

Inspire Maths: Curriculum for Wales KS2 Programme of Study – Year 4

In this correlation chart, objectives taken from the National Literacy and Numeracy Framework (LNF) will appear as normal text. Objectives that have been extended from the LNF or that are specific Mathematical Development Area of Learning skills appear in bold.

Additional activities can be found in *Inspire Maths Online* on Oxford Owl (www.oxfordowl.co.uk).

Curriculum for Wales KS2 Programme of Study Year 4 requirements	<i>Inspire Maths</i> Pupil Textbooks 4A and 4B	Notes and Additional Activities
Developing numerical reasoning		
Identifying processes and connections		
Learners are able to:		
• transfer mathematical skills to a variety of contexts and everyday situations	This skill is covered throughout <i>Inspire Maths</i> .	
• identify the appropriate steps and information needed to complete the task or reach a solution	This skill is covered throughout <i>Inspire Maths</i> .	
• select appropriate mathematics and techniques to use	This skill is covered throughout <i>Inspire Maths</i> .	
• select and use suitable instruments and units of measurement	This skill is covered throughout <i>Inspire Maths</i> .	
• choose an appropriate mental or written strategy and know when it is appropriate to use a calculator	This skill is covered throughout <i>Inspire Maths</i> .	
• estimate and visualise size when measuring and use the correct units	This skill is covered throughout <i>Inspire Maths</i> .	
Represent and communicate		
Learners are able to:		
• explain results and procedures clearly using mathematical language	This skill is covered throughout <i>Inspire Maths</i> .	
• refine informal methods of recording written calculations,	This skill is covered throughout <i>Inspire Maths</i> .	

moving to formal methods of calculation when developmentally ready		
<ul style="list-style-type: none"> select and construct appropriate charts, diagrams and graphs with suitable scales 	PB3A Unit 5: Multiplying by 6, 7, 8 and 9, p 73 PB3B Unit 11: Length, Mass and Volume, pp 36, 42 PB3B Unit 13: Bar Graphs, pp 56–67 PB3B Unit 16: Angles, p 121 PB3B Unit 17: Perpendicular and Parallel Lines, pp 131, 142 PB4A Unit 4: Tables and Line Graphs, pp 71–86	
<ul style="list-style-type: none"> recognise, and generalise in words, patterns that arise in numerical, spatial or practical situations 	PB4A Unit 1: Whole Numbers (1), pp 10, 17 PB4A Unit 3: Whole Numbers (3), pp 69 PB4A Unit 9: Decimals (1), p 30 PB4A Unit 13: Symmetry, pp 127–133	Recognising patterns and applying them to problem solving is a skill, which is used throughout <i>Inspire Maths</i> . These page references show specific instances in PB4A and PB4B where patterns are explicitly referenced.
<ul style="list-style-type: none"> visualise and describe shapes, movements and transformations 	PB2B Unit 17: Shapes and Patterns, pp 129–131 PB3B Unit 16: Angles, pp 120–122, 125–126 PB4A Unit 7: Perpendicular and Parallel Lines, pp 137, 141 PB4A Unit 8: Squares and Rectangles, pp 142–147	
Review		
Learners are able to:		
<ul style="list-style-type: none"> select from an increasing range of checking strategies to decide if answers are reasonable 	This skill is covered throughout <i>Inspire Maths</i> .	
<ul style="list-style-type: none"> interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible 	This skill is covered throughout <i>Inspire Maths</i> .	
<ul style="list-style-type: none"> draw conclusions from data and recognise that some conclusions may be misleading or uncertain 	This skill is covered throughout <i>Inspire Maths</i> .	

Using number skills		
Use number facts and relationships		
Learners are able to:		
• read and write numbers to 10 000	PB3A Unit 1: Numbers to 10 000, pp 6–24	
• compare and estimate with numbers up to 1000	PB2A Unit 1: Numbers to 1000, pp 14–18	NC Activity 3.1 NC Activity 3.2
• use mental strategies to recall 2, 3, 4, 5, 6 and 10 multiplication tables and use to solve division problems	PB2A Unit 5: Multiplying by 2 and 3, pp 102–105 PB2A Unit 6: Multiplying by 4, 5 and 10, pp 126–131 PB2A Unit 7: Using Models: Multiplication and Division, pp 132–136 PB2A Unit 8: Length, pp 152–153 PB3A Unit 9: Mental Calculations, pp 134–136 PB4A Unit 3: Whole Numbers (3), pp 57–62	NC Activity 4.2
• multiply and divide numbers by 10 and 100	PB2A Unit 6: Multiplying by 4, 5 and 10, pp 122–125 PB5A Unit 2: Whole Numbers (2), pp 33–49	Multiplying and dividing by 10 and 100 is covered in PB5A, however by this stage in <i>Inspire Maths</i> children are expected to know numbers to 10 million, so the numbers used in this unit quickly become larger.
• identify multiples of 2, 3, 4, 5, 6 and 10; use the terms multiple and factor	PB2A Unit 5: Multiplying by 2 and 3, pp 102–105 PB2A Unit 6: Multiplying by 4, 5 and 10, pp 126–131 PB3A Unit 5: Multiplying by 6, 7, 8 and 9, pp 62–64 PB4A: Unit 2: Whole Numbers (2), pp 36–44	
Fractions, decimals, percentages and ratio		
Learners are able to:		
• halve 3-digit numbers in the context of number, money and measures		
• find fractional quantities using known table facts, e.g. $\frac{1}{6}$ of 30cm	PB4A Unit 5: Fractions, pp104–107	
• recognise fractions that are several parts of a whole, e.g. $\frac{2}{3}$, $\frac{3}{10}$	PB4A Unit 5: Fractions, pp104–107, 110–115	

Calculate using mental and written methods

Learners are able to:

- find differences within 1000

PB2A Unit 2: Addition and Subtraction within 1000, pp 31–34, 44–60
PB3A Unit 3: Subtraction of Numbers within 10 000, pp 37–39

- add a 2-digit number to, and subtract a 2-digit number from, a 3-digit number using an appropriate mental or written method

PB2A Unit 2: Addition and Subtraction within 1000, pp 38–39, 56–58
PB2A Unit 3: Using Models: Addition and Subtraction, pp 69–70

- use mental strategies to multiply and divide 2-digit numbers by a single digit number

PB3A Unit 9: Mental Calculations, pp 132–136

- **identify negative whole numbers on a number line**

NC Activity 5.2

- **order whole numbers between -10 and 10**

NC Activity 5.2

Estimate and check

Learners are able to:

- check answers using inverse operations

NC Activity 4.1

- estimate by rounding to the nearest 10 or 100

PB4A Unit 2: Whole Numbers (2), pp 32–35

NC Activity 4.10

Manage money

Learners are able to:

- use money to pay for items up to £10 and calculate the change

PB3B Unit 10: Money, pp 18–19

• order and compare items up to £100	PB3B Unit 10: Money, pp 16–17, 23–26	
• add and subtract totals less than £10 using correct notation, e.g. £6.85 – £2.76	PB3B Unit 10: Money, pp 6–10	
• manage money, compare costs from different retailers and determine what can be bought within a given budget	PB3B Unit 10: Money, pp 14–19	
Using measuring skills		
Length, weight/mass, capacity		
Learners are able to:		
• measure and calculate the perimeter of squares and rectangles	PB3B Unit 18: Area and Perimeter, pp 163, 165, 166, 168, 172 PB4B Unit 12: Area and Perimeter, pp 98–100, 102–104, 105–116	NC Activity 4.8
• select and use appropriate standard units to estimate and measure length, weight/mass and capacity	PB3B Unit 11: Length, Mass and Volume, pp 29, 33–36, 40–42, 44	NC Activity 4.10
• measure on a ruler to the nearest mm and record using a mix of units, e.g. 1cm 3mm		NC Activity 3.7 NC Activity 4.7
• use weighing scales with divisions to weigh objects to the nearest 5g, 10g, 25g or 100g	PB3B Unit 11: Length, Mass and Volume, pp 33–35	
• measure capacities to the nearest 50ml or 100ml	PB3B Unit 11: Length, Mass and Volume, pp 38–42	
• convert metric units of length to smaller units, e.g. cm to mm, m to cm, km to m	PB3B Unit 11: Length, Mass and Volume, pp 27–33, 36–39, 42–43 PB5B Unit 8: Measurements, pp 37–39	NC Activity 4.7
• choose appropriate metric units to measure length, weight/mass and capacity	PB3B Unit 11: Length, Mass and Volume, pp 29–30, 33, 36, 38, 42	NC Activity 4.7

Time		
Learners are able to:		
• tell the time to the nearest minute on analogue clocks	PB3B Unit 15: Time, pp 91–94	
• read hours and minutes on a 24-hour digital clock		
• time and order events in seconds	PB4B Unit 11: Time, pp 81–85	
• use calendars to plan events		NC Activity 4.11
• calculate start times, finish times and durations using 5-minute intervals	PB4B Unit 11: Time, pp 89–97	
• convert between 12- and 24-hour clock times	PB4B Unit 11: Time, pp 86–89	
• estimate the number of minutes everyday activities take to complete		NC Activity 3.9 NC Activity 4.11
Temperature		
Learners are able to:		
• take temperature readings using thermometers and interpret readings above and below 0°C		NC Activity 2.10 NC Activity 5.2
Area and volume/Angle and position		
Learners are able to:		
• recognise volume in practical contexts	PB3B Unit 11: Length, Mass and Volume, pp 38–42	
• use a protractor to check if an angle is more or less than a right angle	PB4A Unit 6: Angles, pp 119–121	
• use eight compass points to describe direction	PB4A Unit 6: Angles, pp 127–132	

Using geometry skills		
Shape		
Learners are able to:		
<ul style="list-style-type: none"> • recognise, classify and sketch polygons with up to eight sides, including irregular shapes 	PB3B Unit 16: Angles, pp 120–122, 125–126 PB4A Unit 7: Perpendicular and Parallel Lines, pp 137, 141 PB4A Unit 8: Squares and Rectangles, pp 142–152	NC Activity 4.16
<ul style="list-style-type: none"> • recognise and classify 3D shapes, using their own criteria 	PB2B Unit 17: Shapes and Patterns, pp 129–131	NC Activity 5.21
Construction		
Learners are able to:		
<ul style="list-style-type: none"> • draw lines to the nearest millimetre 		
<ul style="list-style-type: none"> • recognise and draw perpendicular and parallel lines 	PB3B Unit 17: Perpendicular and Parallel Lines, pp 127–148 PB4A Unit 7: Perpendicular and Parallel Lines, pp 133–141 PB4A Unit 8: Squares and Rectangles, pp 142–145	
Movement		
Learners are able to:		
<ul style="list-style-type: none"> • draw lines of symmetry 		
<ul style="list-style-type: none"> • draw the reflection of a shape in a horizontal and vertical line 	PB4B Unit 13: Symmetry, pp 130–134	
Using algebra skills		
Number sequences		
Learners are able to:		
<ul style="list-style-type: none"> • explore sequences of positive whole numbers involving 	PB2A Unit 1: Numbers to 1000, pp 8–9, 19–25	

addition and subtraction in 2s, 3s, 4s, 5s, 6s, 8s and 10s from different starting points	PB3A Unit 1: Numbers to 10 000, pp 21–24	
• write the next two (or more) terms in sequences that involve addition or subtraction	PB2A Unit 1: Numbers to 1000, pp 8–9, 19–25 PB3A Unit 1: Numbers to 10 000, pp 21–24 PB4A Unit 9: Decimals, p 30	
Functions and graphs		
Learners are able to:		
• use one- and two-step function machines to generate input and output using all four operations; express, in words, the operations of function machines		
Equations and inequalities		
Learners are able to:		
• use < > to describe whether a number is less than or greater than another		NC Activity 2.3 can be extended to cover numbers up to 10 000.
• find an ‘unknown’ in two-step equations, e.g. $4 \times \square + 1 = 25$		
Using data skills		
Collect and record data/Present and analyse data/Interpret results		
Learners are able to:		
• represent data using: <ul style="list-style-type: none"> ○ lists, tally charts, tables and diagrams ○ bar charts and bar line graphs labelled in 2s, 5s and 10s ○ pictograms where one symbol represents more than one unit using a key ○ Venn and Carroll diagrams 	PB2A Unit 9: Mass, pp 157, 166, 171 PB2B Unit 13: Time, p 77 PB2B Unit 14: Volume, p 87 PB2B Unit 15: Graphs, pp 95–109 PB3A Unit 5: Multiplying by 6, 7, 8 and 9, p 73 PB3B Unit 11: Length, Mass and Volume, pp 36, 42 PB3B Unit 13: Bar Graphs, pp 56–67 PB3B Unit 16: Angles, p 121	

	PB3B Unit 17: Perpendicular and Parallel Lines, pp 131, 142 PB4A Unit 4: Tables and Line Graphs, pp 71–86	
<ul style="list-style-type: none"> extract and interpret information from charts, timetables, diagrams and graphs 	PB2B Unit 15: Graphs, pp 95–109 PB3A Unit 5: Multiplying by 6, 7, 8 and 9, p 73 PB3B Unit 13: Bar Graphs, pp 56–67 PB4A Unit 4: Tables and Line Graphs, pp 71–86	

Inspire Maths Pupil Textbooks 4A and 4B additionally cover:

<ul style="list-style-type: none"> recognising, comparing, addition and subtraction of numbers up to 100 000 	PB4A Unit 1: Whole Numbers (1), pp 8–22
<ul style="list-style-type: none"> understanding mixed numbers, improper fractions, converting fractions, adding and subtracting fractions 	PB4A Unit 5: Fractions, pp 87–103
<ul style="list-style-type: none"> identifying horizontal lines, and stating that a vertical line is perpendicular to a horizontal line it meets 	PB4A Unit 7: Perpendicular and Parallel Lines, pp 139–141
<ul style="list-style-type: none"> stating that a square has four equal sides and four right angles stating that the opposite sides of a square are parallel stating that the opposite sides of a rectangle are equal and parallel stating that a rectangle has four right angles differentiating a square from a rectangle and vice versa solving simple geometrical problems using properties of squares and rectangles 	PB4A Unit 8: Squares and Rectangles, pp 142–147
<ul style="list-style-type: none"> finding unknown angles and sides of squares and rectangles 	PB4A Unit 8: Squares and Rectangles, pp 148–151
<ul style="list-style-type: none"> understanding, comparing and rounding decimals, and expressing fractions as a decimal 	PB4B Unit 9: Decimals (1), pp 8–47
<ul style="list-style-type: none"> adding, subtracting, multiplying, dividing and estimating decimals 	PB4B Unit 10: Decimals (2), pp 48–80
<ul style="list-style-type: none"> finding the area and perimeter of a composite shape made up of squares and/or rectangles 	PB4B Unit 12: Area and Perimeter, pp 105–116
<ul style="list-style-type: none"> recognising and making tessellations, and tessellating a given unit shape 	PB4B Unit 14: Tessellations, pp 135–144