

East Midlands Academy Trust Math Curriculum Overview - Overview













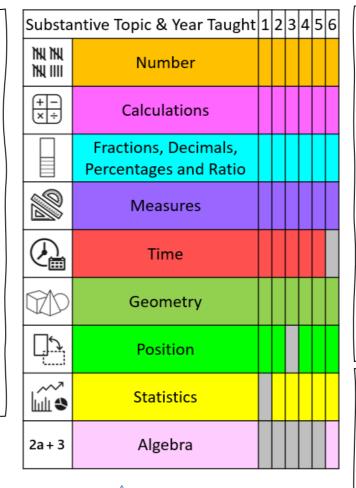


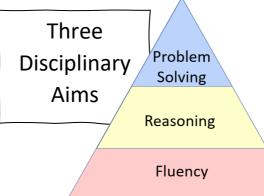
Why Teach Mathematics?

We believe that mathematics will allow students to establish life-long skills to make informed decisions and choices throughout their lives. Our curriculum aims to support children in securing conceptual understanding through:

- making rich connections across mathematical ideas to develop fluency, reasoning and solving increasingly sophisticated problems
- using concrete manipulatives to support conceptual understanding
- the use of variation to help children notice and understand pattern and structure
- fostering and maintaining a curiosity about mathematics in the world around us
- creative teaching approaches and rich tasks
- developing an appreciation of the beauty and elegance of mathematics
- applying their mathematical knowledge to other areas of the curriculum

We want our children to be able to think like mathematicians and provide them with the necessary financial literacy and mathematical knowledge in preparation for the next step in their educational journey and ultimate employment.





Teaching & Learning Priorities Thinking Mathematically Wariation Toricing and understanding date.

Arithmetic Focus

Arithmetic tests are taken in the first week of each half term with each question assessing a particular skill to show progress directly between corresponding questions in each test. Question Level Analysis (QLA) helps to identify where pupils need additional support to achieve the expected age-related objectives by the end of the academic year.



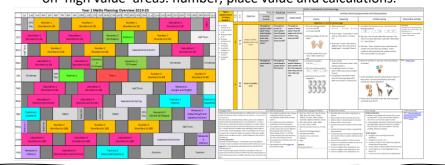
Curriculum Progression Maps by Topic

Set out the progression through each key topic by each year.

Acceptance for	2		st Midlands Academ s Skill Progress Map		ış⊊ı 🚱 NI▲		
	Year 1	Year 2	Year 3	Tour 4	Year 5	Year 6	
	Court to and screen LSE. Towards and Section 19.		Continue to court in your, love, and handwall, or that they become found to the units one about	Court lackwards Prough I to include regative numbers	minoral regalite numbers in contest, court forcer's and	ute registre numbers in contest, and	
Place Value: Counting	beginning with the 's, or from any green hunder	South in days of (), and 1 from 6, and in all from any number, formed performance	witer of hydrox in 1988. Went Statutes Supplier	Taciffic II and Art Taciffich, National Ratios II after Halfalls Brough selection (Regard profiles (New Yorks) Galleries)	between with posters and regative varies runtiers, including through a	omade money arrows	
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		the property (mapped) and the help company of a spec- ground original function or effects.	Start or and Start it Smith, Prom President)	South as and about it foresholds (from fractions)	Recipitate and all of the latest scripts or pursues. The complete II in Co. [1] of the Co. [2] in the control of the control o		
Comparing	use the language of legacine. Conspice and order numbers more than, but then (ferror), from true to (4th; user), a serior specification.		Compare and order numbers up to 1,000	Order and company numbers become LIME	order and company numbers to all least 1,000,000.	other and company numbers agree as passives	
Numbers				Compare sumbers with the same sumber of decimal places as to 2 decimal places (Providence policy)	Next, with, order and compare hundres with up to 1 decimal		
Mentifying.	dertify and represent	dettil, represent and estimate	dentify, represent and estimate numbers.	denth, represent and estimate numbers using different		the fits which surface spirits, behalfing upong	
married	numbers and objects and printed representations molecular the number free	number using offerent representations, including the number line	and agenc abstraction	Spring and a second sec		madity and uniforg scroken according (Non- Balancey Galleria)	
nd estimating				States Sales			
Reading and Writing	Court, real and write numbers to 10 to numerals and worth	And and wife runber to at their sit in runbers and a worth.	And prof or the numbers up to 1,000 in hurter str. and in worth		Real and write-numbers to all least USE, SEC.	had and with number up to \$1,000,000	
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Understanding Place Value	Augin in recipito plaza solar in surdam bayone (I by mading selling, combing and company)	haugeten fan deze selve of each digit is a feer digit number ook o	Noneprise Provides ratios of sech digit in a 3-digit number (2006, 200, 20)	having now the place value of social right in a few right number (1,000), 1000, 1000, and 101	laterative the value of each digit in numbers up to 1,000,000	determine the value of such digits in numbers up to 10,000,000	
	AUTHORISTS OR ASSOCIATED	Spiller across it afficial was	reciprose that bentle arise from dividing an algain this or requer parts and in dividing one-slipt numbers or quantities by sal	recognise that handwall is also when dividing an object by all and dividing handwalls at	fecupios pel os fecupativos di essellare in larife. Suntatto perdecina agusante	dentify the value of each digit in numbers given to 1 decimal places	
	Nation / New Stationary Contract		To large scelars is of test SSE, applying performing school in piece wider uning world and increasing surpless problems, (for example, sell + 100 - 60 world, 160 + 160 - 16). Date between Sciences.	Prior the officer of distings a row or have digit number by of and olds. demolphing the date of the digits in the process of area, dentity and handwallfus (Franchisco).	MARKET and distills which numbers and those insisting stationals by 10, 100 and 1,000	multiple and shall numbers by all 2000 and 1,000 gaining articises up to 3 decimal allows, Prochamic	
				found any number to the neural sit, sittler 1,880	Number of Section (1997) (1997	According whole number is a required degree of ecourses	
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				Total offsets of sorby within 5 ft or \$1000 ft advance. For Solder Science			
haperion of Number				Nacignia anti ua fator pais anti ummutati dy it mental secunition	others), multiples and factors, including finding of factor pains of a multiple, and common factors of a multiples	darely common factors, common multiples and prime numbers	
Factors.					Note and use the coallulars of prints sundans, prints Section and contactible tree-prints; surface:		
multiples,					Enabled whether a number of to 150 is prine and recall across surplets of the		
and Caller					Neogrice and use opers rumbers and cube numbers, and the notation for operated 7 and cubes?		
Municipan		continue of a religion	take marker problems and precing	to a series and practical problems that modes all of the	late spring pullers and profine pullers the house	bits notice and prefixed problems that	
Problem Scheng		NO S USA JOBBES	proteins nursing these descriptions and fine course		at Fifth about	none of of the doce	

Long Term Planning and Scheme of Work

Details the sequencing of knowledge to build mathematical understanding systematically over time. This reflects a higher proportion of teaching time on 'high value' areas: number, place value and calculations.



Shorter Term Planning and Retrieval

		Maths Objective Planning: Year 1						Maths Objective Planning: Year 1							
ACI	Edst Midlands Academy Trust Autumn 1 2019-20					Spring 1 2019-20									
		bjectives					Connections	To	pic Ot	piectives				Making	Connections
	mber 1 weeks)	 Count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number Count, read and write numbers to 10 in numerals (selentif) and reparement numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Given a number, leading 1 more and 1 lies 			numbe • Focus o numbe	LG – working with ers to 20 on individual ers looking at the eness" of three etc.	Posit (1 w	tion 2 reek)	 Describe position, direction and movement, including whole, half, quarter and three-quarter turns Sequence events in chronological order using language for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening! 				30 shapes position, di movement t, • Position 1: quarter tur	ns	
	ulations 1 weeks)	 Count in multiples of 2s. Represent and one number bonds and related subtraction facts within 10 Add and subtract one-digit numbers to 10, including 0 Read, write and interprent multi-musclaid subtractions (-), subtraction (-) and regular (-) again and a subtraction (-) and regular (-) again and a subtraction (-) and country (-)			(-) two sin	LG - add/subtract ngle digit numbers er 1 – numbers to 10	Tin (1 w	ne 1 reek)	Recognise and use language relating to dates, including days of the week, weeks, months and year? Tell the first to the hour and half past the hour and draw the hands on a clock face to show these times. Company, decide and solve practical problems for time [for example, quicker, shower, Measure and begin to record time [hours, minutes, seconds]				and less th	an when	
(i	days)	 Recognise and name 2-0 shapes [for example, rectangles (including squares), circles and trillagilist). Describe position, direction and movement, including whole, half, quarter and three- quarter turns 				sides • Geome	er 1 – number of etry 1 – shapes used tion, direction and nent		Count to and across 40, forwards and backwards, beginning with 0 or 1, or from any given number Number 3 Count, read and write numbers to 40 in numerals (1 week) (2 week) (2 week) (3 week) (4 week) (4 week) (6 week) (7 week) (8 week) (9 week)				Number 2- numbers to		
(1 Con	Number 2 [2 Wask- Continued in Continued in Sortinued in Number 1 (2 Wask- continued in Sortinued in Number (se, and use the language of equal to, nore than, less than (fewer), most, least		10 (one into "te numbe	er 1 – Count in		ations 3 eeks)	Represent and use number bonds and related subtraction facts within 20 Add and subtract one origit and two length numbers to 20, including 0 Read, write and interpret mathematical statements involving diddition (+), subtraction (-) and equal (+) ging or converting to the converting to t				 Calculation 	Number 2 – Numbers to Calculations 3 – Deepen numbers to 20			
		Fluency	_	Reasoning		Problem 5	Patrice .	- 2		Fluency		Reasoning		Problem Sol	ring
Curriculum Aims	complex proble develop conce ability to recall	vert practice with incresents over time, so that p ptual understanding an and apply knowledge ra and accurately.	upils relation the developing	g a line of enquiry, conje ships and generalization an argument, justification or mathematical language	s, and increasi n or proof down pr	ng their mathem ne and non-routi ng sophistication oblems into a se	natics to a variety of ine problems with n, including breaking eries of simpler steps seeking solutions.	Curriculum Expectations	complex pro develop con	equent practice with inc oblems over time, so that iceptual understanding a all and apply knowledge and accurately.	pupils relation nd the developing	g a line of enquiry, conject ships and generalisations an argument, justification ing mathematical language	and increasing down pro	g their mathematic e and non-routine g sophistication, in oblems into a series persevering in seek	problems with cluding breaki s of simpler ste
ning nts	Sequential S	Steps Vocabu Expectat		ort and Challenge for a	ll Lir	king Manipula CPA approa		Planning Points	Sequentia	Expect	ations Suppo	ort and Challenge for al	'	king Manipulative CPA approach aportunities inclu	
ning	Mathemat Mind-se				pportunities in ins (Using Misc						ns (Using Misconi				
Planning Points	Millip-se		Geometry	Position	Measures	Fractions	Time	sno	Number	r Calculations • Number bonds to	Geometry • Rectangles	Position • Whole, guarter and • 0	Measures Order by • 0	Fractions Concepts of •	Time before and after



East Midlands Academy Trust Maths Curriculum Map – EYFS & KS1













Fluenc	У		Reasoning		Problem Solving		
EYFS	KS1		Year 1		Year 2		
Early Learning Goal: Number Children at the expected level of development will: Have a deep understanding of number to 10, including the composition of each number; Subitise (recognise quantities without counting) up to 5; Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.		given number Count, read and write numbee Count in multiples of 2s, 5s a Given a number, identify 1 m Identify and represent numb number line, and use the lang Read and write numbers from	nd 10s nore and 1 less ers using objects and pictorial representations including the guage of: equal to, more than, less than (fewer), most, leas m 1 to 20 in numerals and words	Recognise the place value of ea Identify, represent and estimat Compare and order numbers fi Read and write numbers to at le Use place value and number fat			
 Early Learning Goal: Numerical Patterns Children at the expected level of development will: 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. Typical learning experiences include: Counting opportunities across environment, using concrete apparatus – eg fruit at snack time, jumps in a puddle, lunch 	Calculations	 (-) and equals (=) signs Represent and use number b Add and subtract one-digit at Solve one-step problems that and pictorial representations Solve one-step problems invo 	onds and related subtraction facts within 20 and two-digit numbers to 20, including 0 t involve addition and subtraction, using concrete objects and missing number problems such as 7 = ? - 9 clving multiplication and division, by calculating the answer rial representations and arrays with the support of the	numbers, quantities and measu Solve problems with addition a Recall and use addition and sul Add and subtract numbers usin two-digit number and 10s, 2 tw Show that addition of 2 number Recognise and use the inverse number problems Recall and use multiplication an Calculate mathematical statem multiplication (×), division (÷) a Show that multiplication of 2 n	and subtraction applying their increasing knowledge of mental and written methods bitraction facts to 20 fluently, and derive and use related facts up to 100 mg concrete objects, pictorial representations, and mentally, including a two-digit number and 1s, a wo-digit numbers and 3 one-digit numbers ers can be done in any order (commutative) and subtraction of 1 number from another cannot relationship between addition and subtraction and use this to check calculations and solve missing and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers the for multiplication and division within the multiplication tables and write them using the sind equals (=) signs numbers can be done in any order (commutative) and division of 1 number by another cannot plication and division, using materials, arrays, repeated addition, mental methods, and multiplication		
boxes on the trolley etc.Representing a total pictorially, with dots or a tally chart.	Fractions	_	nalf as 1 of 2 equal parts of an object, shape or quantity quarter as 1 of 4 equal parts of an object, shape or quantity	Recognise, find, name and writ	the fractions $1/3$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or quantity mple $1/2$ of $6=3$ and recognise the equivalence of $2/4$ and $1/2$		
 Recording opportunities e.g. in children's invented games recording score, who has more points. Playing games with dice and dominos to recognise dot patterns. Using concrete resources e.g. Numicon and matching to a numeral Reading story books e.g. 3 bears to elicit discussions of size. Connecting learning of size throughout the curriculum e.g. plates in the home corner. Sharing resources equally 	Measures	long/short, longer/shorter, ta Measure and begin to record Compare, describe and solve heavy/light, heavier than, ligh Measure and begin to record Compare, describe and solve full/empty, more than, less the Measure and begin to record	I lengths and heights practical problems for mass/weight [for example, hter than] I mass/weight practical problems for capacity and volume [for example, han, half, half full, quarter]	temperature (°C); capacity (litr • Compare and order lengths, m • Recognise and use symbols for • Find different combinations of	andard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); es/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ass, volume/capacity and record the results using >, < and = pounds (£) and pence (p); combine amounts to make a particular value coins that equal the same amounts of money ctical context involving addition and subtraction of money of the same unit, including giving change		
 Cooking, measuring ingredients, time. Capacity – e.g. water/sand tray (counting embedded across these opportunities) Measuring – e.g. comparisons between towers, between each other Positional language – embedded across the curriculum e.g. we're going on a bear hunt Time – visual timetable, talking about what comes next. Timers in activities (sand timers) or tidy up timers. 	Time	 Compare, describe and solve earlier, later] Measure and begin to record Sequence events in chronolo next, first, today, yesterday, Recognise and use language months and years Tell the time to the hour and show these times 	practical problems for time [for example, quicker, slower, ditime (hours, minutes, seconds) gical order using language [for example, before and after, tomorrow, morning, afternoon and evening] relating to dates, including days of the week, weeks, half past the hour and draw the hands on a clock face to	Know the number of minutes in	als of time minutes, including quarter past/to the hour and draw the hands on a clock face to show these times n an hour and the number of hours in a day		
 Shapes and patterns throughout the environment – exploring properties of 3D shapes in block play and construction area, junk modelling. Looking at patterns on animals, flowers, clothes etc. 	Geometry	triangles]	pes [for example, rectangles (including squares), circles and oes [for example, cuboids (including cubes), pyramids and	Identify and describe the property.			
The curriculum map for EYFS shows the progression through Autumn to Summer in the following areas. • Counting • Pattern • Cardinality • Spatial Awareness	Position	Describe position, direction, quarter turns	and movement, including whole, half, quarter and three-	Order and arrange combination Use mathematical vocabulary t	ns of mathematical objects in patterns and sequences to describe position, direction and movement, including movement in a straight line and distinguishing in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		
 Comparison Composition Measures Statistics 	Statistics			Ask and answer simple questio	pictograms, tally charts, block diagrams and tables ons by counting the number of objects in each category and sorting the categories by quantity out totalling and comparing categorical data		

Every child deserves to be the best they can be