

Policy Title:	Mathematics Policy	
Date of Issue:	11.06.2019	
Date of Review:	Autumn Term 2020	
Author & Role	Kath Linde – Lead Practitioner - Class Teacher	
Ratified by:	Governors Policy Committee	
Responsible signatory:	W Blundell <i>W. Blundell</i>	M Maher <i>M. Maher</i>
Date of signature:	11.06.2019	11.06.2019
Outcome:	<p>This Policy: Reflects the school values and philosophy in relation to the teaching and learning of Mathematics. It sets out a framework within which teaching, and support staff can operate and gives guidance on planning, teaching and assessment, and is designed to help them understand their role and responsibilities. It is intended for all teaching staff and support staff, school governors, parents and advisers/inspectors as appropriate.</p>	
Cross Reference:	<p>Assessment, Recording and Reporting Policy Computing Policy Homework Policy Online Safety Policy Single Equality Policy Teaching and Learning Policy</p>	

EQUALITY AND DIVERSITY STATEMENT

Astley Park School is committed to the fair treatment of all in line with the Equality Act 2010. An equality impact assessment has been completed on this policy to ensure that it can be implemented consistently regardless of any protected characteristics and all will be treated with dignity and respect.

POLICY REVIEW

To ensure that this policy is relevant and up to date, comments and suggestions for additions or amendments are sought from users of this document. To contribute towards the process of review, please contact the author of the policy.

Mathematics Policy

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Mathematics Policy

This policy reflects the school values and philosophy in relation to the teaching and learning of Mathematics. It sets out a framework within which teaching, and support staff can operate and gives guidance on planning, teaching and assessment.

It is intended for all teaching staff and support staff, school governors, parents and advisers/inspectors as appropriate.

Context

Astley Park is a special school that caters for learners with a wide range of special needs, between the ages of 4-16, all of who have an Education and Health Care Plan.

Learners are taught Mathematics across Key Stages and access mathematical learning appropriate to their ability. Progression rates are dependent upon the individual learner and all small steps of progression are recognised. Many opportunities for over-learning and applying learned skills across contexts are provided.

Mission Statement

At Astley Park we believe that a high-quality education in Mathematics should enthuse and engage learners, creating an enjoyment, which provokes curiosity, enabling learners to feel confident and become successful. High quality teaching of Mathematics begins with with an in-depth understanding of each learner's needs, and then seeks to provide relevant and challenging opportunities that support them as they progress in their learning and development.

Aims

At Astley Park School, our aim in Mathematics allows learners to:

- Be challenged appropriately at their own level.
- Be motivated by the appropriate mathematical challenges presented.
- Promote enjoyment and enthusiasm for learning through practical activities, exploration and discussion.
- Be able to apply their mathematical understanding across curriculum areas.
- Be able to apply their mathematical understanding across contexts, in a functional way that equips learners for everyday life.
- Be able to use appropriate mathematical vocabulary.
- Be able to develop skills through the process of enquiry and investigation.

Curriculum Organisation

Primary Phase:

Foundation Stage: Learning is developed through a broad range of contexts in which learners can explore, enjoy, learn, practise and talk about their developing mathematical understanding. Mathematics, in this phase, involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure, in line with the EYFS statutory framework.

Mathematical development is related to the objectives set out in the Early Learning Goals and are further personalised using B-Squared which underpins curriculum planning in this phase.

Key Stage 1-2

Mathematics is taught discretely within KS1-2 where coverage follows a two-year curriculum cycle covering elements of:

- Number and Place Value
- Number-Addition and Subtraction
- Number- Multiplication and Division
- Number-Fractions
- Geometry-Properties of Shape
- Geometry-Position and Direction
- Measurement
- Statistics

This is in line with the National Curriculum Mathematics programmes of study Year 1 and 2. B-Squared and an adapted Numicon assessment framework are used to personalise learning further to meet the needs of the individual learner.

Secondary Phase:

Key Stage 3

At KS3 the above elements of mathematical coverage continue with KS3 drawing curriculum content from the Year 3-Year 5 Programme of Study to ensure broad and balanced coverage in line with National Curriculum content. As with KS1 and 2, B-Squared and an adapted Numicon framework are used to personalise learning further to meet the needs of the individual learner.

Key Stage 4

KS4 curriculum content focuses on providing realistic contexts, scenarios and problems; specific tasks that are relevant to learners; problem solving; and the applications of knowledge, skills and understanding for a purpose.

A pathway approach is followed across KS4 where differing levels of content prepare learners for their journey beyond Astley Park.

- Pathway A - ASDAN Personal Progress
- Pathway P - OCR Functional Skills Maths at Entry Level 1
- Pathway S - OCR Functional Skills Maths Entry Level 2 – 3

Whilst the whole school are expected to follow the mathematical strands in the given order, the Astley Park Curriculum allows the opportunity for mathematics to be taught flexibly and creatively.

Planning

Long-Term Plans:

Long-term plans have been mapped out by the Lead Practitioners to ensure coverage across school and signpost how content and skills in each key stage, subject and programme of study are covered. The long-term plans show clear links between subjects and build in progression, consolidation and diversification for learners across school.

Medium-Term Plans:

Our medium-term plans include differentiated objectives closely matched to the curriculum theme for each content area and include further personalisation through the use of Personal Outcome Plan targets. These plans define what is taught and ensure an appropriate balance and distribution of learning across each half term.

Medium-term planning is undertaken on a half-termly basis. It is used to set clear, achievable goals matched to learners' own abilities as well as Personalised Outcome Plan outcomes, as well as ensuring progression, breadth, continuity and subject coverage throughout the school. Planning is the responsibility of individual class teachers and is shared via the school network.

Mathematics activities are planned so that they are relevant to the curriculum and build upon the prior learning of the learners. We strive to ensure learners of all abilities have the opportunity to develop their skills, knowledge and understanding. We also build planned progression into each Key Stage, so that there is an increasing challenge for learners as they move up through classes.

Time Allocation

In the EYFS a continuous provision approach is used with learners accessing mathematical learning as part of this approach. In addition to this, focussed mathematical learning activities are undertaken regularly throughout the week.

In the Primary Phase and Secondary Phase learners access mathematical teaching for four sessions across the school week, with additional application of skills sessions promoted across curriculum areas, during community visits and through the use of continuous provision.

Teaching and Organisation

In mathematics lessons a variety of teaching and learning styles are used. The methods employed vary according to the age, ability and experience of the learners and the concept being taught.

Mathematics lessons are delivered in an interesting and stimulating way, making use of commercial materials, teacher-prepared materials, support materials, community visits, practical equipment, visual aids, online programmes and iPad applications, to maintain the learner's attention and reinforce learning and development.

Our principal aim is to develop every individual learner's knowledge, skills and understanding in mathematical concepts, ensuring that time and consideration is given to the application of these skills, to enable mathematical learning to become embedded across contexts.

We do this best through a mixture of whole-class teaching and individual/group learning.

Examples of this learning includes

- Multi-sensory learning
- Creative learning
- Learning through collaboration
- Individual learning, including precision teaching
- Independent learning, including workstation tasks
- Enquiry learning through problem solving
- Discovery learning through high quality continuous provision
- Application of skills and knowledge across contexts

Across KS1, KS2 and KS3, Numicon is used to teach number concepts through a multi-sensory approach where number skills are developed, using a practical base, to develop conceptual understanding and fluent recall.

Assessment, Recording and Reporting

Assessment in Mathematics is on-going and is assessed in accordance with the schools Assessment, Recording and Reporting Policy. Mathematics is assessed and reviewed at regular intervals using both ongoing formative and summative assessments.

Formative assessments are an integral part of teaching and learning of Mathematics and enable small step progress to be acknowledged so that accurate 'next steps' learning can be identified. This is recorded using the Evidence for Learning application.

Progress is recorded through summative assessments using the B-Squared assessment application; half-termly for number and termly for the other strands. This

enables effective tracking of learners' progress throughout their school life and is used for accurate reporting to parents and carers of their child's progression in Mathematics. Summative Numicon assessments are also completed every half-term and used to inform the medium-term planning cycle.

In Key Stage 4 progress is recorded through the bespoke KS4 Astley Park assessment framework on entry to Year 10, at the end of Year 10 and the end of Year 11. To enable consistent, effective tracking, summative assessments are also recorded on the B-Squared application at the end of Year 10 and Year 11.

Progress relating to Mathematics is reported to parents /carers at regular intervals. One piece of learning in Mathematics is made accessible to parents/carers every week, through the Parent View feature on the Evidence for Learning application and special WOW moments of mathematical learning are also shared. Termly 'Sharing our Learning' sessions are also used to showcase learning. Parent/carer evenings, Annual Reviews and annual reports are used to share progress, including progression in Mathematics over the academic year.

Equal Opportunities

All learners have equality of access to a broad and balanced Mathematics curriculum irrespective of gender, ethnicity, sexual orientation, religious identity, special educational need or social circumstance. The entitlement of all learners to a full curriculum is acknowledged and teaching promotes spiritual, moral, social and cultural development. The Mathematics curriculum contains highly differentiated learning objectives to base teaching and learning around and teachers provide any other adaptations, specific teaching techniques and Leader resources required to overcome individual learners' barriers to learning.

Monitoring and Evaluation

Monitoring and evaluation is carried out in order to enhance the teaching and learning of Mathematics within our school.

The Subject Leader is responsible for monitoring standards and quality in Mathematics. He /She will attend regular network meetings alongside other Mathematics Subject Leaders from SEN schools across Lancashire. The Subject Leader will work closely with other Mathematics Leaders to moderate work accordingly and be given the opportunity to feedback any relevant information to staff. Internal moderation takes place through regular moderation meetings.

Work is scrutinised on a termly basis by the Subject Leader through evidence checks on the Evidence for Learning application to ensure high quality mathematical teaching across school. Learner progress is analysed by the Subject Leader on an annual basis and any identified concerns in progression are shared with the Lead Practitioners.

Subject Leaders have responsibility for keeping abreast of National Curriculum and other developments in their subject, liaising with the Lead Practitioners to identify

specific training needs and provide guidance to colleagues on subject content, methodology and sharing of good practice.

Subject Leaders are required to play a leading role in preparing, reviewing and updating policy as well as producing annual Subject Improvement Plans with clear outcomes, identified steps to achieve these outcomes and evaluations of the impact of this.

Subject Leaders have responsibility for all curriculum materials and resources, including the storing, purchasing and sharing of these materials.

Mathematics Curriculum Coverage

Class	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Beech	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals
Chestnut	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals	Early Learning Goals
Maple	Number & Place Value (2 Weeks) Length & Mass/Weight Addition & Subtraction (2 Weeks) 2D & 3D Shapes	Sequencing & Sorting Fractions Fractions, Capacity & Volume. Money Time Assess & Review week	Number & Place Value Mass & Weight 2D & 3D Shapes Counting & Money Multiplication Division	Length, Mass and Weight. Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Number & Place Value Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Time Multiplication & Division Subtraction/Difference Measurement Sorting Assess & Review Week
Oak	Number & Place Value (2 Weeks) Length & Mass/Weight Addition & Subtraction (2 Weeks) 2D & 3D Shapes	Sequencing & Sorting Fractions Fractions, Capacity & Volume. Money Time Assess & Review week	Number & Place Value Mass & Weight 2D & 3D Shapes Counting & Money Multiplication Division	Length, Mass and Weight. Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Number & Place Value Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Time Multiplication & Division Subtraction/Difference Measurement Sorting Assess & Review Week
Rowan	Number & Place Value (2 Weeks) Length, Mass & Weight Addition & Subtraction (2 Weeks) 2D & 3D Shapes	Counting, Multiplication & Sorting Statistics Fractions, Capacity & Volume Money Time Assess & Review Week	Number & Place Value Mass & Weight 2D & 3D Shapes Counting & Money Multiplication Division	Length, Mass & Weight Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Number & Place Value & Statistics Addition & Subtraction Fractions Position & Direction Time Assess & Review Week	Time Multiplication & Division Statistics including finding the difference Measurement Sorting Assess & Review Week
Willow	Number & Place Value (2 Weeks) Length, Mass & Weight Addition & Subtraction (2 Weeks) 2D & 3D Shapes	Counting, Multiplication & Sorting Statistics Fractions, Capacity & Volume Money	Number & Place Value Mass & Weight 2D & 3D Shapes Counting & Money Multiplication Division	Length, Mass & Weight Addition & Subtraction Fractions Position & Direction Time	Number & Place Value & Statistics Addition & Subtraction Fractions Position & Direction	Time Multiplication & Division Statistics including finding the difference Measurement Sorting

		Time Assess & Review Week		Assess & Review Week	Time Assess & Review Week	Assess & Review Week
Year 7	Place value Place value & mental Calculation 2D Shape length including perimeter Statistics Mental Calculation Written Calculation Written Subtraction	Counting, Multiplication tables (3x, 4x) Written & Mental multiplication Written & mental division Time 3D shape Assess & Review week	Place Value, Mental addition & subtraction. Fraction Fractions, Division. Volume & capacity mass. Multiplication include 8x table Multiplication (statistics, measures, money)	2D & 3D shape including sorting Addition & Subtraction (statistics) Fractions Position & direction Time Assess & Review week	Multiplication facts (statistics) Addition & Subtraction (measures) 2D shape including sorting. Decimals, Addition & Subtraction (money) 3D shape including sorting.	Place-value (measures Mental Calculation Fractions Measures Statistics Assess & review week.
Year 8	Place value Place value- decimals Written addition & Subtraction Written addition & subtraction (problems and inverse 2d shape Time	Mental Multiplication including 6x & 9x tables Mental division Written Multiplication Length including perimeter Statistics Assess and review week.	Place value, Roman numerals, counting including negative numbers. Fractions, decimals & division Position & direction Area Multiplication (statistics, measures, money)	<i>Mental Multiplication</i> & <i>written</i> division including 7x & 11x tables Place value Written multiplication 2D shape position Addition subtraction (statistics) Assess & review week	Counting & sequences (statistics) & Fractions & decimals (measures) Fractions & written division & Measures, volume/capacity & Mass Position & area Multiplication facts including 12x table & time.	Place value Statistics Addition & Subtraction (statistics) Multiplication & division Shape Assess & review week.
Year 9	Place value Place value (decimals) Written + and – including problems Geometry (angles) Geometry and measure (perimeter) Addition and subtraction (statistics)	Mental x and / (factors, multiples Division including problems Fractions (compare, order, equivalence) Multiplication and measure (area) Statistics and measures (time) Access and review	Place value, Roman numerals counting incl neg ative numbers. Addition and subtraction including problems Mental and written multiplication Measure (length, mass and capacity) Geometry reflection and translation) Geometry – angles	Mental and written division. 2D and 3D shape incl. sorting Calculating with fractions Measure (area and volume) Statistics and measures Assess and review	Place value Fractions Measure (time) and statistics Geometry Addition and Subtraction Multiplication and Division	Place value Written calculations Fractions Measure (mass volume and capacity) Area and volume of shapes Assess and review
Year 10	Maths for Design Shape, Colour and Space Number	Maths for Design Repeating Patterns Number	Maths in Everyday Life Time Number	Maths for the Future Enterprise Number	Maths in Everyday Life Shopping Number	Maths for the Future Financial Responsibility Number
Pathway A	ASDAN Personal	ASDAN Personal	ASDAN Personal	ASDAN Personal	ASDAN Personal	ASDAN Personal

	Progress	Progress	Progress	Progress	Progress	Progress
Pathway P	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1
Pathway S	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3
Year 11	Maths for Design Design Number	Maths for Life Domestic Appliances/ICT/ consoles/TV/ iPad, touch screen Number	Maths for the Community Maps, Travel and Timetables Number	Maths for Life Telephone and Communication Number	Maths in Everyday Life Money Number	Maths in Everyday Life Time Number
Pathway A	ASDAN Personal Progress	ASDAN Personal Progress	ASDAN Personal Progress	ASDAN Personal Progress	ASDAN Personal Progress	ASDAN Personal Progress
Pathway P	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1	OCR Functional Skills Entry Level 1
Pathway S	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3	OCR Functional Skills Entry Level 2 – 3

Resources

A range of Mathematical resources are available in school and are centrally located in the Primary resource room. Some resources are accommodated in individual classrooms.

ICT plays an extensive part within the teaching and learning of Mathematics through various software including Purple Mash and Education City and applications accessed through I Pads. The use of ICT allows learners to be motivated and engaged by their mathematical studies, work independently and to apply their mathematical understanding purposefully.

Mathematic Resources Located in the Primary Resource Cupboard
Number
Dice, counters, calculators, number games, number fans, number tiles, counting strings, Numicon large shapes, multi-Link, base 10 equipment
Measurement
Pan balances, measuring centres, hand and foot measurement tool, height measurement tool, measuring sticks, metre rules, trundle wheels, capacity receptacles, money, money games, money fans, money trays, class clock sets, protractors and compasses
Geometry
2d and 3d shapes, large 2d glitter shapes, shape dominos