Maths

Contents

Early Maths

Early Maths Skills Level 1	Pre Maths skills Level 2	Pre Maths skills Level 3	Pre Maths skills Level 4
Engagement			
PMEL1 Demonstrates some focused attention and response to activity.	**PMEL2** Participates in familiar maths activities by showing anticipation, increasingly independent/ unprompted involvement.	**PMEL3** Engage in Maths activities with purpose (i.e. joining in action songs, hand function tasks, completing simple puzzles, 1:1 correspondence, stacking, filling emptying).	**PMEL4** Matches objects.
Play			
PMPL1 Demonstrates surprise, differences within offered experiences. Have consistent likes and dislikes. Have an understanding of object permeance	**PMPL2** Starts to intentionally explore (including finding hidden objects). Demonstrates that they can learn a simple response over time. Point at desired item	**PMPL3** Purposely move object, engage in container play. Practical activities around sharing, portioning, breaking, connecting Exposed to money play.	**PMPL4** Orders objects (by size). Stack/ nest objects
Sequencing			
PMSL1 Reaches (including track) for objects (independently or cooperates with support). Plays with objects placed in reach (including visually and auditory engagement).	**PMSL2** Shares attention with counting and sequencing activities. Show an understanding of turn taking (including waiting) Vocalises to call and response/ fills pauses.	**PMSL3** Places objects in groups. Engages in sequential play (lining up toys, puzzles, watching an adult model counting, follows modelled support) Understand the difference between one and lots	**PMSL4** Understand more and less and begin to use in play Begin to explore number Counts objects 1-5
Language			
PMLL1 Directs themselves towards the sound of voice. Is exposed to a choosing system.	**PMLL2** Makes eye contact/ maintains directional focus with adults and peers when communicating. Looks at numbers and symbols when modelled by an adult. Demonstrates increased attention. Attempts to make choices.	**PMLL3** Knows names of objects (including colours) Attributes meaning to key words. Knows some maths language (to include number, comparative and propositional language, measure)	**PMLL4** Responds to simple instructions including key mathematical language. Begins to explore using numerals 1-5
Cause and Effect			

PMCL1 Recognise cause and effect (through your own and the actions of others).	PMCL2 Repeat an action to bring about an effect (instrument, switches, knock over tower). Participate in mark making activities	PMCL3 Mark make with purpose. Copy and adult in a mark making activity.	PMCL4 Trace and draw vertical, horizontal lines. Draw circles.
Pattern			
PMPL1 Know familiar routines Experience patterns (including intensive interaction, in nature)	PMPL2 Understand now, next Recognise your actions being mirrored Begin to explore same and different	PMPL3 Knowing location and key objects and their function. Copy an adult actions in intensive interaction	PMPL4 Copies patterns with support Makes simple patterns Clear understanding of daily routine (including OOR)

Calculation

Beyond the Learning Journey, pupils will follow National Curriculum Key stage 1 and 2

[Mathematics programmes of study: key stages 1 and 2 (publishing.service.gov.uk)]

All pupils will:-	Most pupils will:-	Some pupils will:-	A few pupils will:-
Counting and adding more			
MCA1 Add one more person or object to a group to find one more	MCM1 Add one more cube or counter to a group to represent one more. up to five.	MCS1Use a number line to understand how to link counting on with finding one more. One more than 6 is 7. 7 is one more than 6.	MCF1 Learn to link counting on with adding more than one.
MCA2 Sort people and objects into parts E.g cutting a cake in two Sorting bricks/blocks between two children.	MCM2 Sort people and objects into parts and understand the relationship with the whole	MCS2 Represent the parts and understand the relationship with the whole.	MCF2 Use a part-whole model to represent numbers.
MCA3 Use practical examples within the classroom to explore number bonds Eg, There are three pupils having packed lunch and four pupils having school dinners that makes seven pupils	MCM3 Use Numicon to explore numbers bonds, make connections between shapes.	MCS3 Break apart a group and put back together to find and form number bonds	MCF3 Use a part-whole model alongside other representations to find number bonds. MCF3i Use five and ten frames to represent key number bonds. MCF3ii Use part 'Zero' to make number bonds
Adding by counting on			
MCA4 Use knowledge of counting to 10 to find a total by counting on using people or objects	MCM4 Use cubes or counters to support and represent their counting on strategy	MCS4 Use a number line with support to count on	MCF4 Use a number line independently to count on.

MCA5 Experience mathematical language relating to addition, eg 'one more, counting on'	MCM5 Experience mathematical language, eg 'lets add together'	MCS5 Begin to use mathematical language across 'I am adding…'	MCF5 Read, write and understand mathematical ideas linked to addition
Adding with coins			
MCA6 Use money in a role play situation	MCM6 Use 1p coins to make amounts up to 10p	MCS6 Recognise money by naming coins and notes up to 20p	MCF6 Recognize coins up to £1 Make links between coins and their values e.g. 2P is the same as 1p+1p Choose coins and notes up to the value of £10 when paying for items in a real or simulated shopping experience.
Subtraction			
MCA7 Counting back and taking away. Participate in songs and practical experiences, exploring subtraction to five. 'E.g. five green bottles' 'Simon is not here for lunch today so we need one less knife and fork'	MCM7 Counting back and taking away Arrange objects and remove to find how many are left	MCS7 Counting back and taking away Use counters/equivalent to represent objects to find how many are left.	MCF7 Counting back and taking away Count back to take away. Use a number line to take away Finding a missing part, given a whole and a part Pupils separate a whole into parts and understand how one part can be found by subtraction.
MCA8 Experience simple mathematical language linked to subtraction 'one less, one gone'	MCM8 Experience simple mathematical language linked to subtraction 'take away'	MCS8 Begin to use mathematical language linked to subtraction 'I am taking one away' MCS8i Subtraction within 10 Use a bead string or concrete resources to subtract 1s efficiently	MCF8 Read, write and understand mathematical ideas linked to subtraction. MCF8i Subtraction within 10

			Pupils use knowledge of bonds within 10 to subtract efficiently. Pupils show when and how to subtract 1s efficiently. Using a system, eg crossing out.
MCA9 Subtractions with coins Receive change in a simulated or real shopping experience	MCM9 Subtraction with coins Use 1p coins to take away amounts from from 10.	MCS9 Subtraction with coins Use 2p coins to take away mounts from 10	MCF9 Subtraction with coins Make simple subtractions with coins 2p-1= 1p 10p-5p=5p
Doubling			
MCA10 Experience doubling, eg symmetrical artwork, Butterfly hand prints	MCM10 Begin to experience language linked to doubling and halving.	MCF10 Begin to use language linked to doubling and halving, eg 'I have eaten half my lunch'	MCF10 Make mathematical links between doubling and halving.
MCA11 Halving Experience halving in a range of curriculum based subjects e.g. staff split pupils into groups, cutting food in half, halving symmetrical shapes	MCM11 Use grouping in practical activities, e.g. grouping the coloured swords for pop up pirate, 'we have four red, blue etc.' Grouping cutlery when setting the table	MCF11 Sort objects into equal groups e.g. sharing out toys/sweets/pens etc.	MCF11 Grouping Represent a whole and work out how many equal groups. 'There are 10 in total. There are 5 in each group. There are 2 groups.'

Number and Place Value

All pupils will:-	Most pupils will:-	Some pupils will:-	A few pupils will:-
MNA1 Experience the language associated with counting and comparison e.g. encounter familiar number rhymes, songs, stories, games and snack activities.	MNM1 Engage with familiar number rhymes, songs, stories, games and shopping activities MNM1i beginning to anticipate / predict what comes next. MNM1ii Says the number names to 5 in the correct order (e.g. in a song or by joining in with the teacher) (PKSS) MNM1ii Distinguishes between 'one' and 'lots', when shown an example of a single object and a group of objects (PKSS)	MNS1 Count, by rote, to 10. MNS1i Count, by rote, to 10 backwards. MNS1ii Count, by rote, beyond 10 MNS1iii Use teen numbers when counting by rote. MNS2 Continue a number string from any number to 10 by rote e.g 3456…	MNF1i Count, by rote, numbers to 100, e.g joining in counting, forwards and backwards MNF1ii Count on, by rote, from any given number to 100 MNF1i Count, by rote, in different multiples including, twos, fives and tens, (up to x10 of the number)
MNA2 Respond to a range of objects by reaching for, looking at, pointing/eye pointing, tracking and touching. MNA2i Respond consistently to a range of objects developing sensory responses MNA2ii Explore object permanence MNA2iii scan objects in a sequential way	MNM2 Participate in activities with a purpose e.g., clapping, moving objects in response to an activity/song, signing along MNM2i To touch/point and pick up objects in a sequential way MNM2ii match objects in a sequence verbally or using AAC MNM2iii name objects in a sequence verbally or using AAC MNM2iv Seek a hidden object through scanning or touching. MNM2v Demonstrates an understanding of the concept of 1:1	MNS2 Use counting in play activities MNS2iii count objects in a sequence verbally or using AAC MNS2i Count with 1:1 correspondence up to 5 MNS2ii Count with 1:1 correspondence up to 10	MNF2 Count with 1:1 correspondence teen numbers MNS2ii Recognise and sequence numbers to 20 MNF2 To engage in a variety of activities designed to explore the properties of numbers up to 20 MNF2ii follow a continuous number chain backwards and forwards to 20 MNF2iii follow a broken number chain stopping and starting MNS2iv Use a number line to 10 (and beyond)

	correspondence, e.g. giving one cup to each pupil (PKSS)		
MNA3 Show anticipation of the next sound, item, action in a familiar sequence or activity e.g changing / greetings song, familiar sensory story. MNA3i Show anticipation for their own and others turns e.g., taking part in an adult lead turn taking games	MNM3 Engage in a variety of turn taking activities beginning to wait their turn and show anticipation / prediction of what comes next. MNM3i Copies and continues simple patterns using real-life materials, e.g., apple, orange, apple, orange, etc. (PKSS)	MNS3 Count on from any given number up to 5 MNS3i Copies and continues more advanced patterns using real-life materials, e.g. apple, apple, orange, apple, apple, orange, etc. (PKSS) MNS3ii recognise quantities without counting up to 5 (be able to Subitise) MNS3iii Count on from any given number up to 10	MNF3 Reliably count higher numbers using different methods e,g moving objects, grouping, counting on MNF3i estimate an amount of objects before counting MNF3iii Identifies how many objects there are in a group of up to 10 objects, recognising smaller groups on sight and counting the objects in larger groups up to 10 (PKSS)
MNA4 Experience matching objects and objects being placed in groups e.g., playing with cars or soft toys, during snack time, exploring coloured objects.	MNM4 Match objects MNM4ii Use pictures, signs and numbers as labels. MNM4iii know a number name represents an amount MNM4iv sort and count objects in a variety of ways (rearranging, lining up objects, moving etc) MNM4v Begin to count small quantities more reliably up to 5 objects e.g moving up places in a game counting, Spoonfuls of flour as they are added etc.	MNS4 Use numbers as labels in play activities MNS4i Use numerals in play activities MNS4ii Recognise numerals by name MNS4iii Match quantities to numerals MNS4iv Recognise and sequence objects and numerals to 5 MNS4v Recognise and sequence numerals to 10 MNS4vi Use numbers and corresponding numerals to 10 in practical activities and games including computer activities, money, life skills activities etc	MNF4 Confidently number to 10 MNF4i Demonstrates an understanding that the last number counted represents the total number of the count (PKSS) MNF4ii Confidently use numbers to 20 MNF4iii Recognise and name 2-digit numbers

		MNS5 Know the value of a number out of sequence to 5 MNS5i Know the value of a number out of sequence to 10	MNF5 Participate in a variety of activities exploring place value e.g using Numicon / tens and ones, expanding numbers into their 10s and ones, 100 square activities MNF5i Know the value of a digit within a numeral by the place it is in for all 1- and 2-digit numbers. MNF5ii Begin to know the place value of 2-digit numbers
MNA5 Look at pictures as part of choosing activities MNA5i Know pictures represent objects	MNM5 Begin to recognise numerals as opposed to text or pictures and that these represent a number name.	MNS5 know that marks can represent numbers of objects that have been counted MNS5i Record quantities e.g., writing numbers to 5, drawing objects, using pictures, symbols, showing fingers etc	MNF5 Read and write numbers from 1-20 in digits and in words MNF5i To read and write number to 100 in digits and words MNF5ii Respond to written numbers (AAC)
		MNS6 respond to ordinal numbers e.g., first, second third, last	MNF6i Use ordinal numbers
	MNM6 Handle and play with coins in a range of activities including shopping SSM?	MNS6 Begin to exchange coins or money in a role play game or shopping.	MMF7 To Recognise and know the value of 1p - £2 coins and begin to recognise £5 and £10 notes use money for a range of purposes and in different situations e.g waiting for change, saving for a toy.SSM?

Geometry-Shape and Position

All pupils will:-	Most pupils will:-	Some pupils will:-	A few pupils will:-
MGA1 Begin to develop attention skills using vision and touch to experience a range of objects and shapes e.g., recycled boxes, balls, cylinders MGA1ii Locating objects through auditory input	MGM1 Engage in intentional exploration with different shapes and objects. E.g container play, peg board / inset puzzles, rolling, building with bricks, playing with playdough, lining up objects, etc	MGS1 Explore 2D & 3D shapes in a variety of play and activities e.g., sorting, stacking, balancing and rolling shapes, playing games, making pattern / pictures from shape, building models. MGS1i Select suitable shapes for building i.e shapes with flat surfaces.	MGF1 Name and find 3D shapes e.g., Naming 3D shapes in everyday objects, making a collection of cylinders from around the school, explaining which shapes were used to create a model.
MGA2 Participate in container play e.g. placing objects in and out of a container in imitation, pouring sand and water out of a container. MGA2i Touch objects in a sequential manner MGA2ii Begin to line up blocks or toys	MGM2 Match and sort objects and pictures by shape, form or colour. MGM2i Begin to stack cups or blocks.	MGS2 Begin to name and find 2D shapes e.g., respond to show me the circle, what is the name of this shape? MGS2i Begin to name some 3D shapes.	MGF2 Investigate and identify the properties of simple 3D shapes e.g., find shapes that roll/slide, select MGF2i Describe a shape by its attributes, MGF2ii sort / match shapes by - those with square faces, those with curved faces, the number, sort between 2D (flat) and 3D solid shapes, of faces, vertices or edges they have.
MGA3 Demonstrate an interest in people and objects beginning to move and track things in a variety of ways e.g track objects through a horizontal / vertical plane, in circular movements, watch people with interest.	MGM3 Intentional mark making of vertical and horizontal lines MGM3i Begin to trace simple 2D shapes MGM3iiBegin to copy and simple 2D shapes e.g in sand, shaving foam, on the computer, with a pencil etc.	MGS3 Begin to independently draw a simple shape.	MGF3 Use 2D and 3D shapes in a creative way e.g., design and copy simple patterns or pictures using shapes, draw specified shapes, explore pattern with pegboards, explore symmetry, tessellation

			and repeating patterns, draw shapes on the computer.
		MGS4 Identify shapes within objects and pictures e.g., recognizing shapes in photos, shape hunts around the school, recognizing faces on 3D shapes.	MGF4 Begin to use and respond to geometric language both in the classroom and in the wider environment e.g., describing something that they have seen, planning what they would like to make, discussing patterns in nature, describe the attributes of 2D and 3D shapes: flat, curved, round, straight, solid,
MGA5 Experience a variety of activities to encourage the development of object permanence e g. watch when an object is hidden; experience the retrieval of the hidden object, beginning to look for an object that has been moved out of their field of vision or hidden in a container.	MGM5 Develop a clear understanding of object permanence (e.g. Find an object in its usual place, look for it when moved somewhere else/ dropped.)	MGA5 Begin to show an awareness of the location of familiar objects e.g., coats on pegs, books in the box, favourite toys.	
MGA6 Observe and begin to repeat an action that has had an effect e.g., shaking or squeezing an object, stacking objects and knocking them down, pressing a switch, touching some chime bars, throwing, and dropping objects etc	MGM6 Explore the use of positional language in context. MGM6i React or respond to positional language e.g., up, down in a hoist.	MGS6 Explore the placement of an object beginning to use terms such as on, under, off, next to, in, out, in front of, behind, at the bottom, on top e.g., MGS6i following instructions to place toys with varying key word	MGF6 Demonstrate an understanding of prepositional language in relation to people and objects e.g. placing self or objects where requested, MGF6i giving others instructions with multiple key words, describe

MGA5i Expose to positional language e.g., up, down in a hoist.		levels, playing with cars, following instructions to tidy away.	positions in a picture, copying a model.
MGA7 Showing an awareness of your own body in relation to your surroundings. E.g through massage stories and TACPAC, Sherbourne MGA7i Intentional movement of your own body.	MGM7 Engage in a range of activities (such as dance / PE/ swimming) to explore movement e.g., following instruction to stop, go, up, fast and slow, moving cars / balls in different ways.	MGS7 Understand spatial words in play or stories using in, on, under, off, up, down, through e.g water play, trains and tunnels,	MGF7 Demonstrate an understanding of movement language in relation to people and objects e.g., move around the room as requested/ give directions to others, maze work, programming a robot/ coding, exploring the movement of vehicles or rides. MGF7i Explore the movement of an object beginning to use terms such as forwards, backwards, quickly, slowly, up, down e.g computer coding work, remote control vehicles, grid work, cars, boats, PE activities. MGF6ii Respond to directional language e.g left, right MGF6iii Give and use directional language.
MGA8 Participate in adult lead repetitive / turn taking games where an adults stops to wait for a response e.g. intensive interaction, action songs	MGM8 Take turns actively e.g., rolling ball to a partner passing objects backwards and forwards. MGS8i Recognise and copy simple patterns e.g., clapping, making sounds	MGS8 Copy simple patterns using objects, beads, bricks, shapes etc	MGF8 Continue, copy and create repeating patterns

Measure

All pupils will:-	Most pupils will:-	Some pupils will:-	A few pupils will:-
MMA1 Comparing measures Experience and encounter objects and materials of differing length, size, capacity and weight through everyday activities e.g. sand and water play, cooking, building blocks, carrying bags.	MMM1 Explore a range of objects of a differing sizes, weights and volume e.g by trying, fitting, storing, matching, comparing, filling and emptying.	MMS1 Make practical use of judgements of size e.g. trying items on, fitting items in gaps, matching, filling and emptying.	MMF1 Solve practical problems for lengths and weights e.g. halving/doubling cooking ingredients.
MMA2 Practical comparison of size Encounter and respond to comparisons of differing length, size and weight.	MMM2 Engage in practical activities to compare size. MM2i Order objects by size in a practical activity.	MMS2 Use practical comparisons to order up to 3 objects by size or length.	MMF2 Compare order and sequence length, weight and capacity e.g. compare volume of 3 containers
MMA3 Use comparative language Experience and respond to language of measure e.g. big/small, long/short, hot/cold.	MGM3 Respond to requests using simple comparative language e.g give me the big ball. MMM3i Begin to use simple comparative language to describe objects e.g. big, small, long, short.	MMS3. Begin to use comparative language when making comparisons during activities such as sand and water play, using construction kits, playing with cars etc e.g. heavy, light, full, empty, long, short.	MMF3 Measure and begin to record weight, length and capacity using non-standard units
MMA4 Passage of time Experience, routines and the passage of time, including waiting times.	MMM4 Appreciate passage of time including waiting times.	MMS4 Compare and describe time using symbols, signs or verbal e.g earlier, later	MMF4 Compare describe and solve practical problems for time i.e. earlier, later. How many jumps in a minute

MMA5 Daily routines Remember simple learned responses over a period of time.	MMM5 Develop an increasing awareness of routines and the passage of time e.g. now, next, later, before, visual timetable	MMS5 Be able to recognise familiar daily routines and be able to talk about what has happened before and what comes after.	MMF5 Responds appropriately to time-based terminology, e.g. we will do that in the morning, where are we going after lunch
MMA6 Calendar Have an awareness of Weeks/months/days/years	MMM6 Understand that weekdays and weekends are different	MMS6 Become familiar with the days of the week and begin to link activities to particular days.	MMF6 Recognise and use language relating to dates including days of the week, months and year