

Shape and Space (Measurement)

[C] Communication	[PS] Problem Solving
[CN] Connections	[R] Reasoning
[ME] Mental Mathematics and Estimation	[T] Technology
	[V] Visualization

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
K.SS.1. Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight), and volume (capacity). [C, CN, PS, R, V]	1.SS.1. Demonstrate an understanding of measurement as a process of comparing by <ul style="list-style-type: none"> ■ identifying attributes that can be compared ■ ordering objects ■ making statements of comparison ■ filling, covering, or matching [C, CN, PS, R, V]	2.SS.1. Relate the number of days to a week and the number of months to a year in a problem-solving context. [C, CN, PS, R] 2.SS.2. Relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass (weight). [C, CN, ME, R, V] 2.SS.3. Compare and order objects by length, height, distance around, and mass (weight) using non-standard units, and make statements of comparison. [C, CN, ME, R, V] 2.SS.4. Measure length to the nearest non-standard unit by <ul style="list-style-type: none"> ■ using multiple copies of a unit ■ using a single copy of a unit (iteration process) [C, ME, R, V]	3.SS.1. Relate the passage of time to common activities using non-standard and standard units (minutes, hours, days, weeks, months, years). [CN, ME, R] 3.SS.2. Relate the number of seconds to a minute, the number of minutes to an hour, and the number of days to a month in a problem-solving context. [C, CN, PS, R, V] 3.SS.3. Demonstrate an understanding of measuring length (cm, m) by <ul style="list-style-type: none"> ■ selecting and justifying referents for the units cm and m ■ modelling and describing the relationship between the units cm and m ■ estimating length using referents ■ measuring and recording length, width, and height [C, CN, ME, PS, R, V]	4.SS.1. Read and record time using digital and analog clocks, including 24-hour clocks. [C, CN, V] 4.SS.2. Read and record calendar dates in a variety of formats. [C, V] 4.SS.3. Demonstrate an understanding of area of regular and irregular 2-D shapes by <ul style="list-style-type: none"> ■ recognizing that area is measured in square units ■ selecting and justifying referents for the units cm^2 or m^2 ■ estimating area by using referents for cm^2 or m^2 ■ determining and recording area (cm^2 or m^2) ■ constructing different rectangles for a given area (cm^2 or m^2) in order to demonstrate that many different rectangles may have the same area [C, CN, ME, PS, R, V]

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Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
<p>5.SS.1. Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions. [C, CN, PS, R, V]</p> <p>5.SS.2. Demonstrate an understanding of measuring length (mm) by</p> <ul style="list-style-type: none"> ■ selecting and justifying referents for the unit mm ■ modelling and describing the relationship between mm and cm units, and between mm and m units <p>[C, CN, ME, PS, R, V]</p>	<p>6.SS.1. Demonstrate an understanding of angles by</p> <ul style="list-style-type: none"> ■ identifying examples of angles in the environment ■ classifying angles according to their measure ■ estimating the measure of angles using 45°, 90°, and 180° as reference angles ■ determining angle measures in degrees ■ drawing and labelling angles when the measure is specified <p>[C, CN, ME, V]</p> <p>6.SS.2. Demonstrate that the sum of interior angles is</p> <ul style="list-style-type: none"> ■ 180° in a triangle ■ 360° in a quadrilateral <p>[C, R]</p>	<p>7.SS.1. Demonstrate an understanding of circles by</p> <ul style="list-style-type: none"> ■ describing the relationships among radius, diameter, and circumference of circles ■ relating circumference to π (π) ■ determining the sum of the central angles ■ constructing circles with a given radius or diameter ■ solving problems involving the radii, diameters, and circumferences of circles <p>[C, CN, R, V]</p> <p>7.SS.2. Develop and apply a formula for determining the area of</p> <ul style="list-style-type: none"> ■ triangles ■ parallelograms ■ circles <p>[CN, PS, R, V]</p>	<p>8.SS.1. Develop and apply the Pythagorean theorem to solve problems. [CN, PS, R, T, V]</p> <p>8.SS.2. Draw and construct nets for 3-D objects. [C, CN, PS, V]</p> <p>8.SS.3. Determine the surface area of</p> <ul style="list-style-type: none"> ■ right rectangular prisms ■ right triangular prisms ■ right cylinders <p>to solve problems. [C, CN, PS, R, V]</p> <p>8.SS.4. Develop and apply formulas for determining the volume of right prisms and right cylinders. [C, CN, PS, R, V]</p>	<p>9.SS.1. Solve problems and justify the solution strategy using circle properties, including</p> <ul style="list-style-type: none"> ■ the perpendicular from the centre of a circle to a chord bisects the chord ■ the measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc ■ the inscribed angles subtended by the same arc are congruent ■ a tangent to a circle is perpendicular to the radius at the point of tangency <p>[C, CN, PS, R, T, V]</p>

Shape and Space (Measurement) *(continued)*

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		General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.	
		Specific Learning Outcomes	Specific Learning Outcomes	
		2.SS.5. Demonstrate that changing the orientation of an object does not alter the measurements of its attributes. [C, R, V]	3.SS.4. Demonstrate an understanding of measuring mass (g, kg) by <ul style="list-style-type: none"> ■ selecting and justifying referents for the units g and kg ■ modelling and describing the relationship between the units g and kg ■ estimating mass using referents ■ measuring and recording mass [C, CN, ME, PS, R, V]	
			3.SS.5. Demonstrate an understanding of perimeter of regular and irregular shapes by <ul style="list-style-type: none"> ■ estimating perimeter using referents for centimetre or metre ■ measuring and recording perimeter (cm, m) ■ constructing different shapes for a given perimeter (cm, m) to demonstrate that many shapes are possible for a perimeter [C, ME, PS, R, V]	

Shape and Space (Measurement) *(continued)*

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General Learning Outcome Use direct or indirect measurement to solve problems.	General Learning Outcome Use direct or indirect measurement to solve problems.			
Specific Learning Outcomes	Specific Learning Outcomes			
5.SS.3. Demonstrate an understanding of volume by <ul style="list-style-type: none"> ■ selecting and justifying referents for cm^3 or m^3 units ■ estimating volume by using referents for cm^3 or m^3 ■ measuring and recording volume (cm^3 or m^3) ■ constructing rectangular prisms for a given volume [C, CN, ME, PS, R, V]	6.SS.3. Develop and apply a formula for determining the <ul style="list-style-type: none"> ■ perimeter of polygons ■ area of rectangles ■ volume of right rectangular prisms [C, CN, PS, R, V]			
5.SS.4. Demonstrate an understanding of capacity by <ul style="list-style-type: none"> ■ describing the relationship between mL and L ■ selecting and justifying referents for mL or L units ■ estimating capacity by using referents for mL or L ■ measuring and recording capacity (mL or L) [C, CN, ME, PS, R, V]				

Shape and Space (3-D Objects and 2-D Shapes)

[C] Communication	[PS] Problem Solving
[CN] Connections	[R] Reasoning
[ME] Mental Mathematics and Estimation	[T] Technology
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Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
K.SS.2. Sort 3-D objects using a single attribute. [C, CN, PS, R, V]	1.SS.2. Sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule. [C, CN, R, V]	2.SS.6. Sort 2-D shapes and 3-D objects using two attributes, and explain the sorting rule. [C, CN, R, V]	3.SS.6. Describe 3-D objects according to the shape of the faces and the number of edges and vertices. [C, CN, PS, R, V]	4.SS.4. Solve problems involving 2-D shapes and 3-D objects. [CN, PS, V]
K.SS.3. Build and describe 3-D objects. [CN, PS, V]	1.SS.3. Replicate composite 2-D shapes and 3-D objects. [CN, PS, V]	2.SS.7. Describe, compare, and construct 3-D objects, including <ul style="list-style-type: none"> ■ cubes ■ spheres ■ cones ■ cylinders ■ prisms ■ pyramids [C, CN, R, V]	3.SS.7. Sort regular and irregular polygons, including <ul style="list-style-type: none"> ■ triangles ■ quadrilaterals ■ pentagons ■ hexagons ■ octagons according to the number of sides. [C, CN, R, V]	4.SS.5. Describe and construct rectangular and triangular prisms. [C, CN, R, V]
	1.SS.4. Compare 2-D shapes to parts of 3-D objects in the environment. [C, CN, V]	2.SS.8. Describe, compare, and construct 2-D shapes, including <ul style="list-style-type: none"> ■ triangles ■ squares ■ rectangles ■ circles [C, CN, R, V]		
		2.SS.9. Identify 2-D shapes as parts of 3-D objects in the environment. [C, CN, R, V]		

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Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
<p>General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</p>	<p>General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</p>	<p>General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</p>	<p>General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</p>	<p>General Learning Outcome Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</p>
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
<p>5.SS.5. Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes, that are</p> <ul style="list-style-type: none"> ■ parallel ■ intersecting ■ perpendicular ■ vertical ■ horizontal <p>[C, CN, R, T, V]</p> <p>5.SS.6. Identify and sort quadrilaterals, including</p> <ul style="list-style-type: none"> ■ rectangles ■ squares ■ trapezoids ■ parallelograms ■ rhombuses <p>according to their attributes. [C, R, V]</p>	<p>6.SS.4. Construct and compare triangles, including</p> <ul style="list-style-type: none"> ■ scalene ■ isosceles ■ equilateral ■ right ■ obtuse ■ acute <p>in different orientations. [C, PS, R, V]</p> <p>6.SS.5. Describe and compare the sides and angles of regular and irregular polygons. [C, PS, R, V]</p>	<p>7.SS.3. Perform geometric constructions, including</p> <ul style="list-style-type: none"> ■ perpendicular line segments ■ parallel line segments ■ perpendicular bisectors ■ angle bisectors <p>[CN, R, V]</p>	<p>8.SS.5. Draw and interpret top, front, and side views of 3-D objects composed of right rectangular prisms. [C, CN, R, T, V]</p>	<p>9.SS.2. Determine the surface area of composite 3-D objects to solve problems. [C, CN, PS, R, V]</p> <p>9.SS.3. Demonstrate an understanding of similarity of polygons. [C, CN, PS, R, V]</p>

Shape and Space (Transformations)

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Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
				General Learning Outcome Describe and analyze position and motion of objects and shapes.
				Specific Learning Outcomes
				4.SS.6. Demonstrate an understanding of line symmetry by <ul style="list-style-type: none"> ■ identifying symmetrical 2-D shapes ■ creating symmetrical 2-D shapes ■ drawing one or more lines of symmetry in a 2-D shape [C, CN, V]

Shape and Space (Transformations)

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Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
General Learning Outcome Describe and analyze position and motion of objects and shapes.	General Learning Outcome Describe and analyze position and motion of objects and shapes.	General Learning Outcome Describe and analyze position and motion of objects and shapes.	General Learning Outcome Describe and analyze position and motion of objects and shapes.	General Learning Outcome Describe and analyze position and motion of objects and shapes.
Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes	Specific Learning Outcomes
<p>5.SS.7. Perform a single transformation (translation, rotation, or reflection) of a 2-D shape, and draw and describe the image. [C, CN, T, V]</p> <p>5.SS.8. Identify a single transformation (translation, rotation, or reflection) of 2-D shapes. [C, T, V]</p>	<p>6.SS.6. Perform a combination of transformations (translations, rotations, or reflections) on a single 2-D shape, and draw and describe the image. [C, CN, PS, T, V]</p> <p>6.SS.7. Perform a combination of successive transformations of 2-D shapes to create a design, and identify and describe the transformations. [C, CN, T, V]</p> <p>6.SS.8. Identify and plot points in the first quadrant of a Cartesian plane using whole-number ordered pairs. [C, CN, V]</p> <p>6.SS.9. Perform and describe single transformations of a 2-D shape in the first quadrant of a Cartesian plane (limited to whole-number vertices). [C, CN, PS, T, V]</p>	<p>7.SS.4. Identify and plot points in the four quadrants of a Cartesian plane using ordered pairs. [C, CN, V]</p> <p>7.SS.5. Perform and describe transformations of a 2-D shape in all four quadrants of a Cartesian plane (limited to integral vertices). [C, CN, PS, T, V]</p>	<p>8.SS.6. Demonstrate an understanding of tessellation by</p> <ul style="list-style-type: none"> ■ explaining the properties of shapes that make tessellating possible ■ creating tessellations ■ identifying tessellations in the environment <p>[C, CN, PS, T, V]</p>	<p>9.SS.4. Draw and interpret scale diagrams of 2-D shapes. [CN, R, T, V]</p> <p>9.SS.5. Demonstrate an understanding of line and rotation symmetry. [C, CN, PS, V]</p>