

Mathematics scope and sequence chart: Kindergarten to Grade 4

	Kindergarten (optional)	Grade 1	Grade 2	Grade 3	Grade 4
REASONING AND PROBLEM SOLVING					
To be applied in other strands	<ul style="list-style-type: none"> Simple practical problems Representing problems and explaining solutions with pictures or objects 	<ul style="list-style-type: none"> Routine and non-routine problem solving in all strands Representing problems and explaining solutions with objects, numbers, symbols or simple diagrams Describing a relationship 	<ul style="list-style-type: none"> Routine and non-routine problem solving in all strands Representing problems and explaining solutions with words, numbers, symbols or diagrams Explaining methods and a simple line of reasoning 	<ul style="list-style-type: none"> Routine and non-routine problem solving in all strands Representing problems and explaining solutions with words, numbers, symbols or diagrams Explaining methods and reasoning 	<ul style="list-style-type: none"> Routine and non-routine problem solving in all strands Representing problems and explaining solutions with words, numbers, symbols or diagrams Explaining methods and reasoning Checking results
NUMBER AND ALGEBRA					
Whole numbers	<ul style="list-style-type: none"> Counting to 10, then 20 Conservation of number Zero; numerals 0 to 20 Comparing numbers to 20; ordering on number line 	<ul style="list-style-type: none"> Number notation and place value to 100 Ordinal numbers Comparing 2-digit numbers; ordering on number line 	<ul style="list-style-type: none"> Number notation and place value to 1000 Comparing 3-digit numbers; ordering on number line 	<ul style="list-style-type: none"> Number notation and place value to 10 000 Comparing 4-digit numbers; ordering on number line; use of $>$, $=$, $<$ 	<ul style="list-style-type: none"> Number notation and place value in whole numbers Rounding to nearest 10 or 100
Whole-number calculations	<ul style="list-style-type: none"> Addition/subtraction of small numbers to solve practical problems (no written recording) 	<ul style="list-style-type: none"> Concepts of addition and subtraction; $+$, $-$ and $=$ signs Relationship between addition and subtraction, and missing-number problems Addition/subtraction facts to 10, and pairs of numbers with a total of 20 Addition/subtraction of 0 Commutative law ($+$) Doubles of 1 to 10 Special cases of mental addition/subtraction (e.g. near doubles) Addition/subtraction of 1-digit number/multiple of 10 (not crossing tens), horizontal recording 	<ul style="list-style-type: none"> Relationship between addition and subtraction, and missing-number problems Associative law ($+$ and $-$) Addition/subtraction facts to 20 Adding three 1-digit numbers Doubles of 1 to 15, and corresponding halves Mental addition/subtraction of multiples of 1, 10 or 100 to/from a 2- or 3-digit number (including crossing tens) Written addition/subtraction of two-digit numbers ($TU \pm TU$, $TU + TU + TU$) Concepts of multiplication and division; \times and \div signs; commutative law for \times 	<ul style="list-style-type: none"> Adding three 1-digit numbers mentally Mental addition/subtraction of any pair of 2-digit numbers Written addition/subtraction of numbers with up to four digits ($HTU \pm HTU$, $ThHTU \pm HTU$, $ThHTU \pm ThHTU$) Multiplication facts to 10×10 Multiplication by 0 and 1 Distributive law Mental multiplication/division (TU by U, simple cases, not crossing 100, no remainders) Multiplication/division by 10 and 100 (whole-number answers) Written multiplication/division ($TU \times U$, $TU \div U$) 	<ul style="list-style-type: none"> Mental and written addition and subtraction of whole numbers Multiplication and division facts to 10×10 Mental multiplication/division (TU by U, no remainders, crossing 100) Multiplication/division by multiples of 10 and 100, using factors (whole-number answers) Written methods for: <ul style="list-style-type: none"> multiplication/division ($HTU \times U$, $HTU \div U$) multiplication ($TU \times TU$, $HTU \times TU$) Estimating answers to calculations to check accuracy

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Whole-number calculations (continued)		<ul style="list-style-type: none"> Simple word problems involving whole numbers, money or measures 	<ul style="list-style-type: none"> Relationship between multiplication and division Multiplication/division within 2, 5 and 10 times tables One-step word problems involving whole numbers, money or measures 	<ul style="list-style-type: none"> Remainders Relationship between multiplication and division, and missing-number problems One- and two-step word problems involving whole numbers, money or measures 	<ul style="list-style-type: none"> Missing-number problems involving inverse operations One- and two-step word problems involving whole numbers, money, measures, simple decimals or fractions
Number patterns		<ul style="list-style-type: none"> Counting in 2s, 5s, 10s 	<ul style="list-style-type: none"> Counting in 3s, 4s Counting in 10s, 100s 	<ul style="list-style-type: none"> Counting in 6s, 7s, 8s, 9s Counting in 1000s Odd and even numbers 	<ul style="list-style-type: none"> Factors, multiples, primes (less than 100) Number pairs related by rule
Money		<ul style="list-style-type: none"> Coin and bank-note recognition and equivalence Finding total and working out change (up to QR 100, riyals only) 	<ul style="list-style-type: none"> Paying exact number of riyals using smaller bank-notes Counting half and quarter riyal coins up to QR 2 Finding total (up to QR 500); working out change Finding cost of number of items given unit cost (within 2, 5 and 10 times tables) 	<ul style="list-style-type: none"> Finding total (up to QR 10 000), working out change Finding cost of number of items given unit cost, or unit cost given total cost and number of items (whole numbers of riyals) 	<ul style="list-style-type: none"> Reading and writing money in decimal form Conversion of riyals in decimal notation to dirhams, and vice versa
Decimals					<ul style="list-style-type: none"> Decimal notation and place value to 2 places, including comparing and ordering Rounding to whole number or 1 decimal place Mental methods (simple cases) Written methods for: <ul style="list-style-type: none"> addition and subtraction of decimals with up to 2 places multiplication of decimals with up to 2 places by 1-digit number Multiplication and division of decimals with up to 2 places by 10 and 100 Estimating answers to check reasonableness

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Fractions		<ul style="list-style-type: none"> Halves and quarters 	<ul style="list-style-type: none"> Adding half and quarter riyal coins up to QR 2 (see Money) 	<ul style="list-style-type: none"> Simple fractions of shapes and numbers Equivalence of simple fractions Comparing and ordering simple fractions 	<ul style="list-style-type: none"> Simple equivalent fractions Fraction and decimal equivalents for one half, one quarter, three quarters, one tenth and one hundredth Addition and subtraction of two fractions with same or related denominators Mixed numbers and improper fractions Product of proper fraction and whole number
GEOMETRY AND MEASURES					
Geometry	<ul style="list-style-type: none"> Shape recognition: recognising common 2-D and 3-D shapes in the environment, e.g. circle, square, triangle; cube, cone Recognition of types of lines (straight, curved, etc.) Vocabulary of position and direction Using shapes to make models, pictures, patterns 	<ul style="list-style-type: none"> Shape recognition: circle, square, rectangle, triangle Extending/completing repeating patterns according to shape, size, position or colour 	<ul style="list-style-type: none"> Straight/curved lines, flat/curved surfaces Shape recognition: sphere, cube, cuboid, cone, cylinder, pyramid (square-based), pentagon, hexagon, octagon Completing geometric patterns according to one or two of shape, size, colour, orientation 	<ul style="list-style-type: none"> Concept of angle: whole, half and quarter turns Eight-point compass Identifying right angles in 2-D shapes Shape recognition: equilateral, isosceles, right-angled triangles Regular and irregular polygons Simple symmetrical patterns 	<ul style="list-style-type: none"> Perpendicular and parallel lines Angles greater or less than a right angle; ordering angles by estimating relative size Side and angle properties of squares, rectangles, parallelograms Line symmetry
Constructions			<ul style="list-style-type: none"> Using a ruler to measure and draw lines to nearest centimetre 		<ul style="list-style-type: none"> Using a ruler to measure and draw lines to nearest millimetre Constructing squares and rectangles
Length, mass/weight, capacity	<ul style="list-style-type: none"> Direct comparison: <ul style="list-style-type: none"> length mass capacity 	<ul style="list-style-type: none"> Measurement in non-standard units: <ul style="list-style-type: none"> length mass capacity 	<ul style="list-style-type: none"> Estimations and measurement in single unit: <ul style="list-style-type: none"> length (m or cm) mass (kg or g) capacity (l or ml) 	<ul style="list-style-type: none"> Knowing relationships between km, m, cm; kg and g; l and ml Using mixed units to: <ul style="list-style-type: none"> record measurements of m and cm kg and g l and ml convert between cm and m, and m and cm 	<ul style="list-style-type: none"> Using decimal notation to write: <ul style="list-style-type: none"> measurements of m and cm, or cm and mm conversions of m to cm, cm to m, cm to mm, mm to cm Reading scales with increasing accuracy Simple problems involving scale

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Time	<ul style="list-style-type: none"> Using vocabulary such as <i>day, week, morning, afternoon, evening, today, tonight, yesterday, tomorrow, birthday, Eid</i> Days of week Telling time (o'clock) 	<ul style="list-style-type: none"> Reading time (o'clock, half past) Ordering familiar events Days of week and months of year 	<ul style="list-style-type: none"> Reading time to 5 minutes; notation 6:35 Calculating a time interval less than 1 hour (multiple of 5 minutes, not crossing the hour) 	<ul style="list-style-type: none"> Reading time to minute Measuring and comparing time in minutes or seconds using a stopwatch Using simple timetables Calculating a time interval less than 1 hour (multiple of 5 minutes, crossing the hour) or more than 1 hour (whole number of hours) 	<ul style="list-style-type: none"> Converting weeks to days, and vice versa Months of year, using a calendar, Hijri calendar Calculating a time interval less than 1 hour (in minutes) or more than 1 hour (multiple of 15 minutes)
Area and perimeter				<ul style="list-style-type: none"> Concept of perimeter Perimeter of squares and rectangles Perimeter of regular polygons (whole-number sides) Concept of area Comparing two areas using unit squares Calculating area of squares and rectangles using formula 	<ul style="list-style-type: none"> Perimeter of irregular polygons (whole-number sides) Rectangles with same area, different perimeter, or same perimeter, different area Simple problems involving the area and/or perimeter of squares and rectangles
DATA HANDLING					
Data handling	<ul style="list-style-type: none"> Sorting common objects (single criterion) 	<ul style="list-style-type: none"> Collecting, representing and interpreting data in: <ul style="list-style-type: none"> simple pictograms (symbol represents 1 complete unit) Carroll diagram (single criterion) 	<ul style="list-style-type: none"> Collecting, representing and interpreting data in: <ul style="list-style-type: none"> pictograms (symbol represents 2, 5 or 10 complete units) 	<ul style="list-style-type: none"> Recording data systematically (e.g. in a tally chart) Representing and interpreting data in: <ul style="list-style-type: none"> bar charts with simple scales (e.g. intervals of 2, 4, 5 or 10) 	<ul style="list-style-type: none"> Recording and reading data in simple two-way tables Representing and interpreting data in: <ul style="list-style-type: none"> bar charts with scales (e.g. intervals of 2, 4, 5, 10, 20, 100) Carroll diagrams (two criteria)