Maths at Ludlow Primary School

Our Curriculum Drivers at Ludlow Primary School			
Confident Communicator	Citizen of the World	Growth Mindset	Healthy Body Healthy Mind
Our Core Values			
Independence	Happiness	Honesty	Kindness

When Ludlow Primary School was created in 2019 from the amalgamation of Ludlow Infant and Ludlow Junior School, we had the exciting opportunity to consider our school community's needs and create a curriculum specifically tailored for them.

We have devised four drivers that run through our school curriculum. They are tailored to our pupil's specific needs and take account of the opportunities and challenges in the context of our school community and our pupils' lives.

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment and therefore provides a foundation for understanding the world.

CURRICULUM INTENT

What Maths looks like in our school:

- A curriculum which caters for the needs of all individuals
- Differentiated ability grouping, however provision for flexibility to enable children to work with different people over the course of time, depending on their skills/confidence in the different focuses
- Daily basic skills outside of the daily maths lesson.
- Independent use of Maths help desks in all classrooms.
- Haylock and Cockburn approach (Concrete, pictorial, abstract)
- Daily White Rose Reasoning & Problem-solving opportunities
- Questioning is a key part of the maths lesson – letting the children demonstrate what they know and challenging them every step
- Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings
- A well planned ready-to-progress criterion for each year group which links to pupils' prior knowledge and future applications.
- Structed daily interventions to help close the gaps for targeted children.

This is our philosophy:

- To become fluent in the fundamentals of mathematics so that children develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- To reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- To have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

This is the knowledge and understanding gained at each stage:

By the end of EYFS pupils will:

- Count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number.
- Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.
- They solve problems, including doubling, halving and sharing.
- Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
- Recognise, create and describe patterns.

- Explore characteristics of everyday objects and shapes and use mathematical language to describe them.

By the end of Key Stage 1 pupils will:

- Develop confidence and mental fluency with whole numbers, counting and place value.
- Use numerals, words and the four operations, including with practical resources.
- Recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.
- Read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1

By the end of Lower Key Stage 2 pupils will:

- Be increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- Develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- Develop their ability to solve a range of problems, including with simple fractions and decimal place value.
- Draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties and confidently describe the relationships between them.
- Use measuring instruments with accuracy and make connections between measure and number.
- By the end of year 4, memorised their multiplication tables up to and including the 12 multiplication table.
- Read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

By the end of Key Stage 2 pupils will:

- Understand the number system and place value to include larger integers.
- Make connections between multiplication and division with fractions, decimals, percentages and ratio.
- Develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.
- Use the language of algebra as a means for solving a variety of problems.
- Classify shapes with increasingly complex geometric properties and use the vocabulary they need to describe them.
- Be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.
- Read, spell and pronounce mathematical vocabulary correctly

CURRICULUM IMPLEMENTATION

This is how it works:

- We foster positive can do attitudes and we promote the fact that 'We can all do maths!'
- We believe all children can achieve in mathematics and teach for secure and deep understanding of mathematical concepts through manageable steps.
- We use mistakes and misconceptions as an essential part of learning
- Teachers share the objectives for the lesson with the children and make sure they are clear what is being expected of them to successfully achieve the objective
- We provide challenge through rich and sophisticated problems
- Support is determined during each lesson to ensure secure understanding based on the needs of the child.
- Challenge is visible throughout the whole session, where children are asked to reason and prove their understanding at a deeper secure level.
- Daily 15 minutes outside of the daily maths lesson focusing on Four Rules, Place Value, Doubling and Halving, Balancing the Equals, Number Bonds, Fractions and remembering more.
- Pre-teaching and/or immediate interventions to prepare children for learning the next day.
- 123Maths used for daily intervention for the lowest achieving pupils in all year groups from year 2 and across Ks2
- Children KS2 will receive extra 'booster groups' to ensure that they are reaching their potential.

This is what adults do:

- Planning documents include discrete focus on 3 aims of curriculum- Fluency, Reasoning and Problem Solving.
- Create a learning environment rich in resources that support learning
- Regular book looks, learning walks, planning audits and pupil voice
- Whole school CPD
- Termly pupil progress meetings
- Identify those children who need extra support in order to provide them with urgent, catch-up sessions

This is how we support:

- High quality teaching
- Work might be differentiated so that all children are able to meet the learning objective.
- Small group/1:1 adult support given where required.
- Use teacher and self-assessment to quickly identify any child who requires additional support in specific areas.
- These pupils will then receive additional support or resources to use.

This is how we challenge:

- Lessons will be differentiated.
- Additional activities to stretch the learning within the lesson.
- More able children will be stretched through differentiated group work and extra challenges.
- Teachers will direct questions towards the more able (at their ability level) to maintain their involvement.

This is how ensure all children can access the curriculum:

- Children with SEND are taught within the daily mathematics lesson and are encouraged to take part when and where possible
- Teaching lessons using the CPA approach.
- Targeted intervention for those that need extra support with their basic maths skills
- More frequent repetition and revisiting to help make it stick

CURRICULUM IMPACT

This is what you might typically see:

- Children enjoying their learning in maths
- Different representations of calculations
- A range of different activities including practical and use of technology
- Engagement and perseverance
- Self-motivated children taking ownership for their learning
- Resilient learners
- Confident children talking positively about maths, sharing and reflecting on their learning and how it relates to real life situations
- Specific gaps in learning addressed through daily interventions

This is how we know how well our pupils are doing:

- AFL at the beginning and throughout every lesson.
- Marking and feedback by teacher and peers.
- White Rose End of Block Assessment
- White Rose End of Term assessment
- Assessment tracked at the end of each half term and entered onto our summative assessment tracking system.
- Learning walks, book scrutiny and pupil voice
- Cross school moderation with schools in the Trust and schools using same summative assessment system to ensure accuracy of assessments

This is the impact of the teaching:

- Confident children who can talk about maths
- Children who enjoy their learning in maths
- Depth of understanding/application in different contexts
- Pupils use acquired vocabulary in maths lessons.
- They have the skills to use methods independently and show resilience when tackling problems.
- The % of children working at ARE within each year group will be at least in line with national average
- The % of children working at Greater Depth within each year group will be at least in line with national average
- Children ready for the next step in their learning
- Children can articulate the context in which maths is being taught and relate this to real life purposes
- Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential.