Burnt Tree Primary School

Mathematics Policy

Signed by Chair of Governors	
Date	04/03/2025
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PURPOSE OF STUDYING MATHS

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject *(National Curriculum 2014).*

1. AIMS AND OBJECTIVES

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

1.1 SCHOOL VISION

- At Burnt Tree, we aim for our children to have no fear of maths, no ceiling of capability, the opportunity to make mistakes to develop their learning and every child given the chance to succeed.

- For all children to think mathematically, show a deeper understanding, enabling them to reason and problem solve.

- Maths lessons will use the Concrete, Pictorial and Abstract (CPA) approach to help children to deepen their understanding of mathematical concepts.

- To broaden children's knowledge and understanding of how mathematics is used in the wider world.

2. TEACHING & LEARNING

Maths is taught for an hour each day, predominantly following the White Rose planning documentation, which must be supplemented to meet the needs of the children.

Maths is taught in an episodic way with small step lessons designed to build on learning and deepen understanding. The lesson should be delivered in the following way:

a. Arithmetic question(s) – teacher to model method before children attempt their question(s) independently. These must be linked to the lesson or closing gaps.

b. Teacher present children with an 'anchor task'. This should be a question linked to today's learning, which requires the children to think deeply (manipulatives should be available). This should be used as an assessment opportunity.

c. Warm up activity – designed to review previous learning ready to build on for the current lesson.

d. Introduce and define vocabulary.

e. Teacher to introduce new learning and model using an element of the CPA approach.

f. Children to have opportunities to explore the learning in groups using relevant equipment, example questions and partner talk.

g. Independent practice (based on individual starting points.

h. Review learning to see what the children have achieved throughout the lesson using a range of assessment strategies.

i. On the spot marking should be used to identify misconceptions as they arise – on the spot interventions where necessary.

j. 'Anchor Task' should be revisited to discuss new skills and strategies.

k. Interventions should aim for children to keep up rather than catch up. Pre-teaching and post teaching interventions should be carried out daily.

Maths lessons should include opportunities for:

- The teaching and use of variation including different mental methods, which are more efficient. Children should be encouraged to share methods they have discovered.
- All 3 elements of the national curriculum to be explored for all ability groups.
- <u>All</u> children to have access to equipment and/or pictorial representations to represent the mathematics they are learning, not to 'do the maths' for them.
- Partner talk
- Fluid groups
- Opportunities for ALL children to be challenged.
- Teaching of written methods (See calculation policy).

- Predominantly using White Rose premium resources to support independent practice, which must be supplemented as appropriate.
- To support reasoning, children should be given opportunities to explain their mathematical thinking, write explanations of their thinking as well as proving their thinking using a calculation, pictorial representation, or equipment.
- Daily opportunities to review previously taught topics outside of the maths lesson (usually after lunch) using White Rose Flashback 4 where children review topics from last session, last week, last month and last year. Teachers may choose own topics for children to review to meet the needs of their class.
- Opportunities need to be provided for the more able children to think more deeply. They should not be completing work from a year group above.
- KS2 children (including children in Year 2 from spring term) have times table practice at least 3 times per week, including using Times Table Rockstars. This will help support the fundamental skill of recalling times tables and division facts, and the Year 4 multiplication tables check.
- EY, Year 1 and 2 have fact fluency lessons following the Mastering Number scheme. This will focus on number, addition and subtraction facts that are the basis of all additive calculation.
- Live marking to take place during lessons so children can receive and act upon feedback immediately during the lesson (an on the spot intervention may be used).
- Where appropriate, self-marking using purple pen can be used. Children to correct mistakes using purple pen and use a pencil and ruler to cross out mistakes.
- Pupils of different levels of ability are catered for through the differentiation of support provided for them. This may include scaffolding, extra support from staff, etc. The majority of pupils should be working from current year group targets and only in agreed circumstances, (such as child with an EHCP - education, health and care plan) should pupils be accessing material below their current year group, SLT must be in agreement.
- Teachers are encouraged to use mixed ability seating during lessons.
- In exceptional circumstances, setting may be introduced into a year group, but this is only after discussion and agreement with SLT.

2.1 EARLY YEARS FOUNDATION STAGE

Pupils are supported to develop their understanding of Mathematical Development in a broad range of contexts in which they explore, enjoy, learn, practise and talk about their developing understanding. They are provided with daily opportunities to practise and extend their skills in these areas and to gain confidence and competence in their use. We achieve this in a variety of ways:

- Developing mathematical understanding through all pupils' early experiences including songs, stories, games and imaginative play.
- Encouraging and valuing pupils' exploration of real life problems.
- Using mathematics as an integral part of daily experiences, modelling and encouraging child participation.
- Providing time, space, indoor and outdoor activities, resources and encouragement to discover new words and mathematical ideas.
- Planning is taken predominantly from White Rose Reception planning document and the NCTM Mastering.
- Planning is used to teach the mathematics from Development Matters (Number and Numerical patterns).
- Teachers in the EYFS ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom.
- Number resources.
- Regular Numberblocks sessions to introduce concepts of number and support early mathematical understanding.
- From Spring term, children will produce one pieces of work ion their maths book per week, building up to two pieces in the Summer term.

2.2 PLANNING

- Teachers plan using the White Rose planning documents. This helps to ensure correct pitch of materials and coverage of the curriculum. Topics are weighted so that some will be longer than others will.
- No formal planning is currently required by the maths leader; however, lessons should be planned in advance of being taught. Any differentiation (SEND) and extension work to further challenge children should also be planned in advance. The maths leader and SLT should be aware of any children that are accessing different work. Planning should be adapted throughout the week, based on evaluation of pupils' learning.
- Summative assessments and formal assessment, such as teacher observations, marking and questioning, are used to inform gaps in learning.
- Judgements against the national curriculum are to be recorded on target tracker. Use of gap analysis report is used to inform future planning pitch and expectations.
- Class teachers should send all assessment data, and/or teacher assessment to the maths leader and SLT after assessing pupil progress.

3. CROSS CURRICULAR OPPORTUNITIES

- Where possible, Mathematical skills will be applied across the curriculum and used to draw mathematical experiences out of a range of activities, to enhance and embed the pupils' understanding of mathematics and its relationship with other aspects of learning, as well as providing opportunities to apply and use mathematics in real life contexts.

4. MATHS & INCLUSION

- Pupils' special educational needs will be supported through reference to provision maps and/or EHCP, although most needs will be met through support in maths lessons (See section 2).

- Guidelines from the Special Needs Policy should be followed in consultation with the SENCO.

4.1 EQUAL OPPORTUNITIES

- The guidelines of the 'Equal Opportunities Policy' should be followed.

5. ASSESSMENT FOR LEARNING

- Pupils' work is marked in line with the Marking Policy, and misconceptions are addressed promptly.

- Insight assessment system to be used to record and assess learning throughout the teaching sequence.

- Termly judgements to be made using Insight

- Termly summative assessments using NTS/practice SATs test materials to be completed to assist with judgements.

- Year 6 to complete half-termly assessments.

- Pupils are assessed externally in mathematics at the end of Y6, by means of National Curriculum assessment. These are the summative "snapshot" assessments of their attainment at a specific time.

- Year 4 complete the Multiplication Times Tables Check in the summer term.

- End of Reception assessment is based on the Early Learning Goals – Number and Numerical patterns.

- Ongoing assessments of the pupils' progress - evidence gathered against the Developmental Stages in Development Matters as outlined in the EYFS framework, through learning walls, floor books and individual learning journeys.

- Annual written reports to Parents and termly Parents' Evenings.

- Guidelines of the Assessment Policy should be followed.

5.1 INTERVENTIONS

- During the lesson, live marking and AfL (assessment for learning) will allow teachers to assess children who need a Same Day Intervention. This will take place during the afternoon on the same day.
- Same Day Interventions help children to "Keep up not Catch Up." They are for children with just a bit more support will be able access the following day's lesson. A maximum of 6 children should be in a group. If more children did not understand the day's learning, teachers will need to consider adjusting the weekly planning to allow the lesson to be repeated.
- Same Day Interventions should be no more than 15 minutes and may include: another example of a question that challenged the children, teacher modelling using the CPA approach, additional whiteboard work etc.
- Pre-teach maths interventions should be timetabled. Using White Rose planning documents, support staff, with consultation from the class teacher, are to look ahead at what is to come and expose some of the key concepts to children before the lesson. This will give them more confidence and improved opportunities to achieve in the lesson.
- Where appropriate, interventions are 'in the moment'. Gaps in children's learning will be identified and shared with all staff in the classroom. Throughout the day, children will be given short, snappy interventions.

6. RESOURCES

- All daily maths resources are kept in classrooms. E.g. place value and double-sided counters, tens frame, rekenreks, Numicon, Base 10, cubes, place value.
- Additional resources for topics such as shape, time and measures are stored in the KS1 and KS2 resource room.
- Additional resources can be requested by speaking to the maths leader.

7. MONITORING

It is the responsibility of the Maths Lead along with the Head Teacher to monitor and review work in Maths through:

- overseeing the planning;
- audit and order resources;
- monitoring progress through book scrutinises, pupil conferencing, lesson observations and learning walks;
- analysis of data;
- providing CPD and

- providing feedback on progress to staff and Governors.

8. GENERAL

- The Maths Lead will ensure that the school is up to date with current practice in Maths by attending CPD and making links with other schools.

- Maths homework is set on a regular basis to consolidate current learning and understanding. This may be through homework sent home, or online activities set on the school's platforms such as Education City etc.