**VOLUME AND CAPACITY 1 – STAGE 2**

**OUTCOMES**

A student:

* MA2-1WM - uses appropriate terminology to describe, and symbols to represent, mathematical ideas
* MA2-3WM - checks the accuracy of a statement and explains the reasoning used
* MA2-11MG measures, records, compares and estimates volumes and capacities using litres, millilitres and cubic centimetres

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| **CONTENT** | **plan** |
| **Measure, order and compare objects using familiar metric units of [capacity](http://syllabus.bos.nsw.edu.au/glossary/mat/capacity/?ajax" \t "_blank" \o "Click for more information about 'capacity') (ACMMG061)** |  |
| recognise the need for formal units to measure [volume](http://syllabus.bos.nsw.edu.au/glossary/mat/volume/?ajax" \t "_blank" \o "Click for more information about 'volume') and capacity | 1 |
| explain the need for formal units to measure volume and capacity (Communicating, Reasoning) CT | 1 |
| use the litre as a unit to measure volumes and capacities to the nearest litre | 1 |
| relate the litre to familiar everyday containers, eg milk cartons (Reasoning) | 1 |
| recognise that one-litre containers can be a variety of shapes (Reasoning) | 1 |
| record volumes and capacities using the abbreviation for litres (L) http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | 2 |
| compare and order two or more containers by capacity measured in litres | 2 |
| estimate the capacity of a container in litres and check by measuring | 2 |
| estimate the number of cups needed to fill a container with a capacity of one litre (Reasoning) | 2 |

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| **Compare objects using familiar metric units of volume (ACMMG290)** |  |
| recognise the advantages of using a cube as a unit when packing and stacking | 3 |
| use the cubic centimetre as a unit to measure volumes | 3 |
| pack small containers with cubic-centimetre blocks and describe packing in terms of layers, eg 2 layers of 10 cubic-centimetre blocks (Problem Solving) | 3 |
| construct three-dimensional objects using cubic-centimetre blocks and count the blocks to determine the volumes of the objects | 4 |
| devise and explain strategies for counting blocks (Communicating, Problem Solving) CT | 4 |
| record volumes using the abbreviation for cubic centimetres (cm3) http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | 4 |
| compare the volumes of two or more objects made from cubic-centimetre blocks by counting blocks | 4 |
| distinguish between mass and volume, eg 'This stone is heavier than the ball but it takes up less space' CT | 4 |

**VOLUME AND CAPACITY 2 – STAGE 2**

**OUTCOMES**

A student:

* MA2-1WM - uses appropriate terminology to describe, and symbols to represent, mathematical ideas
* MA2-11MG - measures, records, compares and estimates volumes and capacities using litres, millilitres and cubic centimetres

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| **CONTENT** | **plan** |
| **Use scaled instruments to measure and compare [capacities](http://syllabus.bos.nsw.edu.au/glossary/mat/capacity/?ajax" \t "_blank" \o "Click for more information about 'capacities') (ACMMG084)** |  |
| recognise the need for a formal unit smaller than the litre to measure [volume](http://syllabus.bos.nsw.edu.au/glossary/mat/volume/?ajax" \t "_blank" \o "Click for more information about 'volume') and capacity | 5 |
| recognise that there are 1000 millilitres in one litre, ie 1000 millilitres = 1 litre | 5 |
| relate the millilitre to familiar everyday containers and familiar [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax" \t "_blank" \o "Click for more information about 'informal units'), eg 250 mL fruit juice containers, 1 teaspoon is approximately 5 mL (Reasoning) | 5 |
| make a measuring device calibrated in [multiples](http://syllabus.bos.nsw.edu.au/glossary/mat/multiple/?ajax" \t "_blank" \o "Click for more information about 'multiples') of 100 mL to measure volume and capacity to the nearest 100 mL | 7 |
| use the millilitre as a unit to measure volume and capacity, using a device calibrated in millilitres, eg place a measuring cylinder under a dripping tap to measure the volume of water lost over a particular period of time E | 6 |
| record volumes and capacities using the abbreviation for millilitres (mL) http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | 6 |
| convert between millilitres and litres, eg 1250 mL = 1 litre 250 millilitres | 7 |
| compare and order the capacities of two or more containers measured in millilitres | 7 |
| interpret information about volume and capacity on commercial packaging (Communicating) http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | 7 |
| estimate the capacity of a container in millilitres and check by measuring | 7 |
| compare the volumes of two or more objects by marking the change in water level when each is submerged in a container | 8 |
| estimate the change in water level when an object is submerged (Reasoning) CT | 8 |
| measure the overflow in millilitres when different objects are submerged in a container filled to the brim with water | 8 |
| estimate the volume of a substance in a partially filled container from the information on the label detailing the contents of the container | 8 |