

Maths at Claycots

Claycots Primary School





The vision for Maths

At Claycots we aim for all pupils to develop a positive and resilient attitude towards mathematics; find joy in their success and understand the opportunities Maths skills can bring.

We aim to provide a broad, balanced, engaging and relevant curriculum that meets the requirements of the National Curriculum along with high-quality teaching using research-based pedagogy to meet all the needs of our learners.

We aim to equip children with the skills of calculation, reasoning and problem solving to provide a solid foundation for the next phase of their learning and throughout life providing the very best future for every child.



Subject Intent

At Claycots, we are committed to ensuring that all children are challenged through a rich Maths curriculum which is carefully sequenced to build upon prior learning and provides opportunities to prioritise conceptual understanding over rote learning. Our curriculum ensures core number facts are embedded as we know they are the foundation to procedural fluency as well as allowing opportunities to solve increasingly complex problems and reason using mathematical vocabulary.

Our Maths curriculum aims to help our pupils recognise that mathematics is an interconnected subject in which we want them to be able to move fluently between different representations of mathematical ideas as well as applying their maths knowledge to science and other subjects.



Subject Implementation

At Claycots School, we use a mastery approach focusing on representation & structure; mathematical thinking; variation; fluency and coherence. As a school, our mastery approach has developed each year through our involvement in a number of projects run by the BBO Maths Hub. Lessons are planned and sequenced using our bespoke termly overviews and progression documents so that new knowledge and skills build on what has previously been taught. Teachers use White Rose Maths, NCETM and other resources to support their planning.

As part of our approach to developing mathematic fluency, in each lesson, children have times tables or number bond practice to give them opportunities to improve rapid recall of declarative knowledge linked to their stage of learning. Children use 'Times table Rockstar' to engage in weekly battles and challenges to improve their fluency which allows them to practice in an engaging and interactive way at school and at home. In addition to this, in each lesson, children are given the opportunity to revisit prior learning through their 'Quick Maths' starters.

Throughout the school, teachers use pedagogical approaches to promote high standards including explicit modelling and using the gradual release of responsibility approach, which includes focused feedback to ensure accuracy all whilst creating an environment where children know mistakes are an important part of learning.

We use our school calculation policy, to ensure a consistent approach in teaching formal methods and use of the CPA (concrete, pictorial and abstract) approach to help build mental models and provide Mathematical representations.

We ensure that the curriculum is tailored to meet the needs of each child through carefully planned scaffolding and resources. For children who cannot access their aged-related curriculum we have a bespoke pre-key stage curriculum which covers the engagement model when appropriate.

Nursery

Long term planning



Autumn

Numbers

Songs, Rhymes
Building
Puzzles
Amounts

Week 1-4

**Shape, Space
& Measure**

Size and weight

Week 5-6

**Numbers
1-3**

Reciting
Objects
Cardinality

Week 7-10

**Shape, Space
& Measure**

Timetables,
routines
Positional
language

Week 11-12

Spring

Numbers
Counting to 5

Week 1-4

Shape
Recognising
Finding shapes
Sorting shapes
Construction

Week 5-6

**Shape, Space
& Measure**
Spatial
awareness
Positional
language

Week 7-8

Numbers
Rote counting
to 5
Ordering

Week 9-10

Measure
Explore size
Weight
Timetables
Sequence of
events

Week 11-12

Summer

Number

Recognise numerals up to 5
Counting objects
Order numbers

Week 1-5

Pattern

Environmental patterns
Patterns on us
Action patterns
Make patterns

Week 6-8

Number

Counting
Recognising numerals
Counting objects and fingers
Ordering numbers to 5
One more to 5

Week 9-12

Reception

Long term planning



Number (1-3)

Week 1-4

Autumn

Patterns

Week 5

Shape, Space & Measure

Week 6-7

Numbers (1-5)

Week 8-11

Shape, Space & Measure

Week 12

Number (1-10)

Week 1-4

Spring

Shape, Space & Measure

Week 5

Patterns

Week 6-7

Numbers (1-10)

Week 8-11

Shape, Space & Measure

Week 12

Number (1-10)

Week 1-4

Summer

Measure Time

Week 5-6

Number (Number bonds, number problems)

Week 7-10

Shape, Space & Measure

Week 11

Patterns

Week 12

Year 1

Long term planning



Number

Place Value
(within 10)

Week 1-5

Autumn

Number

**Addition &
Subtraction**
(within 10)

Week 6-10

Geometry

Shape

Week 11

Consolidation
Week 12

Number

Place Value
(within 20)

Week 1-3

Spring

Number

**Addition &
Subtraction**
(within 20)

Week 4-6

Number

Place Value
(within 50)

Week 7-8

Measurement

**Length &
height**

Week 9-10

Measurement

**Mass and
volume**

Week 11-12

Number

**Multiplication &
divison**

Week 1-3

Summer

Number

Fractions

Week 4-5

Number

Place Value
(within 100)

Week 6-7

Measurement

Money

Week 8

Measurement

Time

Week 9-10

Geometry

**Position &
direction**

Week 11

Consolidation
Week 12

Year 2

Long term planning



Number

Place Value

Week 1-3

Autumn

Number

**Addition &
Subtraction**

Week 4-8

Measurement

Money

Week 9-10

Number

**Multiplication &
divison**

Week 11

Consolidation
Week 12

Number

**Multiplication &
divison**

Week 1-4

Spring

Statistics

Statistics

Week 5-6

Geometry

**Properties
of shape**

Week 7-9

Number

Fractions

Week 10-12

Measurement

**Length &
height**

Week 1-2

Summer

Geometry

**Position &
direction**

Week 3-4

**Consolidation &
problem solving**
Week 5-6

Measurement

Time

Week 7-8

Measurement

**Mass, capacity
& temperature**

Week 9-11

Consolidation
Week 12

Year 3

Long term planning



Number

Place Value

Week 1-3

Autumn

Number

**Addition &
Subtraction**

Week 4-8

Number

**Multiplication &
divison**

Week 9-12

Number

**Multiplication &
divison**

Week 1-3

Spring

Measurement

**Length &
perimeter**

Week 4-6

Number

Fractions

Week 7-9

Measurement

**Mass &
capacity**

Week 10-12

Number

Fractions

Week 1-2

Summer

Measurement

Money

Week 3-4

Measurement

Time

Week 5-7

Geometry

Shape

Week 8-9

Statistics

Statistics

Week 11

Consolidation
Week 12

Year 4

Long term planning



Number

Place Value

Week 1-4

Autumn

Number

Addition &
Subtraction

Week 5-6

Number

Multiplication &
divison

Week 7-9

Measurement

Length &
perimeter

Week 10-11

Consolidation
Week 12

Number

Multiplication &
divison

Week 1-4

Spring

Measurement

Area

Week 5

Number

Fractions

Week 6-9

Number

Decimals

Week 10-11

Consolidation
Week 12

Number

Decimals

Week 1-2

Summer

Measurement

Money

Week 3-4

Measurement

Time

Week 5-6

Consolidation
Week 7

Geometry

Properties of
shape

Week 8-9

Statistics

Statistics

Week 10

Geometry

Position &
direction

Week 11-12

Year 5

Long term planning



Number
Place Value
Week 1-3
Autumn

Number
Addition & Subtraction
Week 4-5

Number
Multiplication & division
Week 6-8

Measurement
Perimeter & Area
Week 9-10

Statistics
Statistics
Week 11-12

Number
Multiplication & division Recap
Week 1
Spring

Number
Fractions
Week 2-6

Number
Decimals & percentages
Week 7-11

Consolidation
Week 12

Consolidation
Week 1

Geometry
Properties of shape
Week 2-4
Summer

Geometry
Position & direction
Week 5-6

Measurement
Covertng units
Week 7-8

Measurement
Volume
Week 9

Consolidation
Week 10-12

Year 6

Long term planning



Number

Place Value

Week 1-2

Autumn

Number

**Addition, subtraction,
multiplication & division**

Week 3-6

Number

Fractions

Week 7-9

Measure

**Converting
Units**

Week 10

Number

Ratio

Week 11-12

Geometry

**Position &
Direction**

Week 1

Spring

Number

Algebra

Week 2-3

Number

Decimals

Week 4-6

Number

**Fractions, decimals and
percentages**

Week 7-8

Measurement

**Perimeter, area
& volume**

Week 9-10

Statistics

Statistics

Week 11-12

Geometry

Shape

Week 1-2

Summer

**Consolidation and
revision**
Week 3-4

S
A
T
S

**Consolidation, problem
solving and themed
projects**
Week 7-12



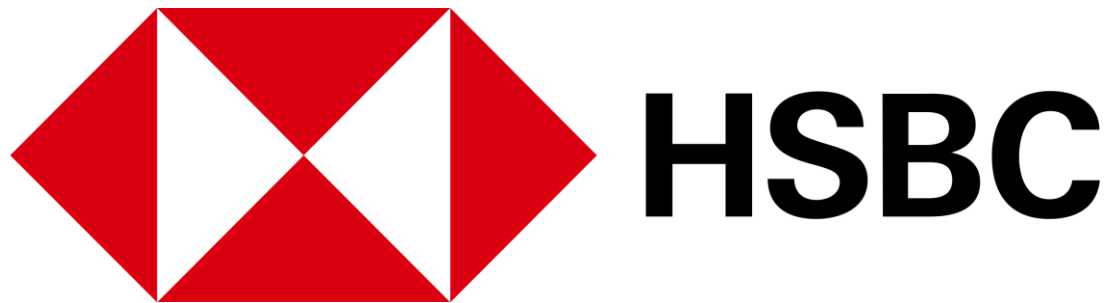
How we measure progress

At Claycots we use end of unit tests, times tables and termly assessments to help teachers gather a deeper understanding of their pupil's existing and developing knowledge and skills. However, we are aware that testing can lead to judging performance rather than learning therefore teachers also use formative assessment daily in their lessons to measure learning over time.

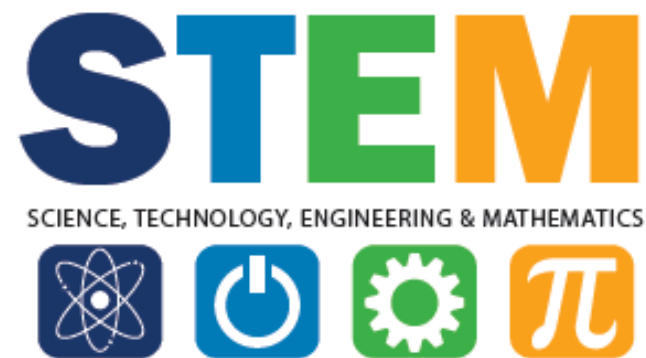
Using this wide range of data, we measure pupil progress on a termly basis and at the end of the year, the expectation is that children achieve Age Related Expectations (ARE) for their year group. Some children may have progressed further and achieve Greater Depth (GD). Those pupils who have been identified as having gaps in their knowledge receive appropriate support and intervention, inside and outside of the usual classroom Maths lesson.

By the end of Year 6, children will have developed a range of efficient skills that can be used to calculate effectively, they will be fluent in the fundamentals of Maths with a conceptual understanding and have the ability to recall and apply key facts accurately.

Visits and experiences



Educational Financial lessons
(EYFS, KS1 & KS2)



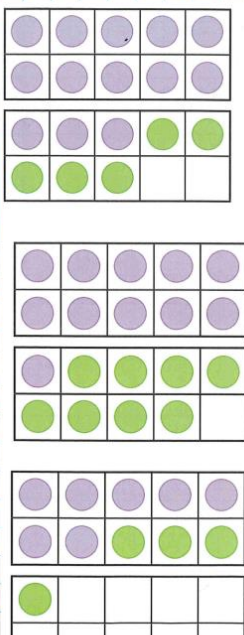
STEM Lego Workshop
(Key Stage 2)

Examples of learning KS1

Year 1

07/02/23 1/AS

I can use a tens frame to add on.



$13 + 5 = 18$ ✓

$54 + 23 = 77$ ✓

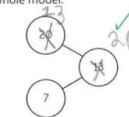
$12 + 8 = 20$ ✓

$2 + 11 = 13$ ✓

$7 + 4 = 11$ ✓

$4 + 7 = 11$ ✓

Kay shows a number bond to 20 in a part-whole model.



What mistake has Kay made?

Kay mistake is that that 20 is the whole.


Year 2

Tuesday 21st February 2023


L1- I can tell the time to hour and half past.

Flashback 4 Year 2 Week 4 Day 2

1) $\square + 7 = 20$ ✓

2) Use < or > to compare the number of candles.  ✓





3) Write forty-two in numerals. ✓

4) What shape is this?  circle ✓

Finished?

- $17 + 39 = 56$
- $33 + 69 = 92$
- $13 + 12 = 25$
- $104 = 66 + 40$
- $66 = 19 + 47$

Fluency: Match the clock to the times.

half past 4


half past 1

half past 9

half past 6

Complete the sentence.

At half past, the minute hand points to ~~9~~ 6

 Alex: It is half past 11 so the hour hand should be on the 11

Is Alex correct?

Explain your reasoning

Examples of learning Lower KS2

Year 3

d) 750 ml
 4) 700 ml
 5) 200 ml + 800 ml = 1000 ml
 6) 900 ml + 100 ml = 1000 ml
 7) 700 ml + 300 ml = 1000 ml
 8) 1600 ml + 300 ml = 1900 ml
 9) 1500 ml + 850 ml = 2350 ml
 10) 2500 ml + 750 ml = 3250 ml
 11) 900 ml + 100 ml = 1000 ml

4) Complete the number sentences.
 a) $11400 \text{ ml} + 31150 \text{ ml} = \boxed{42550} \text{ ml}$
 b) $71950 \text{ ml} + 2110 \text{ ml} = \boxed{74060} \text{ ml}$
 c) $251350 \text{ ml} - 111200 \text{ ml} = \boxed{140150} \text{ ml}$
 d) $501729 \text{ ml} - 201728 \text{ ml} = \boxed{300001} \text{ ml}$
 e) $11 - \boxed{700} \text{ ml} = 300 \text{ ml}$

5) Dani has 1 litre 500 ml of juice in a bottle. She pours some of the juice into a jug. How much juice is in the bottle now?

6) Here are some measuring cylinders.

The total liquid in all three cylinders is 400 ml.
 Cylinder X has half of the total amount in it.
 Cylinder Y has 67 ml less than cylinder X.
 How much liquid does each cylinder contain?
 X = 200 ml
 Y = 133 ml
 Z = 67 ml

8) A carton can hold 200 ml of milk. A bottle can hold 300 ml of milk.
 a) Three milk cartons are emptied into a litre jug. How much milk is there in the jug?
 b) How many bottles can be filled by the milk in the jug?
 9) Tiny is finding how much more water is in jug M than jug N.

The difference between the volumes of water is 5 intervals, so there is 500 ml more water in jug M.
 Do you agree with Tiny? Explain your reasons.

LI: To add and subtract capacity and volume.

Year 4

20/3/23
 1) 1.7350
 2) 2.5240
 3) 3.5300
 4) 4.8200

LI: To compare decimals
 a) $0.35 < 0.39$
 b) $3.07 < 3.7$
 c) $12.947 < 12.49$
 d) $4.26 < 4.62$
 e) $7.97 < 8.09$
 f) $12.23 < 12.89$
 g) $2.44 > 2.28$
 h) $10.05 < 10.5$
 i) $35.5\% > 35.05\%$
 j) $19.35 < 19.53$

No because the 5 should be covered instead of 4.
 LI: To write money as decimals
 1.24
 2.48
 3.70
 4.912
 5.794
 6.1586

2) a) 4.54 > 4.53
 b) 0.84 < 0.89
 c) 3.39 > 3.29
 d) 4.98 > 4.63
 e) 0.78 < 0.79
 f) 1.56 < 2.56
 g) 2.39 > 2.19
 h) 4.09 > 4.01 + 0.00 = 8.10
 LI: To write money as decimals
 1.00
 0.1
 0.1
 0.2
 0.5
 0.75
 1
 3.2
 5.55

2. How much money is there? Write your answer as a decimal.
 a) 1.82
 b) 7.13
 c) 12.72

3. Dani has £3, Nigh has 75p, Huan has £2 and 20p. How much money do they have altogether? Write your answer as a decimal.
 5.95

4. Look at Rang's statement.
 10p is one hundredth of £1 so 10p is equivalent to £0.10
 Do you agree with him? Why or why not?
 No because 10p is 1/10

Examples of learning Upper KS2

Year 5

Q1

47 cm ✓
 36.0 dm ✓
 3.9 kg ✓
 4.8 m ✓
 0.8 1/4 ✓
 4 3/4 ✓
 7 1/4 ✓
 10 1/2 ✓
 14 1/4 ✓
 17 1/2 ✓
 20 ✓
 23 ✓
 26 ✓
 29 ✓
 32 ✓
 35 ✓
 38 ✓
 41 ✓
 44 ✓
 47 ✓
 50 ✓

Q2

15 60 240 1440 3600

Q3

2 weeks = 14 days ✓
 b. 7 years = 84 months ✓
 c. 5 minutes = 300 seconds ✓
 d. 3 days = 72 hours ✓
 e. 14 weeks = 98 days ✓
 g. 540 minutes = 9 hours ✓
 h. 60 hours = 2.5 days ✓
 i. 1 hour = 60 minutes ✓
 j. 45 seconds = 3/4 of a minute ✓

Q4

Amir and Annie ran a race.
 Amir ran the race in 3 minutes and 14 seconds.
 Annie ran the race in 187 seconds.
 Who was faster? **Amir**
 Show your workings:

$3 \text{ min } 14 \text{ sec} = 180 + 14 = 194 \text{ seconds}$
 $187 < 194$
Annie was faster.

Q5

Whitney 3 min 5 seconds
 Eva 192 = 3 min 12 sec
 Alex just at 3 minutes 22 seconds.

Q6

Teddy's birthday is in March.
 Amir's birthday is in April.
 Amir is 96 hours older than Teddy.
 What dates could Teddy and Amir's birthdays be?

Q7

Amir and Jack are converting 52 days into weeks.

Jack: $52 \div 7 = 7 \text{ weeks } 3 \text{ days}$
 Amir: $52 \div 7 = 7 \text{ weeks } 3 \text{ days}$
They are both correct.

Q8

Three children are running a race.

- Whitney finishes the race in 3 minutes 5 seconds.
- Eva finishes the race in 192 seconds.
- Alex finishes the race in 2 minutes and 82 seconds.

Who finishes the race first?
Whitney

Q9

Run and find how many weeks and days have they known each other for 153 days.
 For how many weeks and days have they known each other?
2 weeks and 3 days

Q10

Amir and Jack are converting 52 days into weeks.

Jack: $52 \div 7 = 7 \text{ weeks } 3 \text{ days}$
 Amir: $52 \div 7 = 7 \text{ weeks } 3 \text{ days}$
They are both correct.

Year 6

Q1

Tommy is incorrect as b is 0 a acute angle not obtuse this means that angle B = 64° ✓
 $38 + 28 = 66$

Q2

17 43 38 ✓
 625317 ✓
 6536 ✓
 2533 ✓
 243698 ✓
 243698 ✓

Q3

10 chocolate and 40 donuts altogether is false ✓
 $3 \times 6 = 18$
 $18 + 30 = 48$
48 donuts

Q4

992 ✓
 98935 ✓
 81 ✓
 81 ✓
 1215 ✓
 18 ✓
 7 ✓
 2196 ✓
 813777 ✓
 12 ✓
 11 ✓
 6 ✓
 57 ✓
 54 ✓
 37 ✓
 36 ✓
 64 ✓
 85127 ✓
 42 ✓
 32 ✓
 32 ✓
 7 ✓
 337 ✓
 9105 ✓
 81 ✓
 100 ✓
 81 ✓
 1815 ✓
 189 ✓
 6 ✓

Q5

12 63 6 ✓
 56318 ✓
 5 ✓
 13 ✓
 10 ✓
 31 ✓
 30 ✓
 18 ✓
 15 ✓
 30 ✓
 30 ✓
 0 ✓
 16625 ✓
 21285 ✓
 8 ✓
 48 ✓
 48 ✓
 50 ✓
 48 ✓
 20 ✓
 16 ✓
 40 ✓
 40 ✓
 00 ✓
 301714 ✓
 72112 ✓
 21 ✓
 12 ✓
 7 ✓
 50 ✓
 49 ✓
 10 ✓
 7 ✓
 30 ✓
 70 ✓

Q6

To use ratio and fractions.

Q7

Eve didn't multiply the same number as to the original ratio ✓
 Ratio: $\frac{\text{Egg}}{\text{Flour}} = \frac{1}{3}$
 $\frac{2}{6}$
 $\frac{3}{9}$

Q8

Yes Ranit is correct as they are both in the same times table ✓

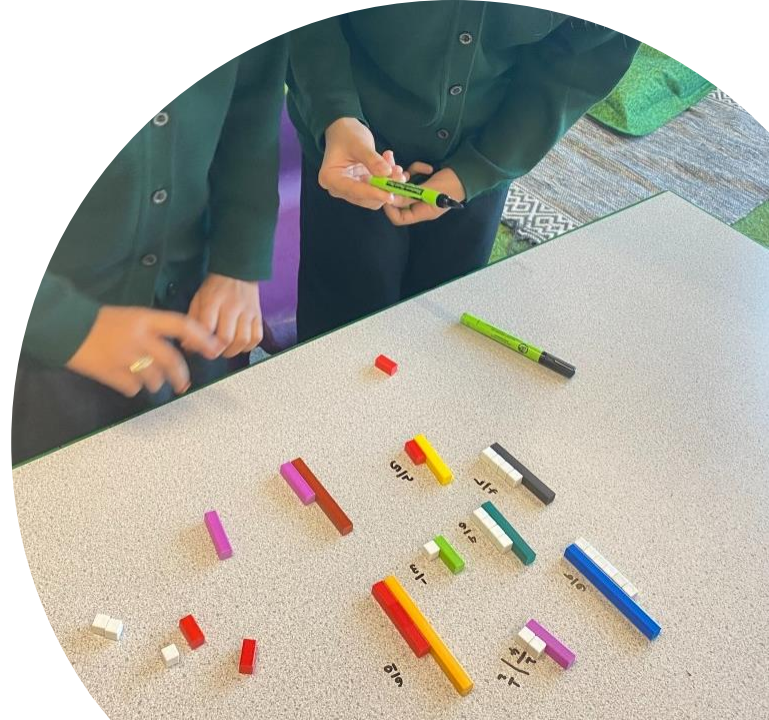
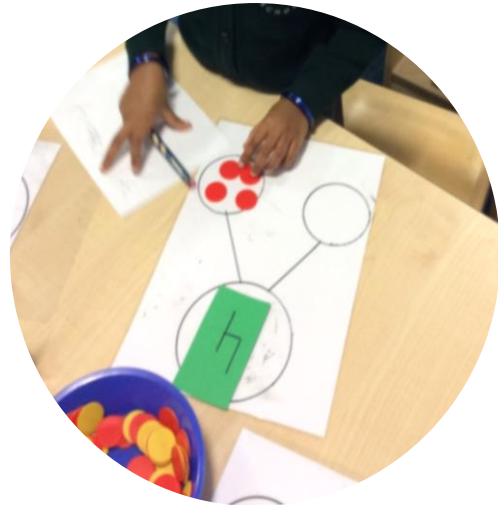
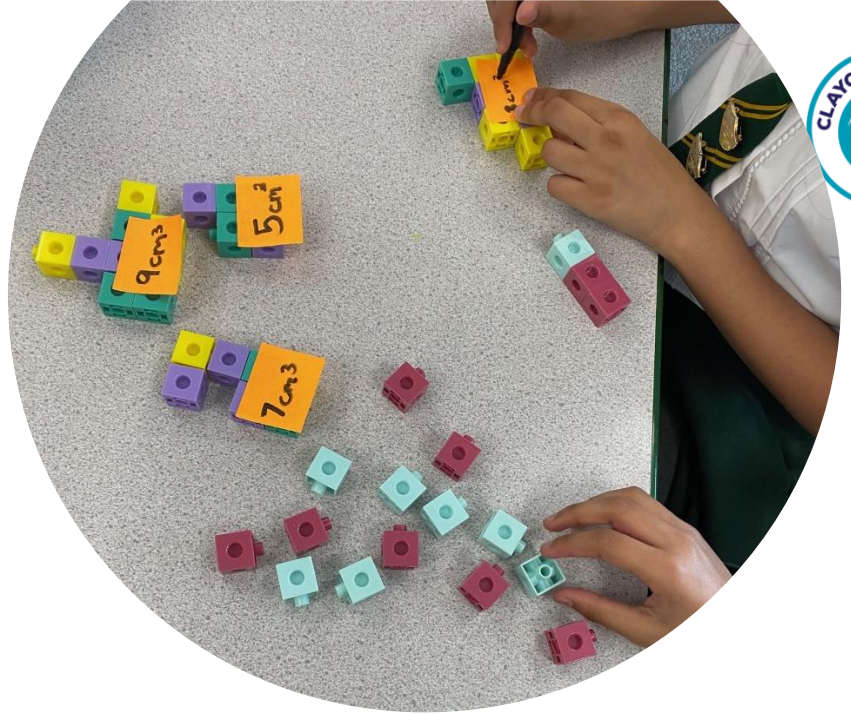
Q9

I disagree as 2 is not in the table of 3 it should be 4 ✓

Q10

3609 Caleb is incorrect as 120 three times is already 360; all the arithmetic add up to get 360 (see and stem) ✓
 I disagree with Jerry because ✓

Practical learning!





Pupil voice

I work with my friends, and we help each other solve difficult problems.
-Year 4, Britwell

I like adding. When questions get hard, I try to use a different method.
-Year 2, Britwell

I love using the numicon and cubes to help me count up to 50.
It's so fun.
-Year 1, Town Hall

The teachers help us because they explain things very clearly.
-Year 3, Britwell

Maths in Year 5 is challenging, and it is very fun because we get to learn from our mistakes and use lots of different equipment.
-Year 5, Town Hall

Maths is really fun in Claycots because it's like a puzzle and we learn a lot about it in greater detail.
-Year 6, Town Hall