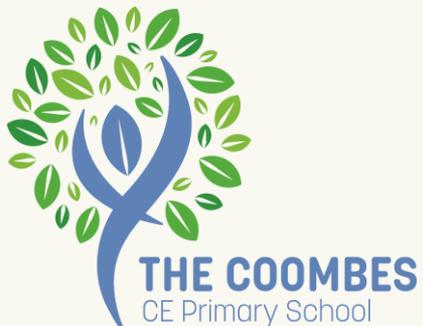




Maths at The Coombes



Friday 28th April 2023

On today's agenda



Our approach to Maths

How we teach Maths at The Coombes



Progression of Maths

What is taught when and how

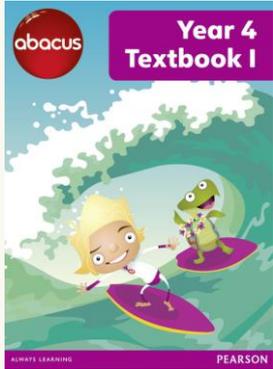


How to support your child

Useful tips and tricks



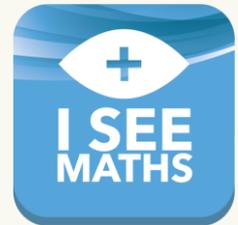
Our approach to Maths



1 lesson per day
1 hour
Consistent across both classes

- ✓ Teaching input
- ✓ Use of manipulatives
- ✓ Independent tasks
- ✓ Feedback and mastery opportunities

➤ Intervention
Regular and targeted
Responding to lesson input



Milestones

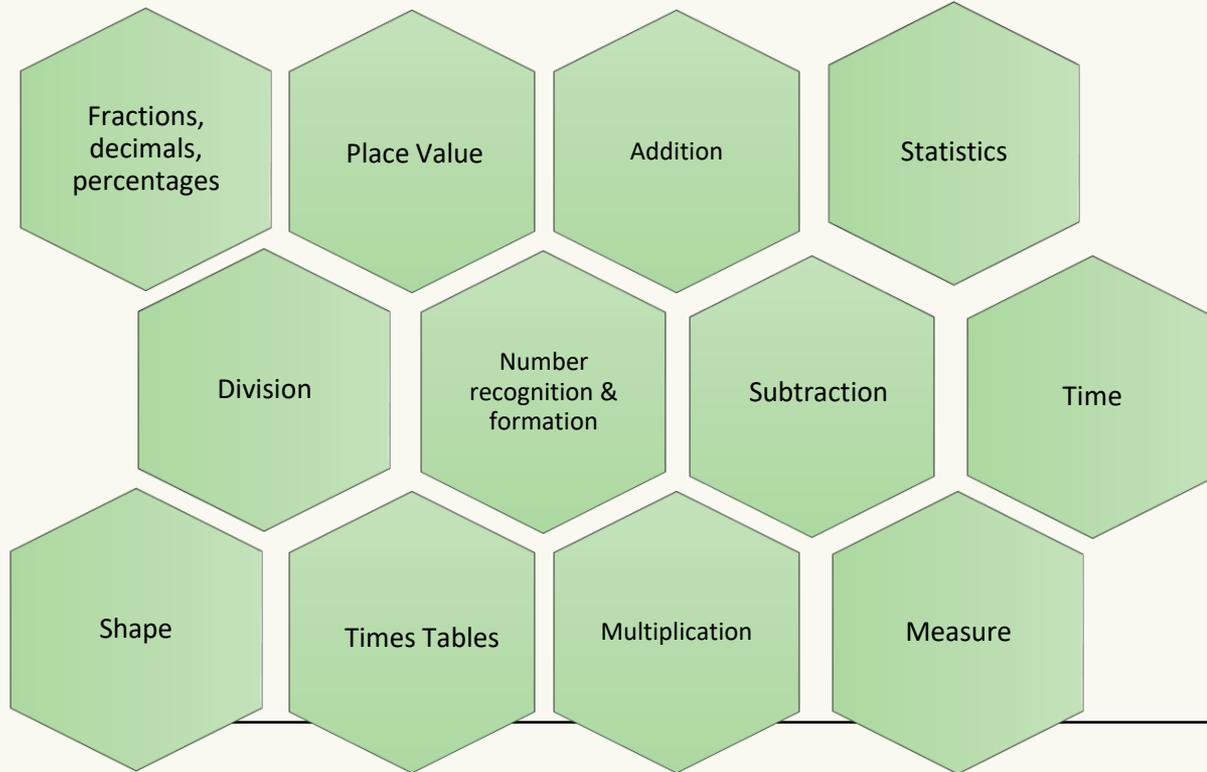


EYFS	Year 2	Year 4	Year 6
Good Level of Development (GLD)	End of Key Stage assessment (Yr 2 SATs)	Multiplication Check (MTC)	End of Key Stage assessment (Yr 6 SATs)

Age Related Expectations (ARE)

Confident, aspirational, engaged, enthusiastic, critical thinkers

Coverage



Step by step

Fluency

Developing number sense and being able to choose the most appropriate method for the task at hand; to be able to apply a skill to multiple contexts.

Reasoning

The process of applying logical thinking to a situation to derive the correct problem solving strategy for a given question, and using this method to develop and describe a solution.

Problem
Solving

Mathematical tasks that have the potential to provide intellectual challenges for enhancing students' mathematical understanding and development.

Fluency

$$69 + 10 + 10 =$$

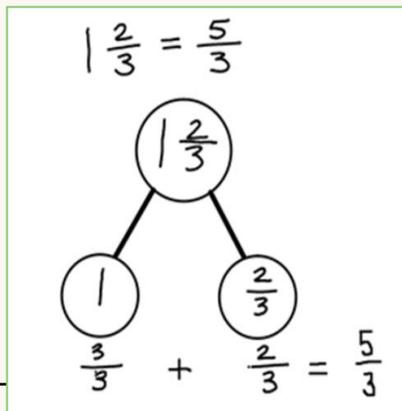
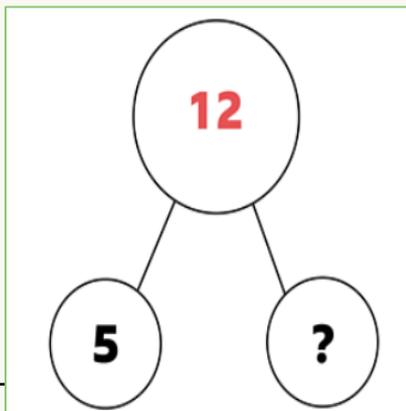
$$\frac{1}{2} \text{ of } 20 =$$

$$17 - 23 =$$

$$8 + \boxed{} + 4 = 17$$

$$1\frac{3}{7} - \frac{4}{7} =$$

$$0 \times 989 =$$



x					
5		55	20	35	
9		99		63	72
					48
8	56	88	32		
	35			35	40

Reasoning

Complete the number sentences.

$$\boxed{7} + 7 = 14$$

$$\boxed{} + 7 = 24$$

$$\boxed{27} + 7 = \boxed{}$$

$$\boxed{} + 7 = 44$$

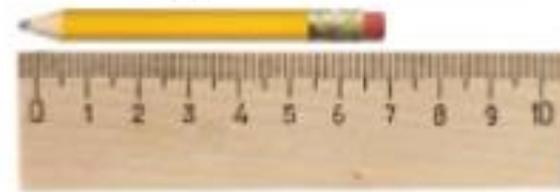
Sam plays a maths game.

Each  is equal to 2 points.

$$\text{leaf} + \text{acorn} + \text{acorn} = 10 \text{ points}$$

How many points is **one**  equal to?

- Harry is measuring the length of this pencil. Explain what he is doing wrong.



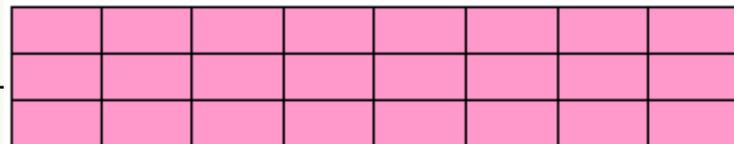
Jack says,

When you square a prime number, the answer has only two factors.



Explain why Jack is **not** correct.

Can you write multiplication and division sentences to describe this rectangle? What do you notice about the number sentences?



Problem Solving

Kemi has **25** red beads and **6** green beads.

How many beads does Kemi have **altogether**?



A wall has **5** bricks in each row.

How many bricks are there in **6** rows?

In a race, Ali completes a swim, a run and a bicycle ride.

The swim is $\frac{1}{10}$ of the total distance.

The run is $\frac{3}{10}$ of the total distance.

What fraction of the total distance is the **bicycle ride**?

1 mark

This triangle has three sides of **equal length**.

Three pencils fit along one side of the triangle.



How many pencils fit around **all three sides** of the triangle?

Here is a red strip of paper.



Here is a green strip of paper that is four times longer.



Both of the strips of paper are put together.



Together they equal 20cm.

How long is the red strip? _____

This sign shows the number of **empty spaces** on each level of a car park at 10am.

P	Empty Spaces
Level 2	511
Level 1	268

In this car park, **each** level has 800 spaces.

What is the total number of cars **parked** in the car park at 10am?

Maths Trays



Progression of Maths



- Carefully planned
- In line with the National Curriculum
- Progression over time- knowledge and resources
- Calculation Policy
- Progression Document



Progression Document

Year 1

Using place value

Count back in 1s
e.g. *Know 53 – 1*
Count back in 10s
e.g. *Know 53 – 10 without counting back in 1s*

32	33	34
42	43	44
52	53	54

Taking away

Count back in 1s
e.g. *11 – 3 as 11, 10, 9, 8*
e.g. *14 – 3 as 14, 13, 12, 11*

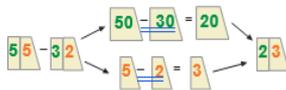


Count back in 10s
e.g. *53 – 20 as 53, 43, 33*

Year 2

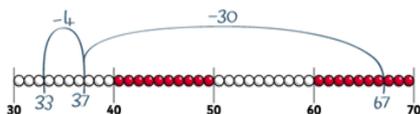
Using place value

Know 1 less or 10 less than any number
e.g. *1 less than 74*
e.g. *10 less than 82*
Partitioning
e.g. *55 – 32 as 50 – 30 and 5 – 2 and combine the answers: 20 + 3*



Taking away

Subtract 10 and multiples of 10
e.g. *76 – 20 as 76, 66, 56 or in one hop: 76 – 20 = 56*
Subtract two 2-digit numbers by counting back in 10s, then in 1s
e.g. *67 – 34 as 67 subtract 30 (37) then count back 4 (33)*

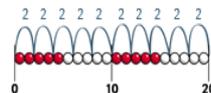


Subtract near multiples of 10
e.g. *74 – 21*
e.g. *57 – 19*

Year 1

Counting in steps ('clever' counting)

Count in 2s



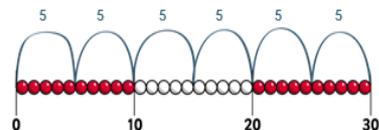
Count in 10s

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

Year 2

Counting in steps ('clever' counting)

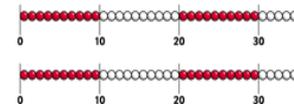
Count in 2s, 5s and 10s



Begin to count in 3s

Doubling and halving

Begin to know doubles of multiples of 5 to 100
e.g. *double 35 is 70*



Begin to double 2-digit numbers less than 50 with 1s digits of 1, 2, 3, 4 or 5

Progression of Maths



Year 3

Taking away

Use place value to subtract

e.g. $348 - 300$

e.g. $348 - 40$

e.g. $348 - 8$



Take away multiples of 10, 100 and £1

e.g. $476 - 40 = 436$

e.g. $476 - 300 = 176$

e.g. $£4.76 - £2 = £2.76$

Partitioning

e.g. $68 - 42$ as $60 - 40$ and $8 - 2$

e.g. $£6.84 - £2.40$ as $£6 - £2$ and $80p - 40p$



Year 4

Taking away

Use place value to subtract

e.g. $4748 - 4000$



Take away multiples of 10, 100, 1000, £1, 10p or 0.1

e.g. $8392 - 50$

e.g. $6723 - 3000$

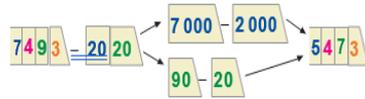
e.g. $£3.74 - 30p$

e.g. $5.6 - 0.2$

Partitioning

e.g. $£5.87 - £3.04$ as $£5 - £3$ and $7p - 4p$

e.g. $7493 - 2020$ as $7000 - 2000$ and $90 - 20$



Count back

e.g. $6482 - 1301$ as $6482 - 1000 (5482) - 300 (5182) - 1 = 5181$

Subtract near multiples of 10, 100, 1000 or £1

e.g. $3522 - 1999$

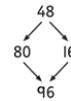
e.g. $£34.86 - £19.99$

Year 3

Doubling and halving

Find doubles of numbers to 50 using partitioning

e.g. double 48



Use doubling as a strategy in multiplying by 2

e.g. 18×2 is double $18 = 36$

Grouping

Recognise that multiplication is commutative

e.g. $4 \times 8 = 8 \times 4$

Multiply multiples of 10 by 1-digit numbers

e.g. $30 \times 8 = 240$

Multiply 'friendly' 2-digit numbers by 1-digit numbers

e.g. 13×4

Using number facts

Know doubles to double 20

e.g. double 15 is 30

Know doubles of multiples of 5 to 100

e.g. double 85 is 170

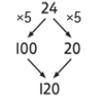
Know $\times 2, \times 3, \times 4, \times 5, \times 8, \times 10$ tables facts

Year 4

Grouping

Use partitioning to multiply 2-digit numbers by 1-digit numbers

e.g. 24×5



Multiply multiples of 100 and 1000 by 1-digit numbers using tables facts

e.g. $400 \times 8 = 3200$

Multiply near multiples by rounding e.g.

24×19 as $(24 \times 20) - 24 = 456$

Using number facts

Know times-tables up to 12×12

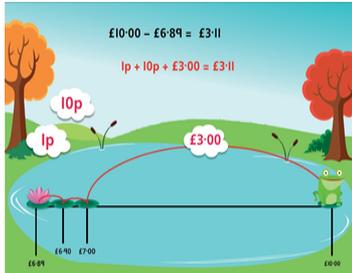
\times	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56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

Progression of Maths



Year 5

Find change using shopkeepers' addition
e.g. Buy a toy for £6.89 using £10.00



Find a difference between two amounts of money by counting up

Using number facts

Derived facts from number bonds to 10 and 100

e.g. $2 - 0.45$ using $45 + 55 = 100$
e.g. $3 - 0.86$ using $86 + 14 = 100$



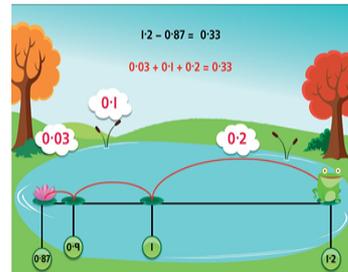
Number bonds to £1, £10 and £100

e.g. $£4.00 - £3.86$
e.g. $£100 - £66$ using $66 + 34 = 100$

Year 6

Counting up

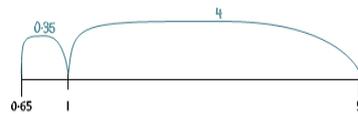
Find a difference between two decimal numbers by counting up
from the smaller to the larger
e.g. $1.2 - 0.87$



Using number facts

Derived facts from number bonds to 10 and 100

e.g. $0.1 - 0.075$ using $75 + 25 = 100$
e.g. $5 - 0.65$ using $65 + 35 = 100$



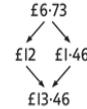
Number bonds to £1, £10 and £100

e.g. $£7.00 - £4.37$
e.g. $£100 - £66.20$ using $20p + 80p = £1$ and $£67 + £33 = £100$

Year 5

Doubling and halving

Double amounts of money using partitioning
e.g. double £6.73



Use doubling and halving as a strategy in multiplying by 2, 4, 8, 5 and 20

e.g. 58×5 is half of 58×10 (580) = 290

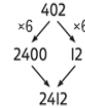
Grouping

Multiply whole numbers and decimals by 10, 100, 1000

e.g. $3.4 \times 100 = 340$

Use partitioning to multiply 'friendly' 2- and 3-digit numbers by 1-digit numbers

e.g. 402×6 as 400×6 (2400) and 2×6 (12) = 2412



Use partitioning to multiply decimal numbers by 1-digit numbers

e.g. 4.5×3 as 4×3 (12) and 0.5×3 (1.5) = 13.5

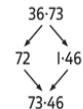
Multiply near multiples by rounding e.g.

32×29 as $(32 \times 30) - 32 = 928$

Year 6

Doubling and halving

Double decimal numbers with up to 2 places using partitioning
e.g. double 36.73



Use doubling and halving as strategies in mental multiplication

Grouping

Use partitioning as a strategy in mental multiplication, as appropriate

e.g. 3060×4 as 3000×4 (12000) and 60×4 (240) = 12240

e.g. 8.4×8 as 8×8 (64) and 0.4×8 (3.2) = 67.2

Use factors in mental multiplication

e.g. 421×6 as 421×3 (1263) doubled = 2526

e.g. 3.42×5 as half of $3.42 \times 10 = 17.1$

Multiply decimal numbers using near multiples by rounding

e.g. 4.3×19 as $(4.3 \times 20) - 4.3 = 81.7$

Our Calculation Policy



The Coombes Calculation Policy

Y2
×

Count in 2s, 5s and 10s

Begin to count in 3s

Begin to understand that multiplication is repeated addition and to use arrays

e.g. 3×4 is three rows of 4 dots

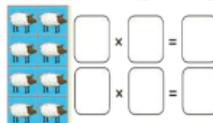
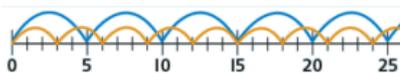
Begin to learn the $\times 2$, $\times 3$, $\times 5$ and $\times 10$ tables, seeing these as 'lots of'

e.g. 5 lots of 2, 6 lots of 2, 7 lots of 2

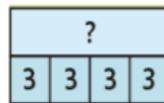
Double numbers up to 20

Begin to double multiples of 5 to 100

Begin to double 2-digit numbers less than 50 with 1s digits of 1, 2, 3, 4 or 5



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



	4	6	9	3	8
$\times 5$	20			15	
$\times 2$		12			

Double 16 is

Double is 28

$2 \times 3 =$

$5 \times 5 =$

$2 \times$ $= 6 \times 3$

Half of 24 is

Half of is 20

Count in 2s, 5s and 10s

Begin to use and understand simple arrays

e.g. 2×4 is two lots of four

Double numbers up to 10

Double multiples of 10 to 50



How can I support my child in Maths at home?



- ✓ Shine a positive light on Maths- find it at home, out and about and discuss it positively
 - ✓ Be aware of the current expectations of your child's year group- supplement with counting games, quick quizzes and examples
 - ✓ Try not to share your own methods- this can be confusing!
 - ✓ Encourage frequent and enjoyable practice- number formation, times tables, rhymes etc
 - ✓ Weekly Times Table Rocks stars or online Maths Games
 - ✓ Use every day experiences- shopping, time, bingo etc
 - ✓ Seek advice from their teacher – we're here to help you!
-



THANKS!

Any questions?



@coombes_school
