

Maths Handbook

Amwell View School



Photos



Mathematics at Amwell View

School

INTENT

At Amwell View School, we aim to embed the teaching of Mathematics across the curriculum and throughout the school day. Pupils are provided with a variety of opportunities to learn functional Mathematics skills, taught through exciting topics and in different contexts within school and offsite.

Teachers set personalised EHCP and termly priority outcomes, which focus on the knowledge and skills that are considered meaningful to the pupil. In Early Years Foundation Stage (EYFS) we aim to develop positive attitudes and interests in Mathematics by providing frequent and varied opportunities. The curriculum includes opportunities for pupils to develop their spatial reasoning skills, problem solving skills and to develop a strong grounding in number through stories, songs and rhymes.

Pupils who are becoming fluent in the fundamentals of Mathematics are identified as high attainers. As in the National Curriculum 2014, teachers must 'set high expectations for every pupil' and 'plan extension learning opportunities for pupils whose attainment is significantly above the expected standards'. Our policy for these pupils endeavours to ensure they can be appropriately and effectively provided for through the teaching and learning of Mathematics. Children that have been identified as high attainers will be working in or towards the Pre-Key stage standards.

Pupils, including those who have been identified as having Profound and Multiple Learning Disabilities (PMLD) and Multisensory Impairment (MSI), may require a multi-sensory approach to their learning. That means they need to have access to teaching methods, activities and resources that involve engaging more than one sense at a time. By involving the use of visual, auditory, olfactory, movement and tactile pathways, a multisensory approach can enhance memory and the ability to learn. The curriculum includes opportunities for pupils to develop attention, anticipation, responding and communicating, choice making.

Amwell View's Post-16 curriculum is designed to provide an emphasis on transferable skills which are used in future provision and adult life. This includes developing important life and social skills needed for becoming members of the community. Pupils utilise the school charity shop where they can practise work-related skills along with visiting local shops to practise money handling, shopping, road safety and travel training where appropriate.

IMPLEMENTATION

We adopt a cross-curricular approach to the teaching and learning of Mathematics; through timetabled Mathematics lessons, as well as learning opportunities throughout the school day. This approach enables pupils to progress at their own pace as they master content and skills.

Our Mathematics curriculum includes a subject overview, offering a vast array of half-termly topics that teachers use to create stimulating and intriguing lessons that promote enthusiasm and curiosity towards learning. Teachers also use pupils' interests and preferences to plan and deliver engaging learning opportunities. Through teaching Mathematics, pupils focus on all learning areas of our Pre-Mathematics curriculum.

Learning areas include:

- **Pre-maths skills:** cognition and learning skills of anticipation, curiosity, investigation, persistence, initiation, discovery.
- **Number skills:** number place, number value, simple fractions, simple ratio and rates of change, simple addition, simple subtraction, simple multiplication and simple division.
- **Simple measurement and geometry:** problem solving, weight, length, capacity, temperature, time, money, position, direction, shape properties.

The Mathematics curriculum is delivered in a variety of ways, complementing the learning styles and abilities of each pupil. Pupils have access to a vast range of resources within school to broaden their experiences, as well as having the opportunity to learn in a variety of contexts both within school and offsite. Mathematics is taught: in classrooms, the Dell, Food Technology, Soft Play, playgrounds, swimming pool, Sensory Room and fitness suite. This is replicated at the Tonwell Satellite Site, where the outside playground, nature area, Food Technology room and sports hall are all used to incorporate Maths activities. Teachers also plan off-site visits that support and develop each individual pupil's Mathematical skills and understanding, including visits to: Amwell View Charity Shop, supermarkets, recycling locations and the local community.

In EYFS, learning is taught through child initiated learning (CIL) and through a targeted approach. CIL involves pupils making decisions about what they want to do, where, with whom, and what resources they will need. Pupils are given time to play, to explore and experiment with their ideas and knowledge whilst adults support and scaffold their learning.

Pupils who have been identified as high attainers by class teachers, will begin to engage with some aspects of the KS1 National Curriculum and will be supported to become fluent in the fundamentals of Mathematics. Learning areas include:

- **Number:** count, read and write numbers in numerals and words, identify one more and one less, pictorial representations, read write and interpret mathematical equations involving operators and solve one step problems involving multiplication and division.
- **Geometry & Measurement:** develop problem solving skills, recognise and know the value of different denominations of coins, measure and begin to record; lengths and heights, weight, capacity and time; compare and describe; mass, length, capacity, volume, and time.

Outcomes for pupils with PMLD and MSI are informed through a bespoke PMLD curriculum, informed by the Routes for Learning framework and are tailored to meet individual needs by class teachers. Pupils experience the basic concepts of Mathematics, through a multi-sensory curriculum. Pupils will learn to gain and sustain attention, anticipate and respond to stimuli, and communicate through choice making.

In Post-16, the learning focuses on consolidation and contextualisation of functional Mathematic skills. Pupils are given opportunities to practice these skills off-site and in the local community to prepare for transitions to new settings.

IMPACT

The impact of this can be evidenced in the pupils' wellbeing and ability to express themselves, their thoughts, likes and dislikes. Pupils will develop their methods of communication through the use of concrete ways, such as real objects, towards the more abstract, such as symbols, signs and print e.g. numerals. It can also be seen in the increased autonomy and independence of the pupils as they gain and progress in their metacognitive skills.

The refined Mathematics overview has been designed to include fun, appealing themes that all pupils are able to access. The intended impact of this, is that pupils will be motivated to engage with their learning, with reduced support and show an increased ability to cope with challenge.

Pupils will demonstrate an ability to maintain, refine and generalise skills over time and in a range of contexts. For example, pupils will learn sorting and organising skills including readying themselves to learn by taking their chair to their learning table and identifying the equipment they need. Over time, the impact of this is that pupils will show a reduced need for support in completing familiar tasks. Pupils learn to generalise these skills and apply them to everyday situations. For example, pupils will learn to identify, collect and organise the equipment they need for a variety of activities in a range of contexts including learning off-site. Mathematics at Amwell View School strives to equip pupils with life-long skills that they are able to transfer into their life within the community.



We aim to create a positive and confident culture around Mathematics; supporting pupils to have a strong exploratory impulse, to be resilient and to develop a lifelong love for learning.

Maths Resources

We have a bank of Maths resources in the booster room that can be signed out for use during lessons.

Maths Subject Leaders will be able to guide you to other resources located around the school.



Maths Resources

The Booster room has the following resource boxes:

- Sequencing
- Sorting
- Length
- Counting
- Number
- Dice
- Number writing
- Matching
- Money
- 3D shape
- 2D shape
- Time
- Fractions
- Weight
- Gardening
- Into the Woods
- Into the Ocean
- Post Office
- Active Maths

The boxes need to be signed out and returned at the end of the day.

Following a Maths resource audit, the following classes may be able to help you out with resources:

- Counting- 3, 6, 7, 8, ST1, ST2
- Sorting and matching- 3, 7
- Games- 3, ST1
- Shape- class 1, 3, 6, 7, ST1
- Money – class 3, 6, 7, ST1, ST2

Other resources, including support for outcome setting can be found in:

Staff/ Planning/ Resources/ Maths

Subject Overview Example

Key stage 1	Topic	Pre maths skills	Number skills	Simple Measurement & Geometry
	Ice cream parlour role play Playgrounds The Dell Ice cream parlour resource set available in Maths cupboard	Sensory cooking – exploring ingredients using vision, hearing, smell and taste. Cause and effect/switches to operate equipment.	- Counting scoops - Following numbered recipe sequence - Following orders – colours, number etc.	- Weighing and measuring ingredients - More/less - Full/empty - Making patterns - Colour
	Construction Playgrounds Adventure playground Soft Play The Dell Giant lego bricks and giant coloured jenga in playground cupboard	- Resonance board – pupil knocking over boxes, tins and assorted junk while sitting on the board. Banging, patting, knocking, and scratching the board - Explore collection of junk – assorted boxes of different sizes, shapes, colours – explore the same/different/ big/small. Get inside big boxes	Following numbered instructions to make particular towers and models	- Lego therapy style activities - Matching and sorting - Creating a model by copying a picture
	Sandwiches Food Technology	Sensory cooking – exploring ingredients using vision, hearing, smell and taste. Cause and effect/switches to operate equipment.	- Counting ingredients - Following numbered recipe sequence	- Weighing and measuring ingredients - More/less - Full/empty - Matching ingredients

Key stage 5	Topic	Pre maths skills	Number skills	Simple Measurement & Geometry
	Restaurants Food technology Classrooms Dining hall Offsite visits Hosting a restaurant	Sensory cooking – exploring ingredients using vision, hearing, smell and taste. Cause and effect/switches to operate equipment.	- Counting ingredients - Following numbered recipe sequence - Creative – designing and creating menus, invites and price tags	- Weighing and measuring ingredients - Capacity - more/less, full/empty - Place setting - Money – serving customers and using a till
	Design and Build Playgrounds The Dell DT room	- Resonance board – pupil knocking over boxes, tins and assorted junk while sitting on the board. Banging, patting, knocking, and scratching the board. - Explore building materials, boxes, tins, foam bricks, fabric, cardboard sheets. Stack, build, balance, sort, go inside, under, etc	- Following numbered instructions - Creating own design plans - Counting and gathering specific amounts when following a plan	- Board games - Christmas gifts - Items for the Dell - Leavers – scrapbooks, assembly PowerPoints, gifts
	Games Playgrounds The Dell Sensory Room IT suite	- Parachute games – activity cue cards to make choices. - Sensory pass the parcel. - What's in the box? - Ribbon circle.	- Sensory room – making choices, engaging with peers - Board games – games trolley – counting, using dice, moving counter - Active games – using PE equipment, playground games, active maths resource box	- Time and using timers - Following rules - Operating IT equipment

The Maths Subject Overview can be found in:

Staff/ Curriculum/ Subject Overviews/ Current Overviews/ this year/ Maths

Year Plan Example

You need to input your Maths topics from the Subject Overview into your year plan. Year plans need to be saved in:

Staff/ Planning/ Year Plans/ this year

	AUTUMN		SPRING		SUMMER	
MATHS	Individual priority outcomes will inform topics which may include: Pre-maths skills ; Cognition and learning skills of anticipation; curiosity; investigation; persistence; initiation, discovery. Number skills : number place; number value; simple fractions; simple ratio and rates of change; simple addition; simple subtraction; simple multiplication and simple division Simple measurement and geometry : weight; length; capacity; temperature; time; money; position; direction; shape properties					
	Flowers and herbs	Post Office role play	Roald Dahl books	Gifts	Making drinks	Travel and journeys

Planning for Maths

Through Maths, pupils will learn to:

- Develop attention, anticipation, responding and communicating, and choice making skills
- Develop metacognitive skills, spatial reasoning skills, problem solving skills and some will develop a strong grounding in number
- Develop transferable skills which are used in future provision and adult life

When creating outcomes for Maths, consider all EHCP outcomes, communication outcomes and what the pupils need to learn. Lists for pupils identified as High Attainers in Maths and with MSI can be found in:

Z:\Curriculum\Subject Leaders\Subject Files\Maths\High Attainers and MSI

When considering planning, create motivating and meaningful activities with opportunities to develop skills in different contexts, plan for over learning and the retrieval process.

Each key stage has a subject overview for the year, including activity, resource and location suggestions. Teachers must choose one Maths topic per half term to add to their year plan. As this only covers one Maths lesson, teachers have the freedom to choose the themes for the other two Maths lessons (each class should have 3 Maths lessons per week, apart from KS5 who have 2 per week).

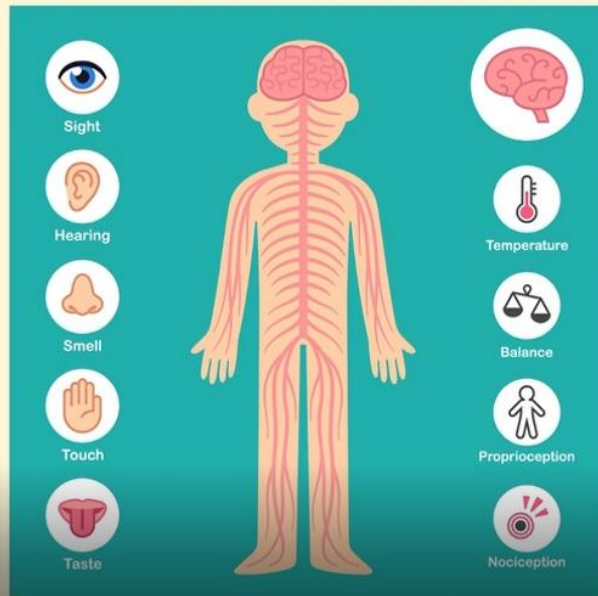
Themes may include:

- Holidays and celebrations such as 'Harvest', 'Christmas' or 'Easter'
- Topics linked to a different subject
- Books including those read in English or daily story telling sessions

Implementation - How do we teach Maths?

‘Life is one big multi-sensory experience’

Vision
Hearing
Touch
Taste
Smell
Vestibular
Proprioceptive
Interoceptive



Implementation - How do we teach Maths?

Time

Recap and
connection to
previous
learning

Overlearning

Engagement

Sensory
engagement

Real life
examples

Emphasis on
life skills

Retrieval
practice