These levels [5 to 8 years of age] lay the foundation for learning mathematics. Students at this level can access powerful mathematical ideas relevant to their current lives and learn the language of mathematics, which is vital to future progression. Children have the opportunity to access mathematical ideas by developing a sense of number, order, sequence and pattern; by understanding quantities and their representations; by learning about attributes of objects and collections, position, movement and direction, and by developing an awareness of the collection, presentation and variation of data and a capacity to make predictions about chance events. Understanding and experiencing these concepts in the early levels provides a foundation for algebraic, statistical and numerical thinking, that will develop in subsequent levels. These foundations also enable children to pose basic mathematical questions about their world, to identify simple strategies to investigate solutions, and to strengthen their reasoning to solve personally meaningful problems.

Suggested Yearly Overview – Term by Term Planner

- The following overview has been developed using the Australian Mathematics Curriculum content and proficiency standards as a basis for the outline. Teachers will therefore need to develop appropriate quality learning experiences, and use the outcomes from these activities to determine progress in relation to the standards. Teachers need to make continual reference to the descriptions and elaborations listed in the AMC as this overview only shows a suggested outline.

- While the term by term topics have been divided up throughout the year for planning purposes, the content will often be interwoven with topics featured in different terms. The selection of topics in different content strands will often compliment each other [for e.g. length could connect to addition, subtraction, decimals and graphing. Fractions could relate to clocks, shape, division and graphing.] Schools may need to alter the overviews based on their needs. Local events, integrated curriculum topics, school camp and other circumstances will need to be considered.

- While the structure is adjustable to suit the needs of the school, the basic out line works on the premise that at least five hours per week is timetabled for mathematics. To help cover the content listed teachers should endeavor to address several outcomes in the one lesson by integrating across the strands but still have a clear focus for the lessons planned. Opportunities for teachers to link mathematics to other learning areas such as English, Science or History will help students make connections across learning domains.

- There are three cross curriculum priorities in the Australian Curriculum: Aboriginal and Torres Strait Islander histories and cultures: Asia and Australia’s engagement with Asia: Sustainability. These priorities should be connected to tasks where there are natural and clear connections to the content being taught. The AMC lists possible descriptors that naturally connect to these cross curriculum priorities.
**Proficiency Strands** - ‘How’ content is explored or developed.

**Understanding** includes connecting names, numerals and quantities

**Fluency** includes readily counting numbers in sequences, continuing patterns, and comparing the lengths of objects

**Problem Solving** includes using materials to model authentic problems, sorting objects, using familiar counting sequences to solve unfamiliar problems, and discussing the reasonableness of the answer

**Reasoning** includes explaining comparisons of quantities, creating patterns, and explaining processes for indirect comparison of length.

*The proficiency strands need to be embedded in all content strands.*

**Content Strands** - ‘What’ is to be Learnt?

<table>
<thead>
<tr>
<th>Term</th>
<th>Number and Algebra</th>
<th>Measurement and Geometry</th>
<th>Statistics and Probability</th>
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<tbody>
<tr>
<td>1</td>
<td>• Manipulate and group physical objects and drawings to develop basic understanding of the concepts of number and numerals through play situations that are carefully structured so that children can: Make mistakes without feeling afraid. Have access to materials to make discovery possible…. <em>I balanced my shoe with 3 beanbags on the scales</em> Be stimulated and have the desire to find things out. Be <strong>guided</strong> to discover. For example during water or sand play… <em>I wonder how many cups will fill that jug?</em> Have their natural curiosity harnessed… <em>Use student interests to direct lessons presented.</em> • Make lots of models using a variety of manipulatives of numbers 1 – 4 first to form a base for larger numbers. • Count, compare and order collections and objects up to 10. Use measurement activities to provide tactile counting and comparing opportunities. • Begin to relate the models of numbers made and counted to matching numerals. • Sort and classify familiar objects and make simple patterns. Build this into geometry work.</td>
<td>• Directly compare common objects in length, mass and capacity using appropriate language (e.g. longer, wider, heavier, lighter, holds more or less). <em>Build number work in counting and comparing into measurement activities.</em> • Describe familiar time sequences of events. [days of the week, before and after lunch etc] Build into daily routines. • Describe position and movement as part of the everyday language of location and direction, such as ‘between’, ‘near’, ‘next to’, ‘forwards’, ‘towards’ • Sort, describe and name familiar two dimensional shapes such as squares, circles, triangles and rectangles and three dimensional objects in the environment such as cubes and spheres.</td>
<td>• Answer yes/no questions to collect information. Lots of opportunities for children to collect data in other curriculum areas. • While this foundation level has no specific expectations listed for probability children will begin to experience events with uncertain outcomes (e.g. die rolling or using a spinner.) Informally promote the appropriate language of probability as the situations arise throughout the year.</td>
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<table>
<thead>
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<th>2</th>
<th>3</th>
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</table>
| - Continue to manipulate and group physical objects and drawings to develop basic understanding of the concepts of number and numerals. [directed free play]. | - Directly compare common objects in length, mass and capacity using appropriate language (e.g. longer, wider, heavier, lighter, holds more or less).  
  
  **Build number work in counting and comparing into measurement activities.** |
| - Continue to make models of numbers 1 – 4 and use these models as a basis to build the models of numbers 5 – 9. | - Compare and order the duration of events using the everyday language of time. Build on from time sequences from last term. |
| - Deal with zero in contrast to the numbers already modeled. Ensure that zero represents something for e.g... I have 2 biscuits. I ate one so I now have 1 biscuit left. I ate that biscuit so now I have 0 biscuits left. | - Informally promote an awareness of the function of a clock in relation to telling the time. |
| - Begin to recognise numbers up to 5 instantly without counting. [subitising]. | - Sort shapes and geometric objects according to simple descriptions and features. |
| - Continue to count forwards and backwards, compare and order collections and objects up to 10 and beyond for able students. Use measurement activities to provide tactile counting and comparing opportunities. | - Place and orientate shapes and objects according to simple descriptions such as next to, beside, in front of, behind, over and under. Create patterns that will help connect pattern, shape and location. |
| - Group objects into sets (collections) and form simple correspondences (relations) between two sets; for example, in sharing pencils among students. | - Answer yes/no questions to collect information. Lots of opportunities for children to collect data in other curriculum areas. |
| - Describe and place objects in order such as first, second and third…and up to tenth for able students. Build ordinal number into daily routines. | - While this foundation level has no specific expectations listed for probability children will begin to experience events with uncertain outcomes (e.g. die rolling or using a spinner). Informally promote the appropriate language of probability as the situations arise throughout the year. |
| - Model addition by putting groups of objects together and counting the combined set. Use story, materials and symbols / numbers ranges that are suitable for varying levels of understanding. | - Sort and classify familiar objects and explain the basis for these classifications. Build in to Geometry. |
| - Model division as sharing in natural situations for children. Use story, materials and symbols / numbers suitable for the varying levels of understanding. | - Deal with subtraction as it arises informally. |
| - Sort shapes and geometric objects according to simple descriptions and features. Create patterns that will help connect pattern, shape and location. | |
**Proficiency Strands**  - *How* content is explored or developed.

*Understanding* includes connecting names, numerals and quantities.

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<table>
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<th>3</th>
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<tr>
<td>• Continue to manipulate and group physical objects and drawings to develop basic understanding of the concepts of number and numerals. [directed free play].</td>
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<tr>
<td>• Use calculators to investigate patterns and simple computations.</td>
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<tr>
<td>• Continue to make models of numbers up to at least 10 and beyond for able students who can see the teens as a group of ten and some more. Students need to know everything they can about the numbers 0 -9 (quantity, symbol, word) as this will lay the foundation for the years ahead.</td>
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<tr>
<td>• Continue to subitise numbers up to 5. Begin to name numbers in terms of their part/ part whole. For example I instantly see 4 counters but this is made up of 3 counters and 1 counter or 2 counters and 2 counters. There are 6 pop sticks and I can see them as 3 and 3 or 2 and 4.</td>
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<tr>
<td>• Continue to count forwards and backwards, varying starting points, compare and order collections and objects up to 20 and beyond for able students. Use measurement activities to provide tactile counting and comparing opportunities.</td>
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<tr>
<td>• Describe and place objects in order from first to tenth. Continue to build ordinal number into daily routines.</td>
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<tr>
<td>• Continue to model addition by putting groups of objects together and counting the combined set. Use story, materials and symbols / numbers ranges that are suitable for varying levels of understanding.</td>
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<tr>
<td>• Continue to model division as sharing in natural situations for children. Use story, materials and symbols / numbers suitable for the varying levels of understanding.</td>
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<tr>
<td>• Copy, continue and create patterns with objects and drawings. Build into geometry.</td>
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<td>• Continue to deal with subtraction as it arises informally.</td>
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<td>• Directly compare common objects in length, mass and capacity using appropriate language (e.g. longer, wider, heavier, lighter, holds more or less).</td>
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<tr>
<td>• Begin to see the need for a common unit of measurement when making direct comparisons.</td>
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<tr>
<td><em>Build number work in counting and comparing into measurement activities.</em></td>
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<tr>
<td>• Continue with first semester work in time. Connect days of the week to familiar events and actions outside of school day choosing events that make connections with students’ everyday family routines, holidays etc.</td>
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<tr>
<td>• Follow and give simple directions to guide a friend from one point to another around an obstacle path / treasure hunt etc.</td>
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<tr>
<td>• Continue with shape and location work from first semester and extend kinesthetically in movement and dance, art and ICT.</td>
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<tr>
<td>• Answer yes/no questions to collect information. Lots of opportunities for children to collect data in other curriculum areas.</td>
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<tr>
<td>• Begin to experiment with different ways to present data collected such as pictographs and lists.</td>
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<td></td>
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<tr>
<td>• While this foundation level has no specific expectations listed for probability children will begin to experience events with uncertain outcomes (e.g. die rolling or using a spinner). Informally promote the appropriate language of probability as the situations arise throughout the year.</td>
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Teachers will need to create the content for the final term based on how the year has developed. It is impractical to list content for this term as each school’s calendar of events will differ. School concerts, sporting carnivals, religious sacraments, camps etc will take up significant teaching time throughout the year. Teachers should not feel rushed. Term four can be used to revisit, finish off, catch up and link relationships between units of work covered in the first three terms. The above overview covers the content listed in the Australian Mathematics Curriculum but is only a suggested outline that teachers can use to assist in providing a balanced mathematics program.

### Progression Point 0.5

At 0.5, a student progressing towards the standard at Foundation may, for example:

**Number and Algebra**

- connect number names and numerals with sets of up to 10 elements,
- use counting strategies to solve problems that involve comparing, combining and separating these sets,
- match individual objects with counting sequences up to 10
- order the first, second and third elements of a set.

**Measurement and Geometry**

- identify measurement attributes of length and mass in practical situations
- compare lengths and masses of familiar objects.
- order events in a day and name the days of the week, in order.
- identify simple shapes in their environment and use simple location words.

**Statistics and Probability**

- answer simple yes/no questions about given categorical data that are sorted.

### Foundation Achievement Standard

**Number and Algebra**

Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets.

- They match individual objects with counting sequences up to and back from 20.
- Students order the first 10 elements of a set.

**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.

**Statistics and Probability**

Students sort familiar categorical data into sets and use these to answer yes/no questions and make simple true/false statements about the data.