

M3.B Measurement

M3.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M3.B.1.1 Determine or calculate time and elapsed time. Reference: 2.3.3.C, 2.3.3.D	M3.B.1.1.1 Tell time (analog) to the minute. M3.B.1.1.2 Find elapsed time to increments of 5 minutes (limited to 2 adjacent hours). M3.B.1.1.3 Identify times of the day and night as AM and PM.
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V05 3-8

M3.B Measurement

M3.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M3.B.1.2 Use the attributes of length, area, volume and weight of objects. Reference: 2.3.3.A, 2.3.3.E	M3.B.1.2.1 Select an appropriate unit and/or tool for the attribute being measured. M3.B.1.2.2 Compare and/or order objects according to length, area, volume or weight.
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V05 3-9

M3.B Measurement

M3.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M3.B.2.1 Determine the measurement of objects with non-standard and standard units. Reference: 2.3.3.B, 2.3.3.F	M3.B.2.1.1 Use a ruler (provided) to measure to the nearest 1/2 inch or centimeter. M3.B.2.1.2 Find the perimeter of a figure drawn and labeled (with the same units throughout). M3.B.2.1.3 Find the area of a figure drawn on a grid (only full grid blocks inside the figure).
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V05 3-10

M3.B Measurement

M3.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M3.B.2.2 Estimate measurements of familiar objects. Reference: 2.3.3.G	M3.B.2.2.1 Match the object with its approximate measurement (all measurements given must be of the same system, e.g., about how tall is a soda pop can? 5 inches, 5 feet, 5 yards, etc.).
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V05 3-11

M5.B Measurement

M5.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M5.B.1.1 Select appropriate units (customary or metric) to measure specific attributes of objects.
Reference:
2.3.5.A

M5.B.1.1.1 Select the appropriate unit for measuring weight (mass), capacity, length, perimeter and area.

V05 5-11

M5.B Measurement

M5.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M5.B.1.2 Solve problems using simple conversions and/or add and subtract measurements
Reference:
2.3.5.D,
2.3.5.E

M5.B.1.2.1 Convert using linear measurements, capacity, and weight (mass) within the same system to the unit immediately above or below the given unit (using only the units below).

- Metric using mm, cm, m and km; mL and L; g and kg
- Customary using cup, pint, quart, gallon; in, ft, yd; oz, lb

M5.B.1.2.2 Add or subtract linear measurements, (inches and feet) or units of time (hours and minutes), without having to regroup with subtraction (answer should be in simplest form).

V05 5-12

M5.B Measurement

M5.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M5.B.1.3 Estimate and/or compare the perimeters or areas of 2 figures without computation.
Reference:
2.11.5.E,
2.3.5.C

M5.B.1.3.1 Estimate which polygon (shown) has a greater perimeter or area (do not mix perimeter with area).

M5.B.1.3.2 Estimate and/or compare the area of an irregular figure(s) shown on a grid.

V05 5-13

M5.B Measurement

M5.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M5.B.2.1 Use appropriate tools to determine measurements.
Reference:
2.3.5.B

M5.B.2.1.1 Use a ruler to measure to the nearest 1/8 inch or millimeter.

V05 5-14

M5.B Measurement

M5.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M5.B.2.2	Solve problems involving length, time, weight, mass, capacity, temperature, perimeter, area and/or money. Reference: 2.3.5.A and 2.3.5.B	M5.B.2.2.1	Find the perimeter or area of a square or rectangle (same system of measurement – whole numbers only).
		M5.B.2.2.2	Solve problems involving weight, time, temperature, length, capacity, mass (limited to 3 digits) or money.

V05 5-15

M8.B Measurement

M8.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

M8.B.1.1	Convert measurements. Reference: 2.3.5.D	M8.B.1.1.1	Convert among all metric measurements (milli, centi, deci, deka, hecto, kilo using meter, liter and gram) (table of equivalency provided on the reference sheet).
		M8.B.1.1.2	Convert customary measurements to 2 units above or below the given unit (e.g., inches to yards, pints to gallons) (table of equivalency provided on the reference sheet).
		M8.B.1.1.3	Convert time to 2 units above or below given unit (e.g., seconds to hours).
		M8.B.1.1.4	Convert from Fahrenheit to Celsius or Celsius to Fahrenheit (formulas provided on the reference sheet).

V05 8-10

M8.B Measurement

M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M8.B.2.1	Determine the measurement of a missing side(s) or angle(s) in a polygon. Reference: 2.3.8.C, 2.10.8.B	M8.B.2.1.1	Determine the number of degrees (for one angle or total) in 3 through 8 sided figures and/or the number of sides given the angle measurement (formula provided on the reference sheet).
		M8.B.2.1.2	Find the missing angle measure in a triangle.
		M8.B.2.1.3	Use proportions to find the missing length of a side in similar figures.

V05 8-11

M8.B Measurement

M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

M8.B.2.2	Label, measure and/or list properties of angles. Reference: 2.3.8.C, 2.9.8.B, 2.9.8.E	M8.B.2.2.1	Measure angles up to 180 degrees using a protractor (drawn or provided).
		M8.B.2.2.2	Define, identify and/or use properties of complementary, supplementary, adjacent or vertical angles.
		M8.B.2.2.3	Identify and/or find the measure of corresponding angles, alternate interior angles or alternate exterior angles.

V05 8-12

M8.B Measurement
M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M8.B.2.3 Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area and/or volume. Reference: 2.3.8.A, 2.3.8.D</p>	<p>M8.B.2.3.1 Develop and/or use formulas and procedures to determine circumference, perimeter and area of simple figures (triangles, parallelograms, trapezoids, circles) and complex figures (use consistent units).</p> <p>M8.B.2.3.2 Determine surface area and/or volume of cubes and rectangular prisms (formula provided on the reference sheet).</p> <p>M8.B.2.3.3 Determine the appropriate type of measurement (circumference, perimeter, area, surface area, volume) for a given situation (e.g., which measurement is needed to determine the amount of carpeting for a room).</p> <p style="text-align: right;">V05 8-13</p>
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M8.B Measurement
M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M8.B.2.4 Construct, interpret and/or use scale drawings to solve real-world problems. Reference: 2.3.8.F</p>	<p>M8.B.2.4.1 Interpret and/or apply scales shown on maps, blueprints, models, etc.</p> <p>M8.B.2.4.2 Determine and/or apply an appropriate scale for reduction or enlargement.</p> <p style="text-align: right;">V05 8-14</p>
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M8.B Measurement
M8.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M8.B.2.5 Describe how a change in the linear dimension of a figure affects its perimeter, area or volume. Reference: 2.3.8.E</p>	<p>M8.B.2.5.1 Determine the amount of change in the perimeter, area or volume of a figure when its length(s) is/are increased or decreased (triangles, parallelograms, trapezoids, circles, cubes, rectangular prisms).</p> <p style="text-align: right;">V05 8-15</p>
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M11.B Measurement
M11.B.1 Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.

Not assessed at Grade 11.

V05 11-9

M11.B Measurement
M11.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M11.B.2.1 Use and/or compare measurements of angles.</p> <p><i>Reference:</i> 2.3.11.A, 2.3.11.B</p>	<p>M11.B.2.1.1 Measure and/or compare angles in degrees (up to 360°) (protractor must be provided or drawn).</p> <p>M11.B.2.1.2 Classify, use or determine measurements of angles (complementary, supplementary, alternate interior, alternate exterior, vertical).</p>
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V05 11-10

M11.B Measurement
M11.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M11.B.2.2 Use and/or develop procedures to determine or describe measures of perimeter, circumference, area, surface area and/or volume.</p> <p><i>Reference:</i> 2.3.8.A, 2.3.8.D, 2.9.11.E</p>	<p>M11.B.2.2.1 Calculate surface area or volume of prisms, cylinders, cones, pyramids and/or spheres using formulas on the reference sheet.</p> <p>M11.B.2.2.2 Find perimeter, circumference or area of inscribed and/or circumscribed figures given whole number dimensions.</p> <p>M11.B.2.2.3 Estimate and/or determine area, perimeter or circumference of simple figures or complex figures.</p> <p>M11.B.2.2.4 Find the measurement of a missing length given the perimeter, circumference, area or volume.</p>
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V05 11-11

M11.B Measurement
M11.B.2 Apply appropriate techniques, tools and formulas to determine measurements.

<p>M11.B.2.3 Describe how a change in one dimension of a figure (2 or 3 dimensional) affects other measurements of that figure.</p> <p><i>Reference:</i> 2.3.8.E</p>	<p>M11.B.2.3.1 Describe how a change in the linear dimension of a figure affects its perimeter, circumference, area or volume.</p> <ul style="list-style-type: none"> • How does changing the radius of a circle affect the circumference of the circle? • How does changing the edge of a cube affect the volume of the cube? • How does changing the base of a triangle affect the area of the triangle?
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V05 11-12