

WEST TOWN LANE ACADEMY

WHERE LEARNING IS AN ADVENTURE

Mathematics Policy



CHILDREN'S RIGHTS AND RESPONSIBILITIES:

Article 28 – All children and young people have a right to primary education, which should be free. Young people should be encouraged to reach the highest level of education they are capable of.

Article 29 – Education should develop each child's personality to the full. It should encourage children to respect their parents, and their own and other cultures.

RATIONALE

Our mathematics intent is to design a broad and balanced curriculum, which is accessible to all and will help every child maximise their achievement using their individual talents and abilities. Our scheme of work is in-line with the recommendations of the National Curriculum for mathematics. We intend to develop a positive, determined attitude towards mathematics with a growth mindset. Consequently, all pupils will learn to use mathematics with confidence, fluency, understanding and enjoyment. We intend for mathematics to be an essential part of everyday life and provide us with a means for communicating and organising information. Arithmetic skills should be well-embedded throughout the school which are then used to attempt problem-solving and reasoning activities in various real-life contexts. Both conceptual and procedural variation should be used to expose pupils to as many mathematical scenarios as possible. Active learning is strongly encouraged within lessons to make learning an adventure.

AIM

Our aims at West Town Lane Academy are:

- to promote enjoyment of learning through exploration and discussion;
- to promote confidence and fluency with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of geometry, and develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life.

GUIDELINES

PLANNING

Across EYFS, planning is taken from the Master the Curriculum scheme, which is a scheme that mirrors WhiteRose mathematics. From years 1 to 6, children follow the WhiteRose scheme of learning and adapt plans based upon the medium term plans.

LONG TERM PLANNING

Our long term plans are taken from Master the Curriculum and the new WhiteRose scheme. Both programs shared a common foundation; therefore, ensuring progression and continuity from Nursery to Year 6.

MEDIUM TERM PLANNING

Our medium term plans follow the new WhiteRose scheme of work. Work is planned on a termly basis in order to show clear progression and continuity throughout each term.

SHORT TERM PLANNING

Weekly plans are produced by the class teacher following the requirements of the key objectives within the new curriculum. The class teacher will broadly follow the WhiteRose scheme of work, whilst adapting plans to reflect the class, group and individuals' needs.

WEEKLY/DAILY PLANS CONTAIN:

- Learning Objective;
- Starter/pink comment activity;
- Information on whole-class teaching and learning;
- A main task – differentiated via outcome – accompanied by an extension.
- Mathematical vocabulary;
- A clear child-friendly success criteria (where appropriate) that meets the Learning Objective;
- Manipulatives used to support all children (where appropriate).



TEACHING AND LEARNING

The teaching and learning of mathematics at West Town Lane Academy should

include aspects of following mastery approach strategies in every lesson and/or over a series of lessons.

CONCRETE

Concrete is the “doing” stage, using concrete objects to model problems. Instead of the traditional method of mathematics teaching, where a teacher demonstrates how to solve a problem, the CPA approach brings concepts to life by allowing pupils to experience and handle physical objects themselves. Every new abstract concept is learned first with a “concrete” or physical experience. For example, if a problem is about adding up four baskets of fruit, the pupils might first handle actual fruit before progressing to handling counters or cubes which are used to represent the fruit.

PICTORIAL

Pictorial is the “seeing” stage, using representations of the objects to model problems. This stage encourages pupils to make a mental connection between the physical object and abstract levels of understanding by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem. Building or drawing a model makes it easier for pupils to grasp concepts they traditionally find more difficult, such as fractions, as it helps them visualise the problem and make it more accessible.

ABSTRACT

Abstract is the “symbolic” stage, where pupils are able to use abstract symbols to model problems (Hauser). Only once a child has demonstrated that they have a solid understanding of the “concrete” and “pictorial” representations of the problem, can the teacher introduce the more “abstract” concept, such as mathematical symbols. Pupils are introduced to the concept at a symbolic level, using only numbers, notation, and mathematical symbols, for example $+$, $-$, $\times$, $/$ to indicate addition, subtraction, multiplication, or division.

THE EARLY YEARS FOUNDATION STAGE (EYFS)

As children in the EYFS are at a very literal level of understanding, the focus is very hands on with children learning through doing (concrete). Recording is modelled for children until they are ready to move on to using symbols. Children will mostly show understanding at an early stage through their talk and actions, recording in pictures and moving on to symbols and number sentences as the year progresses. Children have access to a variety of toys and maths resources and will be exploring mathematical concepts and ideas throughout the day in a variety of situations e.g. setting up a dinosaur park in the small world area, constructing with 3D shapes, measuring, counting, writing numerals for signs and talking through using mathematical vocabulary in their play. Morning registration, snack times and other times of the day are also used as a chance to model mathematical vocabulary and concepts, and explore and solve problems.

At West Town Lane Academy we follow Development matters, which split mathematics into ‘Number’ and ‘Measure, Shape and Spatial Thinking.’

At the beginning of the school year teachers will make observations of children’s learning to give them a **baseline assessment** from which to measure progress. This will be done against the **Development Matters** document. Parental contributions and information from nurseries will be taken into account when making this judgement. Throughout the school year teachers will use ongoing assessment to inform planning, teaching and delivery of Maths across the EYFS. All members of staff working in Early Years will contribute to this assessment gathering. Evidence of this can be seen on the children’s online Learning Diaries (Tapestry) in their paper Learning Diaries, Long Observations and in their Red books. The learning day in the EYFS is split up into whole class, adult-led, self-sustained (directed) and child initiated activities. Evidence will be collected from all of these; children will use their red books to record adult-led cross-curricular activities. As the school year progresses the children will be expected to do more adult led and self-sustained activities. Children’s learning, in the child-initiated play, should inform planning for subsequent activities. The EYFS Leader will create a Medium Term Plan that Class Teachers use to guide them through the term. Activities and themes should be based around the project and the children’s individual needs and interests.

Class Teachers are responsible for termly assessments at T2, 4, 6 (as well as baseline) using the **Development Matters** document. The class Teachers will use the evidence collected by all EYFS staff to give a summative judgement of that child’s learning. This will be entered into Target

Tracker and used to analyse progress, trends, assess particular groups and set up any intervention groups necessary.

At the end of the Reception Year the children will be assessed to see whether they have met the Early Learning Goal in 'Numbers' and 'Shape, Space and Measure'.

We will assess whether the children are **Emerging** - working towards this level or **Expected** - working at this level. This will help support teachers to plan and prepare for the children as they move into Year 1. This information will be reported to parents alongside other curriculum areas.

ASSESSMENT, RECORDING AND REPORTING

Class teachers are responsible for termly assessments. Each child will receive a step during terms 2, 4 and 6 to show how they are progressing in relation to the programmes of study for their year group. Teachers will use their professional judgment to combine results from the summative tests (NTS) as well as everyday assessments using various AFL strategies to award each child a step. These steps are then inputted into the target tracker system. Attainment and progress is analysed in order to find areas of weakness within the class by the class teacher and then discussed with the leadership team during pupil progress meetings; planning will be adapted appropriately.

At the end of the school year we use the national tests for children in Year 2 and Year 6, as well as the Multiplication Timetable Check (MTC) in Year 4. These enable us to measure progress against the programmes of study of the National Curriculum. Areas of achievement and weakness can be collated from these tests and relevant information is passed on to the next teacher to inform future planning.

In addition to this, all staff continually conduct day-to-day assessment for learning (AFL) strategies (in line with the school's behaviour policy) which inform their planning for subsequent lessons.

Children's progress in mathematics is shared with parents during parent meetings in terms 2 and 4. They will also receive an annual report during term 6.

MATHS AND INCLUSION

At West Town Academy we adopt a mastery approach to teaching, meaning that all children begin at a similar starting point, ensure that they have mastered key concepts, before moving on to the next topic. Children with additional need will complete the same learning (unless they are significantly below ARE – 2 years); however, they may receive a greater amount of concrete and pictorial resources with less text.

Maths forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. Teachers work closely with the SEN/D coordinator and the Senior Leadership Team (SLT) to meet the needs of those pupils with special educational needs, with disabilities, and with English as an additional language. Additionally, children are challenged through a main challenge tasks (a mixture of procedural and conceptual variation) and extensions/extra challenge (linking current and previous learning together). For further details see separate policies: Special Educational Needs; Disability Non-Discrimination; Able, Interested and Motivated (AIM); English as an Additional Language (EAL).

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or

different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs. A Rapid Maths and Catch-Up Numeracy programme is available to accelerate children's number work – focussing on components such as counting procedures, counting principles and derived fact strategies.

Children identified as having special educational needs in Mathematics will have targets set by the class teacher and reviewed by the SEN/D coordinator.

INFORMING AND LIAISING WITH PARENTS

Parents' evenings are held twice a year and written reports are sent home at the end of an academic year. Informal discussions are held by appointment with parents as and when required. Parents have access to the school website where they can view and download policies (mathematics and others) and year group mathematic overviews. These documents enable parents to follow and ultimately support in-class teaching at home.

RESOURCES

Maths resources are located in cupboards and boxes in the resources room, as well as in each classroom (in the form of a resource box). Teachers who borrow equipment from the cupboard are responsible for returning this equipment to the correct location promptly after they have finished with it. They should inform the leader of any damages or losses.

Each classroom resource box includes:

KS1 Mathematics Resource Box	
Resource	Amount
Red Counters	1 Bag
Yellow Counters	1 Bag
Base Ten Equipment	1 Set
Arithmetic Bead String	3 Sets
Magnetic Foam Numbers	2 Sets
Number Line	3 Sets
Numicon Shapes	1 Box
Place Value Counters	1 Set
0-9 Digit Cards	3 Sets
Place Value Charts	15 Charts
String	10 String
Red Beads	1 Pack
White Beads	1 Pack
Multilink Counting Cubes	1 Bag

Year 3 Mathematics Resource Box	
Resource	Amount
Red Counters	1 Bag
Yellow Counters	1 Bag
Base Ten Equipment	1 Set
Magnetic Foam Numbers	1 Sets
Number Line	3 Sets
Numicon Shapes	1 Box
Place Value Counters	1 Set
0-9 Digit Cards	3 Sets
Place Value Charts	15 Charts

Year 4 Mathematics Resource Box	
Resource	Amount
Red Counters	1 Bag
Yellow Counters	1 Bag
Base Ten Equipment	1 Set
Magnetic Foam Numbers	1 Sets
Number Line	3 Sets
Place Value Counters	1 Set
0-9 Digit Cards	3 Sets
Place Value Charts	15 Charts

Year 5 and 6 Mathematics Resource Box	
Resource	Amount
Red Counters	1 Bag
Yellow Counters	1 Bag
Base Ten Equipment	1 Set
Magnetic Foam Numbers	1 Sets
Place Value Counters	1 Set
0-9 Digit Cards	3 Sets
Place Value Charts	15 Charts

CALCULATIONS

The school has a policy for mental and written methods of calculation from Reception up to Year 6, this can be found on the school website. This information is shared with parents during back to school meetings at the beginning of the school year.

CALCULATORS

In the primary years, the calculator's main role in mathematics lessons is:
"not as a calculating tool, since children are still developing the mental calculation skills and written methods that they will learn throughout their lives." (Framework for Mathematics, DfEE)

However, children are sometimes taught the technical skills they will require, the order in which to press the keys, how to enter money, measurements and fractions, how to read and interpret the display. Children are also taught to choose when it is appropriate to use a calculator instead of a mental or written method. For the above reasons, calculators are rarely to be used and mathematics should emphasise oral and mental calculation.

MONITORING AND EVALUATION

The policy and practice will be monitored and evaluated by the maths leader and the leadership team. Teachers are observed as part of the School Development Plan to achieve the high expectations in maths teaching and learning. Feedback is given to the individual teachers orally by the observer and a written response will follow; targets are set to support areas of development with a specific timescale. Maths books are also monitored in terms 2 and 4, with teachers given individual feedback. Further monitoring may be necessary if there are any areas that need addressing.

..... Chair of Governors

May 2023