

Lord Blyton Primary



Mathematics Policy 2023

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1. Teaching and Learning

The main maths lesson

A typical lesson from Year 1 upwards lasts approximately 1 hour. Maths is taught daily during the morning. Children begin with a short activity which supports fluency in and recall of number facts.

White Rose maths resources provide the basis for the lessons. There is an element of whole class teaching where new content is modelled, building on the prior day's learning, so that children are able to make links and build upon their existing knowledge and skills. Models and images are used to help children to understand the concepts being taught.

There are usually opportunities to then tackle similar problems which they might discuss with a partner or within a small group. At this point, teacher scaffolding is carefully reduced to prepare children for independent practice. The teacher uses this part of the lesson to address any initial errors and confirm the different methods and strategies that can be used.

Following this, independent work usually follows. In this part of the lesson, some children will be encouraged to use concrete resources alongside pictorial representations. Others might be supported through additional scaffolding provided by the teacher, which may include provided models of the calculation method that the children will need to use, or copies of the worded question, with key aspects and vocabulary highlighted. Children who complete this are provided with further 'rich and sophisticated' problems from the White Rose Maths Small Steps guidance or 'Planpanion' which they complete in their own maths books, giving them the opportunity to apply their fluency in different contexts.

The final part of the lesson is an opportunity for children to review, reason and reflect on learning and enables the teacher to gauge their depth of understanding.

****This is just a typical lesson and teachers will use their own professional judgment if they feel a different approach would work better for certain lessons.***

Additional fluency

To support pupils with retention, we have built in an additional 10 minutes session, which revisits prior learning. This includes learning from the last lesson, the last week, the last block and the last year. 'Flashback 4' (White Rose) is used throughout school to support the delivery of this.

2. Assessment

Assessment for Learning:

- Children receive feedback through teacher assessment, both orally and through our green and pink highlighting. *We have moved away from detailed written feedback as research indicates that this has no impact after the lesson*
- The structure of the teaching sequence ensures that children know how to be successful in their independent work. Guided practice which takes place within the earlier part of the lesson, provides further preparation for children to be able to apply the skills, knowledge and strategies taught during the independent phase. Common misconceptions are addressed within the teaching sequence and key understanding within each 'small step' is reviewed and checked by the teacher and the children before progression to further depth.
- Opportunities for additional practice and correction are provided by the teacher as appropriate, during marking, with a focus on promoting and achieving a growth mind set within the subject.

Formative Assessment:

- Short term assessment is a feature of each lesson. Observations and careful questioning enable teachers to adjust lessons and brief other adults in the class if necessary. The lesson structure is designed to support this process.
- When a block of learning is completed, children will not be assessed on this until after the subsequent block of learning has been taught. This interval provides a better indicator as to which pupils have acquired long-term learning (retained the knowledge) and which pupils require further consolidation/intervention work.

Summative Assessment:

- Teachers administer a baseline then termly LCP paper, the results of which are inputted into our iTrack system. The results of these papers enable teachers to identify any common areas of weakness so appropriate consolidation work can be done. In addition to this, we have introduced the half termly White Rose assessments to monitor progress. Any individual areas of strength or personal targets derived from these tests are communicated to the children, as well as to parents and carers at Parents Evening.
- End of year data is used to measure the extent to which attainment gaps for individuals and identified groups of learners are being closed. This data is used to inform whole school and subject development priorities for the next school year.

Doodle Maths is now being used as an online assessment and intervention tool to help consolidate and close gaps in pupils' learning.

3. Planning & Resources

The school is a White Rose Maths Premium member, which provides detailed schemes of learning and access to additional related resources and reference materials that teachers can use to support their teaching, including videos, teaching slides and PowerPoints. Teachers use this as their main plan, adapting and supplementing where necessary to meet the needs of the children.

Our Reception teaching follows the Power Maths scheme, which aligns perfectly to White Rose. The format of this works well for our younger children and they then make the transition to White Rose when they begin Year 1.

The use of mathematical resources is integral to the C-P-A approach and thus planned into teaching and learning. These resources are used by our teachers and children in a number of ways including:

- **Demonstrating or modelling an idea, an operation or method of calculation.**

Resources for this purpose would include: double sided counters, a number line; place value cards; Dienes; place value counters and grids; money or coins; measuring equipment for capacity, mass and length; bead strings; the interactive whiteboards and related software; 3D shapes and/or nets; Numicon; multi-link cubes; clocks; protractors; dice; number and fractions' fans; individual whiteboards and pens; and 2D shapes and pattern blocks, amongst other things.

- **Enabling children to use a calculation strategy or method that they could not do without help, by using any of the above or other resources as required.**

Standard resources, such as number lines, multi-link cubes, Dienes, hundred squares and counters are located within individual classrooms. Resources within individual classes are accessible to all children who should be encouraged to be responsible for their use. An interactive teaching tool for the purpose of modelling strategies is available to all teachers as part of the White Rose scheme.

Teachers are encouraged to use the school grounds as an outdoor classroom where this will provide more purpose and context to the learning, for example, when teaching length, area or perimeter.

The school uses Times Tables Rock Stars and Doodle Maths as online programs which can be accessed at home as well as in school.

The subject leader attends regular training through the local authority and through the Great North Maths Hub and keeps staff abreast of new initiatives and resources.

4. Organisation

As we are using Power Maths (reception) and White Rose (Years 1-6), we follow a blocked curriculum approach to the teaching of Mathematics. This ensures that children are able to focus for longer on each specific area of Maths and develop a more secure understanding over time. This approach is also designed to enable children to progress to a greater depth of understanding.

Subsequent blocks continue to consolidate previous learning so that the children continually practise key skills and are able to recognise how different aspects of maths are linked. For example, when children have completed a block which has enabled them to master the multiplication of two-digit numbers, a subsequent block on area and shape might provide opportunities to use this understanding when calculating the area of shapes with 2 digit length and width dimensions.

The additional daily fluency sessions with Flashback Four materials also support this consolidation, with carefully selected questions being used to encourage children to practise skills and retain knowledge.

5. EYFS

Statutory Framework: *“Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes.”*

Mathematics ELG: Number -Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; 14 - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. ELG: Numerical Patterns Children at the expected level of development will: - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

In Nursery, maths is taught through adult-led group sessions, adult-led focus tasks, challenges in the maths area and through continuous provision. It is also implemented throughout the daily routine. The children begin to develop their understanding of simple mathematical concepts such as counting to 5 (then 10 and then 20), maintaining 1 to 1 correspondence, simple addition and subtraction, to recognise and describe simple 2d shapes etc. Children are taught these concepts using physical and pictorial resources, songs, games and role-play activities.

In Reception, Mathematics is delivered through whole class teaching, adult led focus activities, weekly challenges in the maths area, though continuous provision and implemented throughout the daily routine. In Reception, maths lessons are split into three parts, which broadly follows the Power Maths program. This consists of: 1. Whole class oral and mental starter - 5 minutes 2. Whole class main teaching - 10 minutes 3. Adult led focus activity. The oral and mental starters focus on a broad range of topics such as shape, measure, time, patterns etc. to help develop an understanding of these concepts. Whole class main teaching follows Reception Power Maths planning. We teach a short whole-class lesson following the teaching sequence set out in Power Maths; starter stimulus, discover & share, think together, challenge and practical activities.

Children enjoy sharing their understanding, talking about maths and the practical elements of these maths activities. The clarity and focus of the Power Maths resources allow teachers

to focus on developing and strengthening fundamental maths concepts and skills and also to address any misconceptions that may arise. The structure of the lesson enables teachers to secure a good balance between whole class work, group teaching and individual practice. It also allows teachers to establish regular routines thereby maximising teaching time. It supports assessment, as well as providing individual verbal feedback to children, ensuring that children have a clear understanding of the task they have completed, as well as any next steps.

In both Nursery and Reception, through continuous provision, children can self-select Maths resources to consolidate their learning during child-initiated activities. We recognise the importance of play-based learning and therefore encourage children to develop their understanding during their play. Such opportunities are provided in both the inside and outside environment. Regular observations and assessments help to ensure that children that need additional intervention to consolidate their mathematical understanding are identified and supported appropriately.

6. Inclusion & Equal Opportunity

Staff at Lord Blyton are committed to ensuring the active participation and progress of all children in their learning. All children will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

With a mastery approach, differentiation occurs in the support and intervention provided to different children, not in the topics taught, particularly at earlier stages. The National Curriculum states: 'Children who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.' There is little differentiation in the content taught but the questioning and scaffolding individual children receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems, which deepen their knowledge of the same content before acceleration onto new content. Children's difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support later the same day.

Although the expectation is that the majority of children will move through the programmes of study at broadly the same pace, the 2014 National Curriculum states: 'Decisions about when to progress should always be based on the security of children's understanding and their readiness to progress to the next stage.' In exceptional circumstances, if a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be detailed on the child's provision map and any specific arrangements for the provision of children with SEND will be shared with relevant staff and communicated to parents at SEND reviews and parent meetings.

8. Parental Involvement/Home Links

At Lord Blyton we recognise that parents and carers have a valuable role to play in supporting their child's mathematical learning. We try to involve them in the following ways:

- An overview of the maths curriculum and our adopted calculation policy are readily available on the website.
- Activities which link to each maths topic are suggested for parents and carers to try at home with their child in the weekly letter home (EYFS)
- Children receive maths homework at least once a week from Reception to Year 6.
- Parents are informed of their child's progress at Parents Evenings and this is also communicated in written school reports. Information about their child's standards, achievements and future targets in Maths is shared during these meetings, as well as ways that parents/carers may be able to assist with their child's learning.
- The year group expectations are shared with parents in the form of a non-negotiables list so they are able to support them at home.
- Year 6 parents are invited to attend an informal End of Key Stage 2 SATs meeting during Spring Term during which they are given all relevant information and have the opportunity to ask any questions or raise any concerns they may have.
- The online programs TTRS/Numbots and DoodleMaths are promoted to be used at home, with log in details sent to parents.
- Family learning sessions target our reception parents to come in and work with their children to foster positive attitudes towards maths.
- Our website and Facebook pages share photographs and information about any 'wow' maths activities.

9. Role of the Maths Lead

The subject leader will:

- Work to raise the profile of maths at Lord Blyton Primary School through best practice. They will model lessons, as appropriate, to new staff, NQTs and peers to support continued professional development.
- Ensure classroom environments are conducive to learning, through effective use of displays and accessibility and availability of resources
- Involve the school in 'celebrations' of Maths, including participation in events such as 'World Maths Day'.
- Monitor progression and continuity of Maths throughout the school through lesson observations and regular monitoring of outcomes of work in Maths books.
- Ensure that all staff have access to year group plans and the relevant resources which accompany them.
- Monitor children's progress through the analysis of whole school data. They will use this data to inform the subject development plan which will detail how standards in the subject are to be maintained and developed further.
- Organise, audit and purchase central and class-based Maths resources.
- (Through ongoing involvement in the DfE funded Maths Hubs programme) Keep up to date on current developments in Maths education and disseminate information to colleagues.
- Ensure that all staff have access to professional development including observations of outstanding practice in the subject.

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