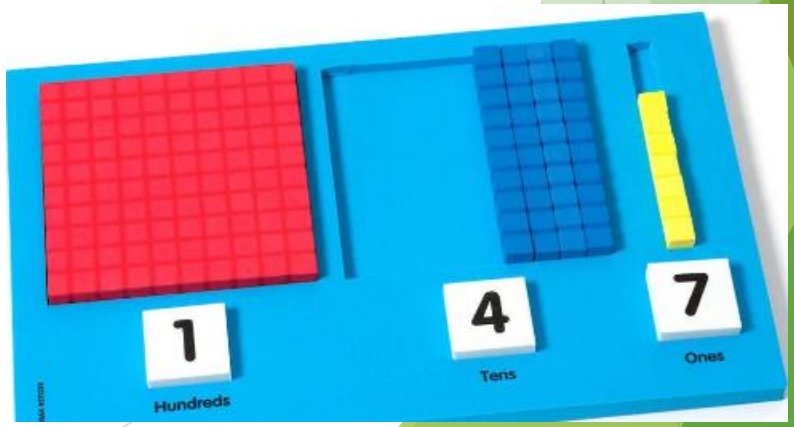
Abstract

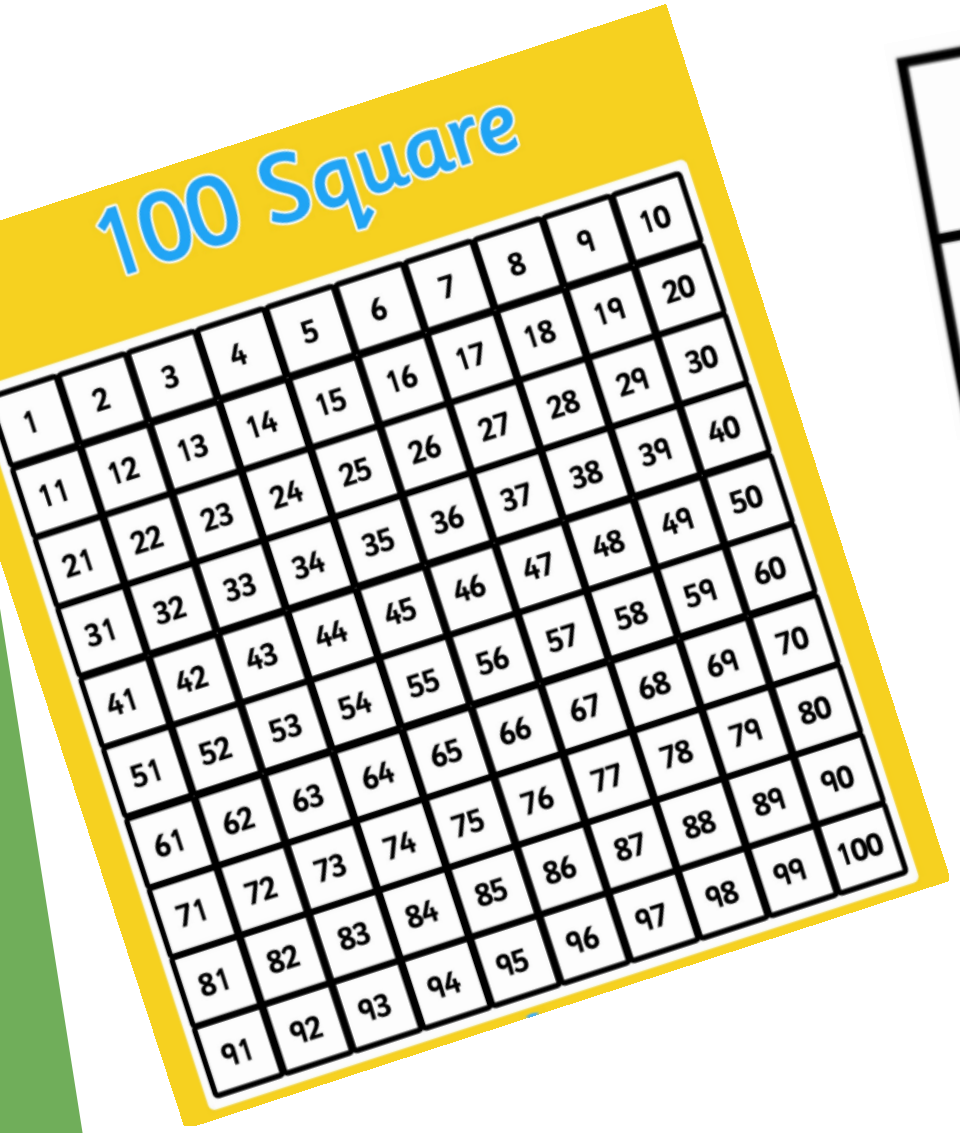
CPA - approach to maths!

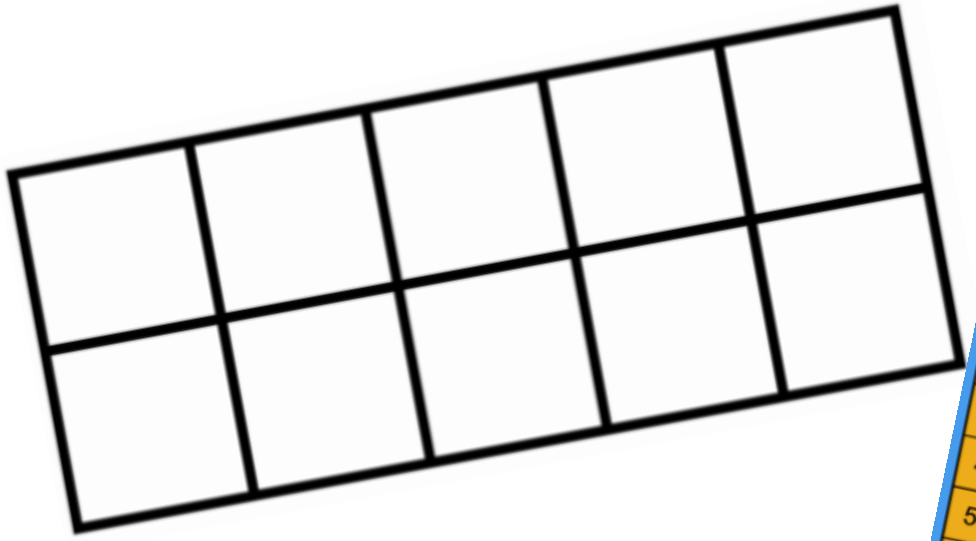
Concrete

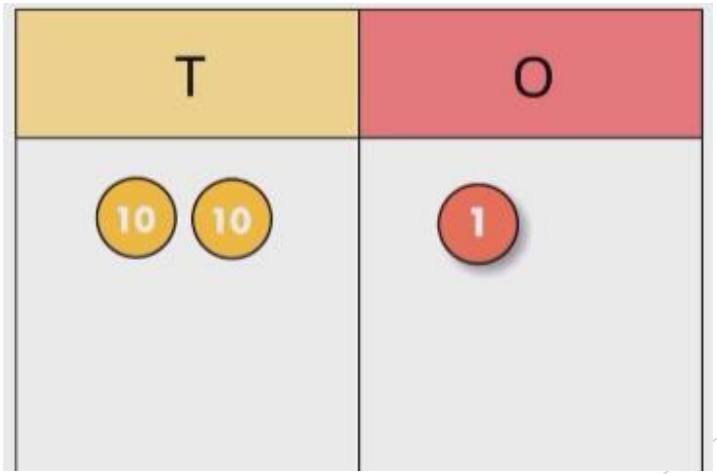


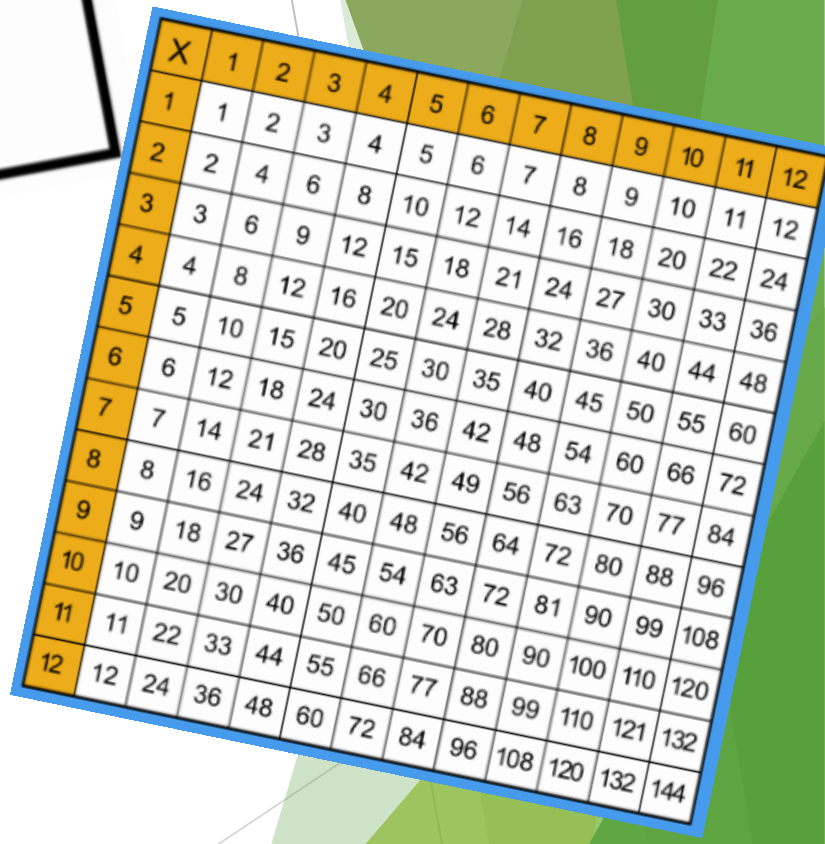


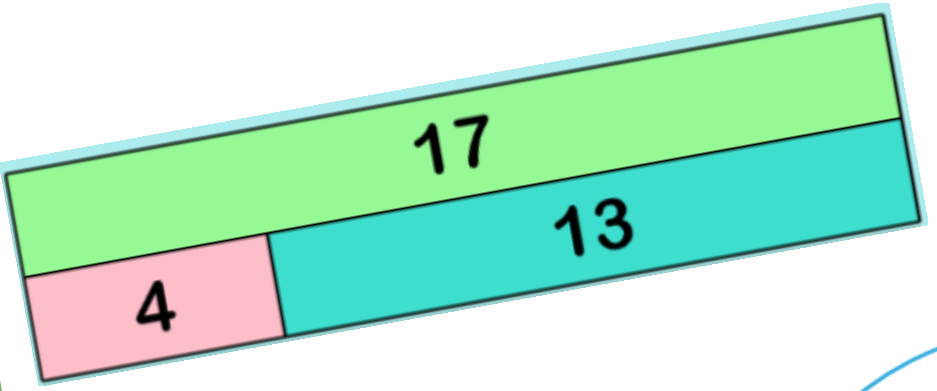


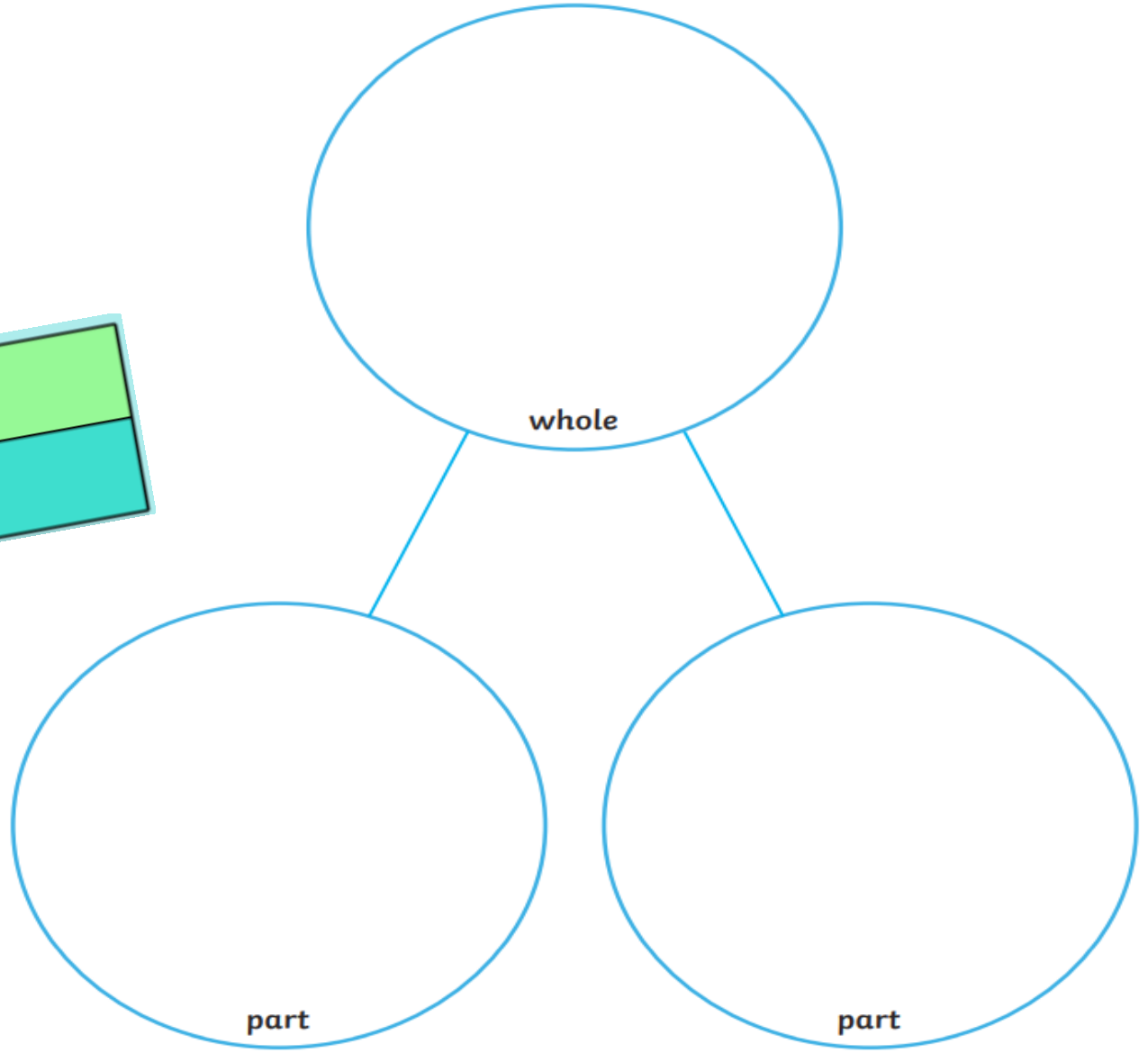

100 Square
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100




T
O
10
10
1

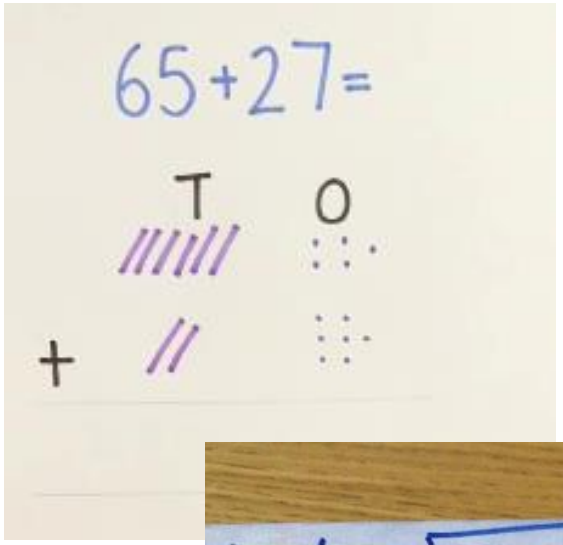

X 1 2 3 4 5 6 7 8 9 10 11 12
1 1 2 3 4 5 6 7 8 9 10 11 12
2 2 4 6 8 10 12 14 16 18 20 22 24
3 3 6 9 12 15 18 21 24 27 30 33 36
4 4 8 12 16 20 24 28 32 36 40 44 48
5 5 10 15 20 25 30 35 40 45 50 55 60
6 6 12 18 24 30 36 42 48 54 60 66 72
7 7 14 21 28 35 42 49 56 63 70 77 84
8 8 16 24 32 40 48 56 64 72 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

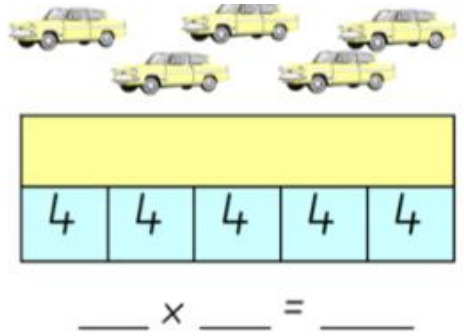

17
13
4

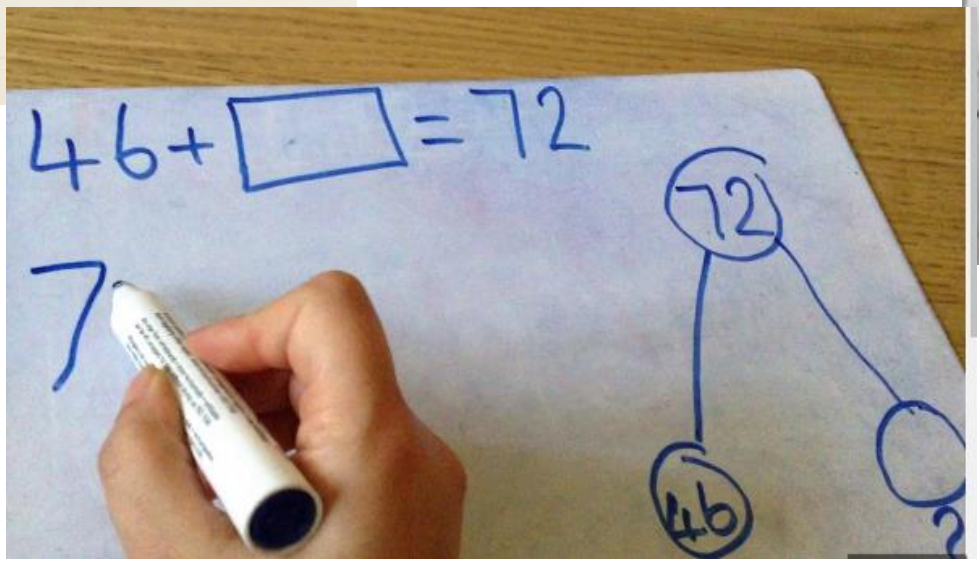

whole
part
part

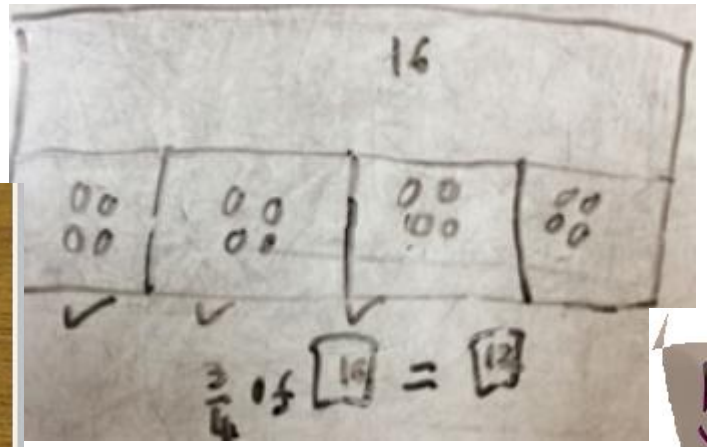
CPA - approach to maths!

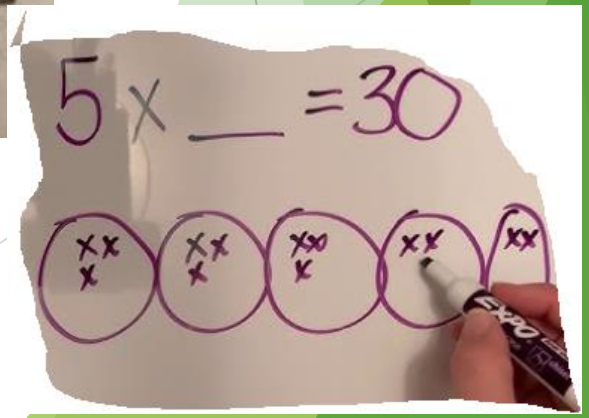
Pictorial











CPA - approach to maths!

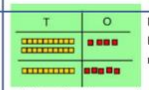
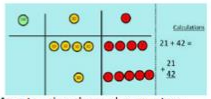
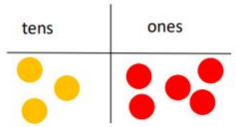
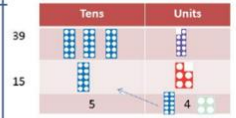
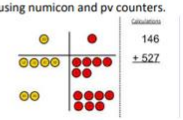
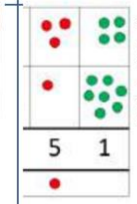
Abstract

98 + 18 =

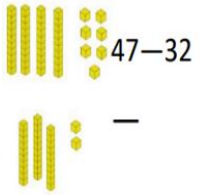
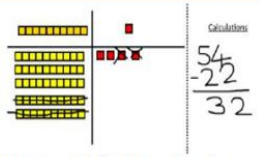
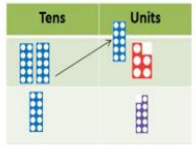
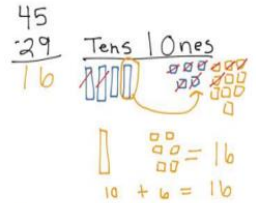
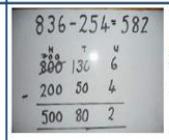
How we teach formal methods?

Addition & Subtraction:

Y3 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Column Addition—no regrouping (friendly numbers) Add two or three 2 or 3-digit numbers.	 Model using Dienes or numicon Add together the ones first, then the tens.   Move to using place value counters	Children move to drawing the counters using a tens and one frame. 	2 2 3 + 1 1 4 3 3 7 Add the ones first, then the tens, then the hundreds.
Column Addition with regrouping.	 Exchange ten ones for a ten. Model using numicon and pv counters. 	 Children can draw a representation of the grid to further support their understanding, carrying the ten **underneath** the line	20 + 5 40 + 8 60 + 13 = 73 Start by partitioning the numbers before formal column to show the exchange. 536 + 85 621 1 1

Y3 SUBTRACTION

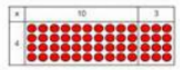
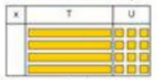
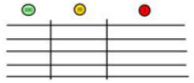
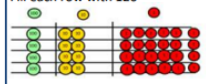
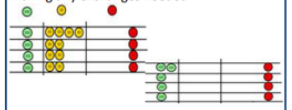
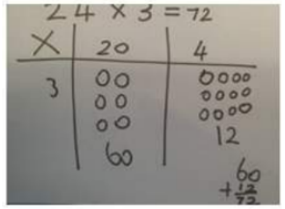
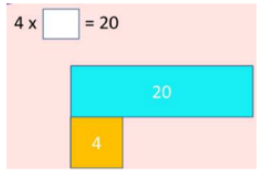
Objective & Strategy	Concrete	Pictorial	Abstract
Column subtraction without regrouping (friendly numbers)	 47—32 Use base 10 or Numicon to model	 Darw representations to support understanding	47-24=23 40+7 -20+4 20+3 Intermediate step may be needed to lead to clear subtraction understanding. 
Column subtraction with regrouping	 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.	 Begin by partitioning into pv columns  Then move to formal method.

Can you make an exchange?

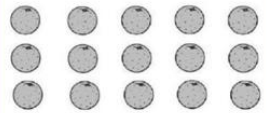
How we teach formal methods?

Division & Multiplication:

Y3 MULTIPLICATION

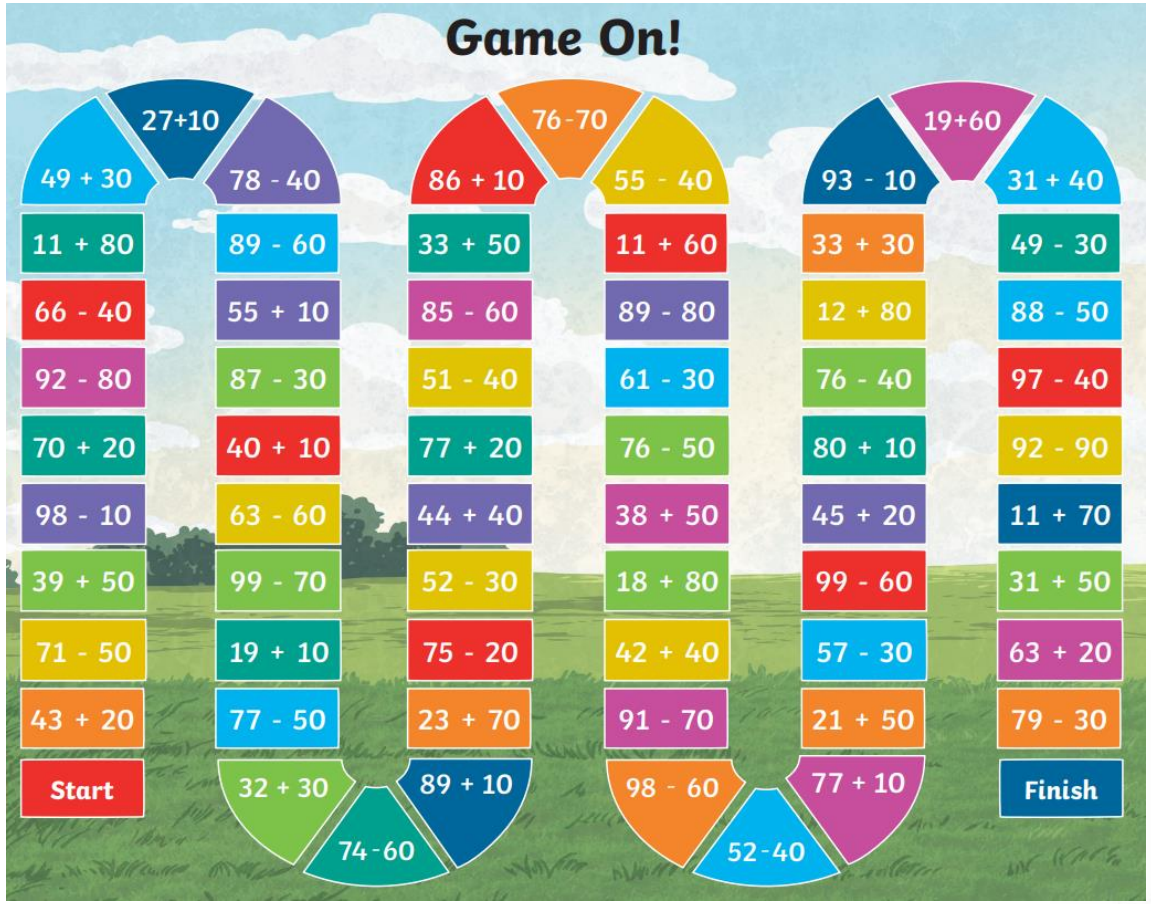
Objective & Strategy	Concrete	Pictorial	Abstract
Partitioning	Show the links with arrays to first introduce the grid method  4 rows of 10 4 rows of 3 Move onto base ten to move towards a more compact method.  4 rows of 13 Move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows  Fill each row with 126  Add up each column, starting with the ones making any exchanges needed  Then you have your answer.	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  4 x ☐ = 20 20 4	Multiply through using partitioning: **36 x 3** 30 x 3 = 90 6 x 3 = 18 90 + 18 = 108 Multiply the tens first and then the ones. Add the two answers together.

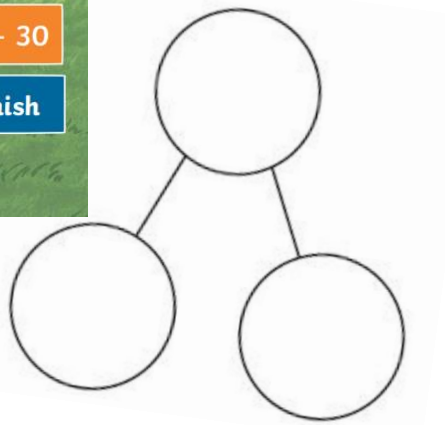
Y3 DIVISION

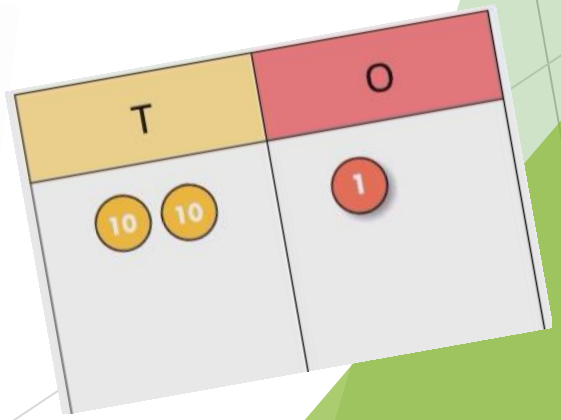
Objective & Strategy	Concrete	Pictorial	Abstract
Division as grouping	Use cubes, counters, objects or place value counters to aid understanding.  24 divided into groups of 6 = 4 96 ÷ 3 = 32 	Continue to use bar modelling to aid solving division problems.  20 ? 20 ÷ 5 = ? 5 x ? = 20	How many groups of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

Let’s play some games with the children!

Recognising place value…

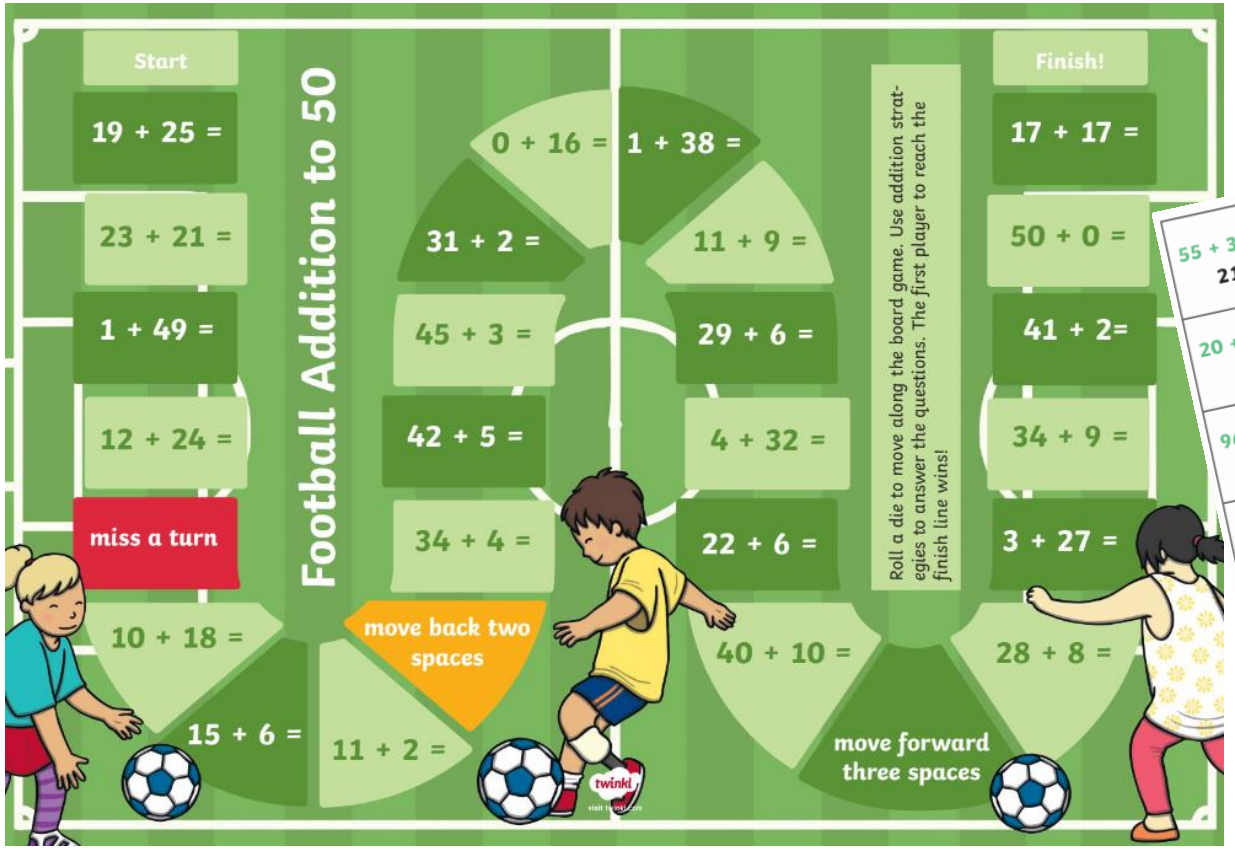


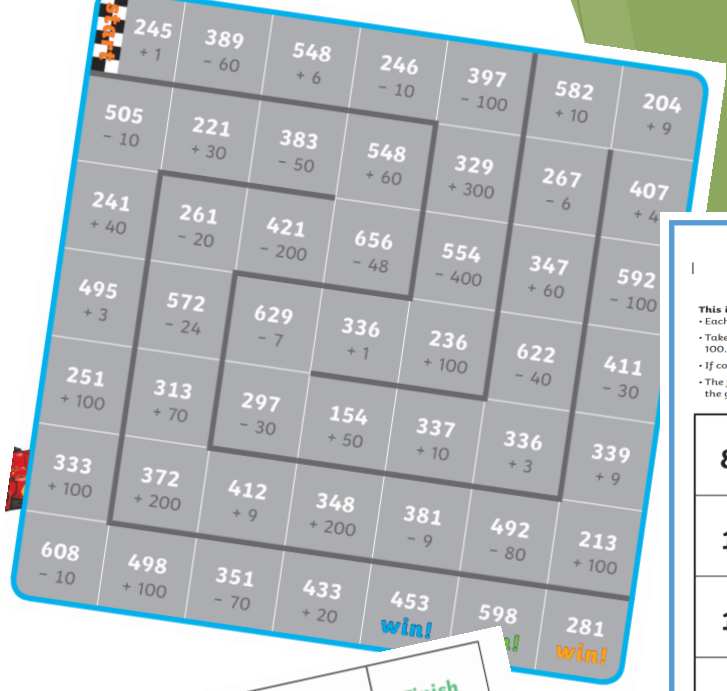


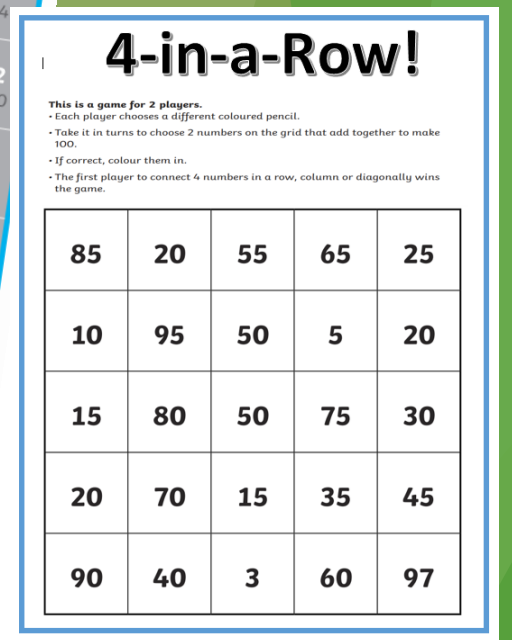


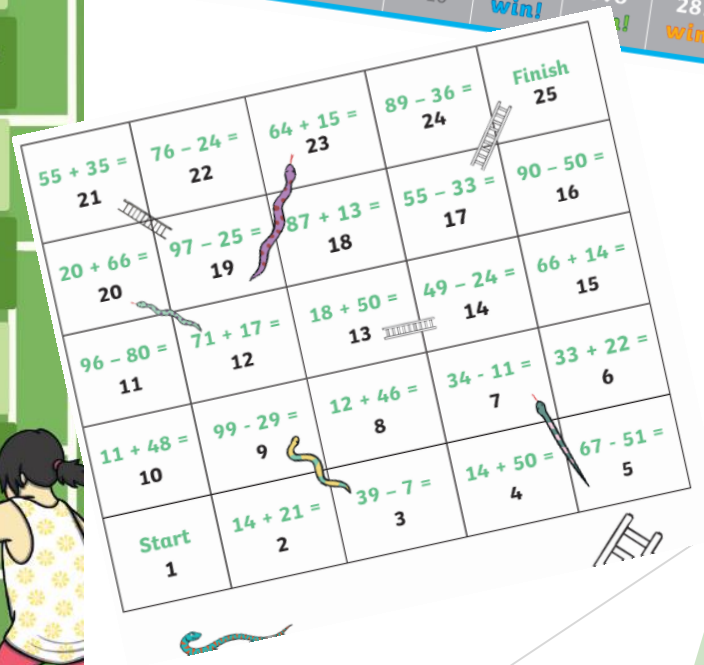
Addition Games

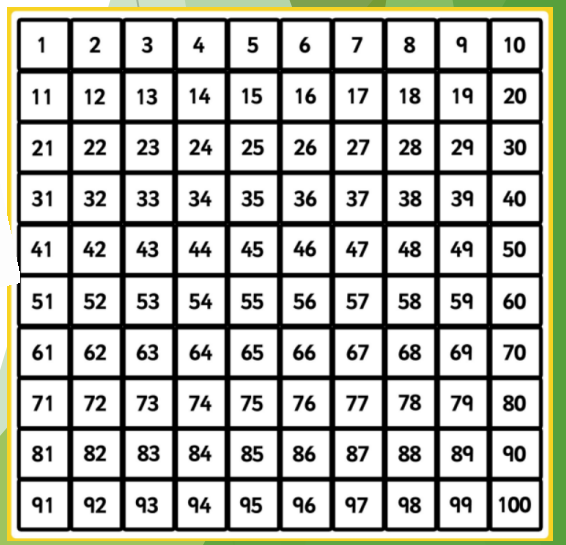
- One more/ 10 more/ 100 more
- Crossing the boundaries





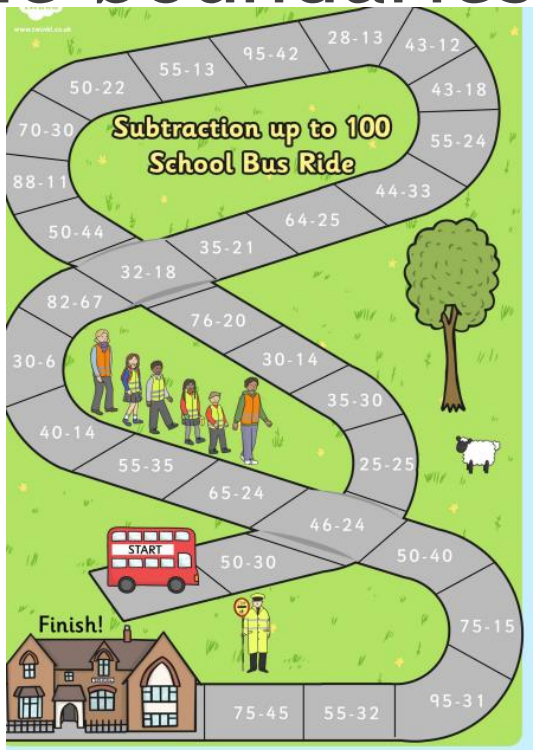


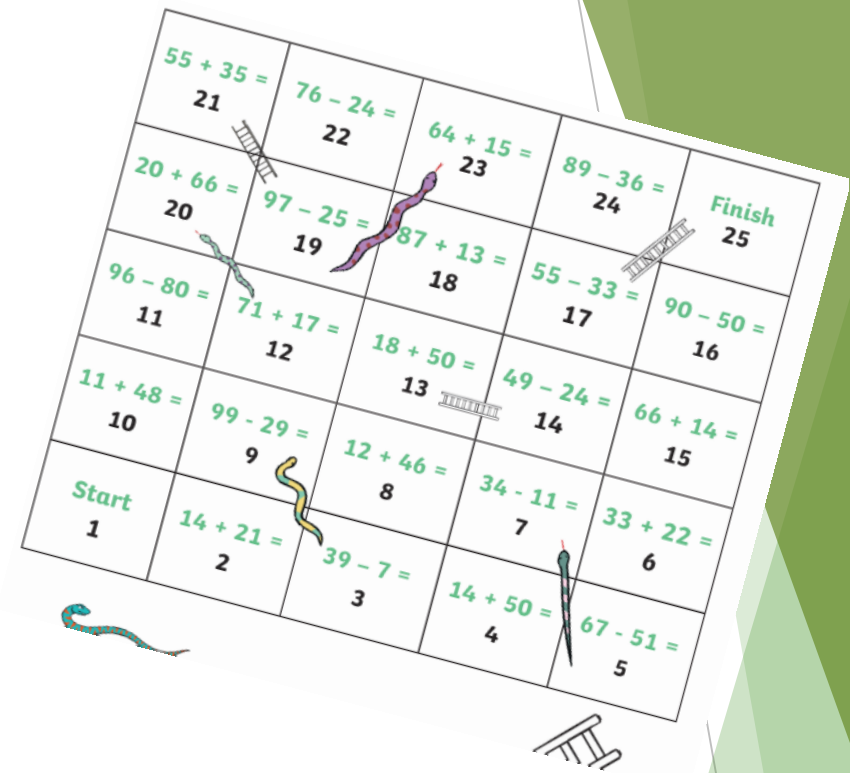




Subtraction Games

- Counting backwards
- One less/ ten less/ 100 less
- Crossing the boundaries





1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

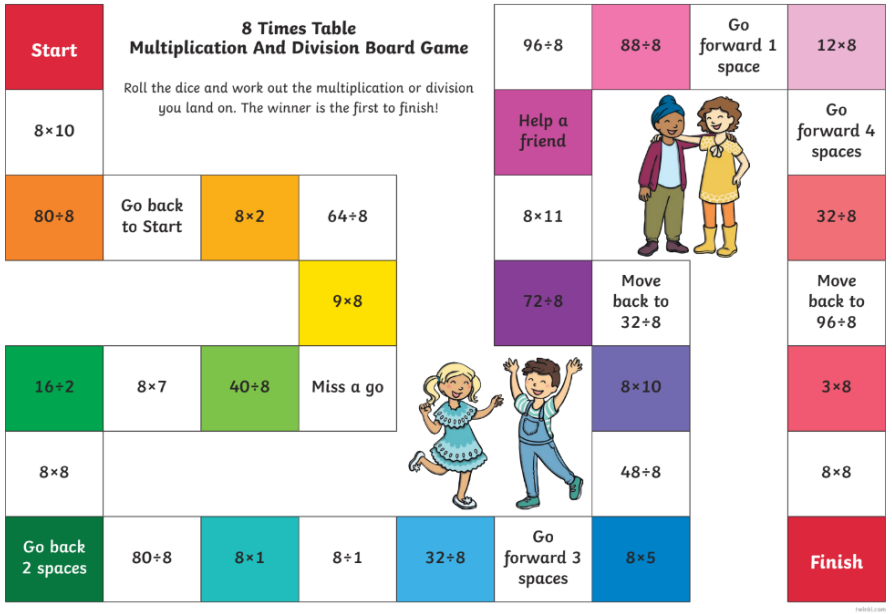
Developing times table knowledge

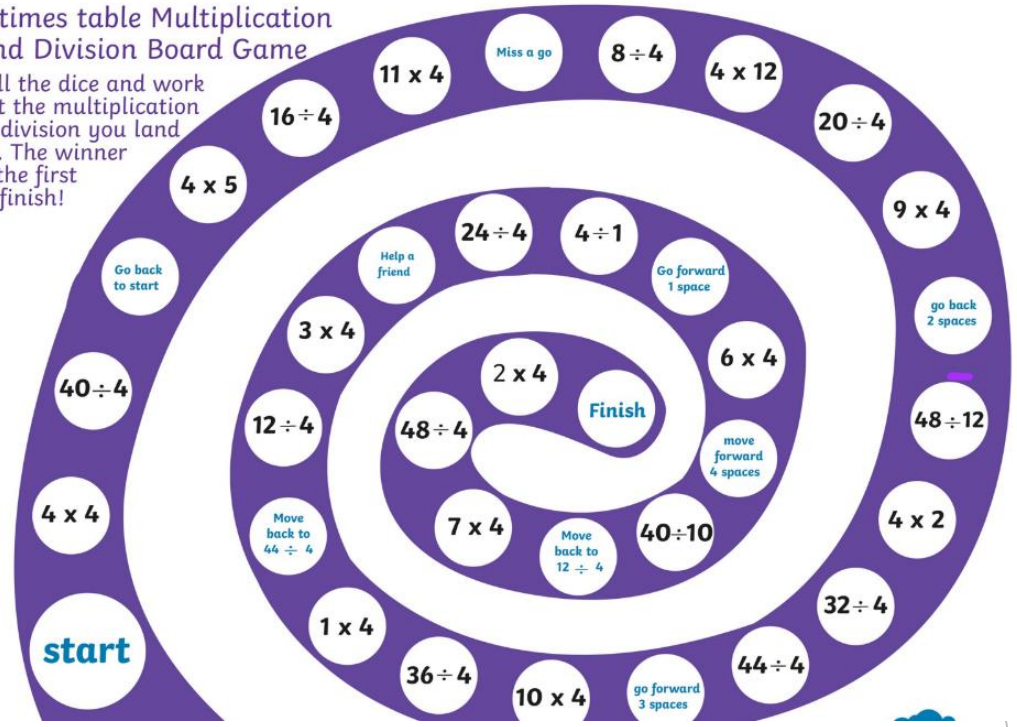
- Counting up
- Songs and using fingers
- Chanting
- Referring to grids/ charts

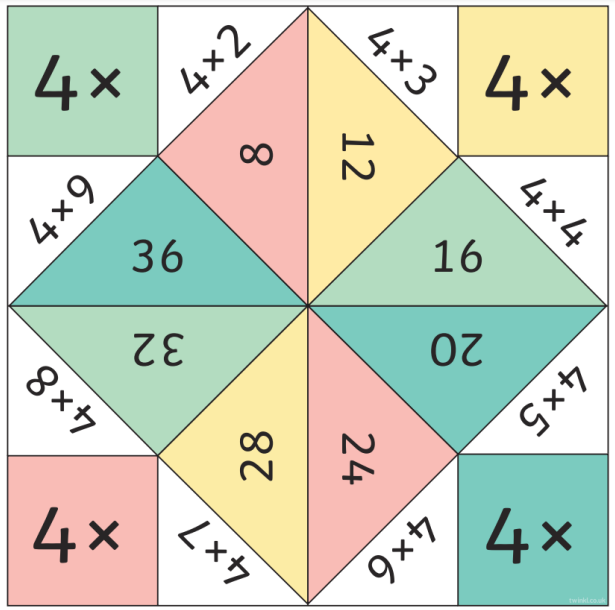
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	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

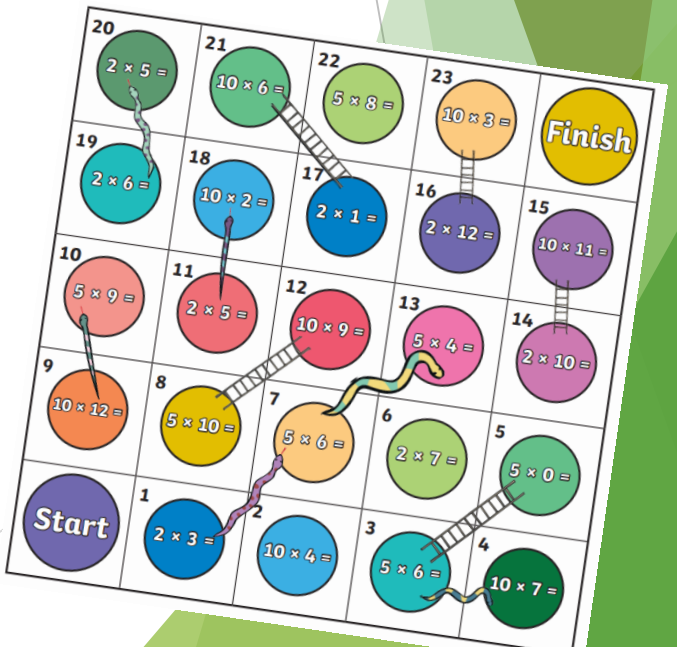
Using well known songs…

Times table games…

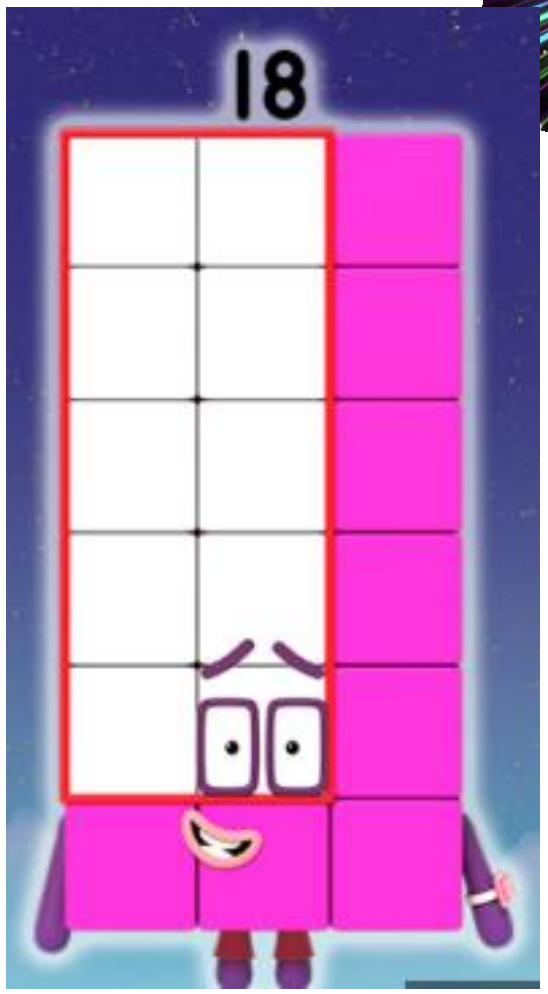




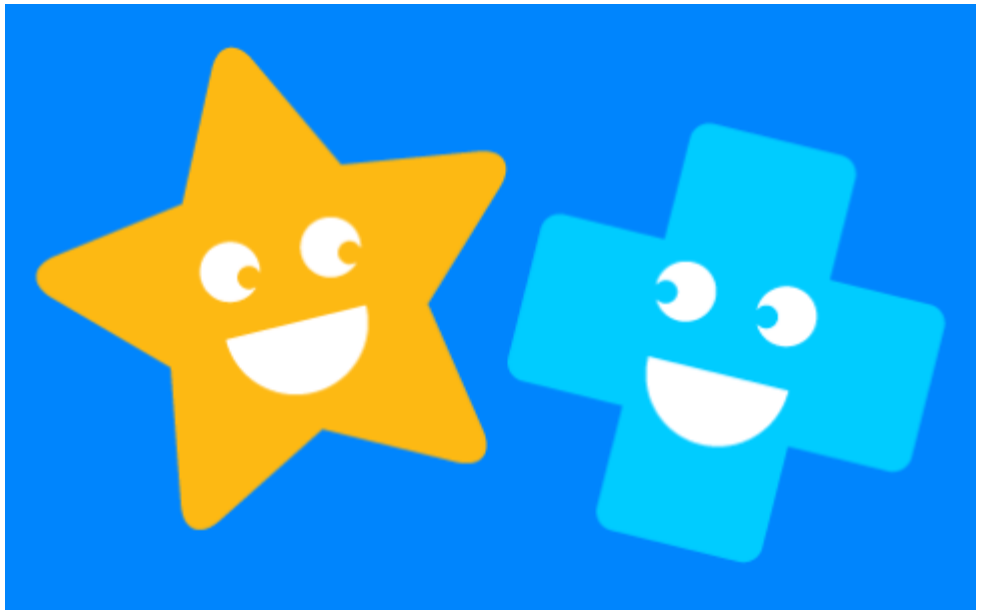




Number Blocks!

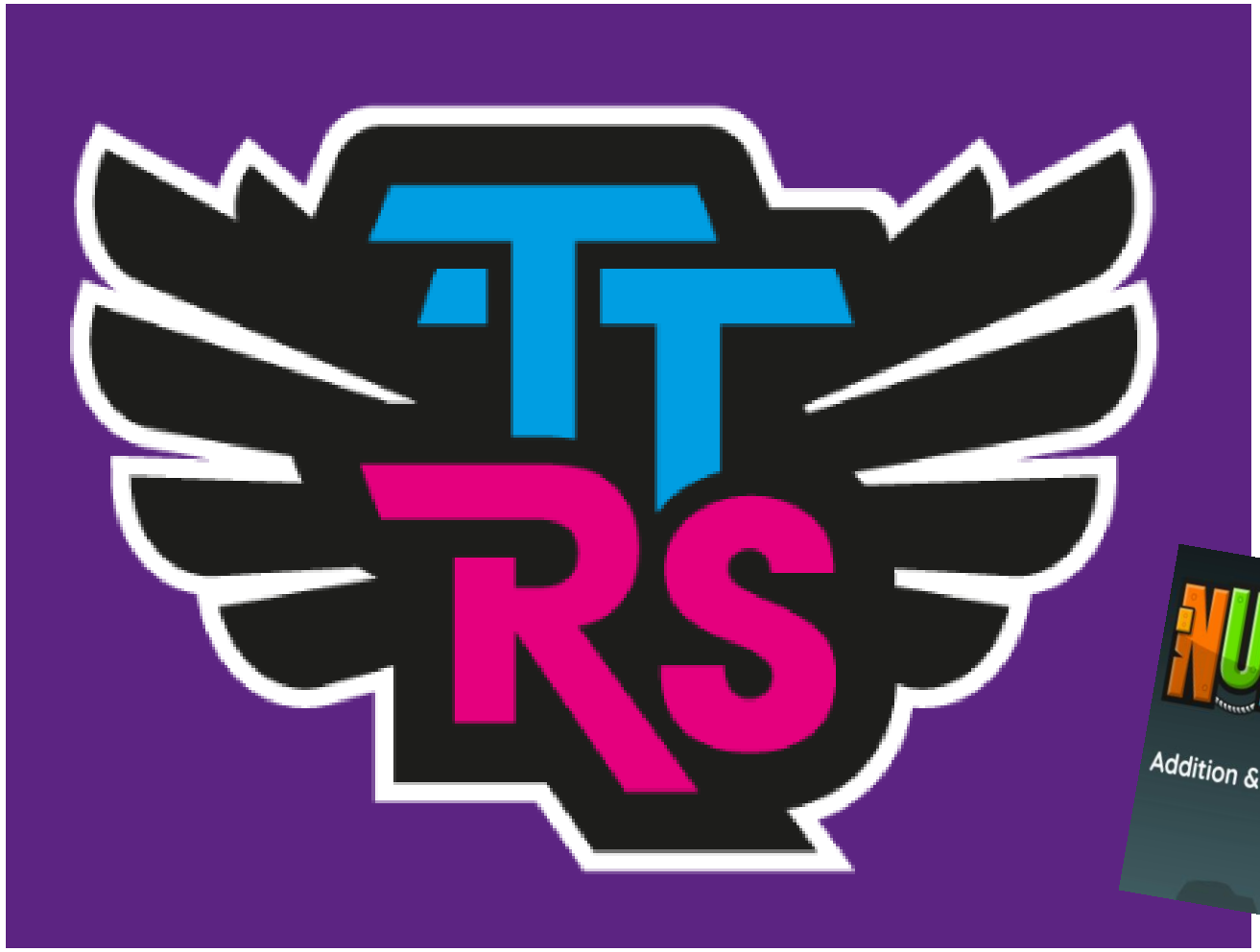


Doodle Maths - great for retrieval!



doodlemaths

TTRS & Numbots



If you have any questions, please contact your class teacher or email:
admin@svps1.com