

## Beacon Federation Policy Document

## Mathematics Policy

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***NB – 2019-20 is a transitionary year for the Federation. This policy will be adopted gradually by all three schools over the course of the year with full implementation from September 2020. Not all elements of this policy will be seen consistently across the Federation until that date.***

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**Section 1 - Intended Impact**

* Our aim is to bring out the mathematician in every child.
* We want all our children to enjoy maths, to feel excited about maths, and to develop comprehensive knowledge and understanding of the subject.
* We challenge children of all abilities, ensuring that they make good progress in all areas, in line with and ambitiously beyond the requirements of the National Curriculum (2014), and that they are fully prepared for the next phase in their education.

**Section 2 – Curriculum Intent**

We aim for our children:

* To have a strong foundation of understanding in number and arithmetic, developing a high level of fluency.
* To have a range of reliable *mental* calculation strategies, aided by informal jottings where necessary.
* To know and be able to use efficient, reliable *written* methods of calculation
* To be able to apply this knowledge and understanding fluently to complex reasoning and problem-solving, both within maths itself and in other areas of the curriculum.
* To achieve mastery – i.e. to be secure and fluent, with the ability to discuss, share, analyse and evaluate their performance and understanding.
* To love maths and have real enthusiasm for the subject, enthusiastically seeking and embracing challenge.
* To know that they can succeed if they work hard, persevere and build resilience by learning from their mistakes – no child should ever feel that they are ‘no good at maths’.

**Section 3 – Curriclum Implementation**

Planning and Pedagogy:

* We follow the National Curriculum 2014 Programmes of Study.
* The Rising Stars and White Rose programmes are used to structure our medium-term planning, ensuring progression and continuity. Teachers also use guidance from the mental and written calculation policies, in order to ensure full and scaffolded coverage.
* Each teacher produces planning according to the needs of their pupils or in a way that they find to be the most useful. Individual teachers then use ongoing AfL to inform and develop their own teaching, annotating planning as required.
* Each week, children are taught several (3-5) ‘Basic Skills’ (number and arithmetic) lessons.
* Children receive 4-5 lessons each week in ‘Applied Maths’ (application, reasoning and problem solving).
* Teachers use a range of resources to support their teaching as required, including materials from Rising Stars, White Rose, Nrich, NCETM, Target Maths and Third Space.
* The Connective Model forms the basis for maths teaching. As the children move through KS1 and KS2, there is an increasing emphasis on the use of their own pictorial images to replace concrete resources such as number lines and bead strings. This supports children in internalizing their mathematical thinking and improving their mental strategies. Natural progression through the year groups should mean that there is less reliance on concrete resources in Year 5/6 however children should be independent enough to self-select resources if they deem them to be appropriate.
* Children are taught that concrete images support understanding – they are not calculation strategies in themselves and do not ‘do the maths’.
* Children are encouraged within both key stages to make their thinking explicit. Stem sentences and key questions can be displayed and modelled for children to use which in turn aims to develop their mathematical vocabulary; ‘What do you notice?’, ‘What’s the same, what’s different?’, ‘How do you know?’, ‘I know this because…’, ‘I chose this method because…’ *This is a fundamental step to embed their ability to reason and deepen their thinking*.
* Teachers teach, support and embed a ‘growth mindset’ for all children - a ‘can-do’ attitude which recognises that ambition, hard work and perseverance will lead to success, and that challenge should be welcomed and mistakes valued for the contribution that they make towards learning.
* Teachers ensure that all learning is secured according to the principles of ‘mastery’ – i.e. that a deep and solid understanding of concepts and skills, and the ability to use and apply these, are securely in place before the next steps of learning are taken.

Differentiation

Teachers differentiate effectively through a range of methods, including:

* Providing support required for less able children at the point of need e.g. pre-teaching, the support of an adult or able peer in class, additional support during and after a block of work through an intervention group.
* Providing a range of challenges and activities from which children can choose their own level, with support where necessary, with the knowledge that they can move themselves on to the next challenge as soon as they are confident and without having to consult an adult.
* Challenging able children by ensuring that there is always a meaningful activity to move on to, reflecting increasing depth of learning, so that children have never ‘finished’.

Children’s Recording and Workbooks

* From Reception onwards, children will have a maths workbook in which they record their learning. These are work books, not answer books. Whilst broadly following the school’s Presentation and Layout Policy, children will use these books freely to record their ideas, suggestions, working-out, calculations, pictures, diagrams, drawings, solutions and answers. They will not be hindered by the requirement to be ‘neat’, though should treat their workbooks respectfully and not be needlessly untidy. This approach may need to be modelled by the teacher. Children may write in each other’s books when carrying out peer working or assessment.
* Workbooks will reveal the depth of the child’s thinking, reasoning and problem solving. They will show progress in thought and method, both within each lesson and from pre- to post- assessment tasks. Feedback will be given and books marked in accordance with the school’s Marking Policy.
* Children may also record their thinking on whiteboards during directed teaching time and this should provide teachers with a good opportunity to use assessment for learning. As soon as children return to working independently they should be recording everything in their workbooks.

Assessment, Recording and Reporting

Formative Assessment

* We use ongoing, daily AfL to refine planning and identify next steps. Progress is measured by both the pupil and teacher against the learning objective, which is shared and discussed at the start of each lesson. Planning is annotated accordingly in order to support decisions about next steps.
* Feedback may be given verbally or through marking (see Marking Policy).
* Pre-unit (elicitation) and post-unit (consolidation) assessment pieces, such as the ones found on the White Rose website, are used to inform planning and identify children’s understanding and progress.

Summative Assessment

* Teachers may use small tests on a regular basis e.g. times-tables or number bonds tests to include schemes such as Big Maths.
* Children will be given more formal written attainment tests on a termly basis using either Testbase, White Rose or previous SATs tests. The results of these tests will be recorded on Class Profiles in order to monitor children’s progress.
* In Y2 & Y6 interim assessment framework guidelines are used to indicate whether children are working towards, at or above the expected standards. Statutory end of year tests are administered.
* Maths work is moderated both within the Federation and across schools who are part of the South Devon Primary Partnership, in order to ensure that teachers’ judgements are accurate. Progression and curriculum coverage in maths will also be monitored using a variety of methods to include book scrutinies and learning walks.
* Parents are informed of their children’s progress through interim and annual reports, and at parents’ evening.
* Achievement in maths is reported to Governors through the Headteacher’s Reports, and regular presentations from the Maths leads.

Early Years Foundation Stage(See also the Beacon Federation EYFS Policy)

* In Foundation we plan from the Early Years Foundation Stage Curriculum (EYFS). A mixture of child initiated planning and accurate AfL ensures an exciting and hands-on cross curricular approach to enable children to make good progress. Children talk and are exposed to opportunities for maths throughout each and every day.
* Number skills are specifically taught daily and continue to be reinforced throughout each day and in all activities. There is a rigorously structured approach to number, starting at 0 and moving on only when the children have secured a full and comprehensive understanding of the number. The focus at pre-school is on securing number to 10, and in Reception on securing number to 20. Children learn about bigger numbers in context.
* The Connective Model influences the teaching and learning of maths where opportunities for concrete ‘real life’ experiences, pictures and images, language and symbols combine to ensure a deep understanding of mathematical concepts. Alongside this, children are actively encouraged to use and apply the skills they have been taught in a range of Let’s Learn activities where they consolidate and extend their knowledge and understanding as well as seeking out new challenges. In this way, maths is promoted across the curriculum using both the inside and outside learning environments.
* Children’s progress is evidenced through photos, observations and self -initiated activities and is tracked through highlighting individual Development Matters sheets. Achievement is plotted onto a tracking grid termly. In order to meet statutory requirements, data for Reception is submitted to Devon LEA in the Summer Term.

SEND

The Federation has the same academic, technical and vocational aspirations for almost

all learners. Where this is not practical, adaptations will be made to the curriculum and resources to allow access to maths for all pupils with SEND, including provision for pupils who are exceptionally able.

Curriculum Leadership

Maths is led across the Federation by a Maths Team, comprising teachers from all three schools and across the key stages. The team has joint responsibility across all three schools, and as such will:

* Stay ‘ahead of the game’ in terms of statutory requirements and current good practice - sharing information that may be beneficial to staff.
* Inspire an exciting, informed and creative approach to maths teaching.
* Support teaching through leading inset, giving advice, and through modelling, feeding back from lesson observations and work scrutiny, team teaching, and monitoring of planning and assessment.
* Carrying out regular moderation to ensure standards are consistently high, and taking appropriate action where this is not the case.
* Use moderation to ensure that knowledge and skills are sequenced across time and being taught systematically and cumulatively, so that new knowledge and skills build on what has been taught before and pupils can work towards clearly defined end points. *This will require moderation both between year groups and across time within each year group*.
* Maintaining and storing resources, and purchasing new resources when necessary.
* Meeting with, and reporting to the SLT and governors when appropriate.

Equal Opportunities

This policy reflects and supports the equal opportunities ethos of the Federation. All children will have complete access to the curriculum and this will be provided in accordance with their age and need.