



Broomwood Primary School



Maths Policy

Intent

The intent of our curriculum is:

To provide a curriculum which covers the mathematical knowledge and skills required for learners to become resilient and courageous mathematical thinkers within a supportive and challenging environment.

Aims

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 develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- 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

Implementation

The implementation of our curriculum:

- Is guided by the planning from White Rose Maths to ensure curriculum coverage across the school as well as skills development within units and across key stages.

- Uses pre-learning tasks before each unit of work to identify starting points, highlight gaps in learning and inform targeted planning.
- Includes the use of concrete, pictorial and abstract resources to introduce children to key knowledge and support their skill development.
- Provides children with varied fluency, problem solving and reasoning activities to develop and apply new skills and knowledge in a range of contexts.
- Creates strong links with other areas of the curriculum, supplying children with real contexts in which to apply their mathematical learning and develop curriculum cohesion

Curriculum and Planning

- The maths long term planning is taken from the White Rose Maths Hub overview. This scheme ensures that we have the necessary curriculum coverage and that objectives are tackled in the most appropriate and effective order.

Year 4 – Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number – Place Value				Number- Addition and Subtraction			Measurement - Length and Perimeter	Number- Multiplication and Division			Consolidation
Spring	Number- Multiplication and Division		Measurement - Area	Fractions			Decimals					
Summer	Decimals			Measurement- Money	Time	Statistics		Geometry- Properties of Shape		Geometry- Position and Direction		
	Consolidation											

* All long-term plans can be found on the schools website and by clicking the link above

- Maths medium term planning is used as a guidance tool in order to pace out coverage of a topic area over a half term. Teachers are encouraged to use professional

discretion when deciding on how long is needed on particular curriculum area whilst ensuring all objectives are covered by the end of the academic year

- Short term planning is recorded and shared on a weekly basis and is supported by the White Rose Maths Schemes of Learning. These schemes of learning highlight:

- + Questions that can be used to encourage mathematical talk
- + Activities to develop varied fluency working through the concrete, pictorial and abstract
- + Examples of reasoning and problem-solving tasks that can be used to consolidate and extend learners

Year 3 | Spring Term | Teaching Guidance

Pounds & Pence

Notes and Guidance

Children need to know the value of each coin and note and understand what these values represent.

They should understand that money can be represented in different ways but still have the same value.

Children will need to be able to add coin values together to find the total amount.

Mathematical Talk

What is the value of the coin/note?

What does p mean?

Why do we have different values of coins and notes?

Week 4 – Measurement: Money


Varied Fluency

- How much money does the jar contain?
The jar contains £____ and ____ p
- Complete the statements using <, > or =.
£____ and ____ p £____ and ____ p
- What amount of money is represented on the number line?
Give your answer in £ and p.

Pounds & Pence

Reasoning and Problem Solving

Charlotte has 85 p in her purse.




Which coins could Charlotte have in her purse?

Possible solutions:

- 50 p, 20 p, 10 p, 5 p
- 20 p, 20 p, 20 p, 20 p, 5 p
- 50 p, 10 p, 10 p, 10 p, 5 p

Roma had 5 **different** coins in his wallet.



What is the greatest amount of money he could have in his wallet?
What is the least?

* All White Rose Schemes of Learning can be found on the school's website and by clicking the link above

Lesson Design

At Broomwood Primary School we use an episodic approach to teaching mathematics within our classrooms. An episodic teaching approach breaks down learning into small episodes (tasks/activities). Each episode contributes towards the overall development of learning towards an intended goal. Each small section of the lesson moves on from the former and towards the latter and children can join the process at different episodes, dependent on their ability.

Why use an episodic approach?

We use this approach as we feel it increases children's independence and resilience as much of the onus for progress is placed upon the child. This approach also allows activities to be accurately differentiated and really focus on the specific issues that children need to develop. In addition, it gives children more focused time with teachers in smaller groups ensuring greater impact of teaching time. Finally, we believe it supports and stretches learning, leading to accelerated development.

What does the episodic process look like?

- Pre-learning task
- Detailed planning
- Accurate differentiation of episodes
- Active group and independent work
- Regular assessment for learning
- Marking, feedback and re-grouping

Pre-learning

This activity is used to assess children's previous knowledge and highlight any gaps in their understanding. The questions set within a pre-learning exercise should assess children's starting points in relation to the unit they are about to begin. Once pre-learning has been completed this forms the basis of our planning and also allows us to initially group our children effectively.

Detailed Planning

When planning we think about our overall objective for a session/sessions and break this down into smaller episodes of learning. Each episode contributes towards the overall development of learning towards our intended goal.

Active Group Work

As highlighted within planning the teacher will always be implementing an episode with a small group throughout the whole session. This small teaching packet will introduce a new concept to the group or build on a concept learnt in previous work. Each episode should move through concrete, pictorial and abstract representations of the concepts being taught. These representations should be added to the working wall within the classroom so children can access these whilst completing independent consolidation.

Whilst the teacher is with a group, the remainder of the class will be working independently on consolidation work. Once one episode has been completed the teacher will begin to work on a different episode with another group. Groups will be encouraged to move through as many different episodes and consolidations as possible within the session, increasing the progress groups make.

Accurately Differentiated Episodes

After each episode children will be expected to complete some independent practice. These should be short tasks testing the application of a skill in different ways. The colour of the activity being tackled should be used as a sub-heading within children's books. Activities should be differentiated from lower to higher using the colour system red, orange, yellow, green, blue and purple. The green activities are the expected level therefore the vast majority of children should see this at some point during the session. Each colour group may not be a completely different activity however learners may be supported in a different way. Every activity provided should have some form of problem solving, puzzle or application attached.

Regular Assessment for Learning

Before, within and after each episode teachers assess the progress of the individuals within their group and from around the classroom. The pace at which a child moves through the episodes is dictated by their ability and application of this through consolidation. With accurate assessment for learning the speed of progress increases and allows greater support and stretch within the same session. As mentioned previously

children will not always start at the same level or end at the same level, this is always dictated through assessment.

Marking, Feedback and Re-grouping

For this approach to be successful marking, feedback and re-grouping needs to be completed after every session. Assessment will inform teachers of re-groupings and give them their starting points for the following day. Feedback given to children will be in line with that set down in the schools **Marking and Feedback Policy** and always builds towards future learning. Any extension tasks that are set for children should test the same skill they have been learning in a different way, it is about applying the same knowledge in a variety of ways. Any corrections that have been highlighted should give children the opportunity to practice this skill again but in a supported way. Finally all targets set should relate to any corrections highlighted and support them to move their learning forward.

EYFS

We believe that maths learning within the EYFS should be child led, investigative and without boundaries. Concrete resources form the basis of all learning opportunities with children being the driving force behind maths discovery. Maths is immersed within our EYFS learning spaces, ensuring that learning opportunities can be maximised and developed when and where they present themselves.

The basis of maths learning within the EYFS comes from The Early Years Foundation Stage Curriculum. The objectives from this document have been developed into a long term plan ensuring coverage, consistency and smooth transitions across the unit.

All objectives from the long term plan are taught through a 'big question' which is set on a half termly basis. These questions are then broken down into smaller weekly questions and objectives. Class teachers, although working in parallel, adapt these objectives to suit their cohorts and based on previous teaching.

To target the specific objectives set down in planning, teachers will implement a daily maths carpet session, lasting between 15 to 20 minutes. During the day children will

then have the opportunity to take part in an adult lead guided maths session which will revise, develop and consolidate the learning from the carpet. In addition to this, children also have free access to continuous provision enhancements which are planned to support the weekly focus and are added to and changed throughout the week.

Classroom Environment

At Broomwood Primary School we pride ourselves on having bright, interactive and useful working spaces. As innovative practitioners we strive to create an environment that children can access independently and that has real impact on the learning that takes place. To ensure that this is the case there are several features you will see present in every classroom at our school.

Working Walls

Working walls are, by definition, a working document and are added to on a daily basis as a unit progresses. The purpose of a working wall is to support the children with their current learning and enable them to become more independent. Maths working walls should contain the title of the unit that is being covered as well as the learning objective of the lesson being taught. In addition to this, there should be concrete, pictorial and abstract examples of the work that the children are carrying out. This can be accessed by the class throughout the session supporting their ability to be independent learners.

Lightbulb Books

Lightbulb books are created alongside the children and should develop as the year progresses. Support documents and information sheets should be added to the lightbulb books to support the learning within the classroom at that time. These should then be available for the children to access independently throughout the year.

Celebrated Good Work

Within the classroom there should be somewhere where good maths work is shared and celebrated with the rest of the class. This work should be clearly labelled with each child's name and should be updated on a regular basis.

Common Resources Labelled and Accessible

All maths resources around the room should be clearly visible and accessible to children throughout lessons. These resources should be clearly labelled using the schools chosen handwriting script as well as having a visual representation attached. Over the year teachers should encourage children to access support materials independently developing self-sufficient learners within the classroom.

Assessment

Assessment plays a vital role in providing a high-quality curriculum that develops children's mathematical knowledge from their starting points. Through the good use of accurate assessment methods and the confident application of the information gathered we can ensure that all children make good progress within maths.

Formative Assessment

As previously mentioned each maths unit begins with a pre-learning task. This activity is used to assess children's previous knowledge and highlight any gaps in their understanding. The questions set within a pre-learning exercise should assess children's starting points in relation to the unit they are about to begin. Once pre-learning has been completed this forms the basis of our planning and also allows us to initially group our children effectively.

Through adopting the episodic approach within teaching it is important that before, during and after each episode teachers assess the progress of the individuals within their group and from around the classroom. This formative assessment guides the speed and direction of progress for each individual within the classroom. It also increases and allows greater support and stretch within the same session.

For this approach to have maximum impact successful assessment, feedback and re-grouping needs to be completed after every session. Assessment from previous sessions

will inform teachers of re-groupings that may be necessary and give them their starting points for each individual for the following day.

Finally, the post learning activity is used at the end of a unit of work and gives the children within the class the opportunity to highlight all the learning that has taken place. This final assessment is the evidence that teachers use to complete formal assessment records which are updated after each unit of work. It also highlights any curriculum areas that may need to be revisited in the future as well as earmarking any potential individuals or groups that may need further support.

Summative Assessment

Effective in-school summative assessment enables:

- **School leaders** to monitor the performance of pupil cohorts, identify where interventions may be required, and work with teachers to ensure pupils are supported to achieve sufficient progress and attainment. The senior leadership team analyses the inputted data every half term for progress and achievement. Senior leaders produce a report for their respective subject. This supports in providing an understanding of how all groups of pupils are performing across the school and where support is required.
- **Teachers** to evaluate learning at the end of a unit or period and the impact of their own teaching. Teachers must input data by the deadlines given and use the data to support in identifying where gaps in learning are to then plan appropriately to meet the needs of individuals.
- **Pupils** to understand how well they have learned and understood a topic or course of work taught over a period of time. It should be used to provide feedback on how they can improve.
- **Parents** to stay informed about the achievement, progress and wider outcomes of their child across a period. Parents are given information every half term based on how well their children are performing. This will either inform the parents about a test they have completed or an allocated teacher assessment.

Teachers are required to carry out tests and teacher assessment in the following ways:

Summative assessment procedures in the EYFS:

Baseline

We have adopted an approach similar to the Early Excellence model:

1. Group children according to Leuven scale of well-being.
2. Long observation by teacher and TA - detailed enough to give a flavour of the child, what they say, what they do, how they tackle something, their interactions, the choices.
3. More specific observations in CP or during short focus tasks.
4. Highlight the assessment statements to show what they can do - generally speaking a child would need half of the statements highlighted for them to be expected in that area of learning.
5. Use these highlighted statements to support clicking on target tracker.
6. Assign a step for all areas of learning.

Reception timeline

Date	Actions
Week 1	Induction/Transition days (2 days) By the end of the week rank/group your children based on well-being and involvement (3 groups low, medium and high) so that you have an idea of which children are the most settled and can be assessed first.
Week 2	Observations by teacher and TA (1 each) for the children demonstrating high levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i>
Week 3	Observations by teacher and TA (1 each) for the children demonstrating medium levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i>
Week 4	Observations by teacher and TA (1 each) for the children demonstrating low levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i>
Week 5	Complete additional assessments. **meet with Teachers from another school to share observations/moderate ** Finalise clicking and assign steps.

Week 6	Data Deadline
Week 7	External moderation

Nursery timeline

Date	Actions
Week 1	Home visits <i>Assess the children who are returning to nursery – you should be able to assess them on the statements with just one observation.</i>
Week 2	Settling in of new children. By the end of the week rank/group your children based on well-being and involvement (3 groups low, medium and high) so that you have an idea of which children are the most settled and can be assessed first. Each teacher to take half each.
Week 3	Observations by teacher and TA (1 each) for the children demonstrating high levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i>
Week 4	Observations by teacher and TA (1 each) for the children demonstrating medium levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i>
Week 5	Observations by teacher and TA (1 each) for the children demonstrating low levels of well-being and involvement. <i>Click initial statements and highlight EE statements.</i> **meet with Teachers from another school to share observations/moderate ** Finalise clicking and assign steps.
Week 6	Data Deadline
Week 7	External moderation

Assigning a Step

- Steps are assigned on target tracker every half term.
- When highlighting statements you don't have to click a statement 3 times. If they are secure you can click it as blue straight away, similarly if they are using and applying the skill/knowledge in different contexts you can click it as mastery. It isn't one colour a term.

- For a child to be judged as **working within a band**, their book should reflect that with the majority of statements being labelled as the correct stage of development for their age - majority of statements would be **red on Target Tracker**.
- For a child **beginning the band** you would expect to see the majority of observations labelled as 'b' - statements would be a mix of **red and blue on Target Tracker**.
- For a child being **secure the band** you would expect to see the majority of observations labelled as 's' - statements would be **mainly blue with some gold on Target Tracker**.
- Judgements should be best fit. Just because a child has one or two observations at a higher/lower band it doesn't mean they have to be assigned a step in that band.
- Do not be constrained by the typical stages of development but use them as a guide to identify whether a child is working at the expected level or not.
- Once a step has been assigned check your class using the Age Related Expectation summary sheet to see if you agree with where children are in relation to their age in months.
- Secondly look at the attainment of the whole child by looking at all areas of learning alongside one another; Where are the highs and lows? Do the judgements make sense? Check using the 'sense checker' - can they show secure understanding of people and places if they are well below on speaking?

Measuring Progress

- As a school we have decided what expected at each point of the year is and what typical/expected progress should look like.

EYFS to make 20 steps across the phase (16-26months secure → just above 40-60months +)

- Pre-school 8 steps in 4 terms (16-26s → 30-50b)
- Nursery 6 steps (30-50b → 40-60b)
- Reception 6 steps (40-60b → ELG Expected)

Expected Progress For Pre2 children (Baseline 16-26s)

End of Aut	End of Spring	End of Summer
	16-26w	16-26s
Expected Progress Across Pre-school (Baseline 16-26s) - Pre 3		
End of Aut	End of Spring	End of Summer
22-36b+	22-36w+	22-36s/30-50b
Expected Progress Across Nursery (Baseline 30-50b)		
End of Aut	End of Spring	End of Summer
30-50w	30-50s	40 - 60b
Expected Progress Across the Reception (Baseline 40-60b)		
End of Aut	End of Spring	End of Summer
40-60w	40-60s	Just above 40-60+ ELG Expected

Summative assessment procedures from year 1- year 6

Tests

- Termly tests for maths (Puma) - completed at the end of Aut 1, Spring 1 and the beginning of Summer 2. (Year 1, 2, 3, 4, 5).
- Year 6 do End of year CGP tests every half term, in maths
- All results to be recorded as standardised scores on Target Tracker.
- These results provide an indicator as to where children are in terms of age related expectations.

	Maths (Standardised Score)
Working towards Expected	<85

Working at Expected	85-115
Working Above Expected	116 - 130
Working Significantly Above Expected	>130

Teacher Assessment

- Statements on target tracker can be clicked throughout the year; at the end of a unit of work or at the end of term/half term.
- Statements should indicate what the children do within lessons. Evidence from tests can also be used.
- A statement clicked red means that they are beginning to work on it but have not yet achieved it. If a statement is clicked blue it means they have achieved it. A third click will allow you show that a child has 'mastered' a specific statement - yellow.
- The highlighted statements will help when assigning a step at the end of each half term.
- When clicking a statement make sure you click it as the half term in which they achieved it.
- Tests should be used as a tool to back up your teacher assessment.

Assigning a Step

- Steps will be assigned every half term based on test results and teacher assessments.
- Target tracker will suggest a step, with the coloured bar, but you put in the step and so you can make the final decision as to the step you assign.
- Make sure you are able to justify any step that you assign.
- To assign a step you need to look at all of the strands within a subject and make a best fit judgement.

- When assigning a step you need to make sure you click it as being assessed in the correct term (see the deadlines table below) and if a child hasn't moved you need to click on the step again and give it a new date. You can assess a child more than once on the step.
- Across the year there are specific bench marks that children need to meet to be deemed as working at the expected standard (see Age related expectation table below). Children will not always move one step per half term but over the year they are expected to make 6 steps of progress.
- If a child is given a step above the benchmark assessment they are classed as working above the expected standard for that point in the year. Similarly, if a child is assigned a step below the expected bench mark for that point in the year they are considered as working below the expected standard.
- Although tests may show a child to be working at greater depth we are not using this as an assessment grade, but children who are working significantly above the expected standard can be awarded a higher step.

Age Related Expectations:

	Expected at Autumn 1	Expected at Autumn 2	Expected at Spring 1	Expected at Spring 2	Expected at Summer 1	Expected at Summer 2
Pre-School	Baseline 22-36b	22-36b+	22-36w	22-36w+	22-36s	22-36s+/30-50b
Nursery	Baseline 30-50b	30-50b+	30-50w	30-50w+	30-50s	30-50s+/40-60b
Reception	Baseline 40-60b	40-60b+	40-60w	40-60w+	40-60s	ELG Expected
Y1	40-60s+	1b	1b+	1w	1w+	1s

Y2	1s+	2b	2b+	2w	2w+	1s
Y3	2s+	3b	3b+	3w	3w+	1s
Y4	3s+	4b	4b+	4w	4w+	1s
Y5	4s+	5b	5b+	5w	5w+	1s
Y6	5s+	6b	6b+	6w	6w+	1s

Homework

Maths homework should be set, completed and marked on a weekly basis. Homework should be set on a Tuesday and is due back in for assessment by the following Monday. All homework set should be a consolidation and/or application of a skill that the children have been learning within the classroom. Homework should also be differentiated to ensure that all children are being challenged and supported at the correct level of ability.

Accountability

Role of Class Teacher

- To plan individual lessons on a weekly basis for themselves and their parallel teacher
- To generate a half termly plan based on the Long Term plan provided by the subject lead
- To follow the policy structures when planning lessons
- To mark work on a daily basis
- To adapt planning to suit the needs of the class/group/individual
- To provide resources to support independent learning
- To carry out half termly tests and report data to SLT
- To click statements on Target Tracker, at least every half term.
- To assign a step, each half term, using test data, performance in class and statements to inform judgements
- To attend moderation meetings to re-affirm judgements

- To carry out gap analysis to identify next steps of learning
- To provide evidence of judgements at pupil progress meetings
- To provide evidence of adhering to the policy in performance management
- To respond to feedback from lesson observations, book scrutinise and learning walks

Role of Subject Lead

- To write and review the policy on an annual basis
- To write an action plan and review it each year
- To keep an up to date checklist of resources
- To order appropriate resources
- To keep up to date on developments within the subject nationally
- To provide support and guidance for staff in relation to the teaching and assessment of the subject
- To produce a scheme of work/long term plan showing what needs to be covered when, for each year group
- To ensure that there is curriculum coverage and appropriate pitch and progression across the school
- To monitor teaching and learning annually, through formal observation and book scrutiny
- To collect data on a half termly basis in order to track standards
- To lead staff meetings to in order to help raise standards within the school
- To meet with the link governor and keep them up to date with standards in the subject
- To write an annual report, for governors, on achievements and standards within the subject
- To demonstrate good/outstanding teaching in your subject in order to lead by example

Role of SLT

- To monitor whole school data on a half termly basis and discuss with the SLT
- To identify areas of need across the school and make suggestions with regards to intervention and support programmes for staff
- To provide materials/advice for intervention groups
- To hold staff accountable for performance data during performance management and pupil progress meetings
- To track the progress of pupil premium children, identifying any gaps in learning and finding ways to address it
- To track the progress of Rec, Year 2 and Year 6 children from their starting points
- To monitor teaching and learning termly - book scrutiny, planning scrutiny, lesson observation, learning walk, discussion with children
- Support subject leads through performance management targets and by giving them opportunities to discuss any issues and give advice
- Lead by example in all areas of the curriculum

Role of Governors

- Meet with co-ordinators to gain a thorough knowledge of the subject; standards, strengths and areas for development
- To have a good understanding of the policy
- To hold subject leads to account by asking challenging questions
- To be involved in some monitoring of teaching and learning each year
- To hold SLT to account in the governors a meetings
- Approve all relevant policies
- Have an understanding about progress and standards across the school

E-safety

E-safety is the 'Safe and responsible use of technology'. Children will learn about the benefits and risks of using technology. They will be taught what internet use is

acceptable and what is not. They will learn how to use the internet safely and what to do if they see something that upsets them. This is important as the internet is an essential element in 21st century life for education, business and social.

Broomwood Primary School is keen to ensure that children always use technology safely and that all children are aware of how to do this. This is taught through lessons, assemblies and E-safety days. Infringements relating to E-safety are taken very seriously and are always investigated (see Computing Policy).

Equality

The School welcomes and values disabled people taking an active part of school life. Broomwood Primary School is keen to make sure that we do not make it difficult for disabled children, young people and adults to be involved in every part of school life. We have a legal duty not to discriminate against disabled people and to comply with the Equalities Act 2010.

Broomwood Primary School recognises that disabled people are very diverse and include people with a physical impairment, visual impairment, hearing impairment, learning difficulty, specific learning difficulty (e.g. dyslexia), mental health issues, people who are deaf, British sign language users and people with long term health conditions.