Clee Hill Community Academy Maths Policy

Vision

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics. At Clee Hill Community Academy, we use our understanding of the current and prior attainment of pupils to build on and deepen their understanding of mathematics; embedding key concepts and challenging all learners. Our aim is to inspire children to work with mathematical curiosity; exploring all aspects of maths and enjoy working to solve problems.

Mathematical reasoning

We encourage all pupils to use and explain their choices of strategies whilst continuing to deepen their number sense. Through increased opportunities for reasoning, pupils articulate 'why' and 'how' and are encouraged, through questioning, to explain their ideas further. They are encouraged to ask questions; developing a curiosity for number and enjoyment of maths. They extend their understanding and explore alternative ways to find solutions.

Mathematical mindset

We promote a good mathematical mind set amongst staff and pupils within a mastery approach to mathematical understanding where all pupils can achieve and a ceiling is not placed upon learning. At all stages, pupils can select manipulatives to support and deepen their learning and are encouraged to take an increasing responsibility for their learning. Expectations for progression in calculation are clearly shown in the calculation policy which is shared with parents on the school's website.

Aims

The aims of teaching mathematics are:

- To promote enjoyment of learning through practical activity, exploration and discussion;
- To promote confidence and competence with numbers and the number system;
- To develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- To develop a practical understanding of the ways in which information is gathered and presented;
- To explore features of shape and space, and develop measuring skills in a range of contexts;
- To understand the importance of mathematics in everyday life.

National Curriculum

The National Curriculum for mathematics aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and can recall and apply their knowledge rapidly and accurately to problems.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

• Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Our Curriculum and Planning

Our Curriculum:

- We follow the National Curriculum for Mathematics and use White Rose Maths resources to provide the key structure to this learning including long and medium-term planning using Small Steps to **guide the** develop**ment** skills. We are using the latest released versions of WRM resources including mixed age planning where this matches our class structures. In case where this is not he case, we have adapted the order of units to best suit the needs of our pupils, We adapt resources to meet the needs of pupils and plan work to specifically to address common misconceptions. We adapt planning to respond to pupils' needs and misconceptions; taking the time to give children opportunities to understand each step before moving on to the next step. We use opportunities for practice to consolidate and deepen learning.

Maths resources for teachers | White Rose Education

Resources from NCETM are used to enhance staff knowledge of small steps and adapted to provide further resources for pupils. These include NCETM Ready to Progress resources, PD Materials and Curriclum Prioritisation resources.

https://www.ncetm.org.uk/in-the-classroom/

Across the school, we follow a Teaching for Mastery approach to Maths.

NCETM Mastering Number is used as the core of our curriculum in Recpetion and we have changed the order of the White Rose Maths units to supplement thi as well as to broden the curriculum to include specific units of work about shape and space. In Year 1, 2 and 4, Masterng Number sessions take place in addition to daily maths sessions. We plan to introduce Mastering Number sessions to Year 3 following CPD.

- White Rose Maths for EYFS:

https://whiteroseeducation.com/resources?year=reception&subject=maths

https://www.ncetm.org.uk/maths-hubs-projects/mastering-number/

- Our maths curriculum is enhanced through:
    - Maths Stories
    - Meaningful links with other subjects.
    - Maths problem solving mornings every term.
    - Maths week.
    - Times Tables Rockstars for pupils in KS2
    - Numbots for Pupils in KS1
    - Morning Maths – daily focus on fluency addressing needs as identified by class teachers
    - Use of NRich resources for further problem solving
    - Use of Target Maths in KS2 for practice
- Pupils' spiritual, moral, social and cultural skills and wider British values are developed through taking turns, questionnaires, acceptance of others and their methods, awareness of word derivation and different systems of measurement.
- Progression in calculation is clearly set out in the school's calculation policy which has been shared with all staff and parents. Video clips give clear additional guidance.
- Planned opportunities to use maths within the context of other curriculum areas including guidance in Science for maths applications.

Planning:

- Long Term Planning is from White Rose Maths and is adapted to our class structure with mixed year groups in most classes.

Class 1 – Reception:

Autumn Term

White Rose	Getting to know you (2 wks.)		It's me 1,2,3 (2 wks.)		Match, sort and compare (2 wks.)		Talk about measure and patterns (2 wks.)		1,2,3,4,5 (2 wks.)		Circles and triangles (1 wk.)	Shapes with 4 sides (1 wk.)
Mastering Number		Subitise 1,2 and 3. Represent these on their fingers.	Count to 3 Cardinality Counting objects	Composition of numbers – 3 and 4	Subitise 2 and 3. Describe patterns - 4	Comparison – more than. Comparing two sets.	Counting, ordinality and cardinality to 5.	Comparison – more than, fewer than, equal	Composition – whole and parts	Compose and decompose numbers to 5	Counting to 10, matching to 5, numerals to 5	

Spring Term

White Rose	Alive in 5 (2 wks.)		Mass and capacity (1 wk.)	Growing 6,7,8 (2 wks.)		Length, height and time (2 wks.)		Building 9 and 10 (3 wks.)			Explore 3D shapes (2 wks.)
Mastering Number	Numerals 1-5 Matching Conceptual subitising. Dice.	Recognise and order to 5	Composition – partitioning 5	Composition – to 7	Composition – more than, fewer than, equal.	Revisit cardinality, counting 1-30.	Comparison – to 8.	Composition	Conceptual subitising to 8	Composition -similar and different, doubles/not doubles.	

Summer Term

White Rose	To 20 and beyond (2 wks.)		How many now? (1 wk.)	Manipulate, compose and decompose (2 wks.)		Sharing and grouping (2 wks.)		Visualise, build and map (3 wks.)			Make connections (1 wk.)	
Mastering Number	Cardinality, ordering and counting to 20.	Subitising	Composition	Composition – to 10.	Comparison	Subitising on a rekenrek	Comparison	Counting	Composition	Patterns	Recall	

Class 2 – Year 1/2

Using White Rose Mixed Age Plans (new for 24/25)

Autumn	Place Value (within 20)	Addition and Subtraction (within 20)	Place Value (within 100)	Geometry - Shape	
				Autumn Summative assessment	
Spring	Addition and Subtraction (within 100)	Multiplication and Division	Length and Height	Statistics	Consolidation
				Spring Summative assessments	
Summer	Money	Fractions	Time	Mass, Capacity and temperature	Geometry - Position and Direction
				Summer Summative assessments	

Class 3 -Year 2/3

Autumn Term

Year 2	Place Value	Addition and Subtraction	Shape
Year 3	Place Value	Addition and Subtraction	Shape (Summer)
			Autumn Summative Assessments

Place

Spring Term

Year 2	Multiplication and Division		Length and height	Mass, capacity and temperature
Year 3	Multiplication and Division A	Multiplication and Division B	Length and Perimeter	Mass and Capacity
				Spring Summative Assessments

Summer Term

Year 2	Time	Fractions		Position and direction	Money	Statistics
Year 3	Time	Fractions A	Fractions B	(Shape)	Money	Statistics
					Summer Summative Assessments	

Class 4 – Year 4/5

Autumn Term

Year 4 Year 5	Place Value (including Year 5 negative Number)	Addition and Subtraction	Year 4 – 2 D shape – triangles and quadrilaterals	Multiplication and Division A/B
				Autumn Summative Assessment

Spring Term

Year 4	Fractions	Decimals A	Area	Length and Perimeter	Statistics
Year 5	Fractions A and B	Decimals and percentages	Perimeter and area		
			Spring Summative Assessment		

Summer Term

Year 4	Decimals B	Shape – Polygons, 3D and angles	Position and direction	Money	Time	Consolidation – four operations/area
Year 5	Decimals			Converting units		Volume
				Summer Summative Assessment		

Class 5- Year 5/6

New White Rose Mixed Age Planning:

Autumn	**Place Value**	**Addition and Subtraction**	**Multiplication and Division A**	**Fractions A**		**Multiplication and Division B**
					Autumn Summative Assessment	
Spring	**Multiplication and Division B (continued)**	**Fractions B**	**Decimals A**	**Area, Perimeter and Volume**	**Decimals B**	**Fractions, Decimals and Percentages**
					Spring Summative Assessment	
Summer	**Ratio**	**Algebra**	**Shape**	**Position and Direction**	**Statistics**	**Converting Units**
					Summer Summative Assessment	

- Medium term planning is responsive: using ongoing informal assessment, staff identify additional misconceptions or areas that require additional input; informing their daily planning with the class, identified groups or individuals to support further during lessons or through interventions. Shared Class/year group 'Pinks and Greens' written following termly assessments also inform this planning and are included on it. Planning also includes key stem sentences.
- Daily planning is for the teacher's own use but will be flexible and responsive to meet the needs of the pupils in securing progression through the small steps needed to progress. Content will vary according to class but it could include:
    - KS1/KS2:

- Coverage of 2014 national curriculum for each year group in KS1 and KS2.
- Development of Fluency, Reasoning and Problem Solving.
- White Rose Version 3.0 (revised 2022)/ Mixed Age resources used as framework.
- Morning maths activities focus on development of arithmetic skills.
- Planned opportunities to revisit and consolidate; making links within maths
- Weekly homework from CPG books and time to review this with pupils.
- Target Maths

- EYFS:
  - Use of ELG and our own maths curriculum's steps and goals.
  - White Rose SoW
  - Mastering Number
- KS1:
  - Daily Mastering Number sessions
- KS2:
  - Year 4 Masterng Number daily sessions
  - Times Tables focus

Pupil Voice:

Children take part in pupil questionnaires regularly. They are involved in their learning; explaining what they understand and encouraged to ask questions to move their learning forwards.

Challenge and Expectation

- Maths sessions are pitched to provide challenge for the pupils.
- Within lessons, pupils work within a shared learning objective, giving all pupils the opportunity to progress mathematically at their level.
- Through development of teacher and pupil mind-set, pupils are increasingly able to challenge themselves.
- Through questioning from staff and sentence stems, pupils are encouraged to deepen their mathematical thinking.
- Pupils are regularly given opportunities to select from a choice of activities and are encouraged to challenge themselves.
- Pupils are involved actively in marking and feedback.
- Every lesson should have an element of fluency, reasoning and problem solving for all pupils.

Monitoring, Evaluation and Self-Review

We are part of the local NCETM Maths Hub which enables us to work in a collaborative network alongside other professionals; to stay up to date with research led initiatives and continue developing our practice in mathematics.

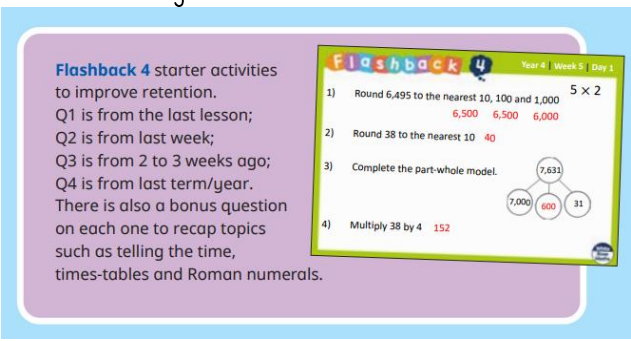
We reflect on research led information (such as EEF) when reviewing our curriculum.

Learning in Mathematics is monitored by:

- Termly book trawls
- Pupil voice questionnaires.
- Termly lesson observations; linked to performance management with actions followed up.
- Lesson coaching opportunities.
- Learning walks monitoring whole school focus and identifying trends.
- Monitoring of maths achievement across whole school and identified groups of pupils.
- Results from termly maths tests sent to Maths Lead for analysis.
- Results of monitoring and evaluation used to inform action planning.
- Identification of groups of pupils and individuals to target for further input, i.e., 1:1 support or interventions.
- Monitoring of Pupil Premium using individual PP passports.
- Monitoring of interventions
- Marking and feedback involving pupils in marking and responding to marking.
- Pupil progress meetings with Headteacher.
- Meetings with SENCo to monitor progress of children towards targets set.
- Targets and progress tracked termly using Arbor.
- Triangulation of evidence through performance management and monitoring by head teacher and maths coordinator.

Assessment

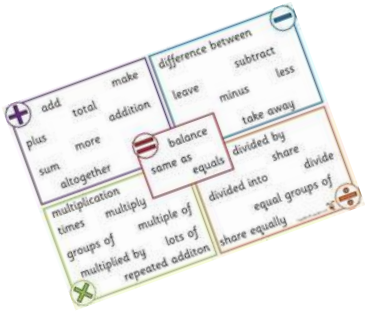
- Ongoing assessment for learning during lessons to enable lessons tailored to meet pupils' needs. Each lesson thereafter is planned in response to pupils' progress with length of time allocated changing to flexibly meet the needs of the learners.
- Pupils complete Flashback4 activities as part of a selection of activities during maths starters to make links with prior learning.

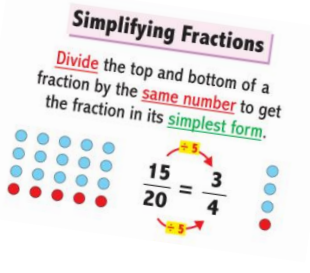


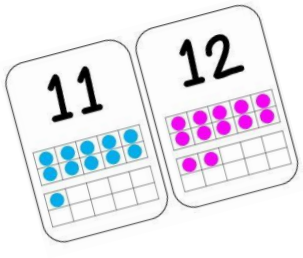
- Pupils complete SATs tests at the end of each Key Stage.
- Year 4 Pupils complete the Multiplication Tables Check. Data is used to inform planning of interventions in Year 5.
- Times Tables Data including heat maps reviewed from TTRockstars.
- Termly assessment test in KS2 to inform tracking of progress (White Rose Maths termly assessments – revised version 3.0, end of block assessments or SATs papers in Year 6)
- End of Block assessment are available to complete to inform next steps in learning (these may be the focus of fluency sessions within lessons during the next block).
- Arbor used to monitor progress across school.
- Use of Class Dojo to record observations in Early Years and Reception classes.
- Regular moderation of work at Staff meetings.
- Scribing of pupils' oral comments between speech marks in their own maths books in Reception.
- Feedback, where possible, to be given to pupils during lessons during conversations or written feedback using pink and green marking.
- Involvement of pupils in marking through response to feedback. Pupils encouraged to use purple polishing pens to correct errors where this is appropriate with support as necessary.

The Maths Environment

- All classrooms have working walls for maths. These can include key vocabulary, stem sentence, examples of strategies, question stems and models and images. They provide support for all pupils during lessons.







- Resources selected for use during maths lessons are matched to the learning and planning.
- Resources are accessible in all classes for children to select during maths lessons to support their learning.

- IWB software and WRM Digital Tools used during maths lessons where appropriate.
- Where appropriate the range of needs is catered for following consultation with SENCo, Teacher of the Deaf, LSAT and other agencies.

Maths in EYFS

Maths in EYFS at CHCA aims to build a secure foundation for the children's future learning in maths.
In Nursery and Reception classes, work is planned using our curriculum which has been organised into learning goals using Development Matters and the Statutory Framework as its foundation.

Nursery Learning Goal:

A master of maths

To use embedded mathematical knowledge naturally in their play. Subitising, counting and representing marks up to 5.

Reception Learning Goal:

A master of maths

Who can show a deep understanding of numbers to 10 including representation. Recognise patterns within the number system, subitise, compare quantities and recall number bonds to 5 and then to 10.

Work is planned flexibly to meet the needs of of children and, in Nursery, also takes into account attendance.
In Reception, Mastering Number is used as the core and we have changed the order of White Rose units of work to provide supplementary opportunities for pupils to deepen their understanding. We have included units of shape and space. of learning are used. We aim to promote confidence, fluency and flexibility in maths.
https://www.ncetm.org.uk/maths-hubs-projects/mastering-number-at-reception-and-ksl/
https://whiteroseeducation.com/resources?year=reception&subject=maths
Throughout EYFS, pupils are challenged to deepen and explain their understanding. They make links between maths they have been introduced to and its applications in their lives in other areas of learning through stories and continuous provision.
In both settings, there are also maths tables providing consolidation or challenge.

Presentation

- Maths is recorded in Maths books in all classes.
- When used, additional sheets are stuck in books.
- In Early Years and Reception, maths completed outside focused activities, i.e., independently chosen maths is recorded as observations by staff using Class Dojo.
- All worked is dated.
- LO written for or by pupils as necessary.
- Reception and KS1 books – plain paper.
- Key stage 2 books – squared paper.
- Year 4, 5, 6 – pupils fold page to split it into two vertical parts where appropriate. Pupils in UKS2 pupils draw this line in pencil and also draw a line one square in from the side of the page as a margin.
- Ruler and pencil used for drawing lines.
- Year R-Year 3 pencil used.
- Yeas 4,5,6 pen used (pencil for drawing)
- Purple pens are used by pupils in KS2 to correct their work.
- Pupil marking- KS2 pupils use pink and green pencil crayons.

Contribution of mathematics to teaching in other curriculum areas

English

The teaching of Mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during plenary sessions.

Reading Links

Children regularly read questions in maths and, in KS2, are expected to underline key words and useful number facts. Vocabulary is a key focus in maths lessons and pupils are encouraged to explain their understanding in a variety of ways and re-word questions to aid understanding. Throughout school, pupils are asked to interpret mathematical information presented in a variety of ways including physical and written representations as well as data presented on diagrams, graphs and tables. When reading mathematical information, pupils are asked to consider the similarities and differences and explain what it represents.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of PSHE and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present children with real-life situations in their mathematics work on the spending of money for example. Spiritual, moral, social and cultural development The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

Mathematics and Computing

Technology enhances the teaching of mathematics significantly, because computing is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships.

Oracy in Maths

Oracy in mathematics involves authentic listening, articulation and development of mathematical thinking. It is an essential skill that supports learning by drawing attention to mathematical structure and enabling all pupils to make connections. At Clee Hill Community Academy, we encourage all pupils to take an active part in maths lessons and this includes using a variety of strategies to help develop pupils' oral skills. Questionning forms a key part of this with pupils being regulary encouraged to notice patterns, explain their thinking and make connections with other known facts or areas of maths. Talking, listening and communication in mathematics are fundamental to enabling thinking, establishing meaning, and developing a deep understanding of key mathematical ideas. Talk in maths includes explanations, generalisations, stem setences. We are exploring strategies that will help pupils develop oracy skills in maths.

Oracy in mathematics framework | NCETM

Mathematics and inclusion

At our school we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language, and we take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, adaptive teaching – so that we can take some additional or different action to enable the child to learn more effectively and match our approaches to the pupil's needs. Additional opportunities may be available for groups of pupils to receive additional tutoring outside of school hours. Our expectations for SEND remain ambitious with the aim for pupils to keep up or catch up where possible. Teachers plan for these pupils by identifying gaps in their learning and planning interventions as necessary using Small Steps as guidance including materials from previous year groups as appropriate.

Teachers are aware of the importance of using resources and manipulatives to support learning and of how these can deepen learning and help avoid cognitive overload. Planning includes a clear indication of anticipated misconceptions.

Problem solving mornings on the last day of each term are further opportunities for the class to enjoy low-threshold, high-ceiling problem solving activities.

Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs. Interventions may lead to additional provision for

children requiring support which may include pre-learning techniques or interventions such as Plus 1 or The Power of 2. Small group interventions also take place.

Each class has a list of interventions. Pupil Premium children will also have any necessary maths interventions included as part of their Pupil Premium Passport. They record the support children receive and are regularly reviewed by the class teacher. We enable all pupils to have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom we carry our risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Further information can be found in our document – Maths and SEN on the website.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school. The subject leader gives the weaknesses in the subject and indicates areas for further improvement. The headteacher allocates regular management time to the subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. This policy will be reviewed at least every two years.

Reviewed: December 2025
Next Review: December 2027