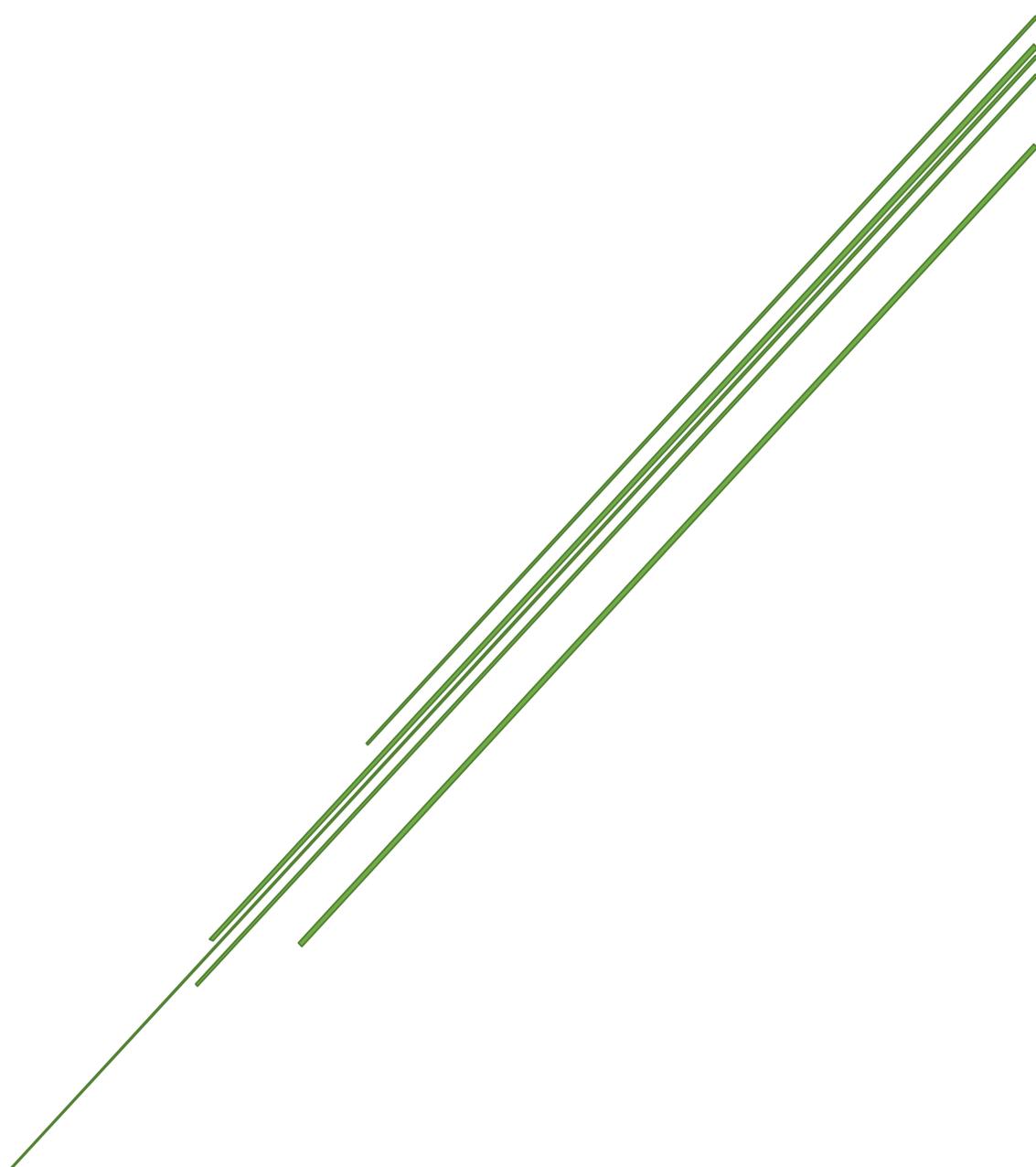


MATHEMATICS SYLLABUS

Year 9 Lev 2-3



Learning Outcomes Framework
September 2022

52	I can convert percentages (<100%) to decimals and vice versa	2.2an
53	I can find the percentage of a quantity where the percentage <100%. E.g. (i) Find 62% of €88.00 E.g. (ii) 2.5 % of 250 l of water is lost. How much water is lost?	2.2am
54	I can express a quantity as a percentage of a larger quantity.	2.2ao
55	I can work through simple situations involving percentage increase and decrease (<100%). E.g. finding the discount, profit, loss and selling price, excluding reverse percentage calculations	2.2ap
67	I can work through situations involving personal and household finance (E.g. earnings, and VAT.)	2.3ay
68	🔴 I can write ratios in their simplest form. (Including decimal numbers and numbers with different units.)	2.2az
69	I can find one quantity of a ratio given the other.	2.2ba
71	I can use map ratios	2.2bd/be
	🔵 I can draw and interpret scale drawings, excluding area, involving: 2D plans; angles of elevation and angles of depression; bearings for the 8 main compass directions.	2.2/3bd/be
72	I can use simple proportion (using ratio notation) to solve simple problems. E.g. What is the value of \square in $1:3 = \square:6$?	2.2bf
73	I can work through situations that involve direct proportion with or without the use of the unitary method.	2.3bg
76	I can use assistive technology (E.g. tablets, computers and calculators) and other resources (E.g. Cuisenaire rods, Unifix cubes, base 10 blocks) appropriate to this level to calculate and to learn about numerical calculations.	2.2/3bq
77	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	2.2/3bs
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	2.2/3br

Strand 3: Learning Area Outcome: I can recognise and describe patterns and relationships in various mathematical ways and can use algebraic manipulations.

Subject Focus: Algebra – Fundamentals of Algebra

6	I can use algebraic notation to represent two or more unknown values in expressions.	3.2h
8	I can simplify non-linear algebraic expressions by collecting like terms.	3.2i
9	I can simplify algebraic expressions by multiplying linear terms. E.g. i) $-4 \times 5b, -2a \times -3b$ ii) $x \times (-3x)$ I can multiply a single numerical term over a bracket. E.g.	3.2jk

	i) $-2(a + 3)$ ii) $3(x + 4) + 2(x - 1)$ iii) $2(1 - x) - 3(x + 2)$	
16	 I can form and solve linear equations involving unknown and integers on both sides.	3.2w/x/z
17	I can use and solve simple linear equations involving brackets. E.g. Solve for x : $4(x - 1) = 2x + 6$	3.2y
19	I can factorise expressions with a numerical common factor.	3.3m
28	I can write and plot the coordinates of a set of points for equations of the form $y = \pm mx \pm c$.	4.2c
32	I know that parallel lines have equal gradients.	4.2i
33	I can explain what the y -intercept represents.	4.2j
34	I can indicate that for the equation $y = mx + c$, the value of m determines the gradient of the graph and the value of c , determines the y -intercept. I can find the gradient of a line from the coordinates of two points on the line.	4.2k/l
35	I can write the equation of a straight line given the gradient and the y -intercept. I can write the equation of a straight line given the coordinates of two points or the line graph.	4.3m/n
36	I can verify whether a line passes through a point.	4.2n
52	I can use assistive technology (E.g. tablets, computers and calculators) and other resources (E.g. algebra blocks) appropriate to this level to learn about the fundamentals of algebra.	3.2/3am
53	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	3.2/3ao
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	3.2/3an

Strand 4: Learning Area Outcome: I understand and can use forms of measurement and can make reasonable estimations.

Subject Focus: Shape, Space & Measures – Measures

1	 I can label the eight main compass points.	5.1a
2	I can draw, interpret and use three-figure bearings for the eight main compass directions.	5.3b/c/d
9	I can interpret angles of elevation and depression.	5.3v
28	I can derive and use the formula to find the area of a parallelogram and a trapezium.	5.2ak/al
29	I can calculate the area of compound shapes that include right-angled triangles, parallelograms and trapezia.	5.2am
30	I can define the notion of π as a ratio of circumference to diameter.	5.2an
31	I can use formulae to find the circumference and area of a circle.	5.2ao/ap

54	I can use assistive technology (E.g. tablets, computers and calculators) and other resources (E.g. 2D and 3D plastic shapes, measuring instruments) appropriate to this level to learn about measures.	5.2/3bw
55	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	5.2/3by
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	5.2/3bx

Strand 5: Learning Outcome: I can recognise and describe the properties of shapes. I can use these properties to construct shapes using appropriate mathematical instruments and to prove geometric statements.

Subject focus: Shape Space and Measures – Euclidean Geometry

1	I can distinguish between lines and line segments.	6.2a
8	I can prove that the exterior angle of a triangle is equal to the sum of the interior angles at the other two vertices and use this theorem to find missing angles.	6.2/3w
13	I can prove that the angle sum of a quadrilateral is 360° .	6.3aj
19	I can draw the plan, front elevation and side elevation of a cube and cuboid.	6.2bm/bn/bo
21	I can identify nets which are possible or not possible for a triangular prism and a square-based right pyramid. I can draw the net of a cube, a cuboid, a triangular prism and a square-based right pyramid.	6.2/3bt
24	I can construct (using a straight edge and compasses only): i) 60° and 90° angles ii) the perpendicular bisector of a line segment iii) the perpendicular from a point to a line iv) the perpendicular at a point on a line v) the angle bisector of a pair of intersecting lines	7.2b/cd/e/f/g
25	I can construct triangles involving 60° and 90° angles using ruler and compasses only. I can construct any triangle given various conditions.	7.2k/7.3j
34	I can use assistive technology (E.g. tablets and computers, including dynamic geometry software packages and LOGO) and other resources (E.g. 2D and 3D plastic shapes) appropriate to this level to learn about properties of shapes.	6.2/3bv
35	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	6.2/3bx
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	6.2/3bw

Strand 6: Learning Area Outcome: I can describe position and movement of shapes in a plane.		
Subject Focus: Shape, Space & Measures – Transformation Geometry		
19	I can create tessellating shapes and draw a tessellation.	8.2t/u
21	I can use assistive technology (E.g. tablets and computers) and other resources (E.g. 2D and 3D plastic shapes) appropriate to this level to learn about transformation geometry.	8.2/3w
22	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	8.2/3y
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	8.2x

Strand 7: Learning Area Outcome: I can collect, analyse, interpret and communicate statistical information		
Subject Focus: Data Handling & Chance – Statistics		
1	I can explain the difference between discrete and continuous data.	9.3a
2	I can present data in the form of an inequality. E.g. The age P in years of under 21 players should be at least 16 but less than 21, i.e. $16 \leq P < 21$	9.3b
3	  I can construct a frequency table using grouped continuous data.	9.3g
9	I can interpret pie charts.	9.2o
10	I can construct pie charts.	9.2p
11	I can interpret a histogram with equal class intervals.	9.3q
12	I can construct a histogram with equal class intervals.	9.3r
23	I can use assistive technology (E.g. tablets, computers and calculators) and other learning resources to learn about statistics.	9.2/3an
24	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	9.2/3ap
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	9.2/3ao

Strand 8: Learning Area Outcome: I understand ideas of chance and uncertainty		
Subject Focus: Data Handling & Chance – Probability		