

Maths at Ravenscliffe High School	
Purpose of this Document	This document has been written in order to provide key Mathematics policy and curriculum information to all key stakeholders, including teaching staff, school governors, parents and other interested parties. It reflects the school values and philosophy in relation to the teaching and learning of Mathematics and draws together National Curriculum guidelines and statutory requirements for Key Stages 3 and 4, but also includes elements of Key Stages 1 and 2 as well as promoting the Spiritual, Moral, Social and Cultural (SMSC) development which includes British Values. The document seeks to address the individual learning needs of our young people and sets out a framework within which teaching staff can operate and provides guidance on planning, teaching and assessment. It outlines the following: • The Intent – The purpose of the Mathematics Curriculum at Ravenscliffe. • The Implementation – How we meet this purpose through the delivery of a broad, balanced and robust Mathematics Curriculum • The Impact – Our intended outcomes in Mathematics and how we assess, evaluate and monitor these over time. This document also contains key information about Leadership, Cross Curricular Opportunities and links to other relevant documentation This document should be read in conjunction with the Scheme(s) of Learning for Emergent, Semi Formal and Formal learners which sets out in detail what our learners in different Key Stages of different ability ranges will be taught. This document is intended for all staff and other stakeholders with classroom responsibilities, school governors, parents, the Local Authority and Ofsted.
Intent	Intent Statement This section outlines the purpose of the Mathematics Curriculum at Ravenscliffe and what we aim to achieve in order to help all students to learn and make expected progress or above in maths. We believe that it is vital that all learners have an ability appropriate understanding of mathematics and we always strive to ensure that the mathematics curriculum meets learners where they are at whilst ensuring that teachers have high expectations of what pupils can achieve from their starting point. Our key aims for mathematics are to ensure that all pupils: • Become fluent in the fundamentals of mathematics through varied and frequent practice with increasingly complex problems over time, so that students develop conceptual understandings and the ability to recall and apply knowledge rapidly and accurately. • Reason mathematically by following a line of enquiry, identifying relationships and generalisations, and developing justification or proof using mathematical language • Solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. • Apply their understanding to a range of real-world scenarios, appropriate to their learning level, and link their knowledge to new and known situations that they will encounter in adulthood. Due to the nature of the learners in our school, the curriculum is derived from pre key stage standards, early learning goals, schema development, key stage 1-4 curriculum, and functional skills outcomes. The overview of how these are used can be found in the subject map and schemes of work for Maths (Appendix A, B & G) We seek to offer a well-rounded experience of mathematical concepts to all learners, meeting them where they are and encouraging growth and development over time. The curriculum covers key topics and ensures that skills are linked across strands to show how mathematics works together and how it can be applied in the world around us. Topics are revisited over time and are applied in other lessons such as cooking, art, science and ICT. Alongside this, Maths promotes SMSC development, enabling learners to become more self-confident, responsible and independent, within their own parameters. It also helps to give learners the knowledge,

	skills and understanding they need to lead healthy lives and to become informed, active, responsible citizens. Learners are encouraged to take part in a wide range of activities and experiences across and beyond the curriculum, contributing to the best of their ability, to the life of the school and the community. This is achieved through a variety of outcomes including: - Be strong communicators - Achieve their potential - Be interdependent/independent - Be well rounded individuals - Be prepared for the future
Implementation	<u>Implementation Statement</u> This section outlines how we meet our Intent, through the delivery of a broad, balanced and robust Maths Curriculum. <u>Meeting the needs of all learners within the Maths Curriculum</u> Our learners at Ravenscliffe High School have Moderate, Severe and / or Profound and Multiple Learning Difficulties including other associated difficulties such as Autism, Multi-Sensory, Visual & Hearing Impairment(s). The wide range of needs of our learners holds no barrier to accessing the learning opportunities within the Maths curriculum. The curriculum for these learners is repeated year on year to ensure repetition and embedding of skills so that pupils can effortlessly move onto the next mathematical skill. To enable the staff at Ravenscliffe High School to fully address the range of needs of pupils, and to enable us to show progression within each Key Stage, the Programmes of Study as outlined in the Scheme of Work for Maths have been differentiated into 4 broad descriptions of learners: - • Formal learners are students who are able to communicate with fluency and who are able to make reasoned choices, work and act cooperatively in a small group and with varying support, work independently. • Semi formal learners are students who communicate in a simpler, supported way e.g. using PEC, AAC, or signing and who need a moderate amount of support to access learning. • Emergent learners are students whose learning is supported through structured patterns of communication and social activity to enable them to develop positive social behaviour. • Sensory are students that require their needs to be met primarily through direct experiences and activities, which are multisensory. For pupils who have sensory impairments and/ or physical disabilities and for those who experience developmental delay, maths is based upon a multisensory approach, which starts from direct experience and progresses to structured activities and experiences using concrete materials. In our formal and semi-formal pathways learners may be taught as a whole class, in small groups or with targeted 1:1 support. Lessons should be differentiated to meet the range of needs in the class and a range of strategies taught to help pupils find the one that works for them. Practical lessons and use of mathematical equipment is vital to help pupils to move from concrete to abstract understanding of a topic. In emergent and sensory pathways maths is accessed through topic based mathematical activities and is integrated throughout the curriculum. Using this personal approach, teachers can devise activities in all areas of Maths which are planned specifically at the appropriate level of need and ability for all learners, which also allows learning outcomes, recording, and assessment to be directly linked to learning objectives. <u>Time Allocation</u> The subject of Maths is allocated the appropriate amount of time, taking into account NC guidance, to provide all learners with a broad and balanced curriculum which is appropriate for their needs. At Key Stage 3 and 4, for students on the Formal and Semi-formal pathways, this equates to 4 lessons of 50 minutes per week. At Key Stage 5, students on the formal pathway receive 3 lessons of 50 minutes per week and students on the semi-formal pathway receive 2 lessons of 50 minutes per week. Students on the Emergent pathway receive 3 discrete lessons per week, as well as maths being weaved throughout the schematic and total communication curriculum. For some learners, the breadth and

balance of the curriculum is addressed through personalised timetables. For students on the **sensory** pathway, at all key stages, maths is interwoven at the discretion of the teacher as appropriate.

Curriculum Overview

To facilitate effective teaching and learning in maths, a Curriculum Overview for each pathway (exc. Sensory) outlines the key programmes of study (*see Appendix A & B*).

At Ravenscliffe, we aim to provide an engaging and creative maths curriculum by;

- Promoting enjoyment and enthusiasm for learning through practical activity, exploration and discussion.
- Equipping learners with the language and skills to communicate their mathematical ideas and help to make sense of the world around them.
- Developing an understanding of the importance of Maths in everyday life and how to apply mathematical skills in a meaningful way.
- Providing opportunities to plan and carry out business enterprises (e.g. stall at the Christmas Fair, fundraising for local charities), school trips (e.g. Bowling, Christmas Markets) and research projects (e.g. How much food do we waste?).
- Focusing on improving learners' ability to solve problems through decision-making and reasoning in a range of contexts.
- Providing appropriate accreditation and opportunities for life beyond school. We offer Laser Accreditation, Entry Level Functional Skills qualifications and for those showing higher abilities, appropriate further qualifications, including Functional Skills Levels 1 and 2 and GCSE Maths.

This subject affords opportunities to link to other curriculum areas such as:

- Literacy (e.g. reading timetables and word problems to apply knowledge)
- Computing (e.g. creating electronic data, researching mathematical information)
- Food (e.g. learning how to weigh ingredients, measure capacity and read the time)
- Vocational Education (e.g. life skills such as weight, reading time and using knowledge to apply to real life situations like getting a bus or train)
- Geography (e.g. understanding position and direction, length and height)
- Art (e.g. Understanding of shape, tessellation, repeating patterns and colour)
- RE (e.g. looking at religious symbols and their symmetry and patterns)
- History (e.g. How maths has changed over time, roman numerals, timelines (understanding years))

Knowledge and skills

For formals and semi-formal learners our curriculum is separated into three broad strands which are taught across the year to ensure that key skills are embedded. The curriculum areas remain the same year on year but the skill pupils are taught will be embedded or built upon depending on the needs of the pupils.

Number

This encompasses counting skills, place value, understanding of the number system, the four operations, mental maths and data handling. The skills of number are taught both discretely and throughout other topics to ensure that learners are developing skills that they can transfer across areas of their lives not just in mathematics lessons.

Shape, space and measure

This covers, 2D and 3D shape, position and direction, weight, capacity, length, transformations and schema development. These skills are taught in a range of ways and practical lessons building real life skills are encouraged. This could be through water play, following recipes or making towers by following pictures or verbal instructions.

Functional Skills

This teaches time skills including but not limited to, understanding time e.g. day and night, personal timetables, reading clocks, adding and subtracting time, reading timetables, understanding time zones. Alongside this, functional skills lessons look at key money skills including but not limited to, understanding a transaction, recognising coins and notes, making amounts, finding change, finding totals, bills, 'invisible money' and bank accounts.

Emergent learners also have discrete lessons in their timetable and their mathematics schemes of learning cover the maths strands outlined above, early number skills and schema development. They receive small group teaching which is targeted to their needs through activity and communication differentiation. The emergent curriculum runs on a five-year cycle and areas of mathematical knowledge have been chosen for each topic by looking at which key skills suit best, and ensuring that each is covered at least once over the year with opportunities to build and develop skills over the five-year cycle.

Resources

Most lessons are taught in sufficiently spacious classroom to enable whole class teaching or for groups to work separately with plenty of room to move around during practical activities.

Maths is well-resourced, with a wealth of equipment to enable practical learning. The following list is not exhaustive.

Counting and Number - Counters (plastic discs, buttons, beads) and manipulatives (e.g. small animals), Linking cubes / multilink cubes, Bead strings and bead frames, Number lines, Hundred squares, Abacus

Place Value and Number Structure - Base-10 blocks, Place value charts and mats, Place value counters

Operations (Addition, Subtraction, Multiplication, Division) - Numicon shapes and boards, cuisenaire rods, counting sticks, rekenreks (counting frames), part-whole models (physical templates)

Fractions, Decimals and Percentages - Fraction circles, bars, and tiles, place value grids, measuring jugs (for capacity and fractions)

Measurement - Rulers, metre sticks, tape measures, weighing scales (balance and digital), measuring jugs and cylinders, clocks (analogue and teaching clocks)

Shape and Geometry - 2D and 3D shape sets, geoboards and elastic bands, tangram sets, mirrors (for symmetry work), shape sorting trays, jigsaws

Practical Maths Games and Activities - Dice and number spinners, playing cards (for number games), dominoes, maths board games (e.g. number bingo), puzzle activities (logic and spatial reasoning)

Problem Solving and Investigation - Real-life objects (coins, food packaging, etc.), sorting and classifying materials, pattern blocks

Outdoor and Active Maths - Large floor number grids, chalk for playground maths, measuring tools for outdoor investigations (metre rulers, tape measure, trundle wheel), physical activity games involving counting, timing, or scoring

Our **outdoor areas** also offer a range of learning environments to access and use for maths based practical activities. They include: kitchen garden, polytunnel, wooded area, playground (MUGA), pond area, flowers and plants, grassed area

Learning beyond the classroom provides equitable opportunities for all students—especially those with sensory or physical needs—to access real-world practical and functional maths in ways that are motivating, meaningful and personalised.

Safeguarding in Maths

Maths teaching at Ravenscliffe prioritises safety and wellbeing. All practical activities are carefully planned and adaptations are made for pupils with physical, sensory, or communication needs. Staff remain alert to safeguarding indicators during practical and outdoor activities, following whole-school procedures to escalate concerns.

Further opportunities in Maths

At Ravenscliffe we have had the opportunity to explore the world of maths in other contexts. Some of these have included:

- Trips to the local shops and supermarkets to apply skills to real world scenarios.
- Trips to local parks to use position and direction skills
- Trips to maths city in Leeds (hopefully in 26/27)
- Trip to Lego café in Bingley – have STEM Lego packs linked to learning outcomes.

Celebration of achievement

We celebrate all achievement in Maths through the school rewards system that includes stickers and Personal Development Certificates. Celebration of achievement is inclusive, ensuring that every learner—regardless of pathway—has their contributions recognised through displays and assemblies.

World Maths Day, National numeracy day and Maths week England

There is a celebration of maths in each term.

- World Maths Day 2027 Friday 26th March
- National Numeracy Day May 20th 2027
- Maths Week England 2026 15th to 21st November 2026

All pathways will be invited to look at the year's theme for each day in a way which is engaging for them. Ideas and activities will be shared so that teachers can incorporate maths into whatever lessons they are teaching that day. There will then be photos and thoughts shared across the school so our community can see what has been happening in these celebrations of maths.

Schemes of work

All of the schemes of work have been developed in school with guidance from pre key stage standards, early learning goals, schema development, key stage 1-4 curriculum, and functional skills outcomes. We also subscribe to White Rose Maths but these resources should be adapted to the needs of learners when being used in lessons.

List of Appendices

Appendix A – Formal Curriculum Overview

Appendix B – Semi Formal Curriculum Overview

Appendix C – Examples of number level descriptors

Appendix D – Examples of shape space and measure level descriptors

Appendix E – Examples of functional skills level descriptors

Appendix F – Examples of emergent schema level descriptors

Appendix G - Examples of schemes of work

Links to other areas

There are various links to other subjects in the maths curriculum including but not limited to:

Mathematical Strands		
Functional Skills	Numeracy	Shape, Space and Measure
Links to		
Art Shapes, patterns, tessellation, enlargements, colours. British Values Democracy, the rule of law, individual liberty and choice, mutual respect and tolerance of those with different faiths and beliefs, understanding of the world. English Reading worksheets, labels, equipment, textbooks, identifying symbols, sequencing symbols / pictures.	Enterprise Costings, weight ingredients, following instructions, pricing items. ICT Recording findings and evaluating results, use of AAC, iPads to aid research of different maths topics. PE/Dance Sequence of movements, making shapes with our body, counting goals, counting people on a team.	SMSC Encouraging awe & curiosity Reflecting on the wonder of life, Safe and responsible choices, Considering ethical issues, Working collaboratively, Developing communication skills, Work Related Learning Reading timetables, following sequences, deciding how long it will take to get to work and what time to set off, recognising bus numbers.

Impact

Impact statement

This section outlines our intended measurable outcomes in Maths and how we assess, evaluate and monitor these to evidence the impact of our implementation towards the development of our students.

By delivering a curriculum that uses a range of teaching methods, differentiated activities and life linked activities we aim to ensure that every learner makes progress over their time at Ravenscliffe. Students will be effective mathematicians in a range of settings to the best of their abilities. They will be able to access mathematical opportunities in their environments to be as independent and as successful as possible in their future lives.

Assessment – Attainment

Students are assessed in different ways in Maths at Ravenscliffe. All teachers make regular formative assessments during each lesson, through targeted open and closed questions and observation. These assessments are used to inform the progression of the lesson as well as future planning and they support more formal, recorded assessments through the year.

Students show their understanding through diverse means, including spoken language, signing, symbol exchange, AAC, facial expression, body movement and independent or supported action. Teachers may wish to complete more summative assessments to evaluate teaching and learning across a topic through the means of a low stakes quiz or game. We understand that many of our students don't always perform well under test conditions, so results need to be supported or corrected with evidence from formative assessments as well as video or photographic evidence.

Formal assessments are recorded each term using the level descriptors (**Appendix C, D, E & F**). Baselines are completed for new Year 7 students in October, then assessment data is added at the end of each term. Teachers use the Evidence for Learning Programme to record attainment as well as to measure and monitor progress during the year. For formal and semi-formal learners, all three strands are graded every term (number, shape space and measure and functional skills). Emergent learners are also graded every term and have an additional schema assessment strand that tracks with the schema units in their rolling curriculum.

Each strand is broken into the key areas and these have a varying number of descriptors based on the complexity of the topic at each level. For each descriptor, one of the following achievement levels can be selected; Experienced, Emerging, Developing, Secure or Mastered. Students need to have achieved 90% or more to progress to the next level e.g. from RPS7 up to RPS8.

Appropriate Mathematics evidence in the form of a photograph, video or a picture of work is added to Evidence for Learning with a supportive description of the task, level of independence, how it shows progress and 'next steps' for each student throughout the year. Our assessment methods are fully inclusive, allowing every learner to demonstrate progress through a range of accessible formats such as photographs, signing, AAC, sensory responses and practical demonstration, this is recorded as evidence on EFL.

Assessment – Progress

Progress is measured in a way that values each student's starting point and learning pathway, ensuring that all achievements—academic, sensory, experiential or communicative—are recognised and celebrated.

Progress is measured against RPS Levels across the year as well as against EHCP Outcomes. These are monitored by the subject lead each term to identify those students that are making expected, above or below expected progress so that the correct measures can be implemented to support all students moving forward.

The subject lead also identifies groups that might be making unexpected progress, such as teaching groups, boys/girls, FSM, Minority groups etc. These groups will be supported based on monitoring evidence and adjusted accordingly if needed.

Accreditation

KS5 complete accreditation towards a LASER qualification pathway in Years 12-14. KS4 and KS5 work towards Pearson Edexcel Functional Skills Maths where appropriate at a range of levels.

Preparation for Adulthood

By fulfilling all of our Intent and Implementation aims, we aim to prepare our students for the next stage in their lives. This could mean that our formal students are in a position to move to college with a broad understanding of the mathematics around them that will help them apply their knowledge and

	understanding towards furthering their education or it could simply mean that our students have gained more independence to undertake specific activities with reduced support, e.g. knowing how much money they need, working out every day mathematical problems at their level, developing problem solving skills and applying their knowledge to life tasks such as cooking. We aim to equip our students with everything they need for the next step on their journey. <u>Overall Achievement</u> By fulfilling all of our Intent and Implementation aims, we expect all of our students to have developed their literacy skills to their full potential. We hope that their love of maths continues into their adult lives and that their functional maths skills develop to allow all students to be as independent as possible.
Leadership and Review	<u>The Mathematics Team</u> Samantha Clark is the Maths lead TLR and takes overall responsibility for the implementation of this document, as well as the Maths Development Plan. Sam regularly reports to a member of SLT to review all aspects of this document as well as the Maths Action Plan aligned to the School Development Plan. Maths is taught by a range of teachers in the school across the different pathways. Experience and expertise are extensive and new to subject staff are offered support by both the maths lead and by experienced teachers to ensure they have the resources to deliver high quality teaching and learning. <u>Development Plan</u> The Mathematics Development Plan is a working document that outlines key aims of development for the subject across the forthcoming 12-month period and relates directly to the School Development Plan. It highlights key tasks, personnel, dates and success criteria and is reviewed termly with a DHT. <u>Curriculum Review</u> Regular reviews have taken place during the course of the curriculum's implementation through team meetings and meetings with the DHT. Once a full year's programme of study has been delivered, a full review of each unit, Scheme of Learning, Planning and Resources will take place in order to make any necessary changes. Feedback from staff of what has worked well and what hasn't alongside information from assessments, work in books and learning walks help to inform this along with any changes and updated to government publish documents. <u>Supporting Teachers</u> To ensure that staff are kept well trained and supported we hold regular meetings, alongside more informal professional discussions to ensure that all Maths teachers receive the support they need. Ongoing CPD supports staff confidence and subject knowledge. 2 key teachers have attended specific SEND CPD delivered by the West Yorkshire Maths Hub (SKTM-Subject Knowledge for Teaching Maths) to develop and improve their practice and dissemination of learning is facilitated at subject meetings. All teachers at Ravenscliffe are supported through regular lesson observations carried out by SLT and peer colleagues. A Formal learning walk is scheduled annually during the early summer term. Teachers receive constructive feedback focused on professional development and the continual improvement of teaching and learning. This process also ensures that the key aspects of Maths Intent, Implementation and Impact are consistently delivered. We also carry out book observations to look at quality of work and how this links to the levels that pupils are working at. These provide opportunities for targeted support where needed and to share good practice among the team. We also meet to look over Entry level papers in the summer term and LASER units twice a year to ensure good practice across school. <u>Supporting Maths Leadership</u> As mentioned previously, the Maths Lead meets regularly with SLT to monitor key aspects of the Maths Action Plan alongside the School Development Plan. The Maths Lead is also part of the WY maths hub who deliver mastery training over the year focusing on the development of mastery across the pathways. These meetings offer the opportunity to share good practice and provide support for the development of mastery in maths. The breadth of knowledge at these meetings has helped to support the development of the maths lead as well as informing the progression that we expect to see in our learners.

Linked documents	This document should be read in conjunction with the whole school curriculum and assessment policy. Other documents that can be read for further information with specific relation to Maths and these documents are: • Schemes of Learning for each pathway and key stage • Edexcel Schemes of work • Edexcel Specifications • Baseline information • Evidence for Learning Statements • National curriculum guidance for both primary and secondary schools
Date:	9 th July 2026
Author:	S. Clark – Mathematics lead in conjunction with S.McVey-Grimes – (Mathematics TLR maternity cover 2026)
Reviewed by:	Jess Lough – Deputy Head
Next review:	Autumn 2027

Nurture, Believe, Achieve, Succeed

Appendix A – Formal Curriculum Overview

KS3

Any pupils working towards their entry qualifications need to apply their knowledge to exam style questions during each module.				
		Week 2 + 3	Week 4 - 8	LAST WEEK OF TERM
Autumn 1	Week 1 Getting To know you	Baselines + Entry 1/2/3/L1 exam paper for identification of pathway (details will come out on past achievements)	Place Value & Counting Secure 5 counting principles (ideas on server) - One to one correspondence - Stable order - Cardinal principle - Abstraction principle - Order irrelevance Place value of numbers, finding more and less than, secure in number bonds to 10, 20, 50, 100. (instant recall as much as possible – this a a core foundation for the rest of their mathematical knowledge)	
			Money – coin knowledge Time – look at days of the week, months, days in months, seasons or read clock to gain understanding of the pupils levels across the strand.	
			Measure and Shape – cover one lesson on length, capacity, weight and shape to look at understanding.	
Autumn 2 (7 Weeks)	Recap place value THEN Addition Objects, number lines, real life See calculation guidance for written methods.			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Money – recognising coins and notes, making amounts, working our totals and change.			
	Geometry: Shape basics -2D and 3D shapes Properties, 2D (sides, corners/ vertices and lines of symmetry), 3D (faces, vertices, edges, nets of shapes), introduce irregular shapes.			
Spring 1 (6 Weeks)	Recap place value THEN Subtraction Objects, number lines, real life See calculation guidance for written methods.			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – months of the year, days of the week, seasons, telling the time, writing dates in numbers and words			
	Measure: Length non-standard units, ordering If ready using a ruler, measuring in cm, m, estimating length, ordering length, reading scales more able finding area and perimeter			

Spring 2 (6 weeks)	Recap place value THEN Multiplication and Division Sharing and grouping No remainders Written methods When able Understanding multiplying and dividing by 10 and 100 (NOT adding and taking away a 0) See calculation guidance for written methods. Money – budgets, comparing prices, making amounts, covering amounts, finding change. Measure: Weight Estimating, ordering by touch, weighing in grams on digital and analogue scales, weighing heavier things in kg and tons, reading scales.	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
Summer 1 (5 Weeks)	Fractions Half of shapes, quantities, quarters, tenths. More able may look at - fractions of amounts, comparing amounts, link to percentages and decimals. Time – reading time, ordering lengths of time, reading timetables More able may look at conversions of minutes and hours, 24 hour clock, adding and subtracting lengths of time. Geometry- 2D and 3D shapes – build on prior knowledge, apply to problems. More able may look at regular and irregular shapes and touch on angles.	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
Summer 2 (7 Weeks)	Statistics & data Read and create a variety of charts. Ways to present data. Using excel to present data. Collecting and presenting data, scales. Application of time and money Using coins to make amounts. Finding change, handing over correct coins. Times of day, reading clocks and matching times More able Budgeting, understanding bank accounts. Planning trips with costs. Planning a train or bus journey. Measure: Capacity & Volume Ways to measure, estimating capacity, reading scales, making given amounts. MA – finding volume	Transition/last week
Mathematical Proficiency Week		

KS4

Any pupils working towards their entry qualifications need to apply their knowledge to exam style questions during each module.					
		Week 2 + 3	Week 4 - 8		LAST WEEK OF TERM
Autumn 1	Week 1 Getting To know you	Baselines + Entry 1/2/3/L1 exam paper for identification of pathway (details will come out on past achievements)	Place value Writing numbers as words, partitioning numbers, identify hundreds, tens units etc. as appropriate	Addition and Subtraction Objects, number lines, real life, written and formal methods with exchange (See calculation guidance for written methods)	
			Money – coin knowledge Time – look at days of the week, months, days in months, seasons or read clock to gain understanding of the pupils levels across the strand.		
			Measure and Shape – cover one lesson on length, capacity, weight and shape to look at understanding.		
Autumn 2 (7 Weeks)	Multiplication and Division - securing methods (See calculation policy for progression)				Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Money – recognising coins and notes, making amounts, working our totals and change.				
	Measure: Length non-standard units, ordering If ready using a ruler, measuring in cm, m, estimating length, ordering length, reading scales more able finding area and perimeter				
Spring 1 (6 Weeks)	Statistics & data Read and create a variety of charts. Ways to present data. Using excel to present data. Collecting and presenting data, scales.				Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – reading time, ordering lengths of time, reading timetables, adding time If ready conversions of minutes and hours				
	Measure: Weight Estimating, ordering by touch, weighing in grams on digital and analogue scales, weighing heavier things in kg and tons, reading scales.				
	Entry Level exams will be in spring 2				
Spring 2 (6 weeks)	Fractions Half of shapes, quantities, quarters, tenths. MA – fractions of amounts, comparing mounts, link to percentages and decimals.				Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Money – recognising coins and notes, making amounts, working our totals and change. Build on last units knowledge				
	Geometry: Position & Direction Prepositions, compass points, left and right, coordinates,				
Summer 1 (5 Weeks)	Addition and Subtraction Objects, number lines, real life, written and formal methods with exchange (See calculation guidance for written methods)				Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – reading time, ordering lengths of time, reading timetables, adding time If ready conversions of minutes and hours. Build on last units knowledge				
	Geometry: Shape basics -2D and 3D shapes Properties, 2D (sides, corners/ vertices and lines of symmetry), 3D (faces, vertices, edges, nets of shapes), introduce irregular shapes. More able to look at angles etc.				
	Multiplication and Division - securing methods				Transition/last week

Summer 2 (7 Weeks)	(See calculation policy for progression)		
	Application of time and money Using coins to make amounts. Finding change, handing over correct coins. Times of day, reading clocks and matching times		
	<u>More able</u> Budgeting, understanding bank accounts. Planning trips with costs. Planning a train or bus journey.		
	Measure: Capacity & Volume Ways to measure, estimating capacity, reading scales, making given amounts. MA – finding volume		

KS5

Any pupils working towards their entry qualifications need to apply their knowledge to exam style questions during each module.					LAST WEEK OF TERM		
Autumn 1	Week 1 Getting To know you	Week 2 + 3 Baselines + Entry 1/2/3/L1 exam paper for identification of pathway (details will come out on past achievements)	Week 4 - 8		Place value Writing numbers in words and numerals	Addition and subtraction- securing methods (See calculation policy for progression)	
			Money – coin knowledge Time – look at days of the week, months, days in months, seasons or read clock to gain understanding of the pupils levels across the strand.				
			Measure and Shape – cover one lesson on length, capacity, weight and shape to look at understanding.				
Autumn 2 (7 Weeks)	If laser falls within the strand you teach please do that first and then curriculum.	2023-2024 Laser Award – Introduction to whole number		2024-2025 Laser Award - Using Money		2025-2026 Laser awards - Using whole numbers	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
Multiplication and Division - securing methods (See calculation policy for progression)							
Money – budgets, comparing prices, giving covering amounts, making different amounts, finding change.							
Measure: Length non-standard units, ordering If ready using a ruler, measuring in cm, m, estimating length, ordering length, reading scales more able finding area and perimeter							
Spring 1 (6 Weeks)	Statistics & data Read and create a variety of charts. Ways to present data. Using excel to present data. Collecting and presenting data, scales.						Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and
	Time – reading the time, matching time to activity, o'clock. reading time, ordering lengths of time, reading timetables, adding time						

	If ready conversions of minutes and hours			develop independent trial of ideas.
	Position & Direction Prepositions, compass points, left and right, coordinates,			
	Entry Level exams will be in spring 2			
Spring 2 (6 weeks)	2023-2024 Laser award - Weight	2024-2025 Laser Award - Working with Measures	2025-2026 Using shape	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
If laser falls within the strand you teach please do that first and then curriculum.	Fractions Half of shapes, quantities, quarters, tenths. MA – fractions of amounts, comparing mounts, link to percentages and decimals.			
	Money – recognising coins and notes, making amounts, working our totals and change. Build on last units knowledge			
	Measure: Weight Estimating, ordering by touch, weighing in grams on digital and analogue scales, weighing heavier things in kg and tons, reading scales.			
Summer 1 (5 Weeks)	Word Problems with all 4 operations – learning to pick key information and using a method to solve problems.			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – reading time, ordering lengths of time, reading timetables, adding time If ready conversions of minutes and hours. Build on last units knowledge			
	Geometry: Shape basics -2D and 3D shapes Properties, 2D (sides, corners/ vertices and lines of symmetry), 3D (faces, vertices, edges, nets of shapes), introduce irregular shapes. More able to look at angles etc.			
Summer 2 (7 Weeks)	Statistics & data Read and create a variety of charts. Ways to present data. Using excel to present data. Collecting and presenting data, scales.			Transition/last week
	Application of time and money Using coins to make amounts. Finding change, handing over correct coins. Times od day, reading clocks and matching times			
	<u>More able</u> Budgeting, understanding bank accounts. Planning trips with costs. Panning a train or bus journey.			
	Measure: Capacity & Volume Ways to measure, estimating capacity, reading scales, making given amounts. MA – finding volume			

Appendix B – Semi Formal Curriculum Overview

KS3 + 4

Any pupils working towards their entry qualifications need to apply their knowledge to exam style questions during each module.				
		Week 2 + 3	Week 4 - 8	LAST WEEK OF TERM
Autumn 1	Week 1 Getting To know you	Baselines + Entry 1/2/3/L1 exam paper for identification of pathway (details will come out on past achievements)	Counting principles - One to one correspondence - Stable order - Cardinal principle	
			Time and Money – work on concepts they found difficult in their baselines.	
			Measure: Length – non-standard measures	
Autumn 2 (7 Weeks)	Counting principles - Abstraction principle - Order irrelevance			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Money - recognising coins - transaction of coins in exchange for things			
	Geometry – Shape Recognising patterns, Making patterns, Finding shapes			
Spring 1 (6 Weeks)	Recap counting principles THEN Addition using manipulatives – may intro number lines			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – days of the week, months of year, identifying birthdays and special days, events in the day/week at home or school, ordering events			
	Measure: Weight – heavier and lighter, ordering by handling			
Spring 2 (6 weeks)	Recap counting principles THEN Subtraction using manipulatives – may intro number lines			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Money – making amounts using 1p to 20p and			
	Geometry: Position & Direction – positional words and movement			

Summer 1 (5 Weeks)	Recap counting principles THEN Grouping and Sharing (multiplication and division) – halving and doubling, sharing	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – days of the week, months of year, identifying birthdays and special days, events in the day/week at home or school, ordering events OR Reading the time to o'clock, matching times to events in the day e.g. 7am wake up, 12 o'clock eat lunch, 3 o'clock go home. half past if ready	
	Measure: Capacity & Volume – full and empty, visual ordering, using cup and non-standard measures to find capacity.	
Summer 2 (7 Weeks)	Statistics & data – pictograms and charts	Transition/last week
	Time and Money – real world application of skills, develop what they have been working on over the year.	
	Geometry: Shape – recognising 2D shapes and simple properties	

KS5

Any pupils working towards their entry qualifications need to apply their knowledge to exam style questions during each module.						LAST WEEK OF TERM
Autumn 1	Week 1 Getting To know you	Week 2 + 3 Baselines + Entry 1/2/3/L1 exam paper for identification of pathway (details will come out on past achievements)		Week 4 - 8		
				Counting principles (continue into autumn 2 if needed) - One to one correspondence - Stable order - Cardinal principle - Abstraction principle - Order irrelevance		
				Time and Money – work on concepts they found difficult in their baselines.		
				Measure: Length – non-standard measures		
Autumn 2 (7 Weeks) If laser falls within the strand you teach please do that first and then curriculum.	2023-2024 Laser Award – Introduction to whole number		2024-2025 Laser Award - Using Money		2025-2026 Laser awards - Using whole numbers	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Place value – ordering numbers, one more one less, missing numbers					
	Money - recognising coins - transaction of coins in exchange for things					
	Geometry: Position & Direction – positional words and movement					
Spring 1	Addition using manipulatives – may intro number lines					

(6 Weeks)	Time – days of the week, months of year, identifying birthdays and special days, events in the day/week at home or school, ordering events			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Weight – heavier and lighter, ordering by handling, following recipes			
Spring 2 (6 weeks)	2023-2024 Laser award – Weight	2024-2025 Laser Award - Working with Measures	2025-2026 Laser Award -Using shape	Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
If laser falls within the strand you teach please do that first and then curriculum.	Subtraction using manipulatives – may intro number lines			
	Money – making amounts using 1p to 20p and			
	Geometry: Shape – Recognising patterns - Making patterns - Finding shapes			
Summer 1 (5 Weeks)	Grouping and Sharing (multiplication and division) – halving and doubling, sharing			Asking pupils to apply their knowledge from the half term to a puzzle helps build critical thinking, promote resilience and develop independent trial of ideas.
	Time – days of the week, months of year, identifying birthdays and special days, events in the day/week at home or school, ordering events OR Reading the time to o'clock, matching times to events in the day e.g. 7am wake up, 12 o'clock eat lunch, 3 o'clock go home. <i>half past if ready</i>			
	Measure: Capacity & Volume – full and empty, visual ordering, using cup and non-standard measures to find capacity.			
Summer 2 (7 Weeks)	Statistics & data – pictograms and charts			Transition/last week
	Recap skills of time and money from across the year			
	Geometry: Shape - recognising 2D shapes and simple properties			

Appendix C – Examples of number level descriptors

Maths

Numeracy – A cross section of level descriptors.

-R4
--Place Value including use of a calculator
I can relate familiar objects e.g. gloves for hands, shoes for feet
I can join in with number rhymes
I can follow a counting sequence.
I can help adults to count objects
I can pick up objects.
I can put object down in order to pick up another
--Addition and Subtraction (inc. counting principles)
I can ask for more
I can assist with one-to-one matching activity
I can respond to give me some (shells, blocks etc)
I can respond to give me more (shells, blocks etc)
-R9C
--Place Value including use of a calculator
I can rote count to 20 consistently
I can count objects out to 10 consistently
I realise that the last number spoken tells you how many there are
I realise that the count doesn't change when you rearrange the objects
I can order numerals to 10 consistently
I can put out quantities to 10 consistently
--Addition and Subtraction (inc. counting principles)
I can use objects to do addition to 10
I am aware of terms 'more/add/altogether
I can use objects to 10 take away given amounts

I am aware of terms 'take away/how many left/leave
--Multiplication and Division
I can give 2 objects to each person
I can put up to 20 items into groups of 2 or 5 or into equal groups
I can use manipulates to find doubles
I can use manipulatives to share by 2
--Statistics and data
I can collect data found in my environment.
I can sort and match sets of objects or pictures by recognising similarities and can communicate my choices.
I can make pictograms with given data.
-R10C (ENTRY 1)
--Place Value including use of a calculator
I have begun to count beyond 100
I can join in rote counting in 5's to 100
I can group objects into 10's to assist with counting
I can start counting at a given number to 100
I can identify the number after up to 100 with support
I can count beyond 100
I can rote count in 5's consistently
I can answer which is more/less questions with numbers to 50
I can find missing numbers to 50
I understand that 16 is 1 ten and 6 units
I can use a calculator to perform a one-step calculation and interpret the result
--Addition and Subtraction (inc. counting principles)
I can add two numbers to 20 including 0
I can Use whole numbers to count up to 20 items, including zero
I can add numbers which total up to 20
I can subtract numbers from numbers up to 20
I can recognise and interpret the symbols +, – and = appropriately

I can counts on and back using a 100 square with consistently
--Multiplication and Division
I can use an array to multiply
I can draw or make equal groups to multiply
--Statistics and data
I can present work orally, in objects, pictorially and in written form, and use a variety of ways to represent collected data with suitable scales
I can create bar charts and bar line graphs labelled in 2s, 5s and 10s
-R13C (LEVEL 2)
--Place Value including use of a calculator
I can understand and use place value for decimals, measures and integers of any size
I can order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, $\neq$, $<$, $>$, $\leq$, $\geq$
I have started to use memory keys and perform more complex calculations, e.g. $(234 + 739) \div (145 - 89)$
--Addition and Subtraction (inc. counting principles)
I can use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative
I can recognise and use relationships between operations including inverse operations
I can use and interpret algebraic notation
I can understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
I can use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)
--Multiplication and Division
I can use the concepts and vocabulary of prime numbers
I can use the concepts and vocabulary of factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple
I can use the concepts and vocabulary of prime factorisation, including using product notation and the unique factorisation property
I can use the concepts and vocabulary of prime numbers, factors (or divisors), multiples,
I can use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative

--Statistics and data
I can calculate the median and mode of a set of quantities
I can estimate the mean of a grouped frequency distribution from discrete data
I can use the mean, median, mode and range to compare two sets of data
I can work out the probability of combined events including the use of diagrams and tables, including two-way tables
I can express probabilities as fractions, decimals and percentages
I can draw and interpret scatter diagrams and recognise positive and negative correlation
--Fractions, decimals and percentages + Ratio and Proportion
I can use understanding of simple fraction, decimal and percentage equivalences, e.g. find 25% of 60cm and know that this is equivalent to $\frac{1}{4}$ of 60cm.
I can simplify a calculation by using fractions in their simplest terms.
I can use and interpret different representations of fractions, e.g. mixed numbers and improper fractions.
I can use equivalence of fractions, decimals and percentages to compare proportions.
I can choose the appropriate degree of accuracy to present answers.
I can use equivalence of fractions, decimals and percentages to select the most appropriate for one a calculation.
I can calculate a percentage increase or decrease.
I can calculate percentages of quantities using non-calculator methods where appropriate.
I can use ratio and proportion to calculate quantities.
I can work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and or 0.375 and $8\frac{3}{4}$)

Appendix D – Examples of shape space and measure level descriptors

SSM - A cross section of level descriptors.

-R4
--Shape, Symmetry and Pattern
---[] I can hold objects in each hand
---[] I can build with bricks
---[] I can anticipate that towers will fall
---[] I can roll a ball
---[] I can put a ring on a peg
---[] I can look for objects that have been hidden
---[] I can match objects by size
--Position and Direction
---[] I can pick up and move objects
--Length
---[] I am aware of light and dark
---[] I can make a choice based upon size
---[] I have begun to match objects by size when size is the only variable
---[] I have begun to match objects by shape when shape is the only variable
--Weight
---[] I am trying to move heavy objects by pushing
---[] I am trying to move heavy objects by pulling
--Capacity and Volume
---[] I can fill a container
---[] I can empty a container
---[] I can know that liquids are expected on cups
---[] I am aware when something is empty
---[] I can expect liquid in a cup
-R10C (ENTRY 1)

--Shape, Symmetry and Pattern
---[] I can describe 2D shapes by numbers of faces, edges and corners
---[] I can find half of a shape by folding paper symmetrically
---[] I can sort 3D shapes by property e.g. all with a curved edge
---[] I can describe shapes by what they can feel but not see
--Position and Direction
---[] I can find objects by position on a simple map
--Length
---[] I can draw lines along a straight edge
---[] I can suggest suitable units to measure or weigh an object
---[] I am becoming aware of standard units for measure
---[] I am becoming aware of standard measure tools for measure
--Weight
---[] I can suggest suitable units to measure or weigh an object
---[] I am becoming aware of standard units for weight
---[] I am aware of standard measure tools for weight
--Capacity and Volume
---[] I can use language full/empty/half/heavier/lighter
-R13C (LEVEL 2)
--Shape, Symmetry and Pattern
---[] I can understand and use basic angles rules and notation
---[] I can solve complex problems with parallel line angles
---[] I can recognise line symmetry
---[] I can investigate angles between parallel lines and the transversal
---[] I can identify and calculate with alternate and corresponding angles
---[] I can identify and calculate with co-interior, alternate and corresponding angles
---[] I can reflect a shape in a horizontal or vertical line 1 (shapes touching the line)
---[] I can identify the order of rotational symmetry of a shape
---[] I can compare and contrast rotational symmetry with line symmetry

---[] I can rotate a shape about a point on a shape
--Position and Direction
---[] I can use coordinates in 2-D, positive and negative, to specify the positions of points
---[] I can identify properties of, and describe the results of, translations, rotations and reflections applied to given figures
--Length
---[] I can calculate perimeters and areas of 2-D shapes including triangles and circles
---[] I can calculate perimeters and areas of 2-D shapes composite shapes including non-rectangular shapes (formulae given except for triangles and circles)
---[] I can use formulae to find volumes and surface areas of 3-D shapes including cylinders (formulae to be given for 3-D shapes other than cylinders)
---[] I can calculate actual dimensions from scale drawings and create a scale diagram given actual measurements
--Weight
---[] I can convert between metric and imperial units of weight using a conversion factor
--Capacity and Volume
---[] I can convert between metric and imperial units of capacity using a conversion graph

Appendix E – Examples of functional skills level descriptors

Functional Skills - A cross section of level descriptors.

-R4
--Time
I am aware of daytime
I am aware of night time
--Money
I can plays with coins
I can with prompts makes an exchange of a coin for an item
-R9C
--Time
I can say the days of the week in order
I can answer 'how old are you?'
I can respond to 'what did you do yesterday?' 'What will you do tomorrow?'
I can recognises O'clock on an analogue clock
I can demonstrate clockwise on an analogue clock
I am aware of key times of the day
--Money
I can identify 1p, £1, £2 and 10p
I can knows that 1p is less than £1
I can identify the highest value coin from a choice of two (£1, £2, 1p, 10p)
I can sort coins by colour and shape
-R10C (ENTRY 1)
--Time
I can read hours and half hours on a digital clock
Read 12-hour digital and analogue clocks in hours
I can solve simple problems relating to hours
I am starting to identify 5-minute intervals past the hour

I can consistently tell the time quarter to and quarter past on an analogue clock
I can read the short date
I can name the seasons of the year
I can sequence the seasons
I know the number of days in a week
I can sequence the days of the week
I know the months of the year
I can sequence the months of the year
--Money
I can give change from 10p
I can give equivalent amount in whole pounds in exchange for notes
I can give equivalent amounts to 10p
I can have begun to give covering amounts in whole pounds
-R13C (LEVEL 2)
--Time
I can use a range of time concepts and apply them to real life activities
--Money
I can use and understand efficient methods of calculating compound interest
I can describe why insurance is important and understand the impact of not being insured
I can understand and demonstrate the real life process of foreign exchange
I can understand and calculate income tax and understand implications of taxation
I can appreciate the basic principles of budgeting, saving (including understanding compound interest) and borrowing

Appendix F – Examples of schema level descriptors

Schema - level descriptors.

Maths
Shape, Space and Measure
- Schema (Emergent only)
--Connection
I am trying to connect, link, join and tie objects together, such as joining train tracks
I am taking things apart or into pieces
I am opening and closing things
I am exploring fastenings on clothing
I am initiating physical contact with others (holding hands/linking arms)
I am repeatedly connecting and disconnecting objects, such as magnets
I am looking at different types of knots
I am exploring with a stapler and other office materials to join paper together
I am using building materials and construction sets that join together
--Positioning
I am rolling, stacking or lining up objects/toys
I am ordering items by colour or size
I am tidying, gathering and organising
I am placing items in 'unusual' places
I am creating a particular order/sequence for everyday activities/routines
I am practicing sorting and positioning language when carrying out an activity I am interested in
I am making caterpillars or trains from items
--Transforming
I am deconstructing objects, cutting and tearing things apart
I am combining, mixing and mashing materials
I am covering objects or myself in different substances, such as water or paint
I am engaging in messy play to explore how I can effect change

I am interested in growing and seasonal changes
--Enclosing
I am putting resources away in unusual places
I am wrapping up or hiding objects/myself
I am grouping resources together and wanting separation between them
I am drawing or painting closed shapes
I am building fences or boundaries around the learning space
--Rotation/Circular
I am turning taps on and off
I am playing with objects that spin or move round and round
I am developing a fascination with wheels, cogs or dials
I am spinning themselves round
I am watching objects that spin, such as washing machines
--Transporting
I am collecting items
I am carrying items
I am busily moving items from place to place
I am losing and misplacing things
I am moving myself in different ways
--Enveloping
I am hiding important or valuable objects
I am hiding myself in small or unusual places
I am covering paper with my drawing or painting
I am wrapping myself, dolls and toys with fabric, clothing or other materials
I am hiding and burying my hands or objects in different materials
--Trajectory
I am moving my arms/legs/body in horizontal and vertical movements, such as kicking
I am deliberately pulling, pushing, dropping and knocking over objects, including food
I am observing and experimenting with the movements of running water

I am throwing objects and watching them move through the air
I am climbing and jumping
--Orientation
I am moving my body into different positions, such as climbing onto furniture
I am looking at things from upside down
I am looking through objects, such as tubes and binoculars
I am playing with toys under tables
I am looking behind me as I walk and run
I am fascinated with the reflection of objects and myself

Appendix G – Examples of schemes of work

Emergent

The Emergent curriculum covers play schema through maths, the counting principles and the three stands from our whole school maths curriculum. They are spread over the two year cycle and can be adapted to fit in with the topic that is being covered.

This document also contains guidance on the outcomes for pupils, schema and counting principles to help with planning and progression in each skill.

Topic and Skills Covered	Knowledge	Suggested learning activities (including trips, activities)	Links to accreditation (KS4 and KS5 if appropriate)
Year 1			
Space - Encounter and show an awareness of a range of activities and experiences - Work to respond consistently to familiar people, events and objects - Begin to be proactive in their interactions (making choices) - Use emerging conventional communication (voice, signing, PECS, AAC) - Find items when given criteria - Sequencing experiments with pictures/symbols - Match real items to symbols/pictures - Following instructions - Turn-taking - Sharing equipment and materials - Begin making observations when given a choice of 2	Schema - Trajectory - Enveloping Counting Principle - One to One Maths Strand - Numeracy - Recognising Objects/Quantity - Shape Space and Measure - Length	Schema - Trajectory - Throwing items to each other (rockets, stars, planets) and counting with each throw/catch - Throwing rockets/space themed items and use near and far vocabulary - Building and knocking down space ships, mountains - Space themed marble runs - Garage ramps and angled planks for space crafts to roll off - Pushing space buggies off tables - Sawing, banging, hammering and tearing - Enveloping - Covering each other up with dark cloth and talking about under, inside, making it night inside. - Talk about night and day when enveloping - Inside and outside a rocket ship - Posting letters to space - Posting drawings to space - Getting under piles of clothes, blankets or cushions – hiding from aliens. - Pretend parcels, buried treasure on the moon - Wrapping paper around objects to send things to the moon/into space - Filling containers, including pliable ones, e.g. Balloons with space themed items - Burying things in moon dust	N/A

		Counting Principles - Counting ourselves - Counting finger puppets on theirs or others fingers - Counting stars in the 'sky' - Counting space themed objects – could find them in sand and then count Maths - Ordering lengths/heights of space themed items - Talking about longer and shorter - Ordering moon footprints - Comparing moon footprints - Length of space spaghetti - Counting songs about space - Counting out objects with a space theme - Counting out one or two objects.	
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Number Semi-Formal Objectives (if appropriate for the unit) Also see the Onwards and Upwards Statement Progression for assessment statements. For Vocabulary for each stage see Mathematical Vocabulary List Whole School.pdf			
Strand	Skills + Knowledge	Suggested learning activities (including trips, activities)	Links to accreditation (KS4 and KS5 if appropriate)
Number Patterns Vocab the same number as, as many as Of two objects/amounts: greater, more, larger, bigger less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest one more, ten more one less, ten less compare order size first, second, third... tenth last, last but one before, after next between above, below	R4-R7 - demonstrate an understanding of the concept of transaction - demonstrate an understanding of the concept of 1:1 correspondence. - distinguish between 'one' and 'lots', when shown an example of a single object and a group of objects R8-R9 - Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	- exchanging a coin for an / item one item for another shop role-play activity - giving one of an item to each pupil - Show differing groups of things - clear difference - Counting games, songs, rhymes - Practical counting and comparing games. Flash cards to comapre. - Patterns using objects, sharing, pattern cards - Copy beats - Turn taking - Patterns - Beats to numerals - Beats to words tea (1), coffee (2), orange juice (3), blackcurrant juice (4) (frog, tadpole, caterpillar, butterfly) - Compose using words/symbols	KS5 only Year 1 (23-24) Laser Award Intro to Whole Numbers WJF500 (E1) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Introduction-To-Whole-Numbers-E1-WJF500.pdf WJB238 (E2) https://www.laser-awards.org.uk/wp-content/uploads/2018/07/Introduction-To-Whole-Numbers-E2-WJB238.pdf WJF501 (E3) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Introduction-To-Whole-Numbers-E3-WJF501.pdf Year 3 (25-26) Laser Award Using whole numbers WJF543(E1) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E1-WJF543.pdf WJF544 (E2)

			https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E2-WJF544.pdf WJF545 (E3) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E3-WJF545.pdf
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Number

Formal

Objectives (if appropriate for the unit)

For Vocabulary for each stage see [Mathematical Vocabulary List Whole School.pdf](#)

Strand	Skills + Knowledge	Suggested learning activities (including trips, activities)	Links to accreditation (KS4 and KS5 if appropriate)
Place Value units, ones tens, hundreds, thousands ten thousand, hundred thousand, million digit, one-, two-, three- or four-digit number numeral ‘teens’ number place, place value stands for, represents exchange the same number as, as many as equal to Of two objects/amounts: >, greater than, more than, larger than, bigger than	R10-R12 - count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s - given a number, identify 1 more and 1 less - identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least - read and write numbers from 1 to 20 in numerals and words R13-R14 - count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward - recognise the place value of each digit in a two-digit number (10s, 1s) - identify, represent and estimate numbers using different representations, including the number line	All of these activities can be adapted to the content at each level - Time to practice counting in given chunks (5s, 10s, 20s etc.) - Read and write numbers in numerals and words, matching games, online work - Number squares with missing numbers and identify missing value - Use a range of ways to show numbers - Number bonds to 100/1000/10000 using known facts - Use a place value grid to identify worth of numbers e.g. HTU 345 – 300 40 5	Year 1 (23-24) Laser Award Intro to Whole Numbers WJF500 (E1) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Introduction-To-Whole-Numbers-E1-WJF500.pdf WJB238 (E2) https://www.laser-awards.org.uk/wp-content/uploads/2018/07/Introduction-To-Whole-Numbers-E2-WJB238.pdf WJF501 (E3)

<, less than, fewer than, smaller than ≥, greater than or equal to ≤, less than or equal to Of three or more objects/amounts: greatest, most, largest, biggest least, fewest, smallest one... ten... one hundred... one thousand more/less compare, order, size ascending/descending order first... tenth... twentieth last, last but one before, after next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately ≈, is approximately equal to just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred/thousand integer, positive, negative above/below zero, minus	- compare and order numbers from 0 up to 100; use <, > and = signs - read and write numbers to at least 100 in numerals and in words - use place value and number facts to solve problems R15-R16 - count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number - recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) - compare and order numbers up to 1,000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1,000 in numerals and in words - solve number problems and practical problems involving these ideas R17-R18 - count in multiples of 6, 7, 9, 25 and 1,000 - find 1,000 more or less than a given number - count backwards through 0 to include negative numbers - recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) - order and compare numbers beyond 1,000 - identify, represent and estimate numbers using different representations - round any number to the nearest 10, 100 or 1,000 - solve number and practical problems that involve all of the above and with increasingly large positive numbers - read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value	Use a diagram to break the number up and show the PV of numbers. - Compare and order numbers, use the < less than > greater then and = equals signs correctly. - Learn to round to the nearest 10/100/1000 at appropriate level, can use a place value flip chart to do this - Roll dice to make numbers and round them, talk about place value etc. - Base 10 – for place value. - Use place value counters. - Circle time – people said a number, then the next person had to say one more or one less. Throw the ball to each other to switch up direction. - Place value partitioning with a pack of cards SR - Create a place value robot representing a number, writing the numeral and word, partitioning SR - Numicon partitioning SR - Read, write and order numbers in value SR - Place value board games SR - Place value numicon table SR 2/3/4 digit bingo SR	https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Introduction-To-Whole-Numbers-E3-WJF501.pdf Year 3 (25-26) Laser Award Using whole numbers WJF543(E1) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E1-WJF543.pdf WJF544 (E2) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E2-WJF544.pdf WJF545 (E3) https://www.laser-awards.org.uk/wp-content/uploads/2019/04/Using-Whole-Numbers-E3-WJF545.pdf KS4 and KS5 Entry 1 – Level 2 Edexcel
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	R19- R20 • read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 • round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1,000 (M) and recognise years written in Roman numerals R21-R23 • read, write, order and compare numbers up to 10,000,000 and determine the value of each digit • round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across 0 • solve number and practical problems that involve all of the above		
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