Multiplication Check Parent Information Session

Welcome

Tuesday 31st January 2023

Important information regarding the MTC

- The MTC determines if Year 4 children can fluently recall their multiplication tables.

- They are designed to help schools identify which children require more support to learn their times tables.

- There is no 'pass' rate or threshold which means that, unlike the Phonics Screening Check, children will not be expected to re-sit the check.

When the check will take place

- There will be a 3 week window from **Monday 5th June to Friday 16th June 2023** for schools to administer the check.

- There is **no set day** to administer the check and children are not expected to take the check at the same time.

- All eligible Year 4 children in England will be required to take the check.

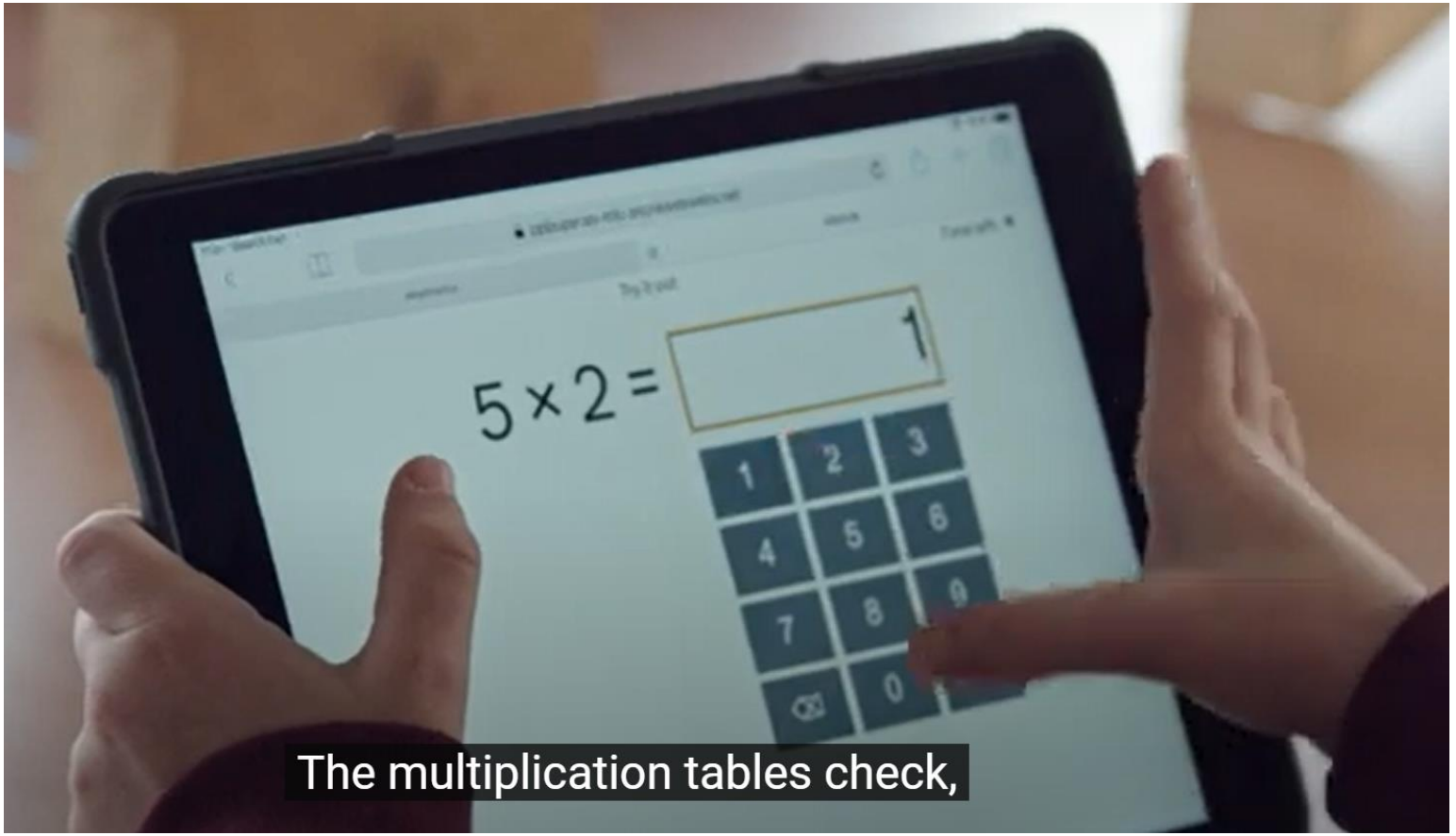
How the check is carried out

- The check will be fully digital.
- Answers will be entered using a keyboard, by pressing digits using a mouse or using an on-screen number pad.
- Usually, the check will take less than **5 minutes** for each child.
- The children will have **6 seconds** from the time the question appears to input their answer.
- There will be a total of **25 questions** with a **3 second pause** in-between questions.
- There will be 3 practice questions before the check begins.

How the check is carried out

- Each child will be randomly assigned a set of questions
- There will only be multiplication questions in the check, not division facts.
- The 6, 7, 8, 9 and 12 times tables are more likely to be asked.
- Reversal of questions (e.g. 8 x 6 and 6 x 8) will not be asked in the same check.
- Children will not see their individual results when they complete the check.

What will the check look like?



What will it look like?

Timestables.co.uk
Learn the times tables here!

Multiplication tables check

00:01

1 / 25

8 x 10 =

1	2	3
4	5	6
7	8	9
<-	0	Enter

Times Tables in each year group

Expectations for times tables for each year group:	
Year 1	Count in multiples of 2, 5 and 10. Recall and use all doubles to 10 and corresponding halves.
Year 2	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
Year 3	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Year 4	Recall and use multiplication and division facts for multiplication tables up to 12x12.
Year 5	Revision of all times tables and division facts up to 12x12.
Year 6	Revision of all times tables and division facts up to 12x12.

Counting and looking for patterns.

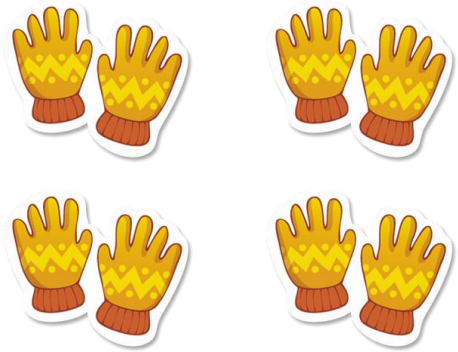
Example: Counting in 2s
2, 4, 6, 8, 10…

- Ensure children have a strong understanding of counting in groups first.
- When children are secure with counting, they can then look for patterns.

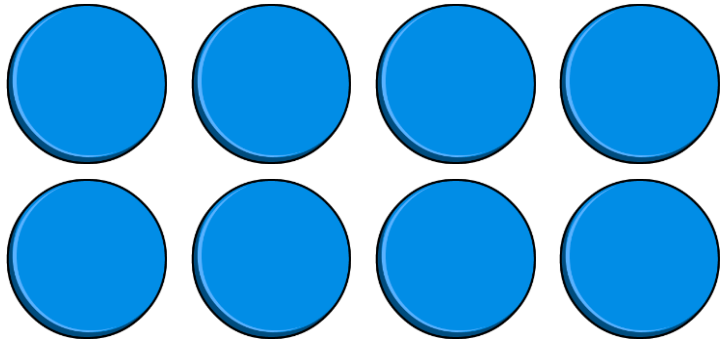



Repeated addition

Knowing that 2 x 4 is the same as 2 + 2 + 2 + 2



2 + 2 + 2 + 2 = ?

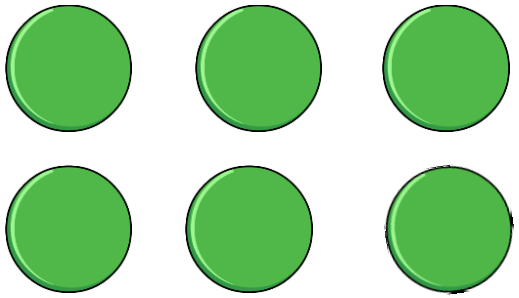


2 x 4 = ?

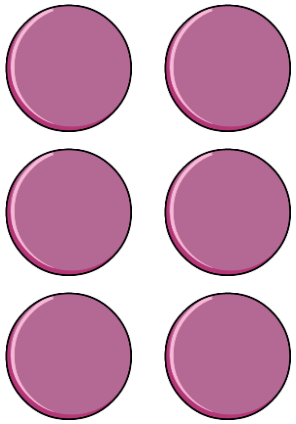
Multiplication is commutative

3 x 2 is the same as 2 x 3

Children need to understand that multiplication can be completed in any order to produce the same answer. Sometimes this link needs to be made explicit.



3 lots of 2 = 6

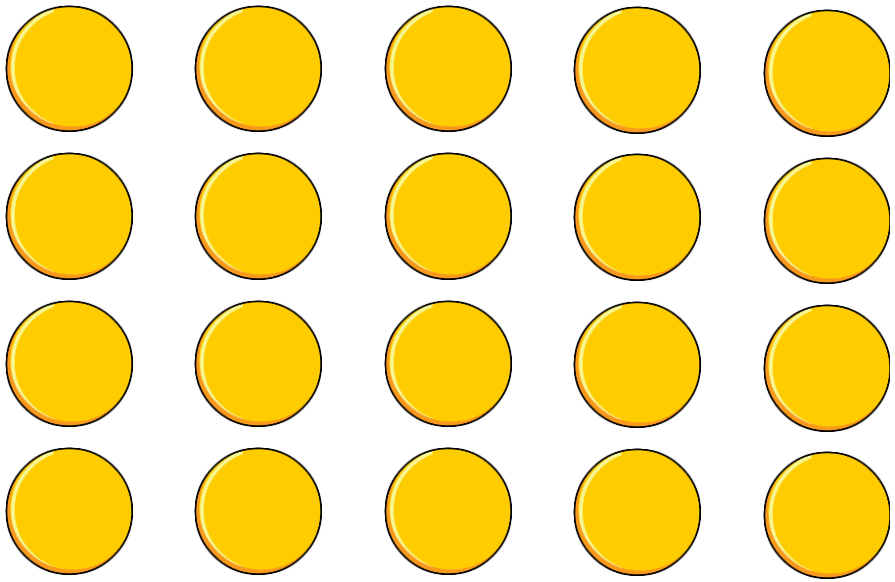


2 lots of 3 = 6

Multiplication is the inverse of division

20 ÷ 5 = 4 can be worked out because 5 x 4 = 20

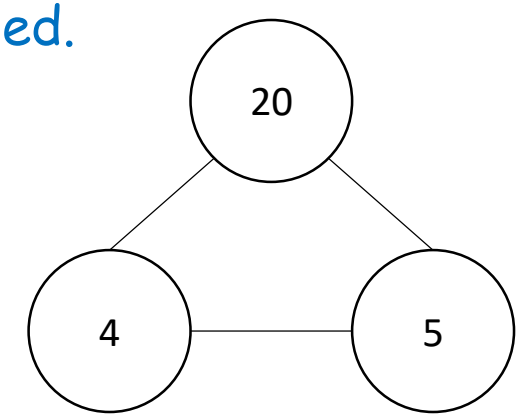
Using pictorial representations (such as arrays) is useful here for children to see the link between multiplication and division.



Number families

$4 \times 5 = 20, 5 \times 4 = 20, 20 \div 5 = 4, 20 \div 4 = 5$

Due to their commutative understanding, children should also be able to see whole number families. For many children this will need to be pointed out and discussed.



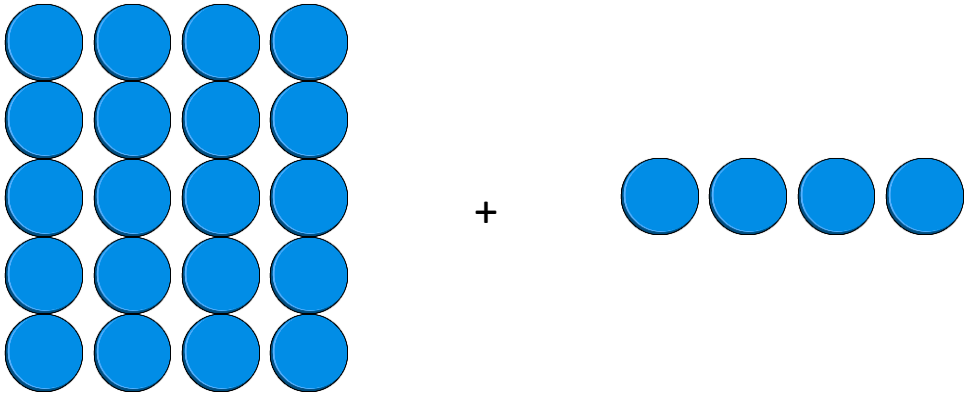
Using known facts

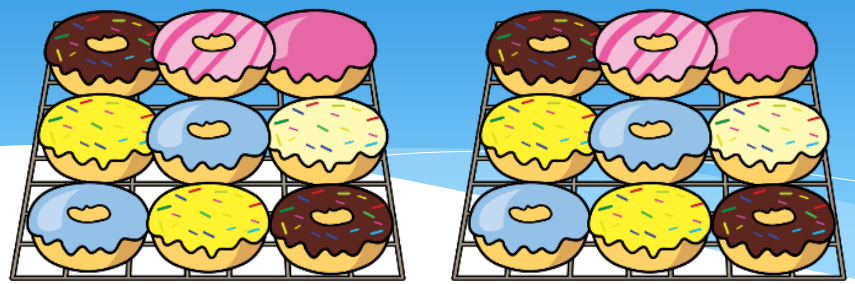
4 x 6 = ?

I know 4 x 5 = 20

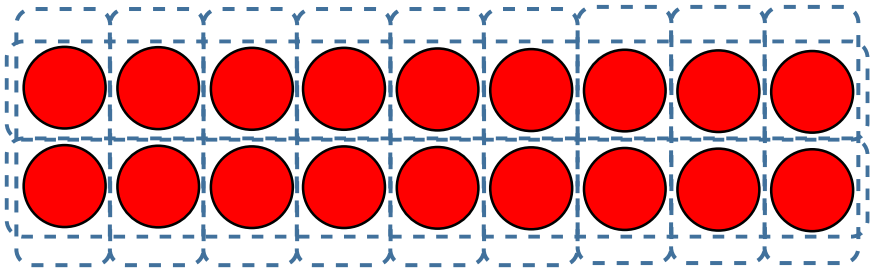
Therefore, 20 + 4 = 24

By using known facts from 'easier' times tables, children should be able to find answers with increasing speed.





$9 + 9 = 18$

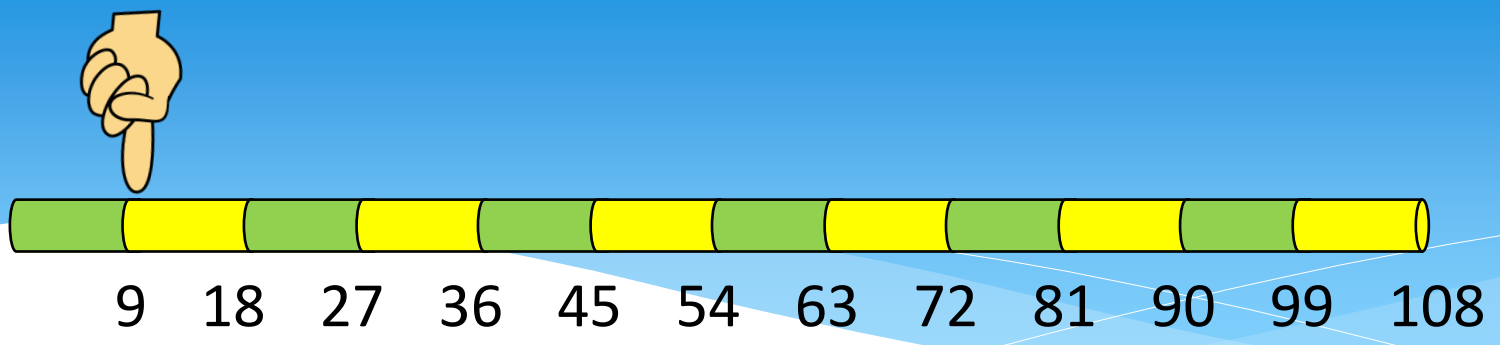


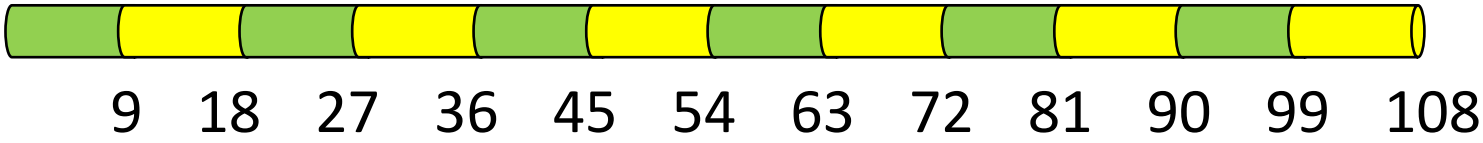
$2 \times 9 = 18$

$9 \times 2 = 18$

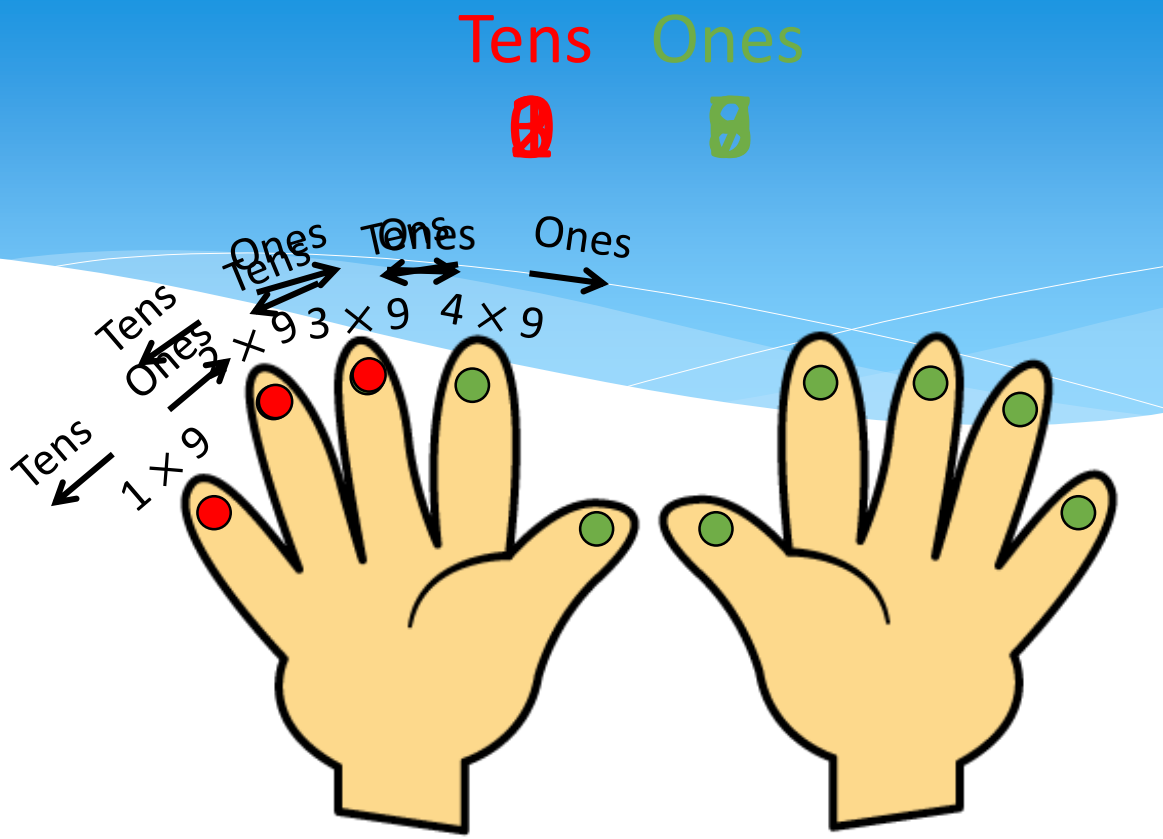
$18 \div 9 = 2$

$18 \div 2 = 9$


9 18 27 36 45 54 63 72 81 90 99 108

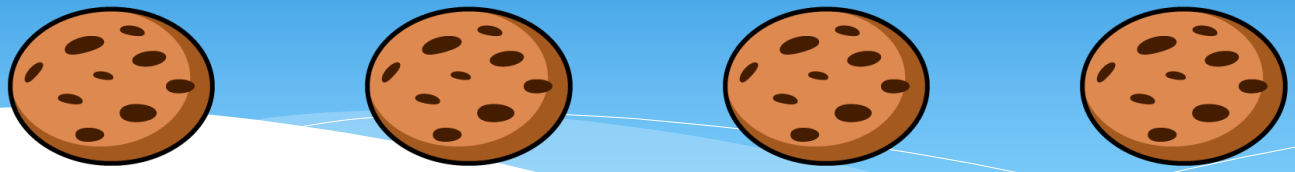

9 18 27 36 45 54 63 72 81 90 99 108

$0 \times 9 = 0$
$1 \times 9 = 9$
$2 \times 9 = 18$
$3 \times 9 = 27$
$4 \times 9 = 36$
$5 \times 9 = 45$
$6 \times 9 = 54$
$7 \times 9 = 63$
$8 \times 9 = 72$
$9 \times 9 = 81$
$10 \times 9 = 90$



Have a think

Complete the missing numbers.



There are 4 cookies.

There are 9 chocolate chips in each cookie.

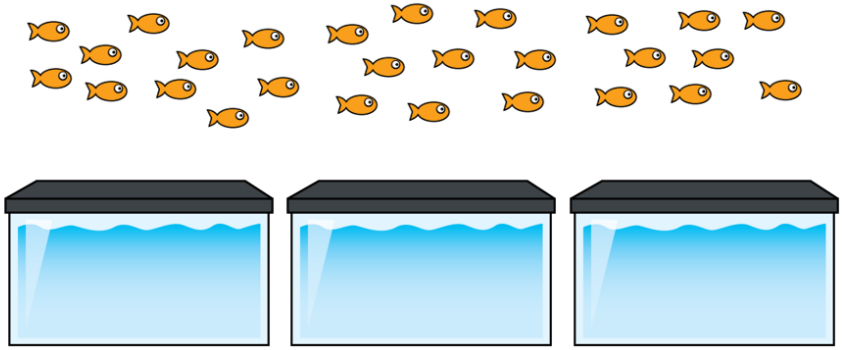
There are 36 chocolate chips altogether.

9 + 9 + 9 = 9 36

4 × 9 = 36

9 × 4 = 36

There are 27 fish.
9 fish are put in each tank.
How many tanks are needed for all the fish?



$27 \div 9 = 3$

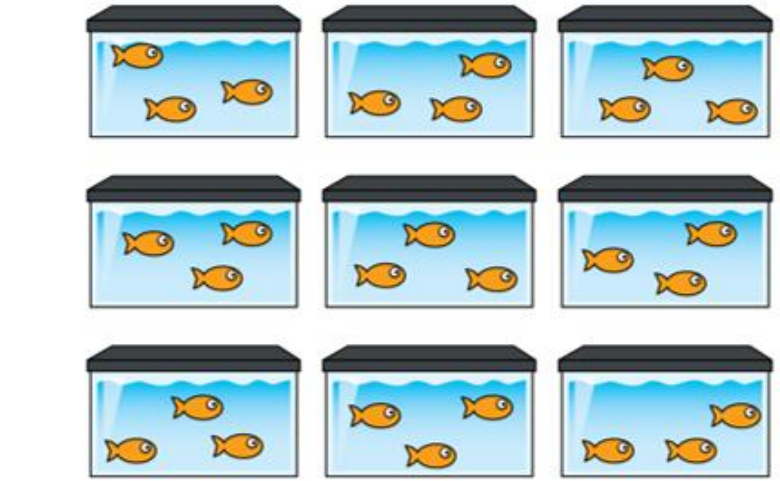
Total number of fish | Number of fish in each tank | Number of tanks

There are 27 fish.
An equal amount are put into each of the 9 tanks.
How many fish are put in each tank?

$27 \div 9 = 3$

Total number of fish | Number of fish tanks | Number of fish in each tank

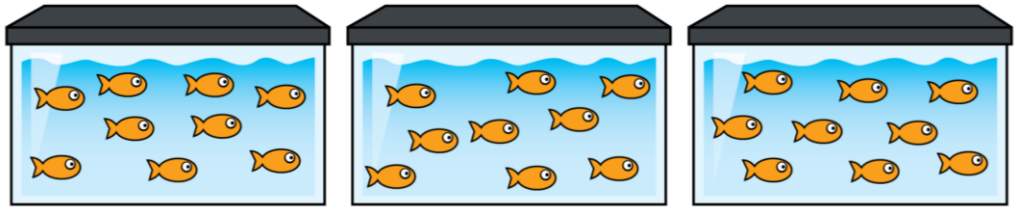
Sharing



$27 \div 9 = 3$

Total number of fish | Number of fish tanks | Number of fish in each tank

Grouping

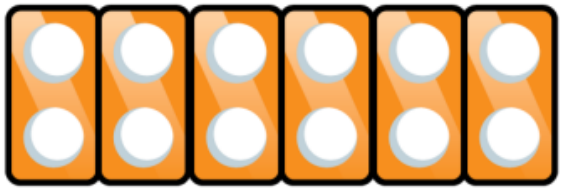


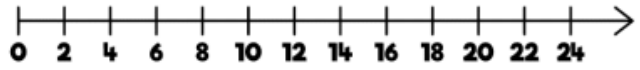
$27 \div 9 = 3$

Total number of fish | Number of fish in each tank | Number of tanks

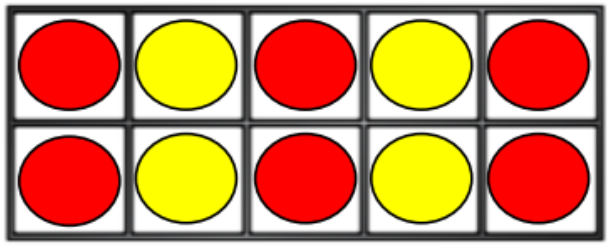
Examples of manipulatives and representations we might use to support the teaching of times tables across year groups

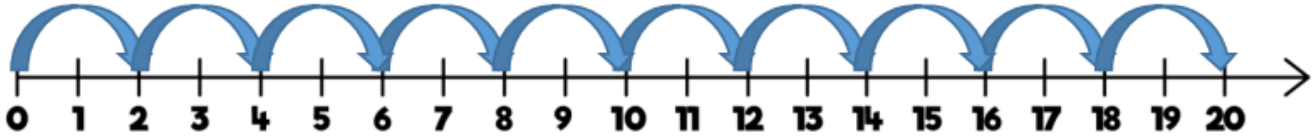
Skill: 2 times table





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





Year: 2

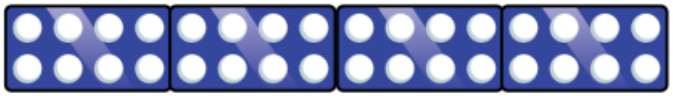
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones.

Use different models to develop fluency.

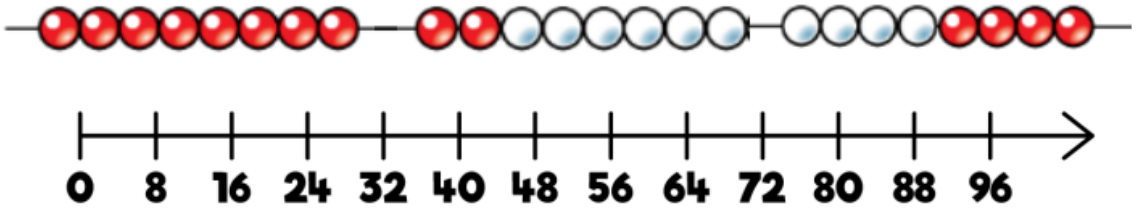
Skill: 8 times table

Year: 3



8	16	24	32	40
48	56	64	72	80

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



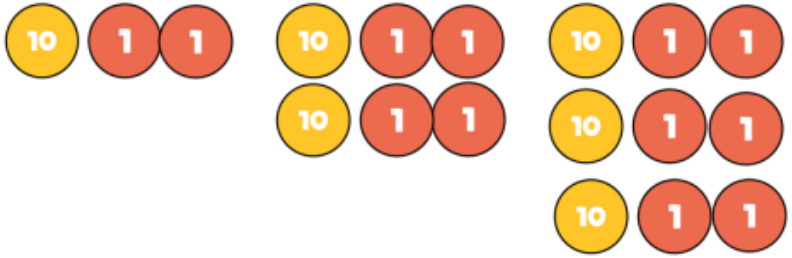
Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

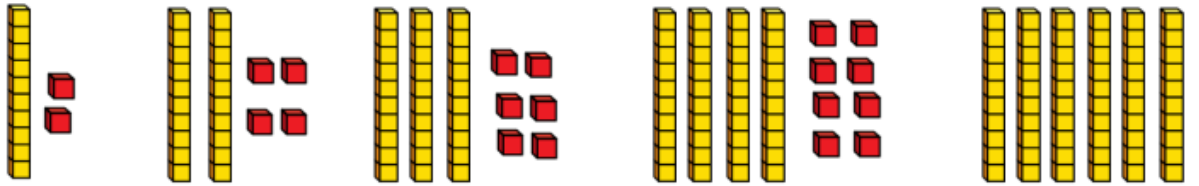
Skill: 12 times table

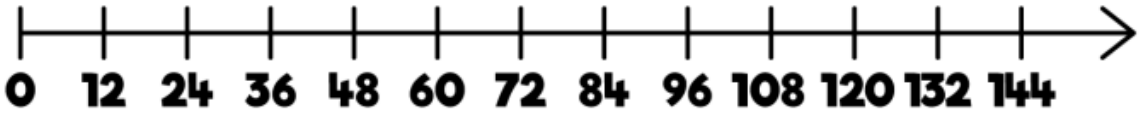
Year: 4

12	24	36	48	60
72	84	96	108	120
132	144			

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







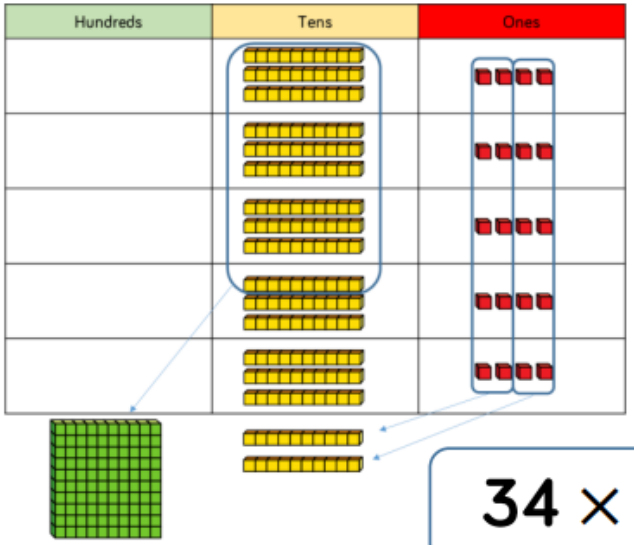
Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the 12 times table, using manipulatives to support. Make links to the 6 times table, seeing how each multiple is double the sixes. Notice the pattern in the ones within each group of five multiples. The hundred square can support in highlighting this pattern.

Examples of how children will begin to apply their understanding of their times tables to more formal methods of recording

e.g. short multiplication

Skill: Multiply 2-digit numbers by 1-digit numbers

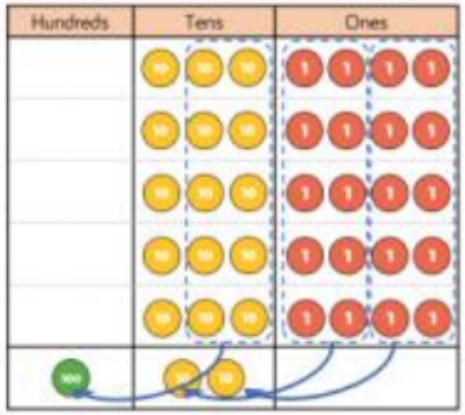
Year: 3/4



	H	T	O	
		3	4	
×			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	

$$34 \times 5 = 170$$

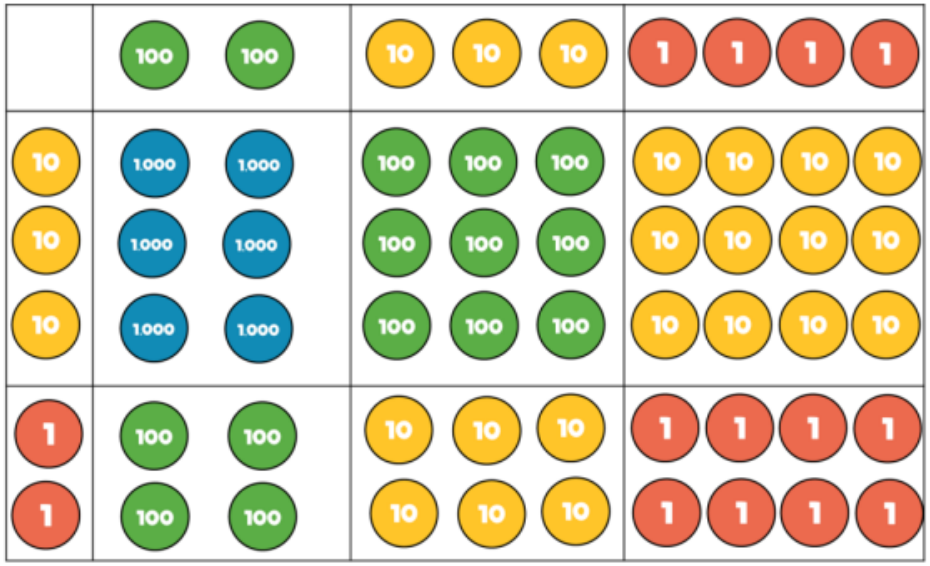
	H	T	O	
		3	4	
×			5	
	1	7	0	
	1	2		



Teachers may decide to first look at the expanded column method before moving on to the short multiplication method.
The place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.

Skill: Multiply 3-digit numbers by 2-digit numbers

Year: 5



Th	H	T	O
	2	3	4
×		3	2
	4	6	8
$^{1}7$	$^{1}0$	2	0
7	4	8	8

×	200	30	4
30	6,000	900	120
2	400	60	8

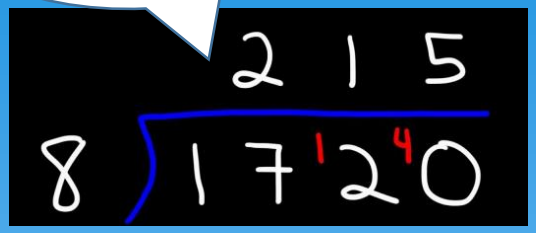
$234 \times 32 = 7{,}488$

Children can continue to use the area model when multiplying 3-digits by 2-digits. Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers.

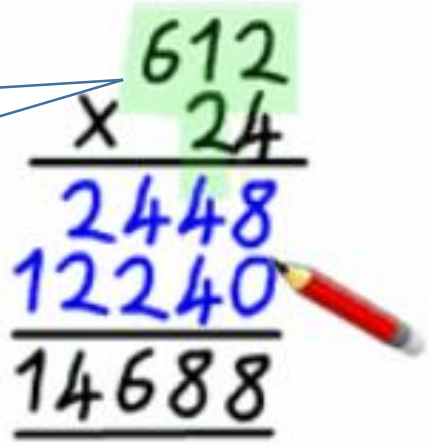
Encourage children to move towards the formal written method, seeing the links with the grid method.

Why it is so important children have fluent recall of their times tables by Year 5 and 6 (UKS2)

Short and long division



Long multiplication



Ratio

Finding prime numbers, multiples, factors, square numbers

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

Scaling a ratio by a factor by 2

2 : 3

To scale a ratio multiply each part of the ratio by the same number

2 x 2 = 4
3 x 2 = 6

4 : 6

$$\frac{13}{20} \times \frac{5}{5} = \frac{65}{100}$$

$$= 65\%$$

Converting fractions to find a common denominator, percentages

Children will be demonstrating some classroom activities

Good morning Year 4

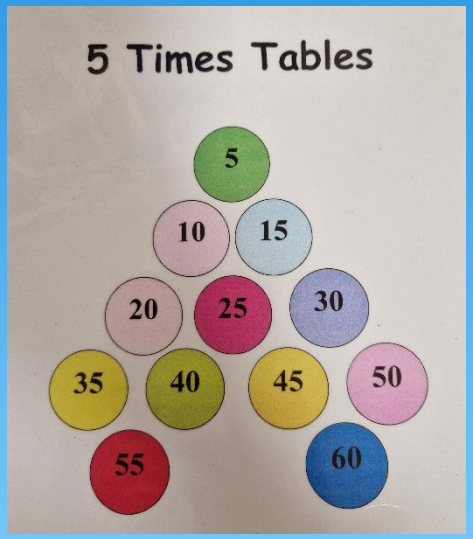
Add the scores of 2 dice to make a number up to 12.

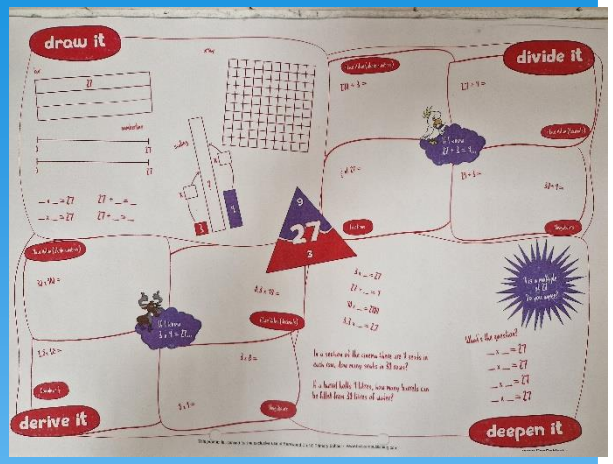
Roll them again to make a another number up to 12.
Find the **product** of the numbers.

GAME

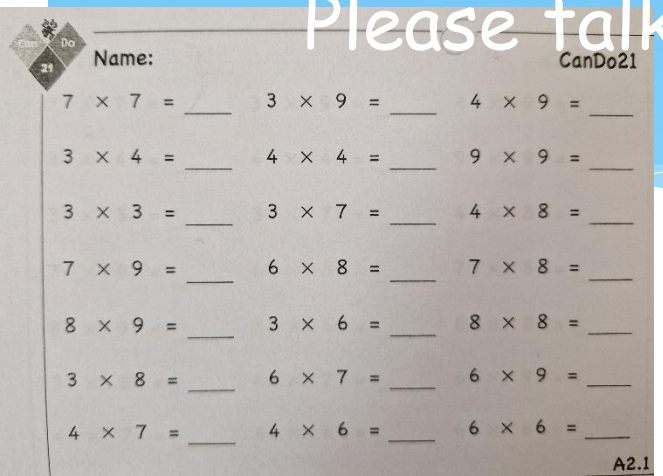
With your partner, decide who will be noughts or crosses.
Take turns to find a product to mark off on the grid.

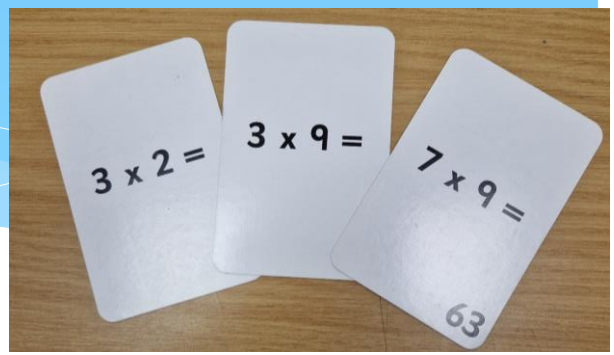
The first to mark off 4 in a row wins!



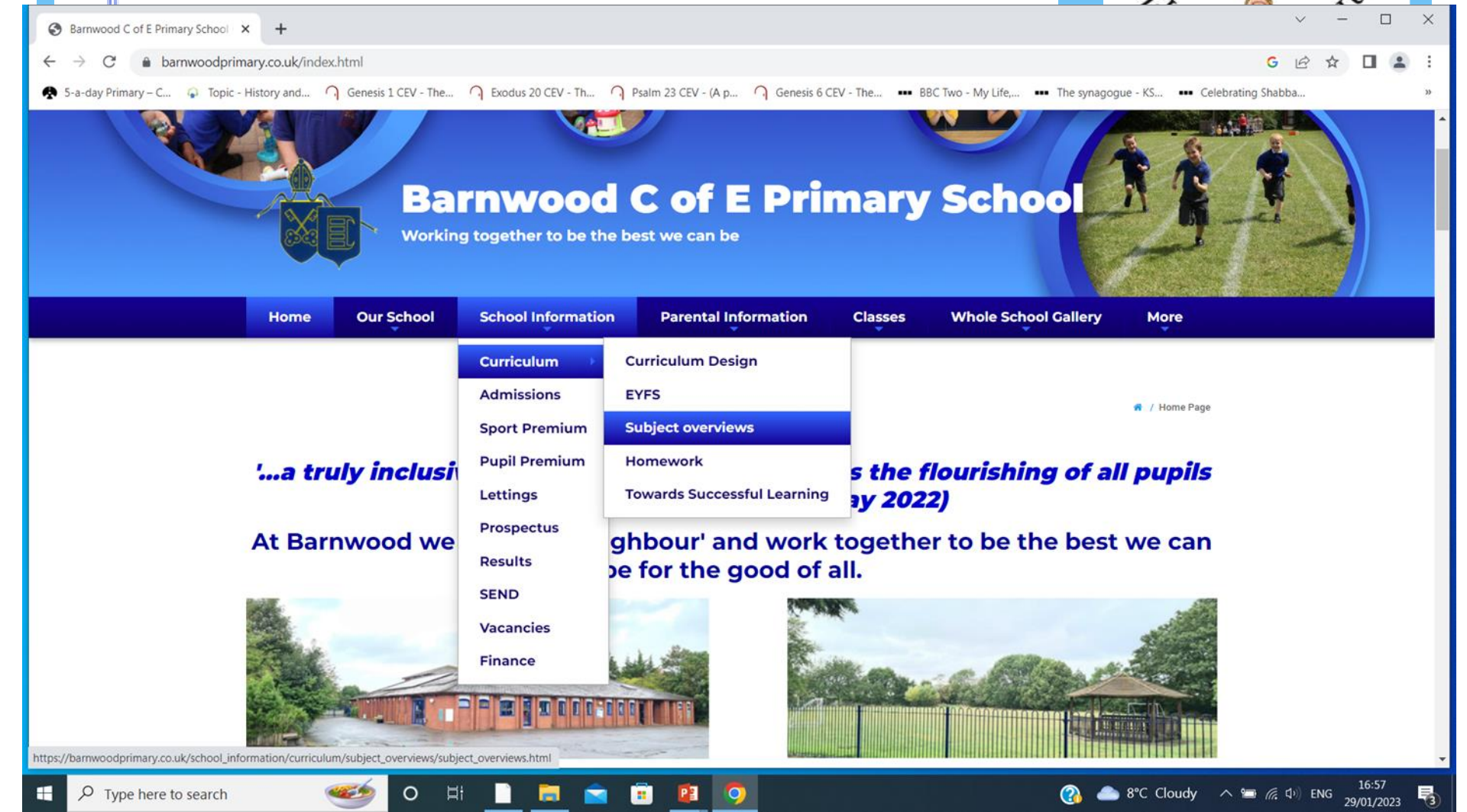


Please talk to them about the activities





Where to find links to support home learning and relevant policies



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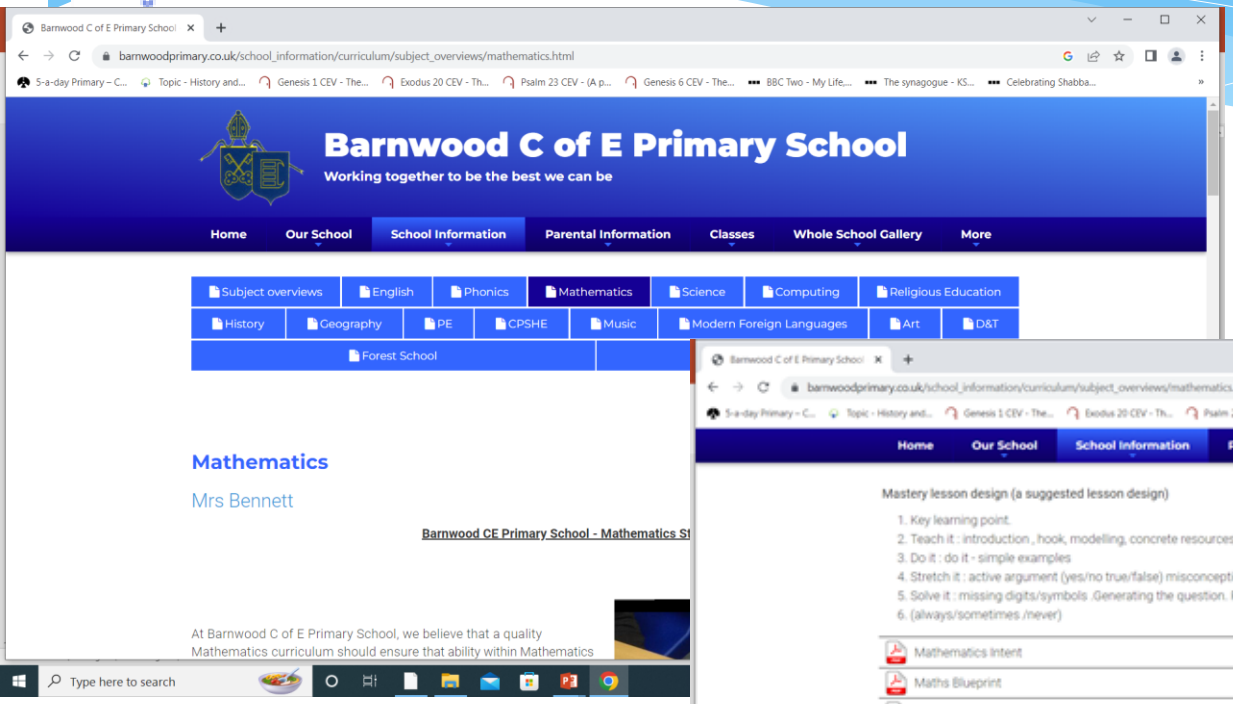
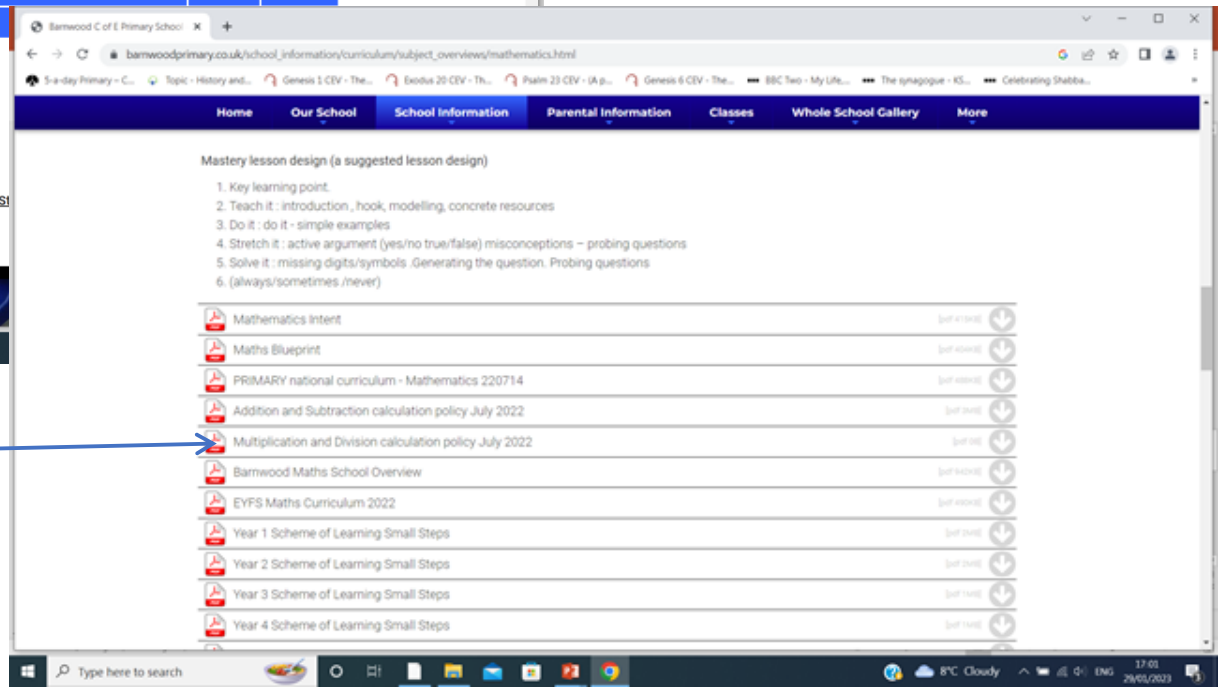
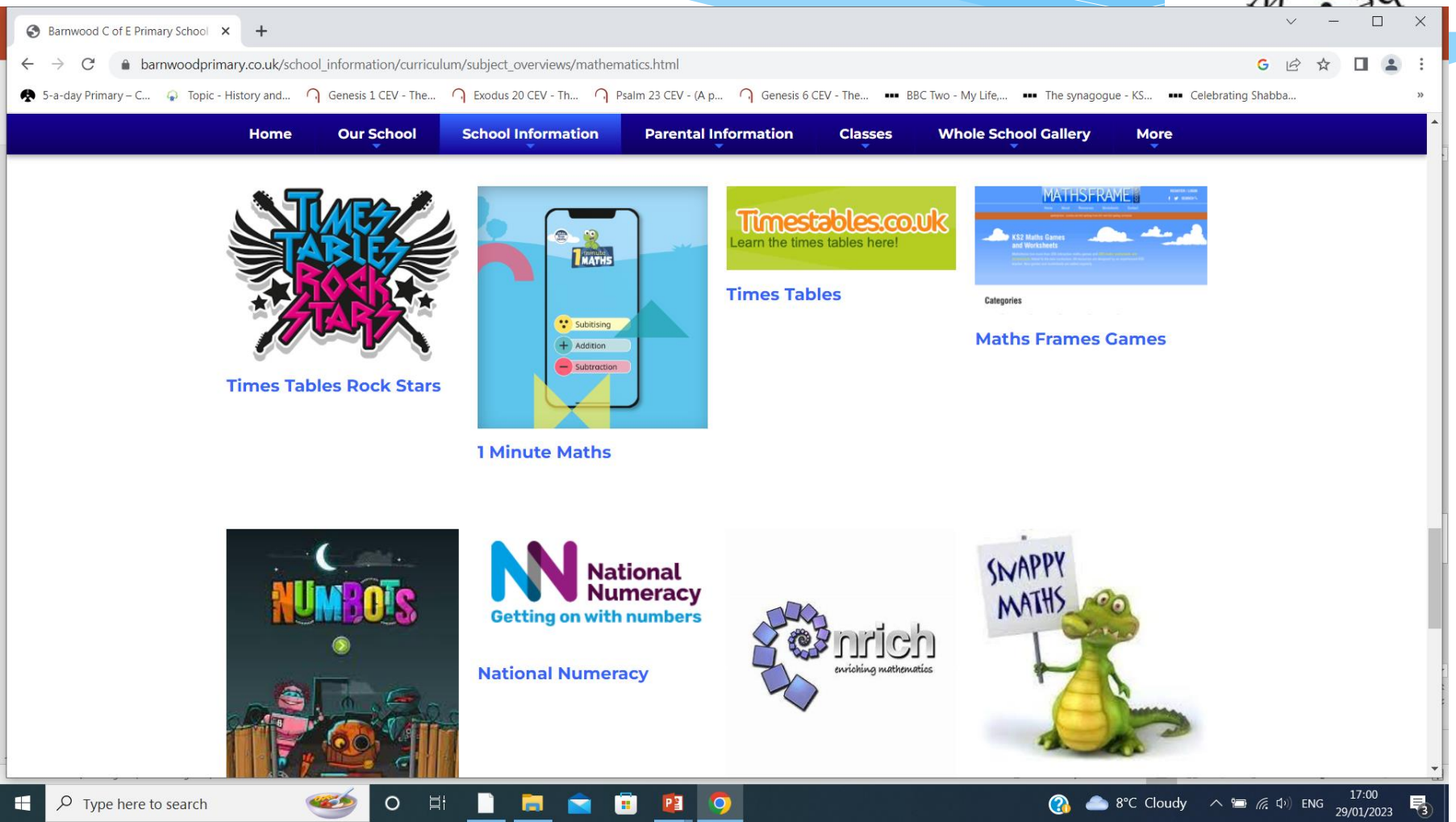




Where to find links to support home learning and relevant policies



Thank you for your support and we hope you find the session informative and enjoyable.