



Primary Mathematics Curriculum

Measuring

Children should be given opportunities to demonstrate how the knowledge and skills gained in this strand can be used to link, reinforce and progress learning across the other four interconnected strands.

	a The learner	b The learner	c The learner	d The learner	e The learner	f The learner	g The learner	h The learner	i The learner	j The learner	k The learner
Elements	Measuring										
Understanding and Connecting	<p>Handles and explores everyday objects and items.</p> <p>Attends to activities in which direct comparisons are made between objects.</p> <p>Connects counting the sum of objects in a set with measurement of the size of the set.</p>	<p>Makes direct comparisons of objects, containers or surfaces to compare measurable attributes and develop an understanding of same.</p> <p>Explores how measures help us to make sense of our world.</p> <p>Recognises that to be accurate, measurements must be fair.</p>	<p>Explores and identifies the different attributes (For example: Length: long/short; Weight: heavy/light; Capacity: full/empty) of a single object that can be measured.</p> <p>Compares and orders objects according to length;</p> <p>Containers and volumes according to capacity; Surfaces and shapes according to area.</p>	<p>Recognises that quantifying a measurement helps us describe and compare more precisely.</p> <p>Explores the conservations of length, weight, capacity and area through practical activities.</p>	<p>Identifies commonalities and differences between measurable attributes and recognises the need for standard units of measurement.</p> <p>Identifies the appropriate measurement instruments and units for a given situation.</p>	<p>Identifies base units for length [metre], weight [kilogram], capacity [litre] and area [square metre].</p> <p>Compares the measurements of objects using the same base unit (For example: comparing the lengths of objects relative to a metre stick).</p>	<p>Explores the relationship between the metric units associated with an attribute (For example: how centimetres relate to metres).</p> <p>Converts between equivalent units of measurement.</p> <p>Explores how to read a simple scale and use conventional measuring instruments.</p>	<p>Uses knowledge of base ten [multiples of ten] to move flexibly between units of measurement.</p> <p>Renames measurements using equivalent units.</p> <p>Adds and subtracts units of measurement to determine differences in quantity.</p> <p>Examines perimeter & area of shapes separately; recognises that length/width and area are different attributes requiring different units of measure.</p> <p>Explores estimates and then measures the perimeter and area of regular 2-D shapes.</p>	<p>Connects decimal representations to the metric system.</p> <p>Converts between and renames measurements using equivalent units involving fractions and decimals.</p> <p>Explores, estimates and measures the perimeter and area of regular and irregular 2-D shapes.</p> <p>Applies the relationship between metric pre-fixes in similar ways across different units of measurement.</p> <p>Uses 3-D shape nets to explore the surface area.</p> <p>Explores the variety of perimeters possible for rectangles of a constant area.</p> <p>Explore possibilities for area if perimeter remains constant.</p>	<p>Compares and orders metric units of measurement in fractional and decimal form.</p> <p>Determines the relevant features and calculates the surface area of appropriate 3-D shapes.</p> <p>Determines the relevant features and calculates the volumes of appropriate 3-D shapes.</p> <p>Connects volume and capacity and their units of measurement.</p> <p>Uses knowledge of existing attributes to find the measure of unknown attributes.</p>	<p>Determines the relevant features and finds the perimeter and area of circles and composite shapes.</p> <p>Determines the volume of prisms, including cylinders.</p> <p>Calculates volume of 3D objects (For example: prisms, pyramids, cones, and spheres), using formulae.</p>

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Communicating	Demonstrates awareness of measurable attributes of everyday objects and items.	Uses appropriate vocabulary to describe and then compare measurable attributes. Listens to and responds to a range of stories and rhymes involving concepts of measurement.	Describes and discriminates between items using appropriate comparative language. Informally records comparisons and measurement activities.	Records estimates and measures concretely, pictorially and orally.	Recognises that units of measurement can simplify communication about measurement. Collects and records measurement data in systematic ways (For example: by using lists, tables etc.) and compares results.	Discusses and records estimations and measurements using appropriate base units and symbols. Makes comparative statements or judgements.	Uses language of metric measurement to describe similarities and differences between attributes of objects. Expresses measurements in appropriate metric units.	Represents equivalent units of measurements in multiple ways.	Explores Communicates and represents measurements using suitable and effective modes of presentation. Records using appropriate units of measurement according to the level of accuracy required.	Uses technology to input and represent measurements for a range of purposes. Builds models and structures based on given measurements.	Inputs appropriate measurements into computer programmes for the purposes of generating simulations and models.
Reasoning	Explores and/or investigates measurable attributes.	Predicts how measurable attributes of objects will compare to each other.	Recognises that if different attributes are used to compare and order objects, the order may be different. Investigates and explains such cases	Recognises the need for units to measure length, weight, capacity and area. Makes numerical estimates of measure based on units that can be seen or handled.	Explains and justifies the necessity of selecting the same unit when comparing two things. Assesses reasonableness of estimations and measurements with reference to previous measurements and personal benchmarks.	Estimates using base units with increasing accuracy. Evaluates the reasonableness of measurements with reference to estimations and personal benchmarks.	Explains and justifies the selection of a particular unit of measure used to measure and/or compare things. Makes reasonable estimations using appropriate units of measurement. Explains and justifies the selection of appropriate instrument for a given situation, depending on the level of accuracy required.	Justifies the specific unit of measurement used to describe an attribute. Orders and compares non-equivalent units of measurement Deduces formulae for measuring from experience with practical measurement tasks [For example: $L \times B = A$]	Uses smaller units of measurement where a more accurate measurement is necessary. Realises when a more accurate measurement is unhelpful in solving a problem. Tests and evaluates the reasonableness of measurements and numerical calculations of measurements.	Justifies the size of the unit selected when calculating measures and solving problems involving measures.	Deduces and uses formulae to find the perimeters and areas of polygons and the volumes of prisms. Justifies formula used for such cases.

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Applying and Problem-Solving	Engages in a range of appropriate real-life learning activities involving measurable attributes.	Explores various materials used to compare the attributes of length, weight, capacity and area. Chooses an object from a group of objects for a purpose based on a particular attribute.	Explores the procedures of measuring by making direct comparisons of measurements in meaningful contexts. Compares and orders objects, containers and surfaces according to appropriate measurable attributes. Selects and uses suitable materials for comparing.	Selects and uses appropriate materials to propose and estimate fair comparisons. Estimates and measures the attributes of a range of items using appropriate repeated units of measurement in purposeful or problem-solving contexts. Uses repetitions of the same size unit to make approximate measurements.	Identifies the appropriate attribute to measure for a given problem situation. Selects and uses appropriate procedures, measures and equipment to measure attributes of length, weight, capacity and area.	Uses base units and appropriate instruments to solve rich practical tasks and problems involving measurement. Devises strategies to measure the attributes of a wide range of objects.	Selects and uses appropriately sized units of measurement to solve practical tasks. Measures for increasing accuracy by using smaller [fractional] metrics of base units. Reads and interprets instruments with increasing accuracy.	Devises strategies to calculate measures where necessary (For example: adding or subtracting measurements). Measures and records with increasing accuracy and precision.	Uses measurement of an object to determine if it is suitable for a given purpose (For example: Will it fit? Which is better value?). Calculates measurements with increasing accuracy in purposeful contexts.	Solves problems and practical tasks involving measurements of more than one attribute. Applies formulae in a meaningful way to solve problems efficiently.	Solves problems of increasing complexity involving the interpretation, calculation and presentation of measurements. Refines decision making for the purposes of more efficient problem-solving.