Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Developing mathematical proficiency	**Conceptual understanding**	I can make connections so that basic mathematical concepts can be transferred during play and classroom activities.	I can make connections so that mathematical concepts can be transferred during play and classroom activities.	I can make connections so that mathematical concepts can be built on and deepened.	I can make connections so that mathematical concepts can be built on and deepened.	I can make connections so that mathematical concepts can be built on and deepened.
				I can draw on my understanding of the basic structures of mathematics and can apply them in different contexts.	I can draw on my understanding of the basic structures of mathematics and can apply them in different contexts.	I can draw on my understanding of the basic structures of mathematics and can apply them in different contexts.
				I can explain and express concepts, and find examples (or non-examples).	I can explain and express concepts, and find examples (or non-examples).	I can explain and express concepts, and find examples (or non-examples).
		I can understand and use basic mathematical concepts in a variety of ways.	I can represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract.	I can represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract.	I can represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract.	I can represent a concept in different ways, flowing between different representations including verbal, concrete, visual, digital and abstract.
		I can explore answers within the context of the problem and I am beginning to consider whether answers are sensible.	I can interpret answers within the context of the problem and consider whether answers are sensible.	I can interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.	I can interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.	I can interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.
	Logical reasoning	I can use everyday and mathematical language to talk about my own ideas and choices.	I can use everyday and mathematical language to talk about and explain my own ideas and choices.	I can construct and develop a mathematical argument.	I can construct and develop a mathematical argument.	I can construct and develop a mathematical argument.
				I can justify my procedures and predictions.	I can justify my procedures, predictions and conjectures.	I can justify my procedures, predictions and conjectures.
			I can verify results and solutions.	I can verify results and solutions.	I can verify and prove results and solutions.	I can verify and prove results and solutions.
				I can explain results and procedures precisely using appropriate mathematical language.	I can explain results and procedures precisely using appropriate mathematical language.	I can explain results and procedures precisely using appropriate mathematical language.
	Fluency	I am beginning to apply relevant facts and techniques.	I can identify relevant facts and techniques in order to apply an efficient method.	I can use firmly established, memorable and usable facts and techniques in order to apply the most efficient methods.	I can use firmly established, memorable and usable facts and techniques in order to apply the most efficient methods.	I can use firmly established, memorable and usable facts and techniques in order to apply the most efficient methods.
			I can use checking strategies to decide if answers are reasonable.	I can select and apply appropriate checking strategies.	I can select and apply appropriate checking strategies.	I can select and apply appropriate checking strategies.
				I can use a calculator effectively and efficiently to carry out calculations.	I can use a scientific calculator effectively and efficiently to carry out calculations using the available range of function keys.	I can use a scientific calculator effectively and efficiently to carry out calculations using the available range of function keys.

 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Developing mathematical proficiency	**Strategic competence**	I can select the appropriate equipment and resources to help me.	I can identify the required information, and select appropriate equipment and resources.	I can recognise, model and apply the underlying mathematical structures and ideas within problems, in order to formulate and solve them.	I can recognise, model and apply the underlying mathematical structures and ideas within problems, in order to formulate and solve them.	I can recognise, model and apply the underlying mathematical structures and ideas within problems, in order to formulate and solve them.
		I can suggest what I might need to do to complete the task or reach a solution.	I can identify steps to complete the task or reach a solution.	I can identify, measure or obtain required information to complete the task.	I can identify, measure or obtain required information to complete the task.	I can identify, measure or obtain required information to complete the task.
				I can identify what further information might be required and select what information is most appropriate.	I can identify what further information might be required and select what information is most appropriate.	I can identify what further information might be required and select what information is most appropriate.
		I can explore appropriate mathematics and techniques to use.	I can select appropriate mathematics and techniques to use.	I can select, trial and evaluate a variety of possible approaches and break problems into a series of tasks.	I can select, trial and evaluate a variety of possible approaches and break complex problems into a series of tasks.	I can select, trial and evaluate a variety of possible approaches and break complex problems into a series of tasks.
				I can prioritise and organise the relevant steps needed to complete the task or reach a solution.	I can prioritise and organise the relevant steps needed to complete the task or reach a solution.	I can prioritise and organise the relevant steps needed to complete the task or reach a solution.
			I can choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.	I can choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.	I can choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.	I can choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
	Communicating with symbols			I can communicate my answers using correct mathematical form.	I can communicate my answers using correct mathematical form.	I can communicate my answers using correct mathematical form.
			I can use appropriate notation, symbols and units of measurement.	I can use appropriate notation, symbols and units of measurement.	I can use appropriate notation, symbols and units of measurement, including compound measures.	I can use appropriate notation, symbols and units of measurement, including compound measures.
		I can explore informal, personal methods of recording, moving towards using symbols.	I can devise and refine informal, personal methods of recording, moving to using words and symbols in number sentences.	I can refine methods of recording calculations.	I can refine methods of recording calculations.	I can refine methods of recording calculations.

WG40666 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Understanding the number system helps us to represent and compare relationships between numbers and quantities	**The number system**	I can count reliably, forwards and backwards, to beyond 10.	I can read, write and interpret numbers using figures and words up to at least 1000.	I can read and write numbers to 1 million and numbers to 3 decimal places.	I can read and write numbers of any size.	I can recognise and define limitations on accuracy of measurements, *e.g. upper and lower bounds.*
		I can notice, read and write numbers from 0 to beyond 10, and relate a number to its respective quantity.		I can use the terms square and square root.	I can use the terms cube, cube root and reciprocal.	
		I can compare and order numbers beyond 10.	I can compare, round and estimate with numbers up to 100.	I can estimate by rounding to the nearest 10, 100, 1000 or whole number.	I can show awareness of the need for standard form and its representation on a calculator.	
		I can demonstrate an understanding of one-to-one correspondence by matching pairs of objects or pictures.	I can count in different steps of uniform size, and recognise odd and even numbers.		I can use and interpret numbers in standard form within calculations.	
		I can use my visual sense of number to make estimates and comparisons.	I can check subtraction using addition.		I can use rounding to estimate and check answers.	
		I can explore estimates by using counting or measuring.	I can check halving using doubling.		I can present answers to a given number of decimal places or significant figures.	
					I can make and justify estimates and approximations of calculations.	
					I can choose the appropriate degree of accuracy to present answers.	
	Relationships within the number system		I can use halves and quarters.	I can use understanding of simple fraction, decimal and percentage equivalences, *e.g. find 25% of 60cm and know that this is equivalent to ¼ of 60cm*.	I can use equivalence of fractions, decimals and percentages to select the most appropriate one for a calculation.	
			I can halve 2-digit numbers in the context of number, money and measures.	I can simplify a calculation by using fractions in their simplest terms.	I can recognise that some fractions are recurring decimals, *e.g. ⅓ is 0.333*.	
			I can find fractional quantities linked to known multiplication facts, e.g. *⅓ of 18, ⅕ of 15*.	I can use and interpret different representations of fractions, *e.g. mixed numbers and improper fractions*.	I can use powers and understand the importance of powers of 10.	
				I can use equivalence of fractions, decimals and percentages to compare proportions.		

 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Understanding the number system helps us to represent and compare relationships between numbers and quantities	**Calculation**	I can understand and use the concept of 'one more' in my play.	I can find differences within at least 100.	I can use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems.	I can use the four operations and the connections between them, *e.g. apply division as the inverse of multiplication*.	I can use multipliers as an efficient method when working with percentages, *e.g. multiply by 1.2 to increase an amount by 20%*.
		I can understand and use the concept of 'one less' in my play.	I can use mental strategies to add and subtract at least 2-digit numbers.	I can multiply numbers and decimals by a multiple of 10, *e.g. 15 x 30, 1.4cm x 20*.	I can use efficient written methods to add and subtract numbers and decimals of any size, including a mixture of large and small numbers with differing numbers of decimal places.	I can use and understand the idea of reverse percentage to find an original quantity.
		I can combine two groups of objects to find 'how many altogether?'.	I can use partitioning to double and halve 2-digit numbers.	I can halve 3-digit numbers in the context of number, money and measures.	I can use appropriate strategies for multiplication and division, including application of known facts to derive others, *e.g. use 7 x 6 to derive 0.7 x 6*.	
		I can take away objects to find 'how many are left?'.	I can use mental strategies to recall number facts within 20.	I can calculate a percentage, fraction and decimal of any quantity with a calculator where appropriate.	I can use efficient methods for multiplication and division of whole numbers and decimals, including decimals such as 0.6 or 0.06.	
		I can find and use number facts to compose a number (up to 10) in different ways.	I can recall 2, 3, 4, 5 and 10 multiplication tables and use to solve multiplication and division problems.	I can use ratio and proportion to calculate quantities.	I can use the order of operations including brackets and powers.	
			I can multiply numbers by 10.	I can calculate percentage quantities based on 10%, *e.g. 20%, 5%, 15%*.	I can calculate a percentage increase or decrease.	
			I can check multiplication using repeated addition.	I can add and subtract numbers using whole numbers and decimals.	I can express one quantity as a percentage of another.	
				I can multiply 2- and 3-digit numbers by a 2-digit number.	I can calculate percentages of quantities using non-calculator methods where appropriate.	
				I can divide 3-digit numbers by a 2-digit number.	I can use ratio and proportion including map scales.	
				I can use a range of strategies to check calculations including the use of inverse operations, equivalent calculations and the rules of divisibility.		

 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Understanding the number system helps us to represent and compare relationships between numbers and quantities	**Financial literacy**	I can exchange money for items and use the language of money.	I can use different combinations of money to pay for items up to at least £2 and calculate the change.	I can add and subtract totals less than £100 using correct notation, *e.g. £28.18 + £33.45*.	I can calculate using foreign money and exchange rates.	I can understand and demonstrate the real-life process of foreign exchange.
		I can demonstrate an awareness of the purpose of money through role play and in real-life situations.	I can order and compare items up to £10.	I can manage money, compare costs from different retailers and determine what can be bought within a given budget.	I can make informed decisions relating to discounts and special offers.	
				I can make comparisons between prices and understand which is best value for money.		
				I can use profit and loss in buying and selling calculations.	I can carry out calculations relating to VAT, saving and borrowing.	I can understand and calculate income tax and understand the implications of taxation.
				I can realise that budgeting is important.	I can appreciate the basic principles of budgeting, saving (including understanding compound interest) and borrowing.	
				I can understand the advantages and disadvantages of using bank accounts.	I can understand the advantages and disadvantages of using bank accounts, including bank cards.	
				I can plan and track money and savings by keeping accurate records.	I can understand the risks involved in different ways of saving and investing.	
					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.	

WG40666 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Learning about geometry helps us understand shape, space and position, and learning about measurement helps us quantify in the real world	**Measurement**	I can use non-standard units of measure to discuss my sense of size.	I can use non-standard units to measure.	I can read and interpret scales or divisions on a range of measuring instruments.	I can represent and use compound measures, using standard units.	I can understand and use a variety of compound measures.
		I can use direct comparisons with: • length, height and distance, *e.g. longer/shorter than* • weight/mass, *e.g. heavier/lighter than* • capacity, *e.g. holds more/less than*.	I can progress to use standard units of measure: • length: I can measure on a ruler to the nearest 0.5cm • weight/mass: I can use 5g, 10g and 100g weights to measure and compare the mass of objects • capacity: I can read scale to to the nearest 100ml.	I can record measurements in different ways, *e.g. 1.3kg = 1kg 300g, 4.2cm = 4cm 2mm.*	I can read and interpret scales on a range of measuring instruments.	
				I can convert metric units of length to smaller units, *e.g. cm to mm, m to cm, km to m*.	I can demonstrate an understanding of the relationship between a formula representing a measurement and the units used.	
				I can use the language of imperial units in daily use, *e.g. miles, pints*.	I can use the common units of measure, convert between related units of the metric system and carry out calculations.	
					I can use rough metric equivalents of imperial units in daily use.	
		I can anticipate events related to elements of daily routines and use the terms ‘before’ and ‘after’.	I can use the concept of time in terms of my daily and weekly activities and the seasons of the year.	I can read and use analogue and digital clocks.	I can interpret fractions of a second appropriately.	
		I can use the basic concept of time in terms of my daily activities.	I can use standard units of time to read ‘o’clock’, ‘half past’, ‘quarter past’ and ‘quarter to’ using both analogue and 12-hour digital clocks.	I can use and interpret calendars, timetables and schedules to plan events and activities, and make calculations as part of the planning journey.		
		I can demonstrate a developing sense of how long tasks and everyday events take.		I can carry out practical activities involving timed events and explain which unit of time is the most appropriate.		
				I can time events in minutes and seconds, and order the results.		
				I can estimate how long a journey takes.	I can use timetables and time zones to calculate travel time.	
				I can measure and record temperatures involving positive and negative readings.	I can convert temperatures between appropriate temperature scales.	

 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Learning about geometry helps us understand shape, space and position, and learning about measurement helps us quantify in the real world	**Shape and space**	I can discuss the properties of shapes that I use in my everyday learning.	I can discuss the properties of two-dimensional and three-dimensional shapes that I use in my everyday learning.	I can recognise that perimeter is the distance around a shape.	I can find circumferences of circles using my understanding of π.	I can apply proportional change to two-dimensional designs.
				I can measure and calculate perimeter.	I can calculate the areas of two-dimensional simple and compound shapes, including circles.	
				I can find areas by counting squares, progressing to calculating the area of squares and rectangles using formulae.	I can apply the formulae for the volume of simple prisms.	
				I can use mathematical language to accurately describe two-dimensional and three-dimensional shapes.		
				I can find volumes by counting and other practical methods.		
	Position	I can explore movements and directions.	I can use the language of position.	I can use grid references to specify location.		
		I can describe position.	I can use the four compass points to describe directions.	I can use coordinates to find position.		
	Angle		I can recognise half and quarter turns, clockwise and anti-clockwise.	I can use angle as a measure of rotation.	I can measure and draw angles.	I can measure and draw angles.
					I can apply understanding of bearings and scale to interpret maps and plans, and to create plans and drawings to scale.	

WG40666 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Learning that statistics represent data and that probability models chance helps us make informed inferences and decisions	**Collecting data**	I have collected data found in my environment.	I can collect information by voting or sorting.	I can collect relevant data to answer posed questions.	I can collect own data for a survey, *e.g. through designing a questionnaire*. I can plan how to collect data to test a simple hypotheses. I can collect both quantitative and qualitative data.	I can collect data in a suitable way according to my hypothesis.
	Representing data	I can sort and match sets of objects or pictures by recognising similarities and can communicate my choices.	I can sort and classify objects using more than one criterion.	I can select and construct appropriate charts, diagrams and graphs with suitable scales.	I can select and construct appropriate charts, diagrams and graphs with suitable scales.	I can select and construct appropriate charts, diagrams and graphs with suitable scales.
		I can present work orally, pictorially and in written form, and use a variety of ways to represent collected 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 including: • 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.	I can represent data using: • lists, tally charts, tables, diagrams and frequency tables • bar charts, grouped data charts, line graphs and conversion graphs • pictograms where one symbol represents more than one unit using a key • Venn and Carroll diagrams.	I can construct frequency tables for sets of data in equal class intervals, selecting groups as appropriate.	
		I can use mark-making to begin to record collections.			I can construct and interpret graphs and diagrams (including pie charts) to represent discrete or continuous data, choosing an appropriate scale. I can construct graphs to represent data including scatter diagrams to investigate correlation.	

 Digital ISBN 978 1 80038 902 1

Numeracy Framework

Strand	Element	Progression step 1	Progression step 2	Progression step 3	Progression step 4	Progression step 5
Learning that statistics represent data and that probability models chance helps us make informed inferences and decisions	**Interpreting data**	I can interpret information presented in charts and diagrams, and draw appropriate conclusions.	I can extract and interpret information presented in charts, timetables, diagrams and graphs.	I can extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).	I can interpret graphs that describe real-life situations, including those used in the media, recognising that some graphs may be misleading.	I can interpret graphs that describe real-life situations, including those used in the media, recognising that some graphs may be misleading.
					I can interpret mathematical information; drawing inferences from graphs, diagrams and data, including discussion on limitations of data.	I can interpret mathematical information; drawing inferences from graphs, diagrams and data, including discussion on limitations of data.
			I can draw conclusions from data and recognise that some conclusions may be misleading or uncertain.	I can draw conclusions from data and recognise that some conclusions may be misleading or uncertain.	I can draw conclusions from data and recognise that some conclusions may be misleading or uncertain.	I can draw conclusions from data and recognise that some conclusions may be misleading or uncertain.
				I can use mean to interpret a simple data set.	I can use mean, median, mode and range to compare data (continuous and discrete), and can choose the most appropriate average.	
					I can explore trends and extreme values (outliers) for data sets.	
					I can examine results critically, select and justify choice of statistics, recognising the limitations of any assumptions and their effect on the conclusions drawn.	

Mae'r ddogfen yma hefyd ar gael yn Gymraeg. This document is also available in Welsh.

WG40666 Digital ISBN 978 1 80038 902 1