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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Foundation Level Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* attempt to fill cups with the same level of fruit juice to share equally between several people, and to ‘top’ up some glasses as applicable
* play search and find games such as treasure hunt with different types of direction and location clues, including ‘hot’ and ‘cold’

**Content Descriptions:**Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language [(VCMMG078)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG078)Describe position and movement [(VCMMG082)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG082) |
| **Example of Indicative Progress toward Foundation Level Achievement Standard** | **Mathematics Foundation Level Achievement Standard** |
| In **Mathematics**, indicative progression towards the Foundation Level achievement standard may be when students:* identify which of two identical cups filled to different levels contains more water
* describe where to find a familiar object in the classroom
 | By the end of Foundation Level :**Measurement and Geometry*** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects.
* They order events, explain their duration, and match days of the week to familiar events.
* Students identify simple shapes in their environment and sort shapes by their common and distinctive features.
* They use simple statements and gestures to describe location.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 1 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* order events such as wake up, breakfast, snack, clean teeth and go to sleep, order parts of a football game or weekly activities.
* follow a sequence of dance steps or provide direction for a robot or anime object to move forward and back, left and right a given number of steps to create a simple shape or path

**Content Descriptions:**Compare and order the duration of events using the everyday language of time (VCMMG079)Give and follow directions to familiar locations (VCMMG099) |
| **Mathematics Foundation Level Achievement Standard**  | **Example of Indicative Progress toward Level 1 Achievement Standard** | **Mathematics Level 1 Achievement Standard** |
| By the end of the Foundation level:* Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects.
* They order events, explain their duration, and match days of the week to familiar events.
* Students identify simple shapes in their environment and sort shapes by their common and distinctive features.
* They use simple statements and gestures to describe location.
 | In **Mathematics**, indicative progression towards the Level 1 achievement standard may be when students:* place familiar events in order of occurrence
* follow and give simple directions about position and movement, such as stepping out a square
 | By the end of Level 1:* Students use informal units of measurement to order objects based on length, mass and capacity.
* They tell time to the half-hour and explain time durations.
* Students describe two-dimensional shapes and three-dimensional objects.
* They use the language of distance and direction to move from place to place.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 2 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* make judgments about the relative mass of a set of objects via hefting
* match names to shapes, identify the features and use draw packages to create images using them, such as a picture of a house

**Content Descriptions:**Measure and compare the lengths, masses and capacities of pairs of objects using uniform informal units (VCMMG095)Describe and draw two-dimensional shapes, with and without digital technologies [(VCMMG120)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG120) |
| **Mathematics Level 1 Achievement Standard**  | **Example of Indicative Progress toward Level 2 Achievement Standard** | **Mathematics Level 2 Achievement Standard** |
| By the end of Level 1:* Students use informal units of measurement to order objects based on length, mass and capacity.
* They tell time to the half-hour and explain time durations.
* Students describe two-dimensional shapes and three-dimensional objects.
* They use the language of distance and direction to move from place to place.
 | In **Mathematics**, indicative progression towards the Level 2 achievement standard may be when students:* order objects in terms of their mass using informal units
* identify two-dimensional shapes and construct examples of them using technology
 | By the end of Level 2:* Students order shapes and objects, using informal units for a range of measures.
* They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events.
* Students draw two-dimensional shapes, specify their features and explain the effects of one-step transformations.
* They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 3 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* represent given times on both digital and analogue clock faces
* compare given sets of diagrams of angles and order angles with respect to amount of turn

Content Descriptions:Tell time to the minute and investigate the relationship between units of time (VCMMG141)Identify angles as measures of turn and compare angle sizes in everyday situations [(VCMMG146)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG146) |
| **Mathematics Level 2 Achievement Standard**  | **Example of Indicative Progress toward Level 3 Achievement Standard** | **Mathematics Level 3 Achievement Standard** |
| By the end of Level 2:* Students order shapes and objects, using informal units for a range of measures.
* They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events.
* Students draw two-dimensional shapes, specify their features and explain the effects of one-step transformations.
* They recognise the features of three-dimensional objects.
* They interpret simple maps of familiar locations.
 | In **Mathematics**, indicative progression towards the Level 3 achievement standard may be when students:* compare images of digital and analogue 'clocks' and investigate the relationship between minutes, hours and days
* informally compare angle size in everyday situations with respect to quarter or half turns
 | By the end of Level 3:* Students use metric units for length, area, mass and capacity.
* They tell time to the nearest minute. Students identify symmetry in natural and constructed environments.
* They use angle size as a measure of turn in real situations and make models of three-dimensional objects.
* Students match positions on maps with given information and create simple maps.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 4 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* measure quantities in recipes, make decisions about cooking times and measures temperatures using various kitchen implements and instruments
* construct and use simple ‘local area’ maps with attention to key features and a reasonable scale for distance

**Content Descriptions:**Use scaled instruments to measure and compare lengths, masses, capacities and temperatures [(VCMMG165)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG165)Use simple scales, legends and directions to interpret information contained in basic maps [(VCMMG172)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG172) |
| **Mathematics Level 3 Achievement Standard**  | **Example of Indicative Progress toward Level 4 Achievement Standard** | **Mathematics Level 4 Achievement Standard** |
| By the end of Level 3:* Students use metric units for length, area, mass and capacity.
* They tell time to the nearest minute.
* Students identify symmetry in natural and constructed environments.
* They use angle size as a measure of turn in real situations and make models of three-dimensional objects.
* Students match positions on maps with given information and create simple maps.
 | In **Mathematics** indicative progression towards the Level 4 achievement standard may be when students:* use measuring instruments from around the home in kitchen, bathroom and garage to measure in metric units
* specify straight distances between locations in simple maps using a provided scale
 | By the end of Level 4:* Students compare areas of regular and irregular shapes, using informal units.
* They solve problems involving time duration.
* Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects.
* They convert between units of time.
* Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology.
* They classify angles in relation to a right angle. Students interpret information contained in maps.
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| **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 5 Achievement Standard**Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison  |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* investigate the area for rectangles of a given perimeter, and identify which configuration provides maximum area for that perimeter
* relate the dimensions of rectangular prisms to their volume using metric blocks
* construct rectangular prisms from their nets, and create nets for rectangular prisms

**Content Descriptions:**Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)Connect three-dimensional objects with their nets and other two-dimensional representations (VCMMG198) |
| **Mathematics Level 4 Achievement Standard**  | **Example of Indicative Progress toward Level 5 Achievement Standard** | **Mathematics Level 5 Achievement Standard** |
| By the end of Level 4:* Students compare areas of regular and irregular shapes, using informal units.
* They solve problems involving time duration.
* Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects.
* They convert between units of time.
* Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology.
* They classify angles in relation to a right angle.
* Students interpret information contained in maps.
 | In **Mathematics**, indicative progression towards the Level 5 achievement standard may be when students:* calculate perimeter and area of a rectangle from its linear dimensions
* construct three dimensional objects from corresponding nets and create nets for given objects
 | By the end of Level 5:* Students use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles and volume, and capacity of rectangular prisms.
* They convert between 12 and 24-hour time.
* Students use a grid reference system to locate landmarks.
* They estimate angles, and use protractors and digital technology to construct and measure angles.
* Students connect three-dimensional objects with their two-dimensional representations.
* They describe transformations of two-dimensional shapes and identify line and rotational symmetry.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 6 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* access timetables from the web and plan activities using this information
* investigate tiling or paver patterns, and continue patterns across a plane surface

**Content Descriptions:**Interpret and use timetables (VCMMG226)Investigate the effect of combinations of transformations on simple and composite shapes, including creating tessellations, with and without the use of digital technologies[(VCMMG229)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG229) |
| **Mathematics Level 5 Achievement Standard**  | **Example of Indicative Progress toward Level 6 Achievement Standard** | **Mathematics Level 6 Achievement Standard** |
| By the end of Level 5:* Students use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles and volume, and capacity of rectangular prisms.
* They convert between 12 and 24-hour time. Students use a grid reference system to locate landmarks.
* They estimate angles, and use protractors and digital technology to construct and measure angles.
* Students connect three-dimensional objects with their two-dimensional representations.
* They describe transformations of two-dimensional shapes and identify line and rotational symmetry.
 | In **Mathematics**, indicative progression towards the Level 6 achievement standard may be when students:* access timetables using digital technology, and use them to plan a trip to see a movie
* continue a given tiling pattern
 | By the end of Level 6:* Students relate decimals to the metric system and choose appropriate units of measurement to perform a calculation.
* They solve problems involving time, length and area, and make connections between capacity and volume.
* Students interpret a variety of everyday timetables.
* They solve problems using the properties of angles and investigate simple combinations of transformations in the plane, with and without the use of digital technology.
* Students construct simple prisms and pyramids.
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| Previous level’s achievement standard as a starting point of comparison Previous level’s achievement standard as a starting point of comparison **CURRICULUM AREA – Mathematics: Measurement and Geometry *toward* Level 7 Achievement Standard** |
| **VCAA EXAMPLE****Context:**Students cover related content and proficiencies when they engage in learning activities where they:* apply shape decompositions and use grids to illustrate the relationship between areas of triangles, rectangles and parallelograms
* use dynamic geometry software or compass, straight edge and protractor, to create pairs of parallel lines and transversals and identify corresponding, alternate and co-interior (allied) angles, measure and calculate these angles
* use and explain programs to create simple geometric patterns in the plane based on triangles and quadrilaterals

**Content Descriptions:**Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving [(VCMMG258)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG258)Identify corresponding, alternate and co-interior angles when two straight lines are crossed by a transversal (VCMMG264)Design and implement mathematical algorithms using a simple general purpose programming language [(VCMNA254)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA254) |
| **Mathematics Level 6 Achievement Standard**  | **Example of Indicative Progress toward Level 7 Achievement Standard** | **Mathematics Level 7 Achievement Standard** |
| By the end of Level 6:* Students relate decimals to the metric system and choose appropriate units of measurement to perform a calculation
* They solve problems involving time, length and area, and make connections between capacity and volume. Students interpret a variety of everyday timetables.
* They solve problems using the properties of angles and investigate simple combinations of transformations in the plane, with and without the use of digital technology.
* Students construct simple prisms and pyramids.
 | In **Mathematics**, indicative progression towards the Level 7 achievement standard may be when students:* find the areas of parallelograms
* identify corresponding angles formed by transversals of parallel lines, measure one angle and calculate the rest
* use a program to create simple geometric patterns in the plane
 | By the end of Level 7:* Students use formulas for the area and perimeter of rectangles.
* They classify triangles and quadrilaterals and represent transformations of these shapes on the Cartesian plane, with and without the use of digital technology.
* Students name the types of angles formed by transversals crossing parallel lines and solve simple numerical problems involving these lines and angles.
* They describe different views of three-dimensional objects, and use models, sketches and digital technology to represent these views. Students calculate volumes of rectangular prisms.
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