Maths

Intent

We believe that pupils deserve a creative and ambitious mathematics curriculum, rich in skills and knowledge, which ignites curiosity and prepares them well for everyday life and future employment**.** We foster a growth mindset with resilient learners who understand the importance of making and learning from incorrect answers. Through this, we challenge pupils to explain their reasoning and methods to draw out misconceptions, embed understanding and achieve greater success.

Our curriculum is designed to ensure that pupils become secure in all aspects of mathematics. We recognise the importance of having a secure understanding of number. Our students have weekly lessons focused explicitly on number, with an emphasis on reinforcing pupils understanding and competency. We value the importance of concepts being sufficiently understood before moving on to another. To ensure coverage of the curriculum, one of the mathematics lessons in the week focuses on other topics within maths, such as geometry/shape, measure, using instruments of measure, statistics etc.

Our semi- formal curriculum is modelled around themes and learning through play to engage children with active learning, exploration and becoming a critical thinker. This play based approach is essential for children's development, building their confidence as they learn to explore, relate to others, set their own goals, and solve problems.

We encourage our learners to become maths-positive problem-solvers and to have ideas, to develop vocabulary and reasoning skills and so better understand mathematical concepts in the world around them. We aim to ensure learners can confidently apply their mathematics skills when out in the community to provide them both with the love of mathematics and the independent skills to support them into adulthood.

We challenge our pupils to become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

Our primary goal is to ensure all of our pupils achieve their personal best academically, through the knowledge and understanding they gain, and personally, have high aspirations and gain the transferable skills to enable them to have a successful future. This overview is a snapshot of what each pathway offers for Maths or 'My thinking and problem solving'. Teachers use the National Curriculum, White Rose Maths Scheme, Cherry Tree Garden Branch Maps, Welburn Levels and the Engagement Model for assessment as well as their own professional judgement in providing a broad, balanced and meaningful maths curriculum.

Please note our 'Nurture group' curriculum is tailored to the needs of the pupils whose main barrier to learning is their social, emotional and mental health needs. Functional communication, interaction and cognitive skills will be covered in a meaningful way that enables pupils to thrive in their learning. The team will plan by using objectives and opportunities from a pathway below which is relevant to the pupil, depending on age, needs and individual barriers to learning.

Semi-Formal - 'My Thinking and Problem Solving'			
Primary	KS3	KS4	College
Our Curriculum will....			
• Be based around learning themes and learning through play to engage children with active learning, exploration and becoming a critical thinker. This play based approach is essential for children's development, building their confidence as they learn to explore, relate to others, set their own goals, and solve problems. • Enable all pupils to learn the mathematical concepts, focusing on developing pupil's confidence at understanding numbers up to 5. Building up from the concept of 1 through to recognising numerals up to 5. • Ensure that staff respond to the individual interests and needs of pupils and help them to build on their learning over time.	• Continue to follow a theme-based and learn through play approach. In Phase 2, pupils will build on previous knowledge and skills covered in the Cherry Garden Branches 5-8. • Encourage and enable pupils to create and think critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things. • As children progress, there should be a greater focus on teaching the essential skills and knowledge in the specific areas of learning, where appropriate pupils will access Cherry Garden Branches 9-10 – these branches progress to counting to 20, telling time to the nearest hour etc.	• Be based around Functional Skills, with an emphasis on encouraging pupils to build upon their mathematical understanding and continue to apply these in real life contexts and experiences. • These objectives build on prior knowledge from the Cherry Garden Branches and encourage pupils to apply their mathematical understanding into real life situations & problems – such as using money in shops & measuring and weighing in cooking. • Promote pupil confidence in the use of fundamental mathematical knowledge and skills – with a key focus on three areas: Using numbers and the number system. Using common measure, shapes and	• Continues to follow a functional approach, with more opportunities for pupils to apply their mathematical knowledge in a range of contexts – such as work experience, construction, catering, animal care etc. • Ensure that all pupils are being challenged and differentiated for appropriately, with opportunities for learners to access Entry 2 Functional Skills, this builds on pupils' prior knowledge. • Promote pupil confidence in the use of fundamental mathematical knowledge and skills – with a key focus on three areas: Using numbers and the number system. Using common measure, shapes and space. Handling information and data.

• Provide frequent and varied opportunities to build and apply their mathematical understanding through activities such as snack time, outdoor play, soft play, construction etc. • Provide rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. Focusing on key objectives such as sorting objects by colour, using construction etc. • Help pupils learn to be strong and independent through positive relationships. • Encourage pupils to play and explore. Children will investigate and experience things, and 'have a go'. • Enable pupils to take part in active learning - children concentrate and keep on trying if they encounter difficulties and enjoy achievements. • Encourage pupils to create and think critically - children have	• Provide frequent and varied opportunities to build and apply their mathematical understanding through activities such as snack time, outdoor play, soft play, construction etc. • Build their confidence as they learn to explore, relate to others, set their own goals, and solve problems. • Encourage pupils to play and explore - children investigate and experience things, and 'have a go'. • Enable pupils to take part in active learning - children concentrate and keep on trying if they encounter difficulties and enjoy achievements. • At this stage, maths lessons are differentiated to ensure each pupil makes progress. In this phase pupils follows the Cherry Garden Branches 5-8, with opportunities to access skills in branches 9-10. • Develop generalisation of skills. Pupils are encouraged to apply	space. Handling information and data. • Will provide opportunities for students to demonstrate their understanding by applying their knowledge and skills to solve simple mathematic problems or carry out simple task in real life scenarios – such as accessing the local supermarkets, using money to buy goods and services in the local community, access to the school grounds etc. • Allow pupils to build on previous knowledge and skills and work towards achieving accreditation – as an example in Phase 1-2 pupils are taught how to find the total number of items in two groups, this knowledge is built on and pupils are taught how to apply this when adding numbers up to 20. • As pupils progress through to KS4, there is an increased focus on applying maths knowledge in practical and meaningful situations. Pupils will have	• Will provide opportunities for students to demonstrate their understanding by applying their knowledge and skills to solve simple mathematic problems or carry out simple task in real life scenarios. In KS5 pupils have the opportunity to apply there mathematical understanding in other topics such as work experience, construction, catering etc. • Progress and differentiate to each learner ensuring that each pupil continues to develop their number skills, understanding of shape, use of money in realistic situations, explore the importance of numbers in everyday life, gain a greater understanding of time and date. • As pupils progress through to KS5, there is an increased focus on applying maths knowledge in practical and meaningful situations – with more opportunities to practice these in a range of cross-curricular activities.

and develop their own ideas, make links between ideas, and develop strategies for doing things. • At this stage, maths lessons are differentiated to ensure each pupil makes progress. In this phase pupils follows the Cherry Garden Branches 5-8. • Prerequisite skills to develop early maths skills are taught through play, through the use of manipulatives such as play dough, musical instruments, heuristic play. • Generalisation of skills is a focus. Pupils are encouraged to apply concepts learning in different ways in class, around school and out in the community.	concepts learning in different ways in class, around school and out in the community. • Develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', communicate to adults and peers about what they notice and not be afraid to make mistakes.	opportunities to access the community to practice real-life maths problems. • Focus on developing the pupils' independence skills – with opportunities for to use money in public, timetables. All with a focus on Preparation for Adulthood. • Prepare our learners for further learning or training, to further develop knowledge and skills in Mathematics. • Assess learners' underpinning knowledge, as well as their ability to apply this in different contexts. As an example, pupils may be asked to find a certain number of items in the shop, which co-insides with working with numbers up to 20 etc. • Provide a foundation for progression into employment or further technical education and develop skills for everyday life – by providing opportunities that are suitable for each child such as role play activities, heuristic play etc.	• Ensure that pupils are prepared with a mathematical foundation for when they leave college, ensuring that they can progress into employment, further education or adulthood.

Learning Opportunities including Cultural Capital and Spiritual, Moral, Social and Cultural (SMSC):			
• Messy Play • Sensory Activities • Drama Games • Swimming Pool • Sensory Garden • PD Sessions • Play Times • Tuff Tray Activities • Intensive interactions • Circle Activities • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money in 'real life situations e.g. Tuck Shop • Access to the school grounds to extend learning	• Messy Play • Sensory Activities • Drama Games • Swimming Pool • Sensory Garden • PD Sessions • Play Times • Tuff Tray Activities • Intensive interactions • Circle Activities • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money in 'real life situations e.g. Tuck Shop • Access to the school grounds to extend learning	• Drama Games • Tuff Tray Activities • Messy Play • Work Experience • Tuck Shop • Shopping Tasks • Role play • Sensory activities • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money to buy goods and services in the local community • Access to the school grounds to extend learning	• Farming • Construction • Catering • Tuck Shop • Life Skills • Drama • Shopping Tasks • Role play • Sensory activities • Work Experience • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money to buy goods and services in the local community • Access to the school grounds to extend learning
The Impact of our Maths curriculum will be that pupils:			
• Develop their ability to learn through play and continuous provision approach, which is catered for real life experiences. • Actively explore their immediate environment through making purposeful actions with a range of objects/stimuli.	• Build on previous skills, knowledge and experiences. • Explore an environment that encourages learning through play and real-life contexts. • Engage in early problem solving and have a consistent	• Develop Maths and Learning Skills using the Achievement Continuum. • Access and apply mathematical thinking in cross curricular activities which develop problem solving in a range of	• Achieve an Ofqual recognised accreditation, personalised and based on their individual needs and ability. • Continue to build on prior learning and develop Maths and Learning Skills using the Achievement Continuum.

• Engage in early problem solving and have a consistent understanding of cause and effect. • Build and apply understanding in practical activities and real-life contexts. • Develop positive attitudes and interests through a theme-based approach. • Begin to understand the concept of "one" and build up to working with numbers to 5. • Look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes • Have a consistent understanding of 1:1 correspondence, in order to solve simple everyday problems e.g. "Do we need more plates?"	understanding of cause and effect. • Build and continue to develop positive attitudes and interests through a theme-based approach. • Count confidently, develop a deep understanding of the numbers to 10 the relationships between them and the patterns within those numbers. • Maintain a sustained interest in a range of activities and talks about shapes or arrangements. • Understand the concepts of 'add', 'take away' and 'equals to'. • Extend their spatial reasoning skills across all areas of mathematics including shape, space and measures. • Look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.	activities – Accessing the community, cooking, P.E etc. • Build on prior knowledge to become confident in their use of fundamental mathematical knowledge and skills and be able to apply these in real life experiences. • Develop pupils understanding by applying their knowledge and skills to solve simple mathematic problems or carry out simple tasks – such as finding a specific amount objects in the supermarket. • Demonstrate their understanding of underpinning skills, and their ability to apply mathematical thinking to solve problems in familiar contexts. • Solve a range of problems, each of which draw upon knowledge and/or skills from mathematical content area (number, common measures, shape, information and data). • Build on prior understanding of the number system and work	• Demonstrate their understanding of underpinning skills, and their ability to apply mathematical thinking to solve problems in familiar contexts and activities such as catering, construction, animal care, work experience etc. • Individual needs are considered and tailored for with an emphasis on preparation for adulthood, employment and further education. • Develop pupils understanding by applying their knowledge and skills to solve simple mathematic problems or carry out simple tasks – such as finding a specific amount objects in the supermarket. • Solve a range of mathematical problems in real life contexts, each of which draw upon knowledge and/or skills from mathematical content area (number, common measures, shape, information and data). • Build on prior understanding of the number system, with opportunities for pupils to work with numbers up to 100,

		with numbers up to 20 and begin to interpret a range of maths symbols e.g. =, +, -	calculate with money up to £1, use measures of length grams etc.

Formal			
Primary	KS3	KS4	College
Our curriculum will…			
• Provide a broad, balanced and meaningful maths curriculum, which accounts for the stage of each learner. In conjunction with the National Curriculum and White Rose. • Ensure that each pupil has a secure understanding of number, by accessing two lessons per week focused solely on number. • Ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. • Learners will develop a secure understanding of number – number underpins 80% of the coverage to ensure time to reinforce understanding and competency.	• Ensure that each pupil has a secure understanding of number, by accessing two lessons per week focused solely on number. • Ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. • Ensure that pupils extend their understanding of the number system and place value to include larger integers. • Extend understanding of the number system, place value and encourage the building of connections between number relationships and representations. • consolidate numerical and mathematical capability, extend understanding of the number system and place value and	• Build on prior learning from earlier phases and base around Functional Skills, with an emphasis on encouraging pupils to build upon their mathematical understanding and provide further opportunities apply these to real-life contexts and experiences. • Provide a foundation for progression into employment or further technical education and develop skills for everyday life. • There is a continued focus on developing pupil confidence with Number with weekly sessions solely to practice these skills. • Embed and build on prior learning extending and challenging pupils to work with numbers up to 1000 and	• Build on prior learning from earlier phases and base around Functional Skills, with an emphasis on encouraging pupils to build upon their mathematical understanding and provide further opportunities apply these to real-life contexts and experiences. • Continue to develop pupil independence with an emphasis on progression into employment or further technical education. • There is a continued focus on developing pupil confidence with Number with weekly sessions solely to practice these skills. • Maintain coverage of the curriculum, ensuring that there are explicit lessons focusing on

• Develop a deeper understanding of place value, the four operations and associated symbols involving increasing numbers up to 100. • Builds on the 5 principals of counting and pupils prior learning. • Allow pupils to work with numerals, words and the four operations, including with practical resources. • Ensure coverage of the curriculum, through a topic focused lesson weekly, to explore and describe the properties of 2D shapes and 3D objects, and learn to use instruments of measures linked to real-life situations of areas and space. • Encourage learners to describe, draw, compare, sort and reason using a mathematical vocabulary and language. • Develop pupil ability to recognise, describe, draw, compare and sort different	make connections between number relationships and representations • 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. • Develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. • Build on the use of formal mathematical knowledge and recording to interpret and solve problems, evaluate the outcomes, including multi-step problems and financial mathematics. • Teach pupils how to select and apply appropriate calculations strategies to solve increasingly complex problems. • Ensure coverage of the curriculum, through a topic	become secure in the four operations. • Maintain coverage of the curriculum, ensuring that there are explicit lessons focusing on using common measures and shapes & space. • Functional Skill Mathematics' provides a broad, coherent and worthwhile course of study, encouraging pupils to develop in confidence, develop a positive attitude towards mathematics and recognise the importance of maths in their own lives and society. • Maintain and continue to develop and encourage a meta cognitive approach to learning, in planning, monitoring and evaluating their own learning. • Pupils are actively encouraged to apply their knowledge, skills and understanding to apply a range of mathematical concepts to situations that may arise in their own lives. With opportunities to practice these in a range of cross-curricular	using common measures and shapes & space. • Functional Skill Mathematics' provides a broad, coherent and worthwhile course of study, encouraging pupils to develop in confidence, develop a positive attitude towards mathematics and recognise the importance of maths in their own lives and society. • Maintain and continue to develop and encourage a meta cognitive approach to learning, in planning, monitoring and evaluating their own learning. • Ensure pupils are challenged and introduced to new areas of life and work so that they are exposed to concepts and problems. • Encourage students to use mathematical skills autonomously, applying them to a range of formal and informal contexts, in the workplace and in real life.

shapes and use the related vocabulary.
 	
• Place an emphasis on developing mastery through:
  ○ Fluency – in using mathematical skills through varied and frequent practice over time, develop conceptual understanding, mental recall and apply their knowledge.
  ○ Reasoning by following a line of enquiry and begin to give simple justification or proof using mathematical language.
  ○ Solving problems by applying their mathematics to a variety of question and persevering in seeking solutions.
 	
• Apply their mathematical thinking to problems that are:
  ○ Concrete – use of real-life objects and manipulatives to help
	focused lesson weekly, to explore and describe the properties of 2D shapes and 3D objects, and learn to use instruments of measures linked to real-life situations of areas and space.
	
	• Ensure that they can use measuring instruments with accuracy and make connections between measure and number
	
	• Ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them.
	
	• Continue to place an emphasis on developing mastery through fluency, reasoning and solving problems.
	
	• Continue to develop a meta cognitive approach to learning, in planning, monitoring and evaluating their own learning.
	
	• Develop a greater independence and persevering attitude
		activities – work experience, cooking, life skills, accessing the community.
		
		• There is a continued emphasis on developing mastery – with an increased focus on making mathematical problems that are relatable to adulthood.
		
		• Continue to encourage learners to apply their mathematical thinking to problems that involve concrete, pictorial and abstract. With an increased emphasis on making these relatable to life after education – such as writing a shopping list, tracking finances and building projects etc.
		
		• Teaching and assessment at KS4 follows the Open Awards Functional Skills Level Entry Level 1-3 & Level 1-2.
			• There is a continued emphasis on developing mastery – with an increased focus on making mathematical problems that are relatable to adulthood.
			
			• Continue to encourage learners to apply their mathematical thinking to problems that involve concrete, pictorial and abstract. With an increased emphasis on making these relatable to life after education – such as writing a shopping list, tracking finances and building projects etc.
			
			• Continue to progress through the Open Awards Functional Skills, ensuring each child achieves their full potential. With extended opportunities to access GSCE qualifications.

learners understand mathematical concepts. ○ Pictorial – use of representations alongside concrete to support reasoning and problem solving. ○ Abstract – use of formal written strategies linked to pictorial and concrete. With an emphasis on developing independence and mental strategies. • Develop a meta cognitive approach to learning, in planning, monitoring and evaluating their own learning. • Encourage learners to become problem solvers, develop ideas and vocabulary, apply their reasoning skills. Apply mathematical concepts when out in the community. • Make mathematical links with pupils' interests, cross curricular activities, outdoor learning, games and apps, community visits etc.	towards maths, by encouraging pupils to take risks and experience success in their practical application of mathematical knowledge in real-life contexts. • Develop and nurture learner confidence by further developing maths mastery through relevant contexts (by beginning to consider the future careers and aspirations of pupils). • Make mathematical links with pupils' interests, cross curricular activities, outdoor learning, games and apps, community visits etc. • Ensure learners can confidently apply their mathematical skills when out in the community to provide them both with the love of mathematics and the independent skills to support them into adulthood. • Use learning objectives from the Mathematics National Curriculum for Key Stage 1 & Lower Key Stage 2 (Year 1–4)		

• Ensure learners can confidently apply their mathematical skills when out in the community to provide them both with the love of mathematics and the independent skills to support them into adulthood. • Use learning objectives from the Mathematics National Curriculum for Key Stage 1 (Year 1 – 2)			
Learning Opportunities including Cultural Capital and Spiritual, Moral, Social and Cultural (SMSC):			
Learning Opportunities… • Practical Skills including concrete objects and measuring tools • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money to buy goods and services in the local community • Access to the school grounds to extend learning • Food Tech – measuring / weight / capacity	**Learning Opportunities:** • Practical Skills including concrete objects and measuring tools • Visits to the local area • Collapsed curriculum days • Visitors to school • Using money to buy goods and services in the local community • Access to the school grounds to extend learning • Food Tech – measuring / weight / capacity	**Learning Opportunities:** • Visits to the local area • Work Experience Opportunities • Use of the school bungalow for life skills. • Personal projects • School Visits • Collapsed curriculum days • Visitors to school • Using money to buy goods and services in the local community • Access to the school grounds to extend learning • Food Tech - measuring / weight / capacity	**Learning Opportunities:** • Work experience • Financing and Budgeting Tasks • Catering • Animal Care • Horticulture • Use of the school bungalows for life skills. • Tuck Shop Activity • York College • Organising and running the weekly Tuck Shop • Collapsed curriculum days • Visitors to school. • Using money to buy goods and services in the local community

			• Access to the school grounds to extend learning • Food Tech – including buying ingredients. Make 'staff lunches'/ Tuck shop.
The Impact of our Maths curriculum will be that pupils:			
• Develop confidence and mental fluency with whole numbers. • Work with numerals, words and the 4 operations, including with practical resources. • Develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. • Use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. • Read and spell mathematical vocabulary.	• Become increasingly fluent with whole numbers and the 4 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. • Use measuring instruments with accuracy and make connections. between measure and number. • Read and spell mathematical vocabulary correctly and confidently.	• Become confident in their use of fundamental mathematical knowledge and skills, as described through the subject content. • Demonstrate their understanding by applying their knowledge and skills to solve simple mathematic problems or carry out simple tasks. • Demonstrate their understanding of underpinning skills, and their ability to apply mathematical thinking to solve problems in familiar contexts. • Use their knowledge and skills to recognise a simple mathematical problem and obtain a solution. • Address individual problems, each of which draw upon knowledge and/or skills from	• Be introduced to new areas of life and work so that they are exposed to concepts and problems which, while not of immediate concern, may be of value in later life. • Address individual problems, some of which draw upon a combination of any two of the mathematical content areas and require learners to make connections between those content areas. • Develop an appreciation of the role played by mathematics in the world of work and in life generally. • Use these skills autonomously, applying them to a range of

		one mathematical content area (i.e. number and the number system; common measures, shape and space; information and data).	formal and informal contexts, in the workplace and in real life.