

**Curriculum for Wales
Key Stage 2
Mathematics Programme
of Study
Year 4**

Curriculum for Wales Key Stage 2 Mathematics Programme of Study – Year 4

Numicon is a proven approach to teaching and learning designed to give children the understanding of mathematical ideas and relationships that is essential for successful reasoning and problem-solving. The use of apparatus builds children's mental image of abstract concepts, and helps to develop their understanding of the connections between different areas of mathematics. The resources cover the key mathematical ideas for number, measuring, geometry and statistics that are essential foundations for further mathematical thinking.

We have correlated focus activities from Number, Pattern and Calculating 4 and Geometry, Measurement and Statistics 4 to Year 4 of the Curriculum for Wales Key Stage 2 Mathematics Programme of Study to support teachers in their planning. These correlations will be useful whether schools choose to follow the focus activities in the order outlined in the Teaching Resource Handbook, or prefer to dip in and out of the teaching materials for different topics.

Key:

In this correlation chart, the non-bold objectives are taken from the Welsh Literacy and Numeracy framework.

1.3 in the Pattern and Algebra column represents the Pattern and Algebra strand within Numicon, and refers to Activity Group 1, focus activity 3. Unless otherwise specified, the Year 4 references correspond to Numicon 4.

GMS3: 1.1 in the Measurement column represents the Measurement strand within Geometry, Measurement and Statistics 3 and refers to Activity Group 1, focus activity 1.

Note that early statistics work is covered in appropriate contexts within the Geometry and Measurement strands.

Teaching Materials Featured in this Correlation:

Geometry, Measurement and Statistics 2 Teaching Pack
ISBN 978-0-19-838955-2

Number, Pattern and Calculating 3 Teaching Pack
ISBN 978-0-19-838968-2

Geometry, Measurement and Statistics 3 Teaching Pack
ISBN 978-0-19-838969-9

Number, Pattern and Calculating 4 Teaching Pack
ISBN 978-0-19-838984-2

Geometry, Measurement and Statistics 4 Teaching Pack
ISBN 978-0-19-838985-9

Geometry, Measurement and Statistics 5 Teaching Pack
ISBN 978-0-19-848972-6

Children should be given the opportunities to:	Numicon focus activity reference				
	Number, Pattern and Calculating 4 Teaching Resource Handbook			Geometry, Measurement and Statistics 4 Teaching Resource Handbook	
	Pattern and Algebra	Numbers and the Number System	Calculating	Geometry	Measurement
DEVELOPING NUMERICAL REASONING					
Identify processes and connections					
Transfer mathematical skills to a variety of contexts and everyday situations	Covered throughout Number, Pattern and Calculating 4 activities			2.1 • 3.4 • 4.1	1.2 • 1.3 • 1.5–1.8 • 2.2–2.5 • 3.1–3.6 • 4.1–4.4 • 5.1 • 5.4 • 6.3 • 6.6
Identify the appropriate steps and information needed to complete the task or reach a solution	Covered throughout Number, Pattern and Calculating 4 activities			2.2 • 2.4 • 2.5 • 3.1 • 4.3	1.7 • 4.2 • 4.4 • 5.3 • 5.4 • 6.6
Select appropriate mathematics and techniques to use	Covered throughout Number, Pattern and Calculating 4 activities			1.3 • 1.4	1.1–1.3 • 1.5 • 2.2 • 2.3 • 2.5 • 3.3 • 4.1 • 4.4 • 6.2 • 6.3
Select and use suitable instruments and units of measurement					3.1–3.3 • 3.5 • 5.1
Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator	Covered throughout Number, Pattern and Calculating 4 activities				1.4 • 2.3 • 2.5 • 3.5 • 4.1 • 5.4
Estimate and visualize size when measuring and use the correct units					1.1 • 3.1–3.3 • 3.5 • 5.1 • 5.3
Represent and communicate					
Explain results and procedures clearly using mathematical language	Covered throughout Number, Pattern and Calculating 4 activities			1.1 • 1.3 • 1.4 • 2.3 • 2.4 • 3.1–3.4 • 4.1–4.3	1.6 • 1.8 • 2.1 • 2.3 • 3.1 • 3.3 • 3.5 • 4.4 • 5.1 • 5.3 • 5.4 • 6.2 • 6.3 • 6.6
Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready	Covered throughout Number, Pattern and Calculating 4 activities				2.5 • 5.1 • 5.4 • 6.2
Use appropriate notation, symbols and units of measurement	Covered throughout Number, Pattern and Calculating 4 activities			4.3	1.1–1.3 • 1.6 • 1.7 • 2.3 • 2.5 • 3.3 • 3.5 • 4.2 • 4.3 • 5.2 • 6.2 • 6.3
Select and construct appropriate charts, diagrams and graphs with suitable scales				1.1 • 1.2 • 1.4 • 3.1	1.7 • 3.5

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	Pattern and Algebra	Numbers and the Number System	Calculating	Geometry	Measurement
DEVELOPING NUMERICAL REASONING continued					
Represent and communicate continued					
Recognize, and generalize in words, patterns that arise in numerical, spatial or practical situations	1.1–1.7 • 2.1–2.8 • 5.1–5.6 • 6.1–6.5 • 7.1–7.5		4.2 • 5.7 • 5.8 • 6.6 • 6.8 • 7.1–7.8		
Visualize and describe shapes, movements and transformations				1.1 • 1.4 • 3.1–3.4	
USING NUMBER SKILLS					
Use number facts and relationships					
Read and write numbers to 10 000		1.1–1.7 • 2.1 • 2.4 • 2.6			3.5
Compare and estimate with numbers up to 1000		1.1 • 1.6 • 2.2 • 2.3 • 2.5			3.6
Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6 and 10 and use to solve division problems	4.1–4.6		5.1–5.3 • 5.5 • 6.1–6.8 • 11.1–11.6 • 13.1 • 14.2 • 14.4		
Multiply and divide numbers by 10 and 100			7.1–7.8		1.1 • 2.3 • 3.5 • 3.6 • 4.1 • 5.1 • 5.3 • 5.4
Identify multiples of 2, 3, 4, 5, 6 and 10; use the terms multiple and factor	1.1–1.4 • 4.1–4.6 • 7.3		7.1–7.8		
Fractions, decimals, percentages and ratio					
Halve 3-digit numbers in the context of number, money and measures		6.8 • 11.1 • 11.2		5.3	
Find fractional quantities using known table facts, e.g. $\frac{1}{6}$ of 30 cm	5.2	11.1 • 11.2 • 11.5			5.2
Recognize fractions that are several parts of a whole, e.g. $\frac{2}{3}$, $\frac{3}{10}$	5.1–5.4				5.1–5.4
Calculate using mental and written methods					
Find differences within 1000			1.5 • 1.6 • 2.6 • 4.1–4.7 • 9.1–9.6 • 14.1 • 14.4		5.1
Add a 2-digit number to, and subtract a 2-digit number from, a 3-digit number using an appropriate mental or written method			1.5–1.7 • 2.5 • 2.6 • 3.1–3.7 • 4.1–4.7 • 8.1–8.7 • 9.1–9.6 • 14.1–14.4		4.1

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USING NUMBER SKILLS continued					
Calculate using mental and written methods continued					
Use mental strategies to multiply and divide 2-digit numbers by a single digit number			5.1–5.8 • 6.1–6.8 • 10.1–10.4 • 11.1–11.3 • 11.5 • 11.6 • 14.2–14.4		1.4 • 5.3
Identify negative whole numbers on a number line		4.1–4.6			
Order whole numbers between -10 and 10		4.4			
Estimate and check					
Check answers using inverse operations	2.1–2.8		1.4–1.7 • 4.2 • 4.6 • 4.7 • 9.2–9.6 • 13.1 • 13.4 • 14.1–14.4		
Estimate by rounding to the nearest 10 or 100		3.1–3.7	3.3 • 4.3 • 4.7 • 8.4 • 8.5 • 8.7 • 9.1 • 9.3 • 12.4 • 12.6 • 13.5		2.2 • 2.3 • 2.5 • 4.1
Manage money					
Use money to pay for items up to £10 and calculate the change			1.4 • 3.1 • 3.2 • 4.1 • 4.3 • 5.5 • 8.7 • 9.5 • 12.5 • 13.4 • 14.1–14.4		
Order and compare items up to £100					2.1 • 2.2 • 2.6 • 5.4
Add and subtract totals less than £10 using correct notation, e.g. £6.85 – £2.76			1.4 • 3.1 • 3.2 • 4.1 • 4.3 • 5.5 • 8.7 • 9.5 • 12.5 • 13.4 • 14.1–14.4		2.5
Manage money, compare costs from different retailers and determine what can be bought within a given budget			11.6 • 14.1–14.4		

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USING MEASURING SKILLS					
Length, weight/mass, capacity					
Measure and calculate the perimeter of squares and rectangles					6.1 • 6.2 • 6.6
Select and use appropriate standard units to estimate and measure length, weight/mass and capacity	1.7	1.6 • 3.1–3.4 • 6.1 • 6.2 • 8.1 • 8.2 NPC3: 6.1–6.9			3.1–3.6 • 4.1–4.4 • 5.1–5.4
Measure on a ruler to the nearest mm and record using a mix of units, <i>e.g. 1 cm 3 mm</i>					6.1 • 6.2 • 6.6
Use weighing scales with divisions to weigh objects to the nearest 5 g, 10 g, 25 g or 100 g		1.6 • 3.1 • 3.2 • 6.1 • 6.2 • 8.1 • 8.2			
Measure capacities to the nearest 50 ml or 100 ml		3.1 • 3.2 • 6.1 • 6.2			
Convert metric units of length to smaller units, <i>e.g. cm to mm, m to cm, km to m</i>					3.2 • 3.3 • 3.6
Choose appropriate metric units to measure length, weight/mass and capacity	1.7	1.6			3.1–3.6 • 4.1–4.4 • 5.1–5.4
Time					
Tell the time to the nearest minute on analogue clocks					1.1
Read hours and minutes on a 24-hour digital clock					1.6 • 1.7
Time and order events in seconds					1.1 • 3.5
Use calendars to plan events					1.4
Calculate start times, finish times and durations using 5-minute intervals					1.1–1.5 GMS3: 1.1–1.5
Convert between 12- and 24-hour clock times					1.6 • 1.7
Estimate the number of minutes everyday activities take to complete		3.1			1.1

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USING MEASURING SKILLS continued					
Temperature					
Take temperature readings using thermometers and interpret readings above and below 0°C		4.2 • 4.4			
Area and volume Angle and position					
Recognize volume in practical contexts					5.1 • 5.2 • 5.4
Use a protractor to check if an angle is more or less than a right angle					GMS5: 1.2
Use eight compass points to describe direction				GMS3: 4.2 • 4.3	
USING GEOMETRY SKILLS					
Shape					
Recognize, classify and sketch polygons with up to eight sides, including irregular shapes				1.1–1.4 • 3.1–3.4	6.1
Recognize and classify 3D shapes, using their own criteria				GMS3: 1.3 • 3.1–3.5	
Construction					
Draw lines to the nearest millimetre					GMS3: 3.3 • 3.4
Recognize and draw perpendicular and parallel lines				GMS3: 1.1 • 1.2 • 1.3	
Movement					
Draw lines of symmetry				2.1–2.6 • 4.4	
Draw the reflection of a shape in a horizontal or vertical line				GMS2: 3.2	
USING ALGEBRA SKILLS					
Number sequences					
Explore sequences of positive whole numbers involving addition and subtraction in 2s, 3s, 4s, 5s, 6s, 8s and 10s from different starting points	1.1–1.7 • 5.1–5.6				
Write the next two (or more) terms in sequences that involve addition or subtraction	2.1 • 5.1 • 5.4 • 5.6				

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USING ALGEBRA SKILLS continued					
Functions and graphs					
Use one and two step function machines to generate input and output using all four operations; express, in words, the operations from function machines	2.1–2.8 • 3.1–3.8	1.1–1.7 • 3.7 • 5.5 • 5.6	1.1–1.7 • 2.1–2.6 • 3.1–3.7 • 4.1–4.7 • 5.1–5.5 • 6.1–6.5 • 7.1–7.8 • 10.1–10.3 • 11.1–11.3 • 12.1 • 13.1 • 14.1 • 14.4 • GMS3: 13.1–13.6 • 14.1–14.6 • 15.1–15.8		2.1–2.5
Equations and inequalities					
Use > to describe whether a number is less than or greater than another	3.1	2.1–2.6 • 3.4			2.6
Find an 'unknown' in two step equations, e.g. $4x \square + 7 = 25$	3.3 • 3.4		1.2		
USING DATA SKILLS					
Collect and record data Present and analyse data Interpret results					
Represent data using: – lists, tally charts, tables and diagrams – bar charts and bar line graphs labeled in 2s, 5s and 10s – pictograms where one symbol represents more than one unit using a key – Venn and Carroll diagrams	6.1–6.5 • 7.1–7.6	3.6		1.2 • 3.1 1.1 • 1.2 • 1.4	2.4 • 2.5 • 3.2 • 3.5 3.5 GMS3: 3.6
Extract and interpret information from charts, timetables, diagrams and graphs			3.7 • 8.5 • 9.6 • 14.1–14.4		1.8 • 3.5

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