

## Correlation Chart: R-7 SACSA Mathematics Teaching Resource

### Knowledge, skills and understandings

STRAND: Exploring, analysing and modelling data	Core Skills Mathematics 7		Mathematics for Year 7 (second edition)	
	Chapter	Unit	Chapter	Unit
<b>Data collection and representation</b>				
• understand the purpose of taking a sample population	9	66	9	A
• explain the difference between a random sample and a biased sample	9	66	9	A
• plan a range of ways to collect data (e.g., surveys, interviews)	9	66	9	A
• record data using spreadsheets, and use simple formulae to create graphs using graphing software	9	67	9	B, E
• construct and interpret pie graphs using graphing software	9	68	9	C, D
• find the mean, median and mode from given data	9	69	9	B, F
• interpret information from data, graphs and tables	9	70	9	D, G
<b>STRAND: Exploring, analysing and modelling data</b>				
<b>Chance and probability</b>				
• identify risks and consequences of taking chances	13	94	13	A
• demonstrate an understanding of what constitutes gambling (e.g., lotto, raffles, poker machines)	13	97	13	F, G
• identify some of the social consequences of gambling	13	97	13	F, G
• assign numbers and percentages to chance (i.e., if it has no chance of occurring it is assigned 0 or 0%; if it is certain to occur it is assigned 1 or 100%)	13	94	13	B
• make your own probability generator (e.g., a spinner or a die to show $P(\text{red}) = \frac{2}{5}$ )	13	96	13	E
• assign probabilities for given situations (e.g., 'Five discs are placed in a bag, two are blue and three are black. What is the probability of drawing a blue disc?')	13	95	13	C, D
• test predictions (e.g., coin tossing)	13	96, 97	13	E, F, G
<b>STRAND: Measurement</b>				
<b>Length, perimeter and area</b>				
• convert between millimetres, centimetres, metres and kilometres (e.g., 25 mm = 0.025 m)	7	53	7	C
• use formula Distance = Speed $\times$ Time to solve problems	10	77	10	G
• develop and use the formula for the area of a triangle (e.g., $A = \frac{1}{2} B \times H = B \times H \div 2$ )	8	61	8	C
• use the appropriate units of measurement (e.g., km <sup>2</sup> , cm <sup>2</sup> , m <sup>2</sup> , mm <sup>2</sup> , ha)	8	59	8	A
• use appropriate strategies and devices to estimate and accurately measure the area of a shape (e.g., using an overlay grid)	8	60	8	A, B
• calculate the area of irregular shapes by separating them into simple parts	8	60, 61	8	B, C
• demonstrate understanding of the relationship between perimeter and area through practical problem-solving activities	8	54, 57	8	G
• use scale in ratio form to calculate either original size or drawing size	7	55	7	E
<b>STRAND: Measurement</b>				
<b>Volume and capacity</b>				
• convert mL to L and L to kL and vice versa	8	62	8	F
• use the symbols cm <sup>3</sup> , m <sup>3</sup> , mL, L and kL	8	62	8	E, F
• demonstrate understanding of volume through practical problem-solving activities	8	64	8	G
• develop and use formula for volume of rectangular prisms: $V = L \times W \times H$ or $V = L \times B \times H$	8	63	8	E
• demonstrate awareness that capacity is related to volume	8	62	8	D, E, F

STRAND: Measurement	Core Skills Mathematics 7		Mathematics for Year 7 (second edition)	
	Chapter	Unit	Chapter	Unit
<b>Mass</b>				
• choose the appropriate units and tools to measure mass of a variety of objects	7	56	7	F
• identify the relationships between milligrams, grams, kilograms and tonnes (e.g., 1 kg = 1000 g, 1 t = 1000 kg, 1 g = 1000 mg)	7	56	7	F
• apply the knowledge of mass to practical problem-solving situations	7	57	7	H
<b>STRAND: Measurement</b>				
<b>Time</b>				
• make comparisons between time zones in Australia and calculate changes incorporating daylight saving	10	76	10	F
• read and use a variety of timetables	10	75	10	E
• construct and interpret timelines using an appropriate scale	10	73	10	A
• explain ways in which time is measured in other cultures (e.g., calendars which are calculated by moon cycles)	10	72	10	B
• use Speed = Distance/Time to answer problems	10	77	10	G
<b>STRAND: Measurement</b>				
<b>Temperature</b>				
• interpret the terminology Fahrenheit, °F	10	77	10	H
• use online resources to compare current temperatures in different parts of the world			10	H
<b>STRAND: Number</b>				
<b>Whole numbers</b>				
• develop an understanding of number systems across time and place (e.g., Mayan, Chinese)	1	1	1	A
• recognise, use and write in words and numbers beyond 1 000 000	1	5	1	H
• identify place value of numbers over 1 000 000	1	5	1	H
• compare numbers and use symbols (e.g., $\div$ , $()$ , $\geq$ , $\leq$ )	1	1	1	B
• write numbers up to 1 000 000 in expanded form (e.g. using powers of 10)	2	11	2	F
• use powers or index (exponents) notation	2	11	2	F, G
• write numbers over 100 000 in ascending and descending order	1	1	1	B
• identify large numbers in everyday use	1	4, 5	1	G, H
• identify factors, common factors, prime factors, highest common factor and lowest common multiple	2	9, 10	2	C, D
• use arrays and divisibility rules	2	10	2	E
• identify triangular and cubic numbers	2	12	2	H
• apply square root to square numbers and use symbol $\sqrt{\quad}$	2	12	2	H
• solve a given 2-step number or word problem (e.g., 'A school has a total of 854 students - 102 boys and 84 girls leave. How many students are left at the school?')	1	3	1	I
• multiply a 3 digit number by a 2 digit number using the extended form (long multiplication)	1	2	1	E
• divide a number with 3 or more digits by a single digit or multiples of 10 (with a remainder expressed as a decimal)	1	2	1	E
• understand the order of operations using BEDMAS (Brackets, Exponents, Division, Multiplication, Addition, Subtraction)	2	8	2	B
• use and explain appropriate strategies in problem solving (e.g., trial and error, working backwards, looking for patterns)	2	13	2	I
• use calculators to solve problems where the numbers are outside mental and written limits	5	40	5	M
• identify the operations required to solve more complex problems within your experiences (e.g., deposits and withdrawals in banking, and other everyday use)	2	13	2	I
• recognise the existence of negative numbers (e.g., profit and loss)	1	6	1	J

STRAND: Number	Core Skills Mathematics 7		Mathematics for Year 7 (second edition)	
	Chapter	Unit	Chapter	Unit
<b>Fractions, decimals, percentages, ratios and rates</b>				
• round off decimals to 3 places	5	35	5	C
• divide decimals by a whole number	5	40	5	J
• use notation for recurring decimals such as $0.\dot{3}$ or $0.\overline{235}$	5	41	5	K
• multiply decimal numbers by decimal numbers to 2 places (e.g., $0.2 \times 0.3 = 0.06$ )	5	39	5	I
• divide decimals using calculators (e.g., calculating averages)	5	40	5	M
• convert decimals to fractions	5	41	5	L
• use decimals in problem solving	5	37, 39, 40	5	G, H, I, M
• compare the size of fractions (e.g., ‘Which is larger: $\frac{2}{5}$ or $\frac{1}{3}$ ?’)	4	28	4	G
• compare and order fractions in ascending or descending order (e.g., $\frac{1}{3}, \frac{2}{5}, \frac{7}{8}$ )	4	28	4	G
• add and subtract fractions with different denominators, including improper fractions and whole numbers	4	29	4	H, I, J
• multiply fractions including whole numbers and mixed numbers	4	30	4	K
• convert fractions to frequently used decimals and percentages (e.g., $\frac{2}{5}, \frac{5}{8}, \frac{2}{3}$ )	6	43	6	B, C, D, E
• convert percentages to fractions and decimals	6	44	6	C, E
• convert fractions and decimals to percentages	6	44	6	B, D
• express fractions of quantities as percentages (e.g., 20 out of 25 is $\frac{4}{5}$ is 80%)	6	43	6	B
• find simple percentages of quantities (e.g., 20% of \$80) using both pen and paper, and calculator)	6	47	6	I
• find discount as a percentage, especially money	6	49	6	M
• solve practical problems involving percentage (e.g., simple interest, banking problems)	6	50	6	N, O
• compare quantities using ratio in problem solving	12	90	12	C
<b>STRAND: Pattern and algebraic reasoning</b>				
<b>Algebra</b>				
• extend and describe the rule for numerical and geometric patterns (e.g., 7, 36, 181, 906)	11	79	11	A, B
• investigate pattern rules in solving problems (e.g., rates charged by tradespeople 1 hr - \$25, 2 hrs - \$60, 3 hrs - \$95, $n \times 35 - 10$ for various hours worked)	11	81	11	E
• investigate and analyse graphs showing the relationship between variables (e.g., analysing winter rainfall patterns and making comparisons and predicting future trends)	11	81	11	F, H
• predict future trends from linear graphs	11	81	11	F
• construct a number sentence to match a problem that is presented in words and that requires finding an unknown	11	81	11	E
• use inverse operations to solve a number sentence (e.g., $2x = 8$ , $x = 8 \div 2$ )	11	82	11	G
<b>STRAND: Spatial sense and geometric reasoning</b>				
<b>Lines and angles</b>				
• use the terms lines, points, rays, segments, intersections, parallel and perpendicular when constructing diagrams	3	15	3	A
• bisect angles using a compass	3	20	3	H
• construct triangles when only the length of sides is given	3	20	3	G
• use understanding of angles to determine compass bearings and true bearings	12	91	12	D
• draw a 2-D shape given a description of its side and angle properties, using geometric software or a ruler, protractor and set square	3	19	3	F, G
• identify the terminology of a circle - radius, diameter, circumference	3	21	3	N

	Core Skills Mathematics 7		Mathematics for Year 7 (second edition)	
	Chapter	Unit	Chapter	Unit
<b>STRAND: Spatial sense and geometric reasoning</b>				
<b>2-D and 3-D shapes</b>				
• identify 2-D shapes within patterns across cultures and in nature (e.g., an investigation of Islamic design)			3	H
• classify solids in terms of their geometric properties (i.e., faces, edges, vertices and cross-sections)	3	22	3	I
• draw 3-D solids	3	23	3	M
• identify and name properties of polyhedra (e.g., tetrahedron, pentagonal prism, hexagonal prism)	3	22	3	I
• construct complex solids from nets (e.g., hexagonal-based pyramid)	3	22	3	J
• draw oblique and isometric projections of cubes using paper or drawing software	3	22	3	K
• recognise the properties of quadrilaterals	3	19	3	F
• construct, name and classify scalene, isosceles and equilateral triangles	3	19	3	F
• determine unknown angles in quadrilaterals and triangles	3	20	3	C, D
<b>STRAND: Spatial sense and geometric reasoning</b>				
<b>Transformation</b>				
• rotate a shape about a point (e.g., rotate 90° clockwise)	12	86	12	B
• reflect a complex shape or design on a line	12	85	12	B
• translate shapes over a given distance (e.g., translate the shape 5 squares horizontally to the left on grid paper)	12	87	12	B
• enlarge and reduce shapes using a scale	12	88	12	B
• create a tessellation using rotation, translation and reflection (e.g., using software)	12	87	12	B
<b>STRAND: Spatial sense and geometric reasoning</b>				
<b>Location and position</b>				
• draw environmental and geometric objects from different perspectives	3	22, 23	3	K, M
• describe and draw what is seen and not seen from different views of 3-D shapes (e.g., pyramids and prisms)	3	22, 23	3	M
• draw 3-D shapes using solid lines for visible edges and dotted lines for invisible edges	3	22, 23	3	K, M
• recognise that a location can be represented on maps or plans using different scales	12	84, 91	12	A
• use a scale to calculate the distance between two points on a map	12	91	12	D
• read, write and use scales in words, ratios and diagrams	7	55	7	E
• produce scaled plans (e.g., classroom, bedroom)				
• evaluate maps and plans in terms of appropriateness of scale, use of symbols, appropriateness for task, clarity of purpose, accuracy, etc.	12	84	12	A
• use coordinate grids to make more complex 2-D shapes	12	84	12	A
• explain a pathway to a location on models, maps or plans using distance, direction, angle multiples of 45°, compass points and coordinates	12	91	12	D
• find alternative routes using a scale (e.g., to find the shortest route between two points)	12	91	12	E
• follow simple directions to move from point to point on a given path, using maps, a magnetic compass, and written and oral instructions	12	84	12	D
• develop a simple orienteering course	12	91	12	E