#  Mathematics Syllabus K-10

# Assessment Rubrics

# Number and Algebra

# Measurement and Geometry

# 2014

Measurement and Geometry and Statistics and Probability to be completed 2014 Term One

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# Mathematics Syllabus K-10

#  NSW Syllabuses and support materials promote an integrated approach to teaching, learning and assessment. *Assessment for learning*, *assessment as learning and assessment of learning* are approaches that can be used individually or together, informally or formally, to gather evidence about student achievement and to improve student learning. The principles of *assessment for learning and assessment as learning* strategies have many common elements.

 *Assessment for learning* and *assessment as learning* incorporate:

* Self-assessment and peer assessment
* Strategies for students to actively monitor abnd evaluate their own learning
* Feedback, together with evidence, to help teachers and students decide whether students are ready for the next phase of learning or whether they need further learning experiences to consolidate their knowledge, understanding and skills.

*Assessment for learning* involves teachers using evidence about students' knowledge, understanding and skills to inform their teaching. Sometimes referred to as ‘formative assessment', it usually occurs throughout the teaching and learning process to clarify student learning and understanding.

Assessment for learning:

* reflects a view of learning in which assessment helps students learn better, rather than just achieve a better mark
* involves formal and informal assessment activities as part of learning and to inform the planning of future learning
* includes clear goals for the learning activity
* provides effective feedback that motivates the learner and can lead to improvement
* reflects a belief that all students can improve
* encourages self-assessment and peer assessment as part of the regular classroom routines
* involves teachers, students and parents reflecting on evidence
* is inclusive of all learners.

*Assessment as learning* occurs when students are their own assessors. Students monitor their own learning, ask questions and use a range of strategies to decide what they know and can do, and how to use assessment for new learning.

*Assessment as learning*:

* encourages students to take responsibility for their own learning
* requires students to ask questions about their learning
* involves teachers and students creating learning goals to encourage growth and development
* provides ways for students to use formal and informal feedback and self-assessment to help them understand the next steps in learning
* encourages peer assessment, self-assessment and reflection.

*Assessment of learning* assists teachers in using evidence of student learning to assess achievement against outcomes and standards. Sometimes referred to as ‘summative assessment', it usually occurs at defined key points during a unit of work or at the end of a unit, term or semester, and may be used to rank or grade students. The effectiveness of *assessment of learning* for grading or ranking depends on the validity and reliability of activities. Its effectiveness as an opportunity for learning depends on the nature and quality of the feedback.

*Assessment of learning*:

* is used to plan future learning goals and pathways for students
* provides evidence of achievement to the wider community, including parents, educators, the students themselves and outside groups
* provides a transparent interpretation across all audiences.

*Assessment as learning and assessment as learning* approached, in particular, help teachers and students to know if current understanding is a suitable basis for future learning. Teachers using their professional judgment in a standards-referenced framework are able to extend the process of *assessment for learning* into the *assessment of learning*.

Refer to the Board of Studies advice on Assessment for further information.

#### Reporting using grades for student reporting – frequent and commonly asked questions.

#### What is the common grade scale?

The common grade scale summarises the standard (or quality) of achievement associated with each grade, A–E. The scale describes:

* the depth of knowledge and understanding
* the range of skills that students working at that standard typically show.

#### How do I know what standard each of the grades represents?

The Board of Studies is gathering samples of the work of real students who have engaged in some syllabus-based tasks and activities. These work samples are published on the Board's Assessment Resource Centre website.

The work samples come from a range of schools throughout NSW. The samples have been aligned to grades by a number of experienced practising teachers on the basis that the sample displays characteristics of work typically produced by students performing at that standard at the end of the stage. Each work sample is accompanied by an explanation called a grade commentary, which helps in understanding the reasons why it was aligned to a particular grade.

The collections of work samples provided on the Assessment Resource Centre show the qualities in work typically produced by students who will receive each grade at the end of the stage.

Teachers become familiar with the standards by:

* reading the descriptions for each grade
* examining the work samples
* considering carefully the grade commentary for each sample.

The grade commentaries are an important link between the work samples and the standards.

While considering the work samples, teachers can reflect on their experiences with other students who have produced work of a similar quality. This will give them a mental picture of the knowledge, skills and understanding represented by that grade. Discussions with colleagues will also be helpful in developing a clear understanding of the standards.

#### How do I choose the right grade?

Teachers weigh up the assessment information they have collected for each student **up to that point in time**. This information will come from both formal assessment activities and informal observations, and will be built up over time and in different situations.

Teachers can then compare their students' achievements with the standards represented by each grade, and make an on-balance professional judgement about the grade that is most appropriate to summarise each student's achievement.

Making a judgement about the grade that best matches each student's achievements requires teachers to make an on-balance judgement in relation to standards. This is a key professional skill. An on-balance judgement does not just focus on a single piece of work.

#### What is the best way for teachers of the same stage to get a shared view of the standards for each subject?

Discussions with colleagues about the common grade scale and the collection of work samples aligned to each grade on the Assessment Resource Centre website would be helpful. The grade commentaries for each sample describe some of the characteristics of the work sample that make it typical of the work produced by a student performing at that standard at the end of a stage.

#### Will the Board of Studies produce course performance descriptors of standards for each course, as it has for Stage 5 courses?

It is not intended that any subject-specific course performance descriptors will be developed for stages other than Stage 5. The common grade scale describes student performance at each of the five grade levels.

The Board of Studies requires schools to submit grades for each student at the end of Year 10. Subject-specific course performance descriptors have been developed for teachers to use in assigning Year grades.

#### Does a C grade mean the same in all schools?

The common grade scale and the work samples on the Board's Assessment Resource Centre website provide the basis for schools in NSW, in each course and stage, to award grades based on the same standards.

As teachers become familiar with the standards and the support materials and engage in professional discussions with their colleagues, greater levels of consistency can be expected.

#### A student received the same grade in their yearly report as they did in their half-yearly report. Does this mean that they showed no improvement?

If a student receives a C grade, they have 'a sound knowledge and understanding of the main areas of content' and have 'achieved an adequate level of competence in the processes and skills' in the work they have covered to date.

If the student receives a C grade at the next reporting point, they generally will have made progress. This is because between the two reporting periods, the student will have learned **new** knowledge and skills of a **more challenging** nature, and will have demonstrated achievement matching the C grade standard in relation to this new and more challenging material.

#### Are there any limits on the number of As, Bs, etc that I can award?

Teachers are **not** limited to set numbers of each grade within their class or school. Grades are given for individual achievement. Students receive the grade that best matches the standard of their achievement. It is possible that there are classes in which all students demonstrate extensive or thorough knowledge and understanding of the content, and show very high or high levels of competence in processes and skills. It may be the case that only A and B grades are assigned in those groups. On the other hand, there may be some groups in which no students demonstrate 'an extensive knowledge and understanding of the content' or show 'very high levels of competence in processes and skills', so that the highest grade awarded may be a B or a C.

#### Is it all right if I don't give an E to any students in my class?

Students are awarded the grade that is the best on-balance summary of their performance, and there are no predetermined numbers or percentages of grades to be awarded.

An E grade would be awarded to students who have demonstrated only 'an elementary knowledge and understanding in few areas of the content' and have achieved only 'very limited competence in some of the processes and skills'.

Grades are awarded based on achievement, not effort or behaviour.

#### How do I award grades part-way through a stage?

At any time in a stage you can:

* compare student achievement with the standards represented by each grade
* make an on-balance professional judgement and give the appropriate grade.

When reporting grades **before** the end of a stage:

* consider the knowledge and skills covered **up to that point in time**
* give the grade that **best matches the standard achieved so far.**

The full range of grades can be awarded at any point in the course or stage.

#### What about grading for students with special education needs?

Teachers should seek advice from their school or sector about any particular requirements for reporting the achievement of students with special education needs. Sectors may determine that students undertaking courses based on Life Skills outcomes and content are outside the A–E reporting requirements. For some students it may be more appropriate to report against their Individual Education Plan.

#### At my school, students are taught in stage groupings. How do I award grades?

Students are sometimes grouped in different ways to meet a variety of different organisational and educational needs. Grades are given for individual achievement. Students should receive the grade that best matches the standard of their achievement. Teachers will need to consider for each student what would typically be expected of that student's year group.

It must always be remembered that the grade awarded is only one element of reporting to parents, and the written comments and other information provided assist by placing the grade in the context of the educational program the student has been undertaking.

#### In my Year 3 class, one student is doing Stage 3 Mathematics. How should I award a grade to this student?

Parents would probably find it most useful to have the grade awarded using the Stage 2 standards – presumably an A in this case – and further information about the student's achievement and how they are being catered for could be provided in the report comments. However, if the Mathematics program for the student includes only the knowledge, skills and understanding of Stage 3 Mathematics, then it may be appropriate to assign a grade that reflects his/her achievement of Stage 3 knowledge, skills and understanding. In such cases, the parents would already be aware that the student was working on such a program. This would also need to be made clear on the report.

#### In my Year 5 class, some students are having difficulties and have not yet achieved Stage 2 knowledge, skills and understanding. Do I award grades using Stage 2 or Stage 3 standards?

If the students have special education needs, and adjustments have been made to their learning program, then teachers may not be required by their school or sector to award a grade. In other cases, grades would normally be awarded according to the standard appropriate to the students' year group.

#### How do I report achievement in Stage 5 Mathematics?

For the purpose of awarding Year 10 grades in Mathematics, a finer grade scale is used, and each of the grades A to D is subdivided into two levels. There is no requirement that this finer scale needs to be used at earlier reporting periods during Stage 5, and teachers can use the common grade scale across the whole of the year group, just as they do in other courses.

#### Do I have to keep samples of my students' work to justify the grades I have awarded?

The Board of Studies does not require teachers to keep samples of student work for the purposes of awarding grades. Teachers make their professional judgement of the grade to be awarded based on the evidence they collect of their students' achievement. This can be in a number of ways, including marks and grades. Teachers should follow the policies of their school/sector in relation to information that they record and/or retain.

#### Can I predetermine the number of grades awarded to students using our school's performance on tests such as NAPLAN?

While students who perform well on these tests will typically be able to demonstrate performance at the higher grades, this may not always be the case. It must be remembered that these tests focus on particular areas of the curriculum – literacy, numeracy, and so on – while the grade awarded to a student in each subject represents a summary of their performance across the broader syllabus content.

#### Can we use trends identified in our school results over the years to help determine the percentage of A, B, C, etc we award in reports in the future?

Schools should refer to the work samples on the Board's Assessment Resource Centre website to make sure that the grades they award are aligned to the standards illustrated by the samples.

The course performance descriptors used to award Year 10 grades are subject-specific elaborations of the common grade scale. It may be that the pattern of grades awarded in Stage 5 courses is similar to the pattern of grades that the school has been awarding.

#### What requirements does the Board of Studies have for reports to parents?

The Board of Studies NSW does not mandate any requirements for reports to parents. That is a sector or school decision. The grades that students receive are only one aspect of a written report to parents and students, which will also contain written comments about the student's achievement, and other information about their participation at school. The school sector/school will provide details about the specific requirements and advice for assessing student achievement and reporting to parents.

#  *Mathematics Syllabus*

# *Early Stage One*

Number and Algebra

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| Whole Number |
| utcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Counts to 30, and orders, reads and represents numbers in a range 0 to 20 MAe-4NA | Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001) | Counts forward to 10 from a given number | Counts forward to 20 from a given number | Counts forward to 30 from a given number | Counts forward beyond 50 from a given number | Counts forward to 100 from a given number |
| Identifies the number before and after a given number to 10 | Identifies the number before and after a given number to 10 | Identifies the number before and after a given number to 20 | Identifies the number before and after a given number to 40 | Identifies the number before and after a given number to 100 |
| Counts backward from a given number in the range 0-10 | Counts backwards from a given number in the range 0-10 | Counts backwards from a given number in the range 0-20 | Counts backwards from a given number in the range 0-50 | Counts backwards from a given number in the range 0-100 |
| Reads and uses ordinal names to at least 5 | Reads and uses ordinal names to at least 10 eg. 10th with teacher assistance | Reads and uses ordinal names to at least 10 eg. 10th | Reads and uses ordinal names to at least 20 eg. 20th | Reads and uses ordinal names to at least 100 eg. 100th |
| Connect number names, numerals and quantities, including zero , initially up to 10 and then beyond (ACMNA002) | Reads numbers to 10 with teacher assistance | Reads numbers to 10 independently  | Reads numbers to 20 | Reads numbers to 50 | Reads numbers beyond 50 |
| Counts and checks groups of objects to 10 with teacher assistance | Counts and checks groups of objects to 10 | Counts and checks groups of objects to 20 | Counts and checks groups of objects to 50 | Counts and checks groups of objects to 100 |
| Subtise small collections o)f objects (ACMNA003 | Beginning to recognise dice and domino dot patterns with teacher assistance  | Instant recognition of dice and domino dot patterns | Instant recognition of dice and domino dot patterns | N/A | N/A |
| Beginning to recognise different arrangements for the same number with teacher assistance | Recognition of some different arrangements for the same number | Instant recognition of different arrangements for the same number | N/A | N/A |
| Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289) | Counts with one-to-one correspondence to 5 with teacher assistance | Counts, orders and compares groups of objects using one-to-one correspondence with teacher assistance to 10 | Counts, orders and compares groups of objects using one-to-one correspondence to 20 | Counts, orders and compares groups of objects using one-to-one correspondence to 50 | Counts, orders and compares groups of objects using one-to-one correspondence to 100 |
| Use the language of money | Beginning to use the language of money or recognise different coins and notes with teacher assistance  | Uses the language of money and recognises some different coins and notes | Uses the language of money and can recognise different coins and notes, cents and dollars | Knows the value of of Australian coins eg 5c, 10c, 20c, 50c, $1, $2 | Makes combinations of coins and notes to a given value eg 2 X 5c = 10C |

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| Addition and Subtraction |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Combines, separates and compares collections of objects, describes using everyday language, records using informal methodsMAe-5NA | Represent practical situations to model addition and sharing (ACMN004) | Combines two or more groups to model addition to 5 with teacher assistance | Combines two or more groups to model addition to 10 with teacher assistance | Combines two or more groups to model addition to 10 | Combines two or more groups to model addition to 20 | Combines two or more groups to model addition beyond 20 |
| Take parts of a group away to model subtraction to 5 with teacher assistance | Take parts of a group away to model subtraction to 10 with teacher assistance | Take parts of a group away to model subtraction to 10  | Take parts of a group away to model subtraction to 20 | Take parts of a group away to model subtraction beyond 20  |
| Beginning to compare groups to determine how many more with teacher assistance  | Compares groups to determine how many more up to 5 with concrete material | Compares groups to determine how many more up to 10 with concrete materials | Compares groups to determine how many more to 10 with no concrete material | Compares groups to determine how many more to 20 with no concrete materials |
| Compares and recognise combinations to 5 with teacher assistance using concrete materials | Compares and recognise combinations to 10 with teacher assistance using concrete materials | Compares and recognise combinations to 10 with concrete materials and representing through pictorial representations | Compares and recognise combinations beyond 10 without concrete materials | Compares and recognise combinations to 20 using known facts |

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| Multiplication and Division |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Groups, Shares and counts collections of objects, describes using everyday language, and records using informal methods MAe-6NA | Investigate and model equal groups | Beginning to model or recognise equal groups or rows with teacher assistance | Models and recognises equal groups or rows with teacher assistance | Models and recognises equal groups or rows | Recognises equal numbers even when arranged differently | Answers maths problems using concrete materials |
| Beginning to group and share collections of objects equally with teacher assistance  | Groups and shares collections of objects equally with teacher assistance | Groups and shares collections of objects equally | Recognises inverse operations eg 3x2 is the same of 2X3 | Makes arrays of 2s, 5s, 10s |
| Record grouping and sharing using informal methods | Beginning to record grouping and sharing informally using pictures, words and numerals with teacher assistance  | Records grouping and sharing informally using pictures, words and numerals with teacher assistance | Records grouping and sharing informally using pictures, words and numerals  | Explains and demonstrates how an answer was obtained | Recognises the symbols X ÷ = |

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| Fractions and Decimals |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Describes two equal parts as halves MAe-7NA | Establish the concept of one-half  | Beginning to divide and an object into two equal parts with teacher assistance  | Divides an object into two equal parts with teacher assistance | Divides an object into two equal parts  | Divides an object into four equal parts  | Divides an object into eight equal parts  |
| Beginning to describe and recognise halves with teacher assistance | Describes and records equal parts as halves with teacher assistance | Describes and records equal parts as halves using drawings | Describes and records equal parts as halves and quarters using drawings | Describes, records and uses notation for halves, quarters and eighths using drawings ½ ¼ 1/8  |

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| Patterns and Algebra |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Recognises, describes and continues repeating patterns MAe-8NA | Sort and classify familiar objects and explain the basis for these classifications (ACMNA005) | Beginning to sort and classify objects in smaller groups with teacher assistance | Sorts and classifies objects into smaller groups  | Sorts and classifies objects into smaller groups and explain the basis for this classification  | Sorts and classifies smaller groups into a number of different attributes and explains the basis for this classification |  |
|  | Copy, continue and create patterns with objects and drawings | Usually continues repeating simple patterns using shapes, objects, pictures and sounds with teacher assistance | Usually continues repeating patterns using shapes, objects, pictures and sounds | Recognises, describes, creates and continues repeating patterns using shapes, objects, pictures and sounds | Recognises, describes, creates and continues repeating patterns using shapes, objects, pictures and sounds and number patterns that increase or decrease  | Recognises, describes, creates and continues repeating patterns using shapes, objects, pictures and sounds and number patterns that increase or decrease Creates and explains a number pattern using words eg it’s goes up by threes |

*Measurement and Geometry*

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| Length  |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes and compares length and distances using everyday language Mae-9MG | Use direct and indirect comparisons to decide which is longer and explain their reasoning using everyday language | Beginning to make short and long construction from concrete materials and with teacher assistance | Makes short and long construction from concrete materials with teacher assistance | Makes short and long construction from concrete materials using everyday language to explain | Makes a variety of short and long construction from concrete materials and using everyday language to explain  | Makes short and long construction from concrete materials and using everyday language in an unfamiliar context |
| Beginning to use everyday language to describe length eg long short, high, tall and everyday language to describe distance eg near, far, closer with teacher assistance  | Uses some everyday language to describe length eg long short, high, tall and everyday language to describe distance eg near, far, closer | Uses everyday language to describe length eg long short, high, tallUses everyday language to describe distance eg near, far, closer | Uses and applies everyday language to explain and describe length and distance | Uses and applies the language for informal units within an unfamiliar context |
| Compares length directly by placing objects side by side and aligning the ends with teacher assistance  | Compares some length directly by placing objects side by side and aligning the ends  | Compares length directly by placing objects side by side and aligning the ends | Compares length directly by placing 2 or more objects side by side and aligning the ends using informal units | Compares length directly by placing 2 or more objects side by side and aligning the ends within an unfamiliar context |
| Records length comparisons informally by drawing, tracing or cutting and pasting with teacher assistance | Records length comparisons informally by drawing, tracing or cutting and pasting | Records length comparisons informally by drawing, tracing or cutting and pasting, and by using words and numerals | Records length comparisons informally by using informal units of measurement | Records length comparisons informally by using informal units of measurement using unfamiliar contexts |

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| Area |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes and compares areas using everyday language | Use direct comparison to decide which shape has a larger area and explain their reasoning using everyday language | Uses some comparative language to describe area eg bigger than or smaller than with teacher assistance | Uses some comparative language to describe area eg bigger than, smaller than, the same as | Uses comparative language to describe area eg bigger than, smaller than, the same as | Uses and applies comparative language to describe area eg bigger than, smaller than, the same as | Uses, applies and compares using comparative language to describe area eg bigger than, smaller than, the same as |
| Orders 2 areas into larger and smaller with teacher assistance | Orders 2 areas into larger and smaller | Estimates the larger of two areas and compares using superimposing or super positioning  | Estimates and applies the larger of two areas and compares using informal units to measure  | Estimates and applies the larger of two areas and compares using informal units to measure in unfamiliar contexts |
| Answers simple questions about which area is larger or smaller with different sizes and with teacher assistance  | Answers simple questions about which area is larger or smaller with different areas | Identifies and describes attribute of area by covering surfaces completely with smaller shapes | Compares the surfaces of 2 areas and answers questions on which is larger or smaller | Uses informal units to measure and record area. |
| Records area comparison informally by drawing tracing or cutting and pasting, and by using numerals and words with teacher assistance | Records area comparison informally by drawing tracing or cutting and pasting,  | Records area comparison informally by drawing tracing or cutting and pasting, and by using numerals and words | Records and applies area comparison informally by drawing tracing or cutting and pasting, and by using numerals and words | Records and applies area comparison informally by drawing tracing or cutting and pasting, and by using numerals and words in a variety of contexts |

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| Volume and Capacity  |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes and compares the capacities of containers and the volumes of objects or substances using everyday language | Uses direct an indirect comparisons to decide which holds more and explain their reasoning using everyday language | Beginning to identify that volume is the amount of space an object occupies | Identifies that volume is the amount of space an object occupies | Identifies that volume is the amount of space an object occupies. | Estimates volume or capacity using appropriate informal units, eg a smaller container filled into a larger one | Compares and orders the volumes of two or more objects using informal units |
| Beginning to identify capacity as the amount of space an object can hold. | Identifies capacity as the amount of space an object can hold with teacher assistance  | Identifies capacity as the amount of space an object can hold | Identifies and explains capacity as the amount of space an object can hold | Identifies and explains capacity as the amount of space an object can hold in a variety of contexts |
| Beginning to use the terms full, empty and about half full with teacher assistance | Uses the terms full, empty and about half full with teacher assistance | Uses the terms full, empty and about half full. | Uses and records using drawings empty, full and about half full | Uses and records using drawings empty, full and about half full |

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| Mass |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes the masses of objects using everyday language | Use direct and indirect comparisons to decide which is heavier and explain their reasoning using everyday language | Beginning to use informal language such as heavy, light | Understands and uses informal language such as heavy, light | Identifies and describes the attributes of mass as the amount of matter in an object | Identifies, describes and compares the mass of objects using informal units | Measures, records and compares the mass of objects using informal units |
| Beginning to identify simple masses by pushing, pulling or hefting using an equal arm balance  | Identifies simple masses by pushing, pulling or hefting using an equal arm balance with teacher assistance | Compares the masses of two objects by pushing, pulling or hefting  | Compares and orders 3 or more masses then check using a balance | Compares and orders 3 or more masses then check using a balance then records findings using drawing  |
| Records comparisons informally using drawings to records mass comparison informally with teacher assistance | Records comparisons informally using drawings to records mass comparison informally | Records comparisons informally using drawings and words to records mass comparison informally | Explains, records and compares informally using drawings and words to record mass comparison informally | Explains, applies, records and compares mass by referring to the number of uniform informal units used |

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| Time  |
| Outcome | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Sequences events , uses everyday language to describe the duration of events and reads hour time on clocks | Compare and order the duration of events using the everyday language of time | Uses terms to describe day / night lunch/dinner with teacher assistance  | Uses simple terms to describe day/night/lunch/dinner | Describes the duration of events using everyday language  | Describes the duration of events using everyday language Estimates and measures the duration of more than 2 events – long time, short time | Describes and records the duration of events using everyday language Uses informal units to measure and compare the duration of more than 2 events |
| Sequence events in time with day or night with teacher assistance | Sequences two events in time day / night | Sequences two events in time | Sequences three events in time next, after, that | Sequences more than three events in time next, after, that |
| Connect days of the week to familiar events and actions | Names the days of the week or names some of the days of the week | Names the days of the week and classifies weekdays and weekends | Names and orders the days of the week and classifies weekdays and weekends | Names, orders and records the days of the week and classifies weekdays and weekends | Names, orders and records the days of the week and classifies weekdays and weekends to a real life situation |
| Beginning to connect a day or days of the week to familiar events and actions with teacher assistance | Connects some days of the week to familiar events and actions | Connects days of the week to familiar events and actions | Connects days of the week to familiar events and actions by recording informally using drawings | Connects days of the week to familiar and unfamiliar events and actions by recording informally using drawings |
| Tell time on the hour on analog and digital clocks | Beginning to read analogue and digital clocks to the hour using the term ‘o’clock’ | Reads analogue and digital clocks to the hour using the term ‘o’clock’ with teacher assistance | Reads analogue and digital clocks to the hour using the term ‘o’clock’ | Reads and applies an understanding of the term o’clock to familiar situations | Reads and applies an understanding of the term o’clock to unfamiliar situations |

*Statistics and Probability*

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| Data |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents data and interprets data displays made from objects. Mae-17SP | Answer yes/no questions to collect information(ACMSP011) | Collects some information about themselves or their environment, including asking and answering some yes/no questions with teacher assistance | Collects some information about themselves or their environment, including asking and answering yes/no questions | Collects information about themselves and their environment, including asking and answering yes/no questions | Collects information about unfamiliar concepts by answering and asking suitable questions to obtain appropriate data. | Collects and interprets information about unfamiliar concepts by asking suitable questions to obtain appropriate data. |
| Organise objects into simple [data displays](http://syllabus.bos.nsw.edu.au/glossary/mat/data-display/?ajax) and interpret the displays | Groups some objects according to characteristics to form a simple data display with teacher assistance | Groups some objects according to characteristics and forms a simple data displays | Groups objects according to characteristics to form a simple data display, e.g. sort blocks or counters according to colour | Groups objects according to characteristics and forms simple data displays to support data conclusions | Groups objects according to characteristics to form data displays on unfamiliar context |
| Arranges some objects in rows or columns according to characteristics to form a data display with teacher assistance | Arranges some objects in rows or columns according to characteristics to form a data display | Arranges objects in rows or columns according to characteristics to form a data display, e.g. arrange lunchboxes in columns according to colour | Arranges objects in rows or columns according to characteristics and displays data using pictorial representations | Arranges and creates data displays using pictorial representations from information gathered e.g. tally marks |
| Interprets some information presented in a display of objects to answer questions with teacher assistance  | Interprets some information presented in a display of objects to answer questions | Interprets information presented in a display of objects to answer questions, e.g. 'How many children in our class have red pencil cases?' | Interprets information presented in a display using comparative language to support conclusions | Interprets information using comparative language and forms questions based on data display |

# *Measurement and Geometry*

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| 3 Dimensional Shapes  |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Manipulates, sorts and represents three-dimensional objects and describes them using everyday languageMAe-14MG  | Sort, describe and name familiar three-dimensional objects in the environment (ACMMG009) | Describes some of the features of some familiar three-dimensional objects, such as local landmarks including Aboriginal landmarks, using everyday language, e.g. flat, round, curved with teacher assistance | Describes some of the features of some familiar three-dimensional objects, such as local landmarks including Aboriginal landmarks, using everyday language, e.g. flat, round, curved | Compares and describes the features of familiar three-dimensional objects, such as local landmarks including Aboriginal landmarks, using everyday language, e.g. flat, round, curved | Compares and describes the features of familiar three-dimensional objects using some mathematical terms such as edges and faces, such as local landmarks including Aboriginal landmarks, using everyday language, e.g. flat, round, curved  | Compares, explains. and describes the features of familiar three-dimensional objects using some mathematical terms such as edges and faces, such as local landmarks including Aboriginal landmarks, using everyday language, e.g. flat, round, curved |
| Sorts some three-dimensional objects and explains some of the attributes used to sort them, e.g. colour, size, shape, function with teacher assistance | Sorts some three-dimensional objects and explains some of the attributes used to sort them, e.g. colour, size, shape, function | Sorts three-dimensional objects and explains the attributes used to sorts them, e.g. colour, size, shape, function | Sorts compares and groups three dimensional objects according to a variety of attributes | Compares and groups three dimensional objects according to a variety of attributes and give justification for their grouping |
| Recognises and uses informal names for some three-dimensional objects, e.g. box, ball with teacher assistance | Recognises and uses informal names for some three-dimensional objects, e.g. box, ball | Recognises and uses informal names for three-dimensional objects, e.g. box, ball | Recognises and uses mathematical names for some objects e.g. cube | Uses mathematical names for all three-dimensional objects e.g. cube, sphere, prism, pyramid and cylinder |
| Manipulates and describes some objects found in the environment with teacher assistance | Manipulates and describes some objects found in the environment | Manipulates and describes a variety of objects found in the environment | Describes and explains (without manipulation) a variety of unfamiliar objects found in the environment | Records, describes and explains (without manipulation) a variety of unfamiliar objects found in the environment  |
| Predicts and describes some movements of objects, e.g. 'This will roll because it is round' with teacher assistance | Predicts and describes some movements of objects, e.g. 'This will roll because it is round' | Predicts and describes the movement of objects, e.g. 'This will roll because it is round' | Predicts, describes and compares the movement of two or more objects and justifies their evaluation | Predicts, describes and compares the movement of two or more objects and justifies their evaluation in a variety of contexts |
| Makes and describes three- dimensional models with teacher assistance | Makes models using a variety of three-dimensional objects and with teacher assistance describes the models | Makes models using a variety of three-dimensional objects and describes the models, e.g. 'I made a model of a person using a ball and some blocks' | Makes and compares models using three-dimensional objects and uses some mathematical terms to describe the models e.g. I made a model of a person using cubes | Makes and compares models of unfamiliar objects and uses mathematical terms to justify the processes used in creating their end product |
| Manipulates, sorts and describes representations of 2D shapes including circles, triangles, squares and rectangles using everyday language | Sort, describes and name familiar 2D shapes in the environment | Identifies, represents and names two shapes circles, triangles, squares or rectangles | Identifies, represents and names two shapes circles, triangles, squares or rectangles in different orientations, pictures and the environment | Identifies, represents and name circles, triangles, squares and rectangles in different orientations, pictures and the environment | Identifies, represents, names and sorts 2D shapes by a given attribute, e.g. number of sides | Identifies, represents, names and sorts and 2D shapes by a given attribute, e.g. number of sides for a variety of shapes |

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| Position |
| Outcomes | Content descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes position and gives and follows simple directions using everyday languageMAe-16MG | Describe position and movement (ACMMG010) | Gives and follows one simple direction to position an object with teacher assistance | Gives and follows one simple direction to position an object or themselves | Gives and follows simple directions to position an object or themselves | Gives and follows more complex directions to position an object or themselves | Gives and follows more complex directions to position an object or themselves and records informally  |
| Beginning to describe the position of an object in relation to themselves using everyday language with teacher assistance | Describes the position of an object in relation to themselves using everyday language with teacher assistance | Describes the position of an object in relation to themselves using everyday language, such as 'between', 'next to', 'behind' or 'inside', e.g. 'The table is behind me' | Describes and compares the position of two or more objects in relation to themselves using everyday language such as 'between', 'next to', 'behind' or 'inside', e.g. 'The table is behind me' | Describes and compares the position of two or more objects in relation to themselves using models or drawings  |
| Beginning to describe the position of objects in relation to themselves using the terms 'left' and 'right', with teacher assistance | Describes the positions of objects in relation to themselves using the terms 'left' and 'right', with teacher assistance | Describes the positions of objects in relation to themselves using the terms 'left' and 'right', e.g. 'The tree is on my right' | Describes and compares the positions of objects in relation to themselves or another person using the terms 'left' and 'right' e.g. “the chair is to the left of me but to the right of Harry” | Describes, explains and compares the positions of objects in relation to themselves or another person using the terms 'left' and 'right' e.g. “the chair is to the left of me but to the right of Harry” |

# *Mathematics Syllabus*

# *Stage One Year One*

Number and Algebra

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| Whole Number 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Applies place value, informally, to count, order, read and represent two- and three digit numbers MA1-4NA | Develops confidence with number sequences to 100 by ones from any starting point(ACMNA012) | Counts forward and backward to 20 from a given number | Counts forward and backward to 100 from a given number with teacher assistance | Counts forward and backward by ones to 100 from any two-digit number  | Counts forward and backward by ones to 100 from any two-digit number independently | Counts forward and backward by ones beyond 100 from any two-digit number independently |
| Reads and uses the ordinal names to at least ‘tenth’ | Reads and uses the ordinal names to at least ‘twentieth’ | Reads and uses the ordinal names to ‘thirty-first’  | Independently reads and uses the ordinal names to ‘thirty-first’ | Independently reads and uses the ordinal names beyond ‘thirty-first’ |
| Counts collections to 100 by partitioning numbers using place value (ACMNA014) | Counts collections to at least 20 using ten as a reference | Counts collections to 100 by partitioning numbers by grouping in tens with teacher assistance | Counts collections to 100 by partitioning numbers by grouping in tens | Counts collections beyond 100 by partitioning numbers by grouping in tens and ones  | Counts collections to 1000 by partitioning numbers by grouping in hundreds, tens and ones |
| Recognise, model, read, write and order numbers to at least 100; locate these numbers on a number line (ACMNA013) | Recognises, models using concrete materials, reads, writes and orders numbers to at least 20 | Recognises, models, reads, writes and orders numbers to at least 100 using visual aids e.g. number line, hundreds chart | Recognises, models, reads, writes and orders numbers to 100 | Recognises, models, reads, writes and orders numbers beyond 100  | Recognises, models, reads, writes and orders numbers to at least 1000 |
| Recognise, describe and order Australian coins according to their value (ACMNA017) | Recognises some Australian coins according to their value  | Recognises, describes and orders some Australian coins according to their value  | Recognises, describes and orders Australian coins according to their value  | Recognises, describes and orders Australian coins and notes according to their value  | Recognises, describes and orders Australian coins and notes according to their value and determines whether there is enough money to buy a particular items |

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| Addition and Subtraction 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers MA1-5NA | Represent and solve simple addition and subtraction problems using a range of strategies, including counting on, partitioning, and rearranging parts(ACMNA015) | Uses concrete materials or fingers to represent simple addition and subtraction problems to 10 | Represents addition and subtraction problems involving one and two-digit numbers using concrete materials with teacher assistance | Represents addition and subtraction problems involving one and two-digit numbers using concrete materials | Represents and applies addition and subtraction problems involving one and two-digit numbers with /out concrete materials | Represents and applies addition and subtraction problems involving two and three-digit numbers with /out concrete materials to complex and unfamiliar problems |
| Records addition and subtraction informally using objects, drawings, words and numerals | Records number sentences in a variety of ways using drawings, words, numerals and mathematical symbols (including +, -, =) with teacher assistance | Records number sentences in a variety of ways using drawings, words, numerals and mathematical symbols (including +, -, =) | Records independently number sentences using written strategies  | Records independently number sentences using efficient written and mental strategies  |
| Applies strategies to solve simple addition and subtraction problems that have been demonstrated by other students and with teacher assistance | Demonstrates solving simple some addition and subtraction problems  | Demonstrates solving simple addition and subtraction problems  | Demonstrates and applies strategies for solving addition and subtraction problems using one and two-digit numbers,  | Demonstrates and applies strategies for solving addition and subtraction problems using one and two-digit numbers,  |
| Uses at least one strategy such as counting on, partitioning, and rearranging parts with teacher assistance  | Uses at least one strategy such as counting on, partitioning, and rearranging parts | Uses a range of strategies such as counting on, partitioning, and rearranging parts | Uses a range of strategies such as counting on, partitioning, and rearranging parts | Implements a variety of mental and written strategies and explains how an answer was obtained |

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| Multiplication and Division 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses a range of mental strategies and concrete materials for multiplication and division MA1-6NA | Skip count by twos, fives and tens starting from zero (ACMNA012) | Rhythmic and skip counts by twos, fives and tens from any number with concrete and visual aids and teacher assistance | Rhythmic and skip counts by twos, fives and tens from any number with concrete and visual aids | Skip counts by twos, fives and tens  | Skip counts by twos, fives and tens from any number  | Skip counts by twos, fives and tens from any number and applies this to solve problems |
|  | Model and use equal groups of objects as a strategy for multiplication Recognise and represent division as grouping into equal sets (ACMNA032) | Recognises and forms equal groupings and with teacher assistance, and models multiplication and division problems with concrete materials | Uses equal groupings to model multiplication and division problems with teacher assistance | Uses equal groupings to model multiplication and division problems | Uses equal groupings to model and solve multiplication and division problems | Uses equal groupings, arrays, columns and rows to model and solve multiplication and division problems |

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| Fractions and Decimals 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents and models halves, quarters and eighths MA1-7NA | Recognise and describe one- half as one of two equal parts of a whole (AMNAA016) | Recognises and describes two equal parts as halves | Recognises, describes and records one- half as one of two equal parts of a whole with teacher assistance | Recognises, describes and records one- half as one of two equal parts of a whole  | Recognises, describes and records one- half as one of two equal parts of a whole and one-quarter as four equal parts of a whole | Recognises, describes and records one- half as one of two equal parts of a whole; one-quarter as four equal parts of a whole; and one-eighth as eight equal parts of a whole |

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| Patterns and Algebra 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Creates, represents and continues a variety of patterns with numbers and objects MA1-8NA | Investigate and describe number patterns formed by skip counting and patterns with objects (ACMNA018) | Recognises, records, describes and continues simple number patterns that ascend or descend by one | Recognises, records, describes and continues repeated ‘two’ and ‘three’ object patterns and number patterns that increase or decrease with visual supports and teacher support | Recognises, records, describes and continues repeated ‘two’ and ‘three’ object patterns and number patterns that increase or decrease with visual supports | Recognises, records, describes and continues repeated ‘two’ and ‘three’ object patterns and number patterns that increase or decrease independently | Recognises, records, describes and continues number patterns that increase or decrease and identify missing elements |
|  | Skip counting (taken from Multiplication and Division) | Rhythmic and skip counts by twos, fives and tens from any number with visual aids and teacher assistance | Rhythmic and skip counts by twos, fives and tens from any number with visual aids | Skip counts by twos, fives and tens from any number with visual aids | Skip counts by twos, fives and tens from any number  | Skip counts by twos, fives and tens and applies this to solve problems |

*Measurement and Geometry*

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| Length 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compare and estimates lengths and distances using uniform informal units, metres and centimetres. MA1-9MG | Measure and compare the lengths of pairs of objects using uniform informal units (ACMMG019) | Measures and compares the lengths of some pairs of objects using uniform informal units with teacher assistance | Measures and compares the lengths of some pairs of objects using uniform informal unit | Measures and compares the lengths of pairs of objects and distances using uniform informal units  | Measures, explains and compares the lengths of several objects and distances by selecting appropriate uniform informal units independently | Estimates, explains measures and compares the lengths of several objects by selecting appropriate uniform informal units in unknown contexts |

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| Area 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measure, compares, records and estimates areas using uniform informal units MA1-10MG | Measure and compare areas using uniform informal units | Estimates, measures, compares and records some areas using uniform informal units with teacher assistance | Estimates, measures, compares and records some areas using uniform informal units | Estimates, measures, compares and records areas using uniform informal units | Estimates, measures, explains compares and records the lengths of several areas by selecting appropriate uniform informal units independently | Estimates, explains measures and compares the lengths of several areas by selecting appropriate uniform informal units in unknown contexts and discusses strategies used |

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| Volume and Capacity 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measure, records, compares and estimates volumes and capacities using uniform informal units MA1-11MG | Measure and compare the capacities of pairs of objects using uniform informal units  | Estimates, measures, compares and records the capacity of some pairs of objects using uniform informal units with teacher assistance | Estimates, measures, compares and records the capacity of some pairs of objects using uniform informal units | Estimates, measures, compares and records the capacity of pairs of objects using uniform informal units | Estimates, measures, compares and records the capacity of several objects by selecting appropriate uniform informal units independently | Estimates, explains measures and compares the capacities of several objects by selecting appropriate uniform informal units in unknown contexts and discusses strategies used |
| Estimate, record and measure the volume of the container with uniform informal units and counting the number used | Estimates, measures and records the volume of a regular rectangular container using some uniform informal units with teacher assistance | Estimates, measures and records the volume of a regular rectangular container using some uniform informal units accurately  | Estimates, measures and records the volume of a regular rectangular container using uniform informal units | Estimates, measures, records, compares the volume of a variety of regular rectangular containers using uniform informal units | Estimates, measures, records, compares and predicts the volume of a variety of rectangular containers by selecting appropriate uniform informal units and justifying their choice |

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| Mass 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measure, records, compares and estimates the masses of objects using uniform informal units MA1-12MG | Investigate mass using a pan balance | Compares and measures the masses of two objects using a pan balance with teacher assistance | Compares, measures and records the masses of two objects using a pan balance with some teacher assistance | Compares, measures, sorts and records the masses of two objects using a pan balance | Compares, measures, sorts and records the masses of two objects using a pan balance independently | Compares, measures, sorts and records the masses of more than two objects using a pan balance independently and predicts the action of a pan balance before placing the objects |

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| Time 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Describe, compares anrations of events and reads half-and quarter hour time MA!-13MG | Name and order months and seasons | Names some months and seasons with teacher assistance  | Names and orders months and seasons with visual supports | Names and order months and seasons | Names and orders months and seasons describing environmental characteristics of each season | Names and orders months and seasons describing environmental characteristics of each season and applies this knowledge in solving written word problems \*  |
| Uses a calendar to identify the day and date with teacher assistance  | Uses a calendar to identify some dates and determine the number of days in each month  | Uses a calendar to identify the date and determine the number of days in each month | Uses and explain a calendar to identify the date, determine the number of days in each month  | Uses and explain a calendar to identify the date, determine the number of days in each month and locate and identify culturally significant days and dates  |
| Reads time to the hour on analogue and digital clocks with teacher assistance  | Reads and records time to the hour and half-hour on analogue and digital clocks with consistent accuracy | Reads and records time to the hour and half-hour on analogue and digital clocks | Reads and records time to the hour and half-hour accurately and some other times (e.g. quarter past or quarter to) on analogue and digital clocks | Reads and records time to the hour, half-hour and quarter-hour on analogue and digital clocks |

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| Three Dimensional 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Sorts, describes, represents and recognises familiar mensional objects including cones, cubes, cylinders, spheres and prisms MA!-14MG | Recognise and classify familiar three-dimensional objects using obvious features | Identify, recognise and name some three dimensional objects: cones, cubes, cylinders, prisms and spheres with teacher assistance | Identify, recognise and name some three dimensional objects: cones, cubes, cylinders, prisms and spheres | Identify, recognise and name three dimensional objects: cones, cubes, cylinders, prisms and spheres | Identify, recognise and name three dimensional objects: cones, cubes, cylinders, prisms and spheres from different vantage points | Identify, recognise, name and represent three dimensional objects: cones, cubes, cylinders, prisms and spheres in a variety of contexts |
|  |  | Use some of the terms surface, flat surface, curved surface, faces in describing familiar three-dimensional objects using concrete materials and teacher assistance | Use some of the terms surface, flat surface, curved surface, faces in describing familiar three-dimensional objects using concrete materials | Use the terms surface, flat surface, curved surface, faces in describing familiar three-dimensional objects | Use the terms surface, flat surface, curved surface, faces in describing unfamiliar three-dimensional objects | Use the terms surface, flat surface, curved surface and faces in describing unfamiliar three-dimensional objects in different contexts |

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| Two Dimensional 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Manipulates, sorts, represent, describes and explores two dimensional shapes, including quadrilaterals, pentagon,hexagons and octagons (MA1-15MG) | Recognise, classify and sort familiar two- dimensional shapes using obvious features | Recognises, classifies and sorts familiar two- dimensional shapes using obvious features with concrete materials and teacher assistance | Recognise, classify and sort familiar two- dimensional shapes using obvious features with concrete material | Recognises, classifies and sorts familiar two- dimensional shapes using obvious features | Recognises, classifies and sorts familiar two- dimensional shapes and explains the attributes used. | Recognises, classifies and sorts unfamiliar two-dimensional shapes in different orientations and explains the attributes used. |

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| Position 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents and describes the positions of objects in everyday situations and on maps (MA1-16MG) | Give and follow directions to familiar locations | Follows some directions to familiar locations with teacher assistance  | Gives and follows some directions to familiar locations  | Gives and follows directions to familiar locations | Gives and follows directions to familiar locations using a diagram or description | Gives, follows, describes and draws directions to familiar locations using diagrams or computer software |

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# *Mathematics Syllabus*

# *Stage One Year Two*

Number and Algebra

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| Whole Number 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Applies place value, informally, to count, order, read and represent two- and three digit numbers MA1-4NA | Develop confidence with number sequences from 100 by ones from any starting point (ACMNA012) | Counts forwards and backwards by ones and identifies the number before and after a given three digit number with concrete materials | Counts forwards and backwards by ones and identifies the number before and after a given three digit number with teacher assistance | Counts forwards and backwards by ones and identifies the number before and after a given three digit | Counts forwards and backwards by ones and identifies the number before and after a given four digit number  | Counts forwards and backwards by ones, and identifies the number before and after a given four and five digit number |
| Recognise, model, represent and order numbers to at least 1000 (ACMNA027) | Recognises, and arranges some three-digit numbers using a variety of methods including concrete materials and with teacher assistance | Recognises, represents and arranges some three-digit numbers using a variety of methods with teacher assistance | Recognises, represents and arranges three-digit numbers using a variety of methods | Recognises, represents and arranges four-digit numbers using a variety of methods | Recognises, represents and arranges four-five digit numbers using a variety of methods |
| Investigate number sequences initially those increasing and decreasing by 2s, 3s, 5s and 10s from any starting point and then moving to other sequences (ACMNA026). | Identifies number sequences and counts forwards and backwards by twos, threes, fives and tens on the decade, with two and three-digit numbers using concrete materials and with teacher assistance | Identifies number sequences and counts forwards and backwards by twos, threes, fives and tens on and off the decade, with two and three-digit numbers with some teacher assistance | Identifies number sequences and counts forwards and backwards by twos, threes, fives and tens on and off the decade, with two and three-digit numbers | Identifies number sequences and counts forwards and backwards by twos, threes, fives and tens on and off the decade, with two, three and four-digit numbers | Identifies number sequences and counts forwards and backwards by twos, threes, fours ,fives and tens on and off the decade, with two, three and four-digit numbers |
| Group partition and rearrange collections of up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028). | Recognises place value and reads, writes and orders some three-digit numbers | Applies understanding of place value and the role of zero to read, write and order some three-digit numbers | Applies understanding of place value and the role of zero to read, write and order three-digit numbers | Applies understanding of place value and the role of zero to read, write and order four-digit number | Applies understanding of place value and the role of zero to read, write and order four-digit numbers |
| Uses place value to partition two-digit numbers in standard forms  | Uses place value to partition three-digit numbers in standard forms | Uses place value to partition three-digit numbers in standard and non-standard forms | Uses place value to partition four-digit numbers in standard and non-standard forms  | Uses place value to partition four-digit and five-digit numbers in standard and non-standard forms |
| Round numbers to nearest ten | Round numbers to nearest hundred with teacher assistance | Rounds numbers to nearest hundred | Rounds numbers to nearest thousand | Rounds numbers to nearest thousand and beyond |
| Count and order small collections of Australian coins and notes according to their value (ACMNA034). | Recognises most coin and note denominations | Uses the face value of most coins and notes to sort, order and count money | Uses the face value of coins and notes to sort, order and count money;  | Uses and applies the face value of coins and notes to sort, order and count money | Uses and applies the face value of coins and notes to sort, order and count money |
| Beginning to recognises that there are 100 cents in $1 with teacher assistance  | Recognises that there are 100 cents in $1 with teacher assistance | Recognises that there are 100 cents in $1  | Recognises that there are 100 cents in $1 in a variety of contexts | Recognises that there are 100 cents in $1 in a variety of contexts |
| Identifies some monetary values of a collection of coins and notes with teacher assistance  | Identifies some monetary values of a collection of coins and notes  | Identifies the monetary values of a collection of coins and notes | Identifies the monetary values of a collection of coins and notes and applies to real-life situations | Identifies the monetary values of a collection of coins and notes and applies to real-life, complex and unfamiliar contexts |

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| Addition and Subtraction 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers MA1-5NA | Explore the connections between addition and subtraction (ACMNA029). | Uses some concrete materials to demonstrate the inverse relationship between addition and subtraction with teacher assistance  | Uses some concrete materials to demonstrate the inverse relationship between addition and subtraction  | Uses concrete materials to demonstrate the inverse relationship between addition and subtraction  | Uses and applies concrete materials to demonstrate the inverse relationship between addition and subtraction  | Uses and applies concrete materials to demonstrate the inverse relationship between addition and subtraction to complex and unfamiliar contexts |
| Demonstrates related addition and subtraction number facts to 10 | Demonstrates some related addition and subtraction number facts to 20  | Demonstrates related addition and subtraction number facts to 20 | Demonstrates related addition and subtraction number facts to 100  | Demonstrates related addition and subtraction number facts to 100 and beyond |
| Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030). | Uses one mental strategy to solve addition and subtraction problems involving one and two-digit numbers with teacher assistance  | Uses some mental strategies to solve addition and subtraction problems involving one and two-digit numbers  | Uses a variety of mental strategies to solve addition and subtraction problems involving one and two-digit numbers | Uses a variety of mental strategies to solve addition and subtraction problems involving one, two and three-digit numbers | Uses a variety of mental strategies to justify and solve addition and subtraction problems involving three-digit numbers and beyond  |

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| Multiplication and Division 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses a range of mental strategies and concrete materials for multiplication and division MA1-6NA | Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031). | Models and uses one of the following strategies for multiplication including arrays, equal groups and repeated addition. | Models some multiplication as repeated addition through the use of concrete materials | Models multiplication as repeated addition through the use of concrete materials | Models and uses informal written and mental strategies for multiplication of 2 digits by 1 digit numbers | Models and uses a range of informal written and mental strategies for multiplication of 2 digit by 1 digit numbers for solving real-life and complex problems |
| Beginning to recognises when some items have been arranged into groups  | Recognises when some items have been arranged into groups  | Recognises when items have been arranged into groups  | Uses and recognises when items have been arranged into groups and uses for problem solving  | Uses, explains and recognises when items have been arranged into groups and uses for problem solving  |
| Beginning to model the accumulative properties of multiplication with teacher assistance | Models the accumulative properties of multiplication with teacher assistance | Models the accumulative properties of multiplication | Models, uses and applies the accumulative properties of multiplication | Models, uses and applies the accumulative properties of multiplication for problem solving |
| Represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032). | Models some division through strategies such as sharing a collection of objects and repeated subtraction with teacher assistance  | Models some division through strategies such as sharing a collection of objects and repeated subtraction | Models division through a variety of ways including sharing a collection of objects and repeated subtraction | Models and uses informal written and mental strategies for solving real-life division problem | Models and uses a range of informal written and mental strategies for solving real-life division problems  |
| Solves and records answers for some multiplication and division problems with teacher assistance | Solves and records answers for some multiplication and division problems | Solves and records answers for a variety of multiplication and division problems  | Solves, explains and records answers for a variety of multiplication and division problems  | Solves, explains and records answers for a variety of familiar and unfamiliar multiplication and division problems  |

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| Fractions and Decimals 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents and models halves, quarters and eighths MA1-7 | Recognises and interprets common uses of halves, quarters and eighths of shapes and collections. | Uses concrete materials to model a half or a quarter using a limited variety of shapes and collections | Uses concrete materials to model a half, a quarter or an eighth using a limited variety of shapes and collections | Uses concrete materials to model a half, a quarter or an eighth using a variety of shapes and collections  | Models and compares a half, a quarter or an eighth using a variety of shapes and collections | Explains, models and compares a half, a quarter, an eighth and a tenth using a variety of shapes and collections  |
| Uses some fraction notation ½ and ¼ with teacher assistance | Uses some fraction notation ½, ¼ and ⅛  | Uses fraction notation ½, ¼ and ⅛  | Uses fraction notation and language in a variety of everyday contexts | Uses fraction notation and language in a variety of everyday contexts |

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| Patterns and Algebra 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Creates, represents and continues a variety of patterns with numbers and objects MA1-8NA | Describe patterns with numbers and identify missing elements (ACMNA035). | Uses concrete materials to represent number patterns  | Describes some number pattern in words  | Describes a number pattern in words  | Recognises, describes, and continues repeating patterns and numbers patterns that increase or decrease by any number | Recognises, describes, creates and continues repeating patterns and numbers patterns that increase or decrease by any number  |
| Beginning to identify the missing number within a number pattern with teacher assistance | Determines some missing number within a given number pattern  | Determines a missing number within a given number pattern  | Determines and explains a missing number within a given number pattern | Determines, interprets and explains a missing number within a given number pattern |
|  | Solve problems by using number sentences for addition and subtraction (ACMNA036). | Completes and solves some number sentences up to ten / twenty involving addition and subtraction by calculating the missing number with teacher assistance | Completes and solves some number sentences involving addition and subtraction by calculating the missing number | Completes and solves number sentences involving addition and subtraction by calculating the missing number  | Completes, solves and composes a number of sentences involving more than one operation | Completes, solves and composes a variety of number sentences involving the four operations  |

*Measurement and Geometry*

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| Length 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres (MA1-9MG) | Compare and order several shapes and objects based on length, using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) (ACMMG037) | Compares and orders some shapes and objects based on length, using appropriate uniform [informal u](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax)nits with teacher assistance | Compares and orders some shapes and objects based on length, using appropriate uniform [informal u](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax)nits | Compares and orders several shapes and objects based on length, using appropriate uniform [informal uni](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax)ts | Compares, applies and orders several shapes and objects based on length, using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) | Compares, applies and orders several shapes and objects based on length, using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) in an unfamiliar context |
| Recognise and use formal units to measure the lengths of objects. | Recognises and uses formal units to measure the length of objects with teacher assistance  | Recognises and uses some formal units to measure the lengths of objects. | Recognises and uses formal units to measure the lengths of objects and records answers using abbreviations. | Recognises, uses and applies formal units to measure the lengths of objects and automatically applies abbreviations when recording answers. | Recognises, uses and applies formal units to measure the lengths of objects and automatically applies abbreviations when recording answers in a range of contexts. |

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| Area 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| measures, records, compares and estimates areas using uniform informal units (ma1- 10mg) | Compare and order several shapes and objects based on area using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) (ACMMG037) | Compares and orders some shapes and objects based on area using appropriate uniform [informa](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax)l units with teacher assistance | Compares and orders some shapes and objects based on area using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) | Compares and orders several shapes and objects based on area using appropriate uniform [informal units](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) | Compares, applies and orders several shapes and objects based on area independently using appropriate informal units | Compares, applies and orders several shapes and objects based on area using appropriate uniform [informal](http://syllabus.bos.nsw.edu.au/glossary/mat/informal-unit/?ajax) units in a variety of unfamiliar contexts |

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| Volume and Capacity 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compares and estimates volumes and capacities using uniform informal units (MA1-11MG). | Compare and order several objects based on volume and capacity using appropriate uniform informal units (ACMMG037). | Compares, records and orders some objects based on volume and capacity using appropriate uniform informal units with teacher assistance | Compares, records and orders some objects based on volume and capacity using appropriate uniform informal units | Compares, and orders several objects based on volume and capacity using appropriate uniform informal units | Compares, discusses, records and orders a variety of objects based on volume and capacity using appropriate uniform informal units | Compares, records and orders a variety of objects based on volume and capacity using appropriate uniform informal units in unfamiliar contexts |
| Records some volume and capacity comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used with teacher assistance  | Records some volume and capacity comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used | Records volume and capacity comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used | Records and applies volume and capacity comparisons informally using drawings, numerals and words, and by referring to the uniform informal unit used | Records, applies and explains volume and capacity comparisons informally using drawings, numerals and words in unfamiliar contexts |

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| Mass 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compares and estimates the masses of objects using uniform informal units | Compare the masses of objects using balance scales (ACMMG038). | Compares the masses of some objects using balance scales with teacher assistance.. | Compares the masses of some objects using balance scales. | Compares the masses of objects using balance scales. | Compares the masses of a variety of objects using balance scales and explains results. | Compares the masses of a variety of objects using balance scales and explains results in unfamiliar contexts. |
|  |  | Records the masses of some objects using appropriate uniform informal units with teacher assistance | Records the masses of some objects using appropriate uniform informal units. | Records the masses of objects using appropriate uniform informal units. | Records and compares the masses of objects using appropriate uniform informal units. | Records and compares the masses of objects using appropriate uniform informal units in unfamiliar contexts. |

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| Time 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Describes, compares and orders durations of events, and reads half- and quarter-hour time (MA1-13MG). | Describe duration using months, weeks, days and hours (ACMMG021). | Beginning to describe duration using some months, weeks, days and hours with teacher assistance | Describes duration using some months, weeks, days and hours  | Describes and compares duration using months, weeks, days and hours. | Describes, applies and compares duration using months, weeks, days and hours | Describes, applies and compares duration using months, weeks, days and hours and solves simple everyday problems. |
|  | Tell time to the quarter-hour using the language of 'past' and 'to' (ACMMG039).  | Tells time and describes the position of the hands on a clock, to the half-hour with teacher assistance, using the language of ‘o’clock’ and ‘half-past’ | Tells time and describes the position of the hands on a clock, to the quarter-hour using some language such as 'past' and 'to' with teacher assistance | Tells time and describes the position of the hands on a clock, to the quarter-hour using the language of 'past' and 'to' | Tells time , applies and describes the position of the hands on a clock, to the quarter-hour using the language of 'past' and 'to' | Tells time, applies and describes the position of the hands on a clock, to the minute using the language of 'past' and 'to' and applies this skill in a variety of everyday contexts |

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| Three Dimensional 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms (MA1-14MG). | Describe the features of three-dimensional objects (ACMMG043). | Identifies and records the features of some three-dimensional objects with teacher assistance | Identifies and records the features of some three-dimensional objects | Identifies, describes and records the features of three-dimensional objects | Identifies, describes, records and applies the features of three-dimensional objects | Identifies, describes, records and applies the features of regular and irregular three-dimensional objects and draws connections to everyday life |
| Classifies some three-dimensional objects according to their attributes with teacher assistance | Classifies and explains some three-dimensional objects according to their attributes | Classifies and explains three-dimensional objects according to their attributes | Classifies and explains three-dimensional objects according to their attributes using appropriate technical language | Classifies, explains, sketches and labels three-dimensional objects according to their attributes |
| Uses some terms ‘flat surface’, ‘curved surface’, ‘edges’ and ‘vertices’ to discuss three-dimensional objects with teacher assistance | Uses some terms ‘flat surface’, ‘curved surface’, ‘edges’ and ‘vertices’ to discuss three-dimensional objects | Uses the terms ‘flat surface’, ‘curved surface’, ‘edges’ and ‘vertices’ to discuss three-dimensional objects | Uses and applies the terms ‘flat surface’, ‘curved surface’, ‘edges’ and ‘vertices’ to discuss three-dimensional objects | Uses and applies the terms ‘flat surface’, ‘curved surface’, ‘edges’ and ‘vertices’ to discuss three-dimensional objects and applies this knowledge to everyday contexts |

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| Two Dimensional 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Manipulates sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons (MA1-15MG). | Describe and draw two-dimensional shapes, with and without the use of digital technologies (ACMMG042) | Describes draws and represents some two-dimensional shapes with concrete materials and teacher assistance | Describes draws and represents some two-dimensional shapes with concrete materials and the use of digital technologies | Describes draws and represents two-dimensional shapes, with concrete materials and the use of digital technologies | Describes draws and represents two-dimensional shapes and applies the use of digital technologies | Describes draws and represents two-dimensional shapes with the use of digital technologies and draws comparisons to everyday life contexts |
| Investigate the effect of one-step slides and flips, with and without the use of digital technologies (ACMMG045). | Investigates and records some of the effect of one-step slides and flips, with and without the use of digital technologies and teacher assistance | Investigates and records some of the effect of one-step slides and flips, with and without the use of digital technologies | Investigates and records the effect of one-step slides and flips, with and without the use of digital technologies | Investigates, applies and records the effect of one-step slides and flips, with and without the use of digital technologies | Investigates, applies and records the effect of one-step slides and flips, with and without the use of digital technologies to everyday life contexts  |
| Identify and describe half-turns and quarter-turns (ACMMG046). | Identifies and describes some half-turns and quarter-turns with teacher assistance and concrete materials. | Identifies and describes some half-turns and quarter-turns  | Identifies and describes half-turns and quarter-turns | Identifies, describes and applies half-turns and quarter-turns | Identifies, describes, connects and applies half-turns and quarter-turns to unfamiliar situations |

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| Position 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Represents and describes the positions of objects in everyday situations and on maps (MA-16MG). | Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044). | Interprets some simple maps of familiar locations and identifies some relative positions of key features with teacher assistance | Interprets some simple maps of familiar locations and identifies some relative positions of key features | Interprets simple maps of familiar locations and identifies the relative positions of key features | Interprets complex maps of familiar locations and identifies the relative positions of key features | Interprets complex maps of familiar locations and identifies the relative positions of key features and relates to real-world contexts |

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| Data 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results (MA-17SP). | Identify a question of interest based on one categorical variable and gather data relevant to the question (ACMSP048). | Identifies a question of interest based on one area and gathers some data relevant to the question with prompting and teacher assistance | Identifies a question of interest based on one area and gathers some data relevant to the question | Identifies a question of interest based on one categorical variable and gather data relevant to the question | Identifies questions of interest based on more than one categorical variable and gathers and applies data relevant to the question | Identifies questions of interest based on more than one categorical variable and gathers and applies data relevant to the question and can apply to unknown situations |
| Collect, check and classify data (ACMSP049). | Collects and classifies some data on familiar topics using tally marks with teacher assistance | Collects and classifies some data on familiar topics using tally marks | Collects, checks and classifies data using tally marks on familiar topics | Collects, checks classifies and sorts data using tally marks on familiar topics | Collects, checks classifies and sorts data using tally marks on familiar and unfamiliar topics |
| Create displays of data using lists, tables and picture graphs and interpret them (ACMSP050). | Creates some displays of data using lists, tables and picture graphs with teacher assistance | Creates some displays of data using lists, tables and picture graphs | Creates displays of data using lists, tables and picture graphs and interpret | Creates displays of data using lists, tables and various graphs and analyses some of the information | Creates displays of data using lists, tables and various graphs and analyses information |

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| Chance 2 |
| Outcomes | Content Descriptor | Limited | Basic | Sound | High | Outstanding |
| Recognises and describes the element of chance in everyday events (MA1-18SP) | Identify practical activities and everyday events that involve chance (ACMSP047) | Identifies some practical activities and everyday events that involve chance with teacher assistance | Identifies some practical activities and everyday events that involve chance | Identifies practical activities and everyday events that involve chance | Identifies and applies practical activities and everyday events that involve chance | Identifies and applies practical activities and everyday events that involve chance and relate to everyday situations |
| Describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' (ACMSP047) | Describe some outcomes as likely' or 'unlikely' and identify some events as 'certain' or 'impossible' with teacher assistance | Describes some outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' | Describes outcomes as 'likely' or 'unlikely' and identify events as 'certain' or 'impossible' | Identifies, explains and describes outcomes as 'likely’, 'unlikely', 'certain' or 'impossible' | Identifies, explains, describes and justifies outcomes as 'likely', 'unlikely’, 'certain' or 'impossible' and distinguish between particular events |

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# *Mathematics Syllabus*

# *Stage Two Year Three*

Number and Algebra

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| Whole Number 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Applies place value to order, read and represent numbers of up to five digits MA2-4NA | Recognise, model, represent and order numbers to at least 10,000 | Recognises models, represents and orders numbers to at least 1,000 with teacher assistance or concrete materials  | Recognises models, represents and orders numbers to at least 10,000 with teacher assistance | Recognises models, represents and orders numbers to at least 10,000 | Recognises models, represents and orders numbers to tens of thousands | Recognises models, represents and orders numbers to tens of thousands and beyond |
|  | Apply place value to [partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053) | Applies place [value to partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to at least 100 to assist calculations and solve problems with concrete material and teacher assistance | Applies place [value to partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to at least 1 000 to assist calculations and solve problems with some teacher assistance | Applies place [value to partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems | Applies place [value to partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to tens of thousands and beyond to assist calculations and solve problems | Applies place [value to partition](http://syllabus.bos.nsw.edu.au/glossary/mat/partitioning/?ajax), rearrange and regroup numbers to tens of thousands and beyond to assist calculations and solve complex and unfamiliar problems |

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| Addition and Subtraction 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses mental and written strategies for addition and subtraction involving two-, three-, four- and five-digit numbers MA2-5NA | Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA055) | Recalls one mental strategy for addition and subtraction using concrete materials and with teacher assistance | Recalls some addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation | Recalls addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation  | Recalls and uses mental strategies up to and involving 2,3 and 4 digit numbers demonstrating efficient strategies for computation  | Recalls and selects efficient strategies for computation up to and involving 2,3 and 4 digit numbers for a variety of complex and unfamiliar problems |
| Recognise and explain the connection between addition and subtraction(ACMNA054) | Recognises and explains some connections between addition and subtraction with teacher assistance  | Recognises and explains some connections between addition and subtraction | Recognises and explains the connection between addition and subtraction | Recognises, explains and applies the relationship between addition and subtraction | Recognises, explains, interprets and applies the relationship between addition and subtraction to unfamiliar and complex problems |
| Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA059) | Represents some money values in multiple ways with teacher assistance | Represents some money values in multiple ways | Represents money values in multiple ways | Represents money values in multiple ways | Represents money values in multiple ways in unfamiliar and complex problems  |
| Counts some change required for simple transactions to the nearest five cents with teacher assistance and concrete materials | Counts some change required for simple transactions to the nearest five cents with teacher assistance | Counts the change required for simple transactions to the nearest five cents | Counts the change required for transactions to the nearest five cents for real life problems | Counts the change required for unfamiliar real life problems and transactions to the nearest five cents |

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| Multiplication and Division 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses mental and informal written strategies for multiplication and division MA2-6NA | Recall multiplication facts of two, three, five and ten and related division facts (ACMNA056) | Recalls some multiplication facts of two, three, five and ten with teacher assistance using concrete material | Recalls multiplication facts of two, three, five and ten using concrete material or written strategies | Recalls and uses mental strategies for multiplication facts of two, three, five and ten | Recalls and uses efficient mental strategies for multiplication facts of two, three, five and ten | Recalls, uses and explains efficient mental strategies for multiplication facts of two, three, five and ten  |
| Recalls some strategies for related division facts with teacher assistance and concrete materials | Recalls strategies for related division facts with concrete materials or written strategies | Recalls and uses mental strategies for related division facts | Recalls and uses efficient mental strategies for related division facts | Recalls, uses and explains efficient mental strategies for related division facts |
| Uses mental and informal written strategies for multiplication and division MA2-6NA | Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies | Uses informal written strategies and concrete material to multiply a one-digit number by a multiple of 10 with teacher assistance | Uses some informal written strategies to multiply a one-digit number by a multiple of 10 | Uses mental strategies to multiply a one-digit number by a multiple of 10  | Uses and explains how an answer was obtained when using mental strategies to multiply a one-digit number by a two-digit number  | Uses, explains and applies a range of mental strategies to multiply a one-digit number by a two-digit number for complex and unfamiliar problems |

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| Fractions and Decimals 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents, models and compares commonly used fractions and decimals MA2-7NA | Model and represent unit fractions, including ½, ¼, ⅓ and ⅕ and their multiples, to a complete whole (ACMNA058) | Models and represents some unit fractions, including ½ and ¼ to a complete whole with teacher assistance | Models and represents some unit fractions, including ½ and ¼, and their multiples, to a complete whole  | Models and represents unit fractions, including ½, ¼, ⅓ and ⅕ and their multiples, to a complete whole  | Models, represents and compares unit fractions, including ½, ¼, ⅓ and ⅕ and their multiples, to a complete whole  | Models, represents and compares unit fractions, including ½, ¼, ⅓ and ⅕ to a complete whole for complex and unfamiliar problemsDemonstrates knowledge of equivalent fractions |
| Count by quarters, halves and thirds, including with mixed numerals; locate and represent these fractions on a number line (ACMNA078) | Counts by quarters and halves up to one whole with teacher assistance | Counts by quarters halves and thirds up to one whole with some teacher assistance | Counts by quarters, halves and thirds, including with mixed numerals | Counts by quarters, halves, thirds, fifths and tenths, including with mixed numerals | Counts by quarters, halves, thirds, fifths and tenths, including with mixed numerals |
| Locates and represents some of these fractions on a number line with teacher assistance | Locates and represents some of these fractions on a number line with some teacher assistance | Locates and represents these fractions on a number line | Locates, represents and applies these fractions on a number line | Locates, represents, applies and compares these fractions on a number line  |

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| Patterns and Algebra 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Generalises properties of odd and even numbers, generates number patterns, and completes simple number sentences by calculating missing values MA2-8NA | Describe, continue and create number patterns resulting from performing addition or subtraction (ACMNA060) | Describes and continues some number patterns resulting from performing addition or subtraction with teacher assistance with teacher assistance. | Describes, continues and creates some number patterns resulting from performing addition or subtraction with teacher assistance. | Describes, continues and creates number patterns resulting from performing addition or subtraction  | Describes, continues, creates and explains number patterns resulting from performing addition or subtraction | Describes, continues, creates and explains number patterns resulting from performing addition or subtraction in unfamiliar problems in complex problems solving tasks.  |
| Investigate the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax) and identify even and odd numbers (ACMNA051) | Investigates some of the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax) with teacher assistance.  | Investigates the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax) with teacher assistance.  | Investigates the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax).   | Investigates and explains the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax).   | Investigates and explains the conditions required for a number to be [even](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax) or [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax) within a problem solving task.   |
| Identifies some even and odd number with teacher assistance | Identifies some even and odd number | Identifies even and odd numbers  | Identifies , explains and applies even and odd numbers | Identifies , explains and applies even and odd numbers in problem solving tasks  |

*Measurement and Geometry*

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| Length 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measure, order and compare objects using familiar metric units of length | Measures, Records, Compares and Estimates lengths, distances and perimeters in meters, centimetres and millimetres and measures, compares and records temperatures. (MA2-9MG) | Measures and orders some objects using familiar metric units of length with teacher assistance | Measures, orders and compares some objects using familiar metric units of length | Measures, orders and compares objects using familiar metric units of length | Measures, orders, records, estimates and compares objects using familiar metric units of length  | Measures, orders, records, estimates and compares objects using familiar metric units of length with familiar and unfamiliar contexts  |

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| Area 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compare and estimates areas using square centimetres and square metres(MA2-10MG) | Recognise and use formal units to measure and estimate the area of rectangles | Recognises and uses informal units to measure the area of rectangles with teacher assistance | Recognises and uses some formal units to measure and to estimate the area of rectangles | Recognises and uses formal units to measure and estimate the area of rectangles | Recognises uses and explains the use of formal units to measure, estimate and compare the area of rectangles | Recognises uses and explains the use of formal units to measure, estimate and compare the area of regular and irregular shapes |

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| Volume and Capacity 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measures, records, compare and estimates volumes and capacities using litres, millilitres and cubic centimetres. (MA2-11MG) | Measure, order and compare objects using familiar metric units of capacity. (ACMMGO61) | Measures and orders objects using informal units of capacity with teacher assistance | Measures, orders and begins to compare objects using familiar metric units of capacity  | Measures, orders and compares objects using familiar metric units of capacity | Measures, estimates, orders and compares capacity of objects using familiar metric units of capacity. Converts between units of capacity | Measures, estimates, orders, compares and applies capacity of objects using familiar metric units of capacity and in unfamiliar contexts Converts and compares between units of capacity |
|  | Compare objects using informal units of volume with significant teacher assistance. (ACMMG290) | Compares some objects using informal units of volume with teacher assistance | Compares some objects using familiar metric units of volume | Compares objects using familiar metric units of volume | Compares objects using familiar and unfamiliar metric units of volume | Compares objects using familiar and unfamiliar metric units of volume and applies to a variety of contexts |

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| Mass 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| A measure, records, compares and estimates the masses of objects using kilograms and grams. (MA2-12MG) | Measure, order and compare objects using familiar metric units of mass. (ACMMGO61) | Measures, orders and compares some objects using informal units of mass with teacher assistance | Measures, orders and compares some objects using familiar metric units of mass  | Measures, orders and compares objects using familiar metric units of mass | Measures, orders and compares objects using familiar metric units of mass. Converts between units of mass | Measures, orders and compares objects using familiar metric units of mass and applies to a variety of contexts Converts and compares between units of mass |

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| Time 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Reads and records time in one minute intervals and converts between hours, minutes and seconds. (MA2-13MG) | Tell time to the minute and investigate the relationship between units of time. (ACMMGO62) | Tells the time to the minute and understands some units of time with teacher assistance  | Tells the time to the minute and understands some units of time | Tells the time to the minute and investigates the relationship between units of time | Tells the time to the minute and investigates the relationship between units of time and applies to familiar contexts | Tells the time to the minute and investigates the relationship between units of time applying to a variety of contexts |

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| Three Dimensional 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Makes, compares, sketches and names three-dimensional objects including prisms, pyramids, cylinders, cones and spheres and describes their features. (MA2-14MG) | Make models of three-dimensional objects and describe key features. (ACMMGO63) | Make models of some three-dimensional objects and recognises some key features with teacher assistance | Makes models of some three-dimensional objects and describes some key features  | Makes models of three-dimensional objects and describes key features | Makes and names models of three-dimensional objects and describes and compares key features | Makes and names models of three-dimensional objects and describes and compares key features Applies knowledge and understanding in a variety of unfamiliar contexts |

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| Two Dimensional 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Manipulates, identifies and sketches two-dimensional shapes including special quadrilaterals and describes their features. (MA2-15MG) | Compare and describe features of two-dimensional shapes, including the special quadrilaterals.  | Compares and describe some features of some two-dimensional shapes with teacher assistance | Compares, constructs and describe some features of some two-dimensional shapes, including some of the special quadrilaterals. | Compares, constructs and describe features of two-dimensional shapes, including the special quadrilaterals | Compares, constructs and describe features of two-dimensional shapes, including the special quadrilaterals and applies to familiar contexts | Compares, constructs and describe features of two-dimensional shapes, including the special quadrilaterals and applies to a variety of contexts |
| Identify symmetry in the environment. | Identifies simple symmetry in environment with teacher assistance | Identifies simple symmetry in environment | Identifies symmetry in the environment | Identifies, explains and applies symmetry and symmetrical patterns in the environment | Identifies, explains, applies and creates symmetry and symmetrical patterns in the environment |

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| Angles 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Identifies, describes, compares and classifies angles. (MA2-16MG) | Identify angles as measures of turn and compare angle sizes in everyday situations. (ACMMG064) | Identifies some angles as measures of turn and compares some angle sizes with teacher assistance | Identifies some angles as measures of turn and compares some angle sizes in everyday situations | Identifies angles as measures of turn and compares angle sizes in everyday situations | Identifies and applies angles as measures of turn and compares angle sizes in everyday situations | Identifies and applies angles as measures of turn and compares angle sizes in everyday situations and unfamiliar contexts |

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| Position 1 |
| Outcomes | Content descriptor | Limited  | Basic | Sound | High | Outstanding  |
| Uses simple maps and grids to represent position and follow routes, including using compass directions. (MA2-17MG) | Create and interpret simple grid maps to show position and pathways.(ACMMGO65) | Interprets some simple grid maps to show position with assistance | Creates and interprets some simple grid maps to show position and pathways | Creates and interprets simple grid maps to show position and pathways | Creates, interprets and applies more complex grid maps to show position and pathways | Creates, interprets and applies more complex grid maps to show position and pathways, using scales, legends and directions |

# *Mathematics Syllabus*

# *Stage Two Year Four*

Number and Algebra

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| Whole Number 2 |
| Outcomes | Content descriptor | Limited  | Basic | Sound | High | Outstanding  |
| Applies place value, to order, read and represent numbers of up to five digits MA2-4NA | Recognise, represent and order numbers to at least tens of thousands | Beginning to understand place value to read and write numbers of up to five digits with teacher assistance | Applies some understanding of place value to read and write numbers of up to five digits  | Applies an understanding of place value to read and write numbers of up to five digits | Applies an understanding of place value to read and write numbers of up to six digits | Applies an understanding of place value to read and write numbers of any size |
| Beginning to arrange numbers of up to five digits in ascending and descending order with teacher assistance  | Arranges some numbers of up to five digits in ascending and descending order  | Arranges numbers of up to five digits in ascending and descending order | Arranges numbers of up to six digits in ascending and descending order | Arranges numbers of any size in ascending and descending order |
| Beginning to use place value to partition numbers of up to five digits and recognise this as expanding notation  | Uses some place value to partition numbers of up to four and five digits Recognises this as expanding notation  | Uses place value to partition numbers of up to five digitsRecognises partitioning of numbers as expanding notation.  | Uses place value to partition numbers of up to six digits Recognises partitioning of numbers as expanding notation.  | Uses place value to partition numbers of any size in non-standard formRecognises partitioning of numbers as expanding notation for any size |

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| Addition and Subtraction 2 |
| Outcomes | Content descriptor | Limited  | Basic | Sound | High | Outstanding  |
| Uses mental and written strategies for addition and subtraction involving two-, three-, four- and five-digit numbers MA2-5NA | Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems  | Beginning to apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems with teacher assistance | Applies some place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems  | Applies place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems | Applies place value to partition, rearrange and regroup numbers to at least hundreds of thousands to assist calculations and solve problems | Applies place value to partition, rearrange and regroup numbers of any value to assist calculations and solve problems |
| Uses a formal and written algorithm to record addition and subtraction with calculations of up to five digit numbers  | Beginning to use formal and written algorithm to record addition and subtraction with calculations of up to five digit numbers with teacher assistance | Uses some formal and written algorithm to record addition and subtraction with calculations of up to five digit numbers  | Uses formal and written algorithm to record addition and subtraction with calculations of up to five digit numbers. | Uses formal and written algorithm to record addition and subtraction with calculations of up to six digit numbers | Uses formal and written algorithm to record addition and subtraction with calculations of any size |

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| Multiplication and Division 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses mental and informal written strategies for multiplication and division MA2-6NA | Recall multiplication facts up to 10 x 10 and related division facts  | Beginning to recall multiplication facts up to 10 x 10 with teacher assistance. | Recalls some multiplication facts up to 10 x 10  | Recalls multiplication facts up to 10 x 10. | Recalls automatically multiplication facts up to 10 x 10. | Uses range mental and written strategies to recall multiplication facts beyond 10 x 10 |
| Recall division facts up to 10 x 10 and related division facts  | Beginning to recall division facts up to 10 x 10 with teacher assistance | Recalls some division facts up to 10 x 10 | Recalls division facts up to 10 x 10 | Recalls automatically division facts up to 10 x 10 | Uses range mental and written strategies to recall division facts beyond 10 x 10 |
| Recall multiplication facts up to 10 x 10 and related division facts | Beginning to recall multiplication facts up to 10 x 10 with teacher assistance  | Recalls some multiplication facts up to 10 x 10 | Recalls multiplication facts up to 10 x 10  | Recalls and applies multiplication facts up to 10 x 10 | Recalls and applies multiplication facts beyond 10 x 10 |
| Relates some multiplication facts using a variety of mental and written strategies with teacher assistance | Relates some multiplication facts using a variety of mental and written strategies | Relates and interprets multiplication facts using a variety of mental and written strategies | Relates and interprets multiplication facts using a variety of mental and written strategies | Relates and interprets multiplication facts using a variety of mental and written strategies to complex and unfamiliar problems |
| Develop efficient mental and written strategies and use appropriate digital technologies, for multiplication and division where there is no remainder | Developing some mental and written strategies for multiplication and division where there is no remainder with teacher assistance | Developing some efficient mental and written strategies for multiplication and division where there is no remainder | Developed efficient mental and written strategies for multiplication and division where there is no remainder | Developed efficient mental and written strategies for multiplication and division where there is a remainder | Developed efficient mental and written strategies for multiplication and division using formal strategies such as the algorithm |
| Uses some appropriate digital technologies, for multiplication and division where there is no remainder with teacher assistance | Uses some appropriate digital technologies for multiplication and division where there is no remainder | Uses appropriate digital technologies for multiplication and division where there is no remainder | Uses appropriate digital technologies for multiplication and division where there is a remainder | Uses appropriate digital technologies, for multiplication and division using formal strategies such as the algorithm where there is a remainder |

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| Fractions and Decimals 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Represents, models and compares commonly used fractions and decimals MA2-7NA | Investigate and record equivalent fractions using diagrams and numerals | Beginning to model, compare and represent some fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100 with teacher assistance | Models, compares and represents some fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100 | Models, compares and represents fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100 | Models, orders, compares, interprets and represents fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100 | Models, orders, compares, interprets and represents fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100 and begin to make connections between fractions and decimal notation |
| Recognise that the place value system can be extended to tenths and hundredths, and make connections between fractions and decimal notation  | Beginning to recognise that the place value system can be extended to tenths and hundredths with teacher assistance | Recognises that the place value system can be extended to tenths and hundredths with teacher assistance | Recognises that the place value system can be extended to tenths and hundredths | Recognises and interprets that the place value system can be extended to tenths, hundredths and thousandths | Recognises and interprets that the place value system can be extended in two directions to the left and the right of the decimal point  |
| Beginning to makes connections between fractions and decimal notation with teacher assistance | Makes some connections between fractions and decimal notation | Makes and recognises connections between fractions and decimal notation | Makes and recognises connections between fractions and decimal notation and non-standard forms  | Makes and recognises connections between fractions and decimal notation and non-standard form and uses it to solve problems |

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| Patterns and Algebra 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Generalises properties of odd and even numbers, generates number patterns, and completes simple number sentences by calculating missing values MA2-8NA | Use equivalent number sentences involving addition and subtraction to find unknown quantities |  |  |  |  |  |
|  | Investigate and use the properties of odd and even numbers (ACMNA071) |  |  |  |  |  |
|  | Investigate number sequences involving multiples of 3,4,6,7,8 and 9 (ACMNA074) |  |  |  |  |  |
|  | Explore and describe number patterns resulting from performing multiplication(ACMNA081) |  |  |  |  |  |
|  | Solve word problems by using number sentences involving multiplication or division where there is no remainders (ACMNA082) |  |  |  |  |  |

*Measurement and Geometry*

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| Length 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-9MGmeasures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres, and measures, compares and records temperatures | Use scaled instruments to measure and compare lengths (ACMMG084) | Selects and uses some appropriate devices to measure lengths and distances, with teacher assistance | Selects and uses some appropriate devices to measure lengths and distances | Selects and uses an appropriate device to measure lengths and distances | Selects, uses and applies an appropriate device to estimate, measure and compare lengths and distances in familiar contexts | Selects uses and applies an appropriate device to estimate measure and compare lengths and distances in unfamiliar contexts |
| Estimate and measure the perimeters of two-dimensional shapes. | Beginning to estimate and measure the perimeter of 2D shapes with teacher assistance | Estimates and measures the perimeter of 2D shapes  | Estimates and measures the perimeters of two-dimensional shapes | Estimates and measures the perimeters of two-dimensional shapes and begins to measure larger areas  | Estimates and measures the perimeters of two-dimensional shapes and begins to measure larger areas and compares perimeters  |
| Convert between metres and centimetres, and between centimetres and millimetres | Beginning to convert between metres and centimetres and between centimetres and millimetres with teacher assistance | Converts between some metres and centimetres and between centimetres and millimetres  | Converts and describes between metres and centimetres, and between centimetres and millimetres | Converts, describes and explains between metres and centimetres, and between centimetres and millimetres and beginning to convert between metres and kilometres | Converts, describes and explains between metres and centimetres, and between centimetres, millimetres, metres and kilometres |
| Use scaled instruments to measure and compare temperatures (ACMMG084) | Beginning to recognise the need for a scaled instrument to measure and compare temperature | Beginning to use a scaled instrument to measure and compare temperature to the nearest degree Celsius | Uses scaled instruments to measure and compare temperatures to the nearest degree Celsius.  | Uses scaled instruments to measure and compare temperatures to the nearest degree Celsius within a familiar context | Uses scaled instruments to measure and compare temperatures to the nearest degree Celsius within an unfamiliar context |

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| Area 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA210MGMeasures, records, compares and estimates areas using square centimetres and square metres | Compare the areas of regular and [irregular shapes](http://syllabus.bos.nsw.edu.au/glossary/mat/irregular-shape/?ajax) by informal means (ACMMG087) | Estimates and measures some areas of regular and irregular shapes using informal units with teacher assistance | Estimates, measures and compares some of the areas of regular and irregular shapes by informal means | Estimates, measures, compares the areas of regular and [irregular shapes](http://syllabus.bos.nsw.edu.au/glossary/mat/irregular-shape/?ajax) by informal means | Estimates, measures, explains and compares the areas of regular and [irregular shapes](http://syllabus.bos.nsw.edu.au/glossary/mat/irregular-shape/?ajax) by informal means | Estimates, measures, explains and compares the areas of regular and [irregular shapes](http://syllabus.bos.nsw.edu.au/glossary/mat/irregular-shape/?ajax) by informal means, within unfamiliar contexts |
|  | Compare objects using familiar metric units of area (ACMMG290) | Compares some areas using square centimetres with teacher assistance | Compares some areas using square centimetres and square metres with teacher assistance | Compares, measures and records areas using square centimetres and square metres | Compares, estimates, measures and records areas using square centimetres and square metres Beginning to show an understanding of decimal notation in recording familiar areas. Uses kilometre units | Compares, estimates, measures and records areas using square centimetres and square metres Beginning to show an understanding of decimal notation in recording familiar areas. Uses kilometre and hectare units |

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| Volume and Capacity 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-11MGmeasures, records, compares and estimates volumes and capacities using litres, millilitres and cubic centimetres | Use scaled instruments to measure and compare [capacities](http://syllabus.bos.nsw.edu.au/glossary/mat/capacity/?ajax)(ACMMG084) | Estimates, measures, records and begins to compare volumes and capacities using litres with teacher assistance | Estimates, measures, records and begins to compare volumes and capacities using litres and millilitres | Estimates, measures, compares and records volumes and capacities using litres and millilitres | Estimates, measures, compares and records volumes and capacities using litres and millilitres. Begins to record using decimal notation in recording | Estimates, measures, compares and records volumes and capacities using litres and millilitres in complex problems Uses decimal notation in recording |

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| Mass 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-12MGMeasures, records, compares and estimates the masses of objects using kilograms and grams | Use scaled instruments to measure and compare masses (ACMMG084) | Estimates, measures, compares and records some masses using grams and kilograms with teacher assistance | Estimates, measures, compare and records some masses using grams and kilograms | Estimates, measures, compare and records masses using grams and kilograms.Uses and relates fractions of a kilogram to grams | Estimates, measures, compare and records masses using grams and kilograms.Uses and relates fractions of a kilogram to grams. Beginning to convert between grams and kilograms | Estimates, measures, compares and records masses using grams and kilograms.Uses and relates fractions of a kilogram to grams. Begins to convert between grams and kilograms, kilograms and tonnes |

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| Time 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-13MGReads and records time in one-minute intervals and converts between hours, minutes and seconds | Convert between units of time (ACMMG085) | Converts some units of time and recalls time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day with teacher assistance | Converts some units of time and recalls time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day | Converts between units of time and recalls time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day | Converts between units of time and recalls time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day. Beginning to compare 12 and 24 hour time systems and converts between them | Converts between units of time and recalls time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day.Compares and converts 12 and 24 hour time  |
|  | Use am and pm notation and solve simple time problems (ACMMG086) | Describes some forms of times given using am and pm notation in relation to 'midday' (or 'noon') and 'midnight', eg '3:15 pm is three and a quarter hours after midday, with teacher assistance | Describes some forms of times given using am and pm notation in relation to 'midday' (or 'noon') and 'midnight', eg '3:15 pm is three and a quarter hours after midday | Describe times given using am and pm notation in relation to 'midday' (or 'noon') and 'midnight', eg '3:15 pm is three and a quarter hours after midday | Describe times given using am and pm notation. Relates analog notation to digital notation for time, eg ten to nine in the morning is the same time as 8:50 am | Describe times given using am and pm notation. Relates analog notation to digital notation for time, independently in one minute intervals 9past and to the hour) and makes comparisons between time units. Beginning to convert between a.m / p.m notation and 24 hour time |
|  | Read and interpret simple timetables, timelines and calendars | Beginning to read and interpret simple timetables, timelines and calendars with teacher assistance | Reads and interprets some simple timetables, timelines and calendars | Reads and interprets simple timetables, timelines and calendars | Reads and interprets timetables, timelines and calendars within a familiar context | Reads and interprets timetables, timelines and calendars within an unfamiliar contextBeginning to determine a suitable scale for drawing and interpreting a timeline |

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| Three Dimensional 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-14MGMakes, compares, sketches and names three-dimensional objects, including prisms, pyramids, cylinders, cones and spheres, and describes their features | Investigate and represent three-dimensional objects using drawings | Identifies, describes, sorts, makes and sketches some [prisms](http://syllabus.bos.nsw.edu.au/glossary/mat/prism/?ajax) (including cubes), [pyramids](http://syllabus.bos.nsw.edu.au/glossary/mat/pyramid/?ajax), [cylinders](http://syllabus.bos.nsw.edu.au/glossary/mat/cylinder/?ajax), [cones](http://syllabus.bos.nsw.edu.au/glossary/mat/cone/?ajax) and spheres, with teacher assistance | Identifies, describes, sorts, makes and sketches some [prisms](http://syllabus.bos.nsw.edu.au/glossary/mat/prism/?ajax) (including cubes), [pyramids](http://syllabus.bos.nsw.edu.au/glossary/mat/pyramid/?ajax), [cylinders](http://syllabus.bos.nsw.edu.au/glossary/mat/cylinder/?ajax), [cones](http://syllabus.bos.nsw.edu.au/glossary/mat/cone/?ajax) and spheres | Identifies, describes, sorts, makes and sketches [prisms](http://syllabus.bos.nsw.edu.au/glossary/mat/prism/?ajax) (including cubes), [pyramids](http://syllabus.bos.nsw.edu.au/glossary/mat/pyramid/?ajax), [cylinders](http://syllabus.bos.nsw.edu.au/glossary/mat/cylinder/?ajax), [cones](http://syllabus.bos.nsw.edu.au/glossary/mat/cone/?ajax) and spheres | Identifies, interprets, describes, sorts, makes and sketches [prisms](http://syllabus.bos.nsw.edu.au/glossary/mat/prism/?ajax) (including cubes), [pyramids](http://syllabus.bos.nsw.edu.au/glossary/mat/pyramid/?ajax), [cylinders](http://syllabus.bos.nsw.edu.au/glossary/mat/cylinder/?ajax), [cones](http://syllabus.bos.nsw.edu.au/glossary/mat/cone/?ajax) and spheres. Begins to name prisms and pyramids according to their base | Identifies, interpretsw, describes, sorts, makes and sketches [prisms](http://syllabus.bos.nsw.edu.au/glossary/mat/prism/?ajax) (including cubes), [pyramids](http://syllabus.bos.nsw.edu.au/glossary/mat/pyramid/?ajax), [cylinders](http://syllabus.bos.nsw.edu.au/glossary/mat/cylinder/?ajax), [cones](http://syllabus.bos.nsw.edu.au/glossary/mat/cone/?ajax) and spheres. Begins to name prisms and pyramids according to their base. Begins to visualize, sketch and construct 3D shapes from different views.  |
| Visualizes, sketches and constructs some 3D shapes from different views with teacher assistance  | Visualizes, sketches and constructs some 3D shapes from different views | Visualizes, sketches and constructs 3D shapes from different views | Visualizes, sketches, explains and constructs 3D shapes from different views | Visualizes, sketches, explains, interprets and constructs 3D shapes from different views |

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| Two Dimensional 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-15MGManipulates, identifies and sketches two-dimensional shapes, including special quadrilaterals, and describes their features | Compare and describe two-dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies (ACMMG088) | Begins to identify and sketch pentagons, octagons, presented in different orientations with teacher assistance | Begins to identify and sketch pentagons, octagons, special quadrilaterals and parallelograms presented in different orientations | Identifies, splits and sketches pentagons, octagons, special quadrilaterals and parallelograms presented in different orientations | Identifies, splits and sketches pentagons, octagons, special quadrilaterals and parallelograms presented in different orientations and complex problems  | Identifies, splits and sketches pentagons, octagons, special quadrilaterals and parallelograms presented in different orientations and complex and unfamiliar problems  |
| Create symmetrical patterns, pictures and shapes, with and without the use of digital technologies (ACMMG091) | Identifies some symmetrical patterns in 2D shapes with teacher assistance | Identifies and creates some symmetrical patterns, in 2D shapes by translating, reflecting and rotating  | Identifies and creates symmetrical patterns, in 2D shapes by translating, reflecting and rotating | Identifies, applies, explains and creates symmetrical patterns, in 2D shapes by translating, reflecting and rotating | Identifies, applies, explains and creates symmetrical patterns, in 2D shapes by translating, reflecting and rotating in complex and unfamiliar problems  |
| Identifies some tessellating patterns, pictures and shapes, with and without the use of digital technologies with teacher assistance | Identifies some tessellating patterns, pictures and shapes, with and without the use of digital technologies | Identifies tessellating patterns, pictures and shapes, with and without the use of digital technologies | Identifies, applies and explains tessellating patterns, pictures and shapes, with and without the use of digital technologies | Identifies, applies, explains and creates and justifies tessellating patterns, pictures and shapes in a context, with and without the use of digital technologies |

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| Angles 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| MA2-16MGIdentifies, describes, compares and classifies angles | Compare [angles](http://syllabus.bos.nsw.edu.au/glossary/mat/angle/?ajax) and classify them as equal to, greater than or less than a [right angle](http://syllabus.bos.nsw.edu.au/glossary/mat/right-angle/?ajax)(ACMMG089) | Recognises, compares and classifies some angles as 'less than', 'equal to', 'about the same as' or 'greater than' a right angle, with teacher assistance. Classifies some angles according to type with teacher assistance  | Recognises, compares, classifies and describes some angles as 'less than', 'equal to', 'about the same as' or 'greater than' a right angle Classifies some angles according to type | Recognises, compares, classifies, creates and describes angles as 'less than', 'equal to', 'about the same as' or 'greater than' a right angle. Classifies according to the type of angle | Recognises, compares, classifies, creates, explains and describes angles as 'less than', 'equal to', 'about the same as' or 'greater than' a right angle. Classifies according to the type of angle | Recognises, compares, classifies, creates, explains and describes angles as 'less than', 'equal to', 'about the same as' or 'greater than' a right angle. Classifies according to the type of angle. Beginning to use a protractor to measure angles up to 360 degrees |

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# *Mathematics Syllabus*

# *Stage Three Year Five*

Number and Algebra

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| Whole Number 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Orders, reads and represents integers of any size and describes properties of whole numbers MA3-4NA | Recognise, represent and order numbers to at least tens of millions | Recognises, represents and orders some numbers to tens of millions with teacher’s assistance | Recognises, represents and orders some numbers to at least tens of millions with concrete materials | Recognises, represents and orders numbers to at least tens of millions | Recognises, represents and orders numbers to at least tens of billions | Recognises, represents and orders numbers to at least tens of trillions |
| Recognises , represents and orders some numbers in basic money problems | Recognises, represents and orders some numbers to tens of millions in simple money problems with teacher assistance | Recognises, represents and orders numbers to at least tens of millions with money problems | Recognises, represents and orders numbers to at least tens of billions in mixed money problems | Recognises, represents and orders numbers to at least tens of trillions in complex mixed money problem |
| Recognises, represents and orders some basic numbers in expanded notation | Recognises, represents and orders some numbers to tens of millions in expanded notation with teacher assistance | Recognises, represents and orders numbers to at least tens of millions in expanded notation | Recognises, represents and orders numbers to at least tens of billions in expanded notation  | Recognises, represents and orders numbers to at least trillions in expanding notation |
| Recognises, represents and orders some numbers in ascending and descending order | Recognises, represents and orders some numbers to tens of millions in ascending and descending order with teacher assistance | Recognises, represents and orders numbers to at least tens of millions in an ascending and descending order | Recognises, represents and orders numbers to at least tens of billions in ascending and descending order | Recognises, represents and orders numbers to at least trillions in ascending and descending order |
| Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098) | Identifies and describes some of the factors and multiples of whole numbers and uses them to solve problems with teacher assistance | Identifies and describes some of the factors and multiples of whole numbers and uses them to solve problems with concrete materials | Identifies and describes factors and multiples of whole numbers and use them to solve problems(ACMNA098) | Identifies automatically and describes factors and multiples of whole numbers and uses them to solve problems (ACMNA098) | Identifies and determines automatically all ‘factors’ and ‘multiples’ and beyond of a given whole number in a variety of contexts |
| Determines some of the ‘factors’ and ‘multiples’ whole number with teacher assistance | Determines some of the ‘factors’ and ‘multiples’ of a of a given whole number | Determines all ‘factors’ and ‘multiples’ of a given whole number | Determines automatically all ‘factors’ and ‘multiples’ of a given whole number | Identifies and determines automatically the ‘highest common factor’ and the ‘lowest common factor’ of any whole numbers in a variety of contexts |
| Determines some of the ‘highest common factor’ and the ‘lowest common factor’ of two whole numbers with teacher assistance | Determines some of the ‘highest common factor’ and the ‘lowest common factor’ of two whole numbers | Determines the ‘highest common factor’ and the ‘lowest common factor’ of two whole numbers | Determines automatically all ‘highest common factor’ and the ‘lowest common factor’ of two whole numbers | Identifies and determines automatically the ‘highest common factor’ and the ‘lowest common factor’ of any whole numbers in a variety of contexts |

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| Addition and Subtraction 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and applies appropriate strategies for addition and subtraction with counting numbers of any size MA3-5NA | Use efficient mental and written strategies and apply appropriate digital technologies to solve problems (ACMNA291) | Selects and applies some efficient mental, written and calculator strategies to solve addition and subtraction problems with concrete materials and with teacher assistance  | Selects and applies some efficient mental, written and calculator strategies to solve addition and subtraction problems with concrete materials  | Selects and applies efficient mental, written and calculator strategies to solve addition and subtraction problems | Selects and applies efficient mental, written and calculator strategies to solve mixed addition and subtraction problems in a variety of situations | Uses, selects and applies efficient mental, written and calculator strategies to solve complex mixed addition and subtraction problems in familiar and unfamiliar situations |
| Use estimation and rounding to check the reasonableness of answers to calculations. (ACMNA099) | Uses estimation and rounding to check some of the reasonableness of answers to calculations with teacher assistance | Uses estimation and rounding to check some of the reasonableness of answers to calculations with concrete materials | Uses estimation and rounding to check the reasonableness of answers to calculations | Uses estimation and rounding to check the reasonableness of answers to mixed calculations with a high degree of accuracy | Uses estimation and rounding to check the reasonableness of answers to complex calculations with a high degree of accuracy |
| Can create simple financial plans.(ACMNA106) | Creates a basic financial plan using scaffold with teacher assistance | Creates basic financial plans using a scaffold | Creates simple financial plans | Creates simple financial plans with a high degree of accuracy | Creates complex financial plans with a high degree of accuracy within familiar and unfamiliar contexts |

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|  Multiplication and Division 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High |  Outstanding |
| Selects and applies appropriate strategies for multiplication and division, and applies the order of operations to calculations involving more than one operation MA3-6NA | Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental and written strategies and appropriate digital technologies (ACMNA100) | Solves some problems involving multiplication of large numbers by one- or two-digit numbers using mental and written strategies with teacher assistance  | Solves some problems involving multiplication of large numbers by one- or two-digit numbers using some efficient mental and written strategies  | Solves problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental and written strategies | Solves complex problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental and written strategies | Solves complex mixed problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental and written strategies  |
| Solves some problems involving multiplication of large numbers by one-or two digit-numbers using some appropriate digital technologies with teacher assistance  | Solves some problems involving multiplication of large numbers by one-or two- digit numbers using some appropriate digital technologies  | Solves problems involving multiplication of large numbers by one-or-two-digit numbers using appropriate digital technologies | Solves complex problems involving multiplication of large numbers by one - or two-digit numbers using appropriate digital technologies with an increasing degree of accuracy | Solves complex mixed problems involving multiplication of large numbers by one-or two-digit numbers using appropriate digital technologies with a high degree of accuracy |
| Solve problems involving division by a one-digit number, including those that result in a remainder (ACMNA101) | Solves some problems involving division by a one-digit number, including those that result in a remainder using concrete materials and with teacher assistance | Solves some problems involving division by a one-digit number, including those that result in a remainder using concrete materials  | Solves problems involving division by a one-digit number, including those that result in a remainder | Solves complex problems involving division by a one-digit number, including those that result in a remainder with increasing accuracy and automaticity | Solves mixed complex problems involving division by a one-digit number, including those that result in a remainder with a high level of accuracy and automaticity in familiar and unfamiliar contexts  |

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| Fractions and Decimals 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Compares, orders and calculates with fractions, decimals and percentages MA3-7NA | Can compare and order common unit fractions and locate and represent them on a number line (ACMNA102) | Models, compares and represents fractions with denominators of 2, 4, 5 and 8 of with teacher assistance | Models, compares and represents some fractions with denominators of 2, 4 and 8; 3 and 6; and 5, 10 and 100  | Models, compares and orders common unit fractions with denominators 2,3,4,5,6, 8 10, 12, 100 on a number line | Models, compares, investigates and orders common unit fractions with denominators 2,3,4,5,6, 8 10, 12, 100 on a number line  | Accurately compares, investigates, explains and orders common unit fractions with denominators 2,3,4,5,6, 8 10, 12, 100 |
| Beginning to locate and represent some common unit fractions on a number line between 0-1 with teacher assistance | Locates and represents some common unit fractions on a number line between 0-1  | Locates, describes, models and represents common unit fractions on a number line between 0-1 | Locates, describes, models and represents common unit fractions or equivalent fractions using strategies such as diagrams (linear diagrams) and number lines 0-1 in familiar word problems  | Locates, describes, models and represents common unit fractions or equivalent fractions using strategies such as diagrams (linear diagrams) and number lines 0-1 in familiar and unfamiliar word problems  |
| Beginning to investigate and explain the relationship between the value of a unit fraction and its denominator with teacher assistance  | Investigates and explain some relationship between the value of a unit fraction and its denominator | Investigates and explains the relationship between the value of a unit fraction and its denominator  | Investigates, compares and explains the relationship between the value of a unit fraction and its denominator | Investigates, compares and accurately explains the relationship between the value of a unit fraction and its denominator |
| Investigate strategies to solve problems involving addition and subtraction of fractions with same denominator (ACMNA103) | Investigates strategies to solve some problems involving addition and subtraction of fractions with same denominator with teacher assistance  | Investigates strategies to solve some problems involving addition and subtraction of fractions with same denominator | Investigates, identifies and describes strategies to solve problems involving addition and subtraction of fractions with same denominators | Investigates, identifies, describes, expresses mental strategies to solve problems involving addition and subtraction of fractions with same denominator | Investigates, identifies, describes, expresses mental, written and diagrams strategies to solve a variety of complex problems involving addition and subtraction of fractions with same denominator |
| Recognise that the place value system can be extended beyond hundredths (ACMNA104) | Recognises that the place value system can be extended beyond tenths and hundredths with teacher assistance  | Recognises that the place value system can be extended beyond hundredths with teacher assistance  | Recognises that the place value system can be extended beyond hundredths  | Recognises and applies the place value system can be extended beyond hundredths  | Recognises and applies that the place value system can be extended beyond hundredths to complex and unfamiliar problems  |
| Compare, order and represent decimals (ACMNA105) | Compares, orders and represents some decimals on a number line with teacher assistance | Compares, orders and represents some decimals on a number line 0-1 | Compares, orders and represents decimals up to 3 decimals and places on a number line 0-1 | Compares, orders, represents and applies to 3 decimals places and beyond on a number line 0-1 | Compares, orders, represents and applies to 3 or more decimal places and beyond to complex and unfamiliar problems  |

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| Patterns and Algebra 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the cartesian plane MA3-8NA | Describe, continue and create patterns with fractions |  |  |  |  |  |
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| Length 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters and converts between units of length MA3-9MG | Choose appropriate units of measurement for length | Chooses some appropriate units of measurement for length with teacher assistance | Chooses some appropriate units of measurements for length | Chooses appropriate units of measurement for length | Chooses and applies appropriate units of measurement in a variety of familiar contexts | Chooses and applies appropriate units of measurement in a variety of unfamiliar contexts |
| Recognises the need for a formal unit longer than a metre in some settings with teacher assistance | Recognises the need for a formal unit longer than a metre in some context | Recognises the need for a formal unit longer than a metre | Recognises, estimates and applies the need for a formal unit longer than a metre | Recognises, estimates and applies the need for a formal unit longer that a metre in a variety of unfamiliar contexts |
| Recognises there is 1000 metres in 1 kilometre and uses the abbreviation km in some settings with teacher assistance | Recognises there is 1000 metres in 1 kilometre and uses the abbreviation km in some problems | Recognises there is 1000 metres in 1 kilometre and uses the abbreviation km | Recognises, estimates and applies there is 1000 metres in 1 kilometre and uses the abbreviation km | Recognises , estimates and applies there is 1000 metres in 1 kilometre and uses the abbreviation km in a variety of unfamiliar context |
| Selects and uses appropriate unit and measuring devices to measure some lengths and distances using kilometres and half kilometres with teacher assistance | Selects and uses appropriate unit and measuring devices to measure some lengths and distances using kilometres and half kilometres | Selects and uses appropriate unit and measuring devices to measure lengths and distances using kilometres and half kilometres | Selects and uses appropriate unit and measuring devices to measure lengths and distances using kilometres and half kilometres in a variety of contexts | Selects and uses appropriate unit and measuring devices to measure lengths and distances using kilometres and half kilometres in a variety of unfamiliar contexts |
| Records some lengths and distances using combinations of millimetres, centimetres, metres and kilometres with teacher assistance | Records some lengths and distances using combinations of millimetres, centimetres, metres and kilometres | Records lengths and distances using combinations of millimetres, centimetres, metres and kilometres | Records complex lengths and distances using combinations of millimetres, centimetres, metres and kilometres | Records complex lengths and distances using combinations of millimetres, centimetres, metres and kilometres in a variety of unfamiliar contexts |
| Calculate the perimeters of rectangles using familiar metric units | Calculates the perimeters of rectangles using some familiar metric units with teacher assistance | Calculates the perimeters of rectangles using some familiar metric units  | Calculates the perimeters of rectangles using familiar metric units  | Calculates, applies and explains the perimeters of rectangles using familiar metric units | Calculates, applies and explains the perimeters of rectangles using familiar metric units in a variety of unfamiliar contexts |
| Calculates the perimeter of some common two-dimensional shapes including squares rectangles, triangles and regular polygons with four or more sides with teacher assistance | Calculates the perimeter of some common two-dimensional shapes including squares rectangles, triangles and regular polygons with four or more sides | Calculates the perimeter of common two-dimensional shapes including squares rectangles, triangles and regular polygons with four or more sides | Calculates and applies the perimeter of complex two-dimensional shapes including squares rectangles, triangles and regular polygons with four or more sides | Calculates and applies the perimeter of complex two-dimensional shapes including squares rectangles, triangles and regular polygons with four or more sides in a variety of unfamiliar contexts |

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| Area 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit to calculate areas, including areas of squares, rectangles and triangles MA3-10MG | Choose appropriate units of measurement for area (ACMMG108) | Recognises the need for a formal unit larger than a square metre in some content with teacher assistance | Recognises the need for a formal unit larger than a square metre in some content | Recognises the need for a formal unit larger than a square metre | Recognises and applies the need for a formal unit larger than a square metre in a variety of contexts | Recognises and applies the need for a formal unit larger than a square metre in a variety of unfamiliar contexts |
| Identify situations where square kilometres are used for measuring area in some content with teacher assistant | Identify situations where square kilometres are used for measuring area in some content | Identify situations where square kilometres are used for measuring area | Identify situations where square kilometres are used for measuring area in a variety of contexts  | Identify situations where square kilometres are used for measuring area in a variety of unfamiliar contexts  |
| Recognises that there are 10 000 square metres in one hectare in some contexts with teacher assistance  | Recognises that there are 10 000 square metres in one hectare in some contexts | Recognises that there are 10 000 square metres in one hectare | Recognises that there are 10 000 square metres in one hectare in a variety of contexts  | Recognises that there are 10 000 square metres in one hectare in a variety of unfamiliar contexts  |
| Record areas using the abbreviation for square kilometres (km²) and hectares (ha) in some context with teacher assistance | Record areas using the abbreviation for square kilometres (km²) and hectares (ha) in some context | Record areas using the abbreviation for square kilometres (km²) and hectares (ha) | Record areas using the abbreviation for square kilometres (km²) and hectares (ha) in a variety of contexts  | Record areas using the abbreviation for square kilometres (km²) and hectares (ha) in a variety of unfamiliar contexts |
| Calculate the areas of rectangles using familiar metric units (ACMMG109) | Establishes the lengths, widths and areas of rectangles and records finding (using length x width) the area of the rectangle in some contexts with teacher assistance | Establishes the lengths, widths and areas of rectangles and records finding (using length x width) the area of the rectangle in some contexts  | Establishes the lengths, widths and areas of rectangles and records finding (using length x width) the area of the rectangle | Establishes the lengths, widths and areas of rectangles and records finding (using length x width) the area of the rectangle in a variety of contexts  | Establishes the lengths, widths and areas of rectangles and records finding (using length x width) the area of the rectangle in a variety of unfamiliar contexts |
| Calculates and records some areas of rectangles (including squares) in square centimetre and square metres in some contexts with teacher assistance | Calculates and records some areas of rectangles (including squares) in square centimetre and square metres in some contexts  | Calculates and records areas of rectangles (including squares) in square centimetre and square metres | Calculates, records and applies areas of rectangles (including squares) in square centimetre and square metres in a variety of contexts  | Calculates, records and applies areas of rectangles (including squares) in square centimetre and square metres in a variety of unfamiliar contexts |

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| Volume and Capacity 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit to estimate measure and calculate volumes and capacities, and converts between units of capacity.MA3-11MG | Choose appropriate units of measurement for volume and capacity. (ACMMG108) | Selects some appropriate units of measurement for volume and capacity using concrete materials with teacher assistance | Selects some appropriate units of measurement for volume and capacity using concrete materials | Selects appropriate units of measurement for volume and capacity | Selects, estimates and applies appropriate units of measurement for volume and capacity in a variety of contexts  | Selects, estimates and applies appropriate units of measurement for volume and capacity in unfamiliar contexts |

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| Mass 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit and device to measure the masses of objects, and converts between units of mass MA3-12MG | Choose appropriate unit of measurement for mass (ACMMG108) | Recognises the need for a formal unit larger than the kilogram in some contexts with teacher assistance | Recognises the need for a formal unit larger than the kilogram in some contexts | Recognises the need for a formal unit larger than the kilogram | Recognises the need for a formal unit and applies knowledge larger than the kilogram in a variety of contexts  | Recognises the need for a formal unit and applies knowledge larger than the kilogram in a variety of unfamiliar contexts |
| Uses the tonne to record large masses and use abbreviation for tonnes (t) in some contexts with teacher assistance | Uses the tonne to record large masses and use abbreviation for tonnes (t) in some context | Uses the tonne to record large masses and use abbreviation for tonnes (t) | Uses and applies the tonne to record large masses and use abbreviation for tonnes (t) in a variety of contexts  | Uses and applies the tonne to record large masses and use abbreviation for tonnes (t) in a variety of unfamiliar contexts |
| Distinguishes between the ‘gross mass’ and ‘net mass’ of containers holding substances in some context with teacher assistance | Distinguishes between the ‘gross mass’ and ‘net mass’ of containers holding substances in some contexts | Distinguishes between the ‘gross mass’ and ‘net mass’ of containers holding substances  | Distinguishes between the ‘gross mass’ and ‘net mass’ of containers holding substances in a variety of contexts | Distinguishes between the ‘gross mass’ and ‘net mass’ of containers holding substances in a variety of unfamiliar contexts |
| Selects and uses the appropriate unit and device to measure mass in some contexts with teacher assistance | Selects and uses the appropriate unit and device to measure mass in some contexts | Selects, records and uses the appropriate unit and device to measure mass  | Selects, records and uses the appropriate unit and device to measure mass in a variety of contexts  | Selects, records and uses the appropriate unit and device to measure mass in a variety of unfamiliar contexts  |

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| Time 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses 24-hour time and am and pm notation in real-life situation, and constructs timelines MA3-13MG  | Compare 12- and 24-hour time systems and convert between them (ACMMG110) | Tells the time accurately using 24-hour time in some contexts and with teacher assistance | Tells the time accurately using 24-hour time in some contexts | Tells the time accurately using 24-hour time | Tells the time accurately using 24-hour time in a variety of contexts | Tells the time accurately using 24-hour time in a variety of unfamiliar contexts |
| Covert between 24-hour time and time given using am and pm notation in some contexts with teacher assistance | Coverts between 24-hour time and time given using am and pm notation in some contexts | Coverts between 24-hour time and time given using am and pm notation | Coverts between 24-hour time and time given using am and pm notation in a variety of contexts | Coverts between 24-hour time and time given using am and pm notation in a variety of unfamiliar contexts |
| Compares local times in various time zones in Australia including daylight saving in some contexts with teacher assistance | Compares local times in various time zones in Australia including daylight saving in some contexts | Compares local times in various time zones in Australia including daylight saving | Compares and analyses local times in various time zones in Australia including daylight saving in a variety of contexts | Compares and analyses local times in various time zones in Australia including daylight saving in a variety of unfamiliar contexts |
| Determine and compare the duration of events  | Selects an appropriate unit of time to measure a particular period of time in some contexts with teacher assistance | Selects an appropriate unit of time to measure a particular period of time in some contexts | Selects an appropriate unit of time to measure a particular period of time | Selects an appropriate unit of time to measure a particular period of time in a variety of contexts  | Selects an appropriate unit of time to measure a particular period of time in a variety unfamiliar contexts  |
| Uses a stopwatch to measure and compare the duration of events in some contexts with teacher assistance | Uses a stopwatch to measure and compare the duration of events in some contexts | Uses a stopwatch to measure and compare the duration of events | Uses a stopwatch to measure and compare the duration of events in a variety of contexts  | Uses a stopwatch to measure and compare the duration of events in a variety of unfamiliar contexts |
| Orders a series of events according to the time taken to complete each one in some contexts with teacher assistance | Orders a series of events according to the time taken to complete each one in some contexts | Orders a series of events according to the time taken to complete each one | Orders and analyses a series of events according to the time taken to complete each one in a variety of contexts  | Orders and analyses a series of events according to the time taken to complete each one in a variety of unfamiliar contexts |
| Uses start and finish times to calculate the time of events in some contexts with teacher assistance | Uses start and finish times to calculate the time of events in some contexts  | Uses start and finish times to calculate the time of events | Uses start and finish times to calculate the time of events in a variety of contexts  | Uses start and finish times to calculate and analyse the time of events in a variety of unfamiliar contexts |

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| Three Dimensional Space 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Identifies three-dimensional objects, including prisms and pyramids, on the basis of their properties, and visualises sketches and constructs them given drawings of different angles MA3-14MG | Compare, describe and name prisms and pyramids | Identifies and determines the number of pairs of parallel faces of some three-dimensional objects in some context with teacher assistance | Identifies and determines the number of pairs of parallel faces of some three-dimensional objects | Identifies and determines the number of pairs of parallel faces of three-dimensional objects | Identifies and determines the number of pairs of parallel faces of three-dimensional objects in a variety of contexts  | Identifies and determines the number of pairs of parallel faces of three-dimensional objects in a variety of unfamiliar contexts |
| Identifies the ‘base’ of prisms and pyramids and names some objects according to base with teacher assistance | Identifies the ‘base’ of prisms and pyramids and names some object according to base  | Identifies the ‘base’ of prisms and pyramids and names object according to base | Identifies the ‘base’ of prisms and pyramids and names and analyses object according to base in some unfamiliar contexts | Identifies the ‘base’ of prisms and pyramids and names and analyses object according to base in a variety of unfamiliar contexts |
| Beginning to visualise and attempts to draw some cut face (plane section) when a three-dimensional object receives a straight cut with teacher assistance | Visualises and draws some cut face (plane section) when a three-dimensional object receives a straight cut | Visualises and draws the resulting cut face (plane section) when a three-dimensional object receives a straight cut | Visualises, draws and analyses the resulting cut face (plane section) when a three-dimensional object receives a straight cut in a variety of contexts  | Visualises, draws and analyses the resulting cut face (plane section) when a three-dimensional object receives a straight cut in a variety of unfamiliar contexts |
| Identifies, describes and compares some of the properties of prisms and pyramids including: number of faces, shape of faces, number and type of identical faces, number of vertices and numbers of edges with teacher assistance | Identifies, describes and compares some of the properties of prisms and pyramids including: number of faces, shape of faces, number and type of identical faces, number of vertices and numbers of edges  | Identifies, describes and compares the properties of prisms and pyramids including: number of faces, shape of faces, number and type of identical faces, number of vertices and numbers of edges | Identifies, describes, compares and analyses the properties of prisms and pyramids including: number of faces, shape of faces, number and type of identical faces, number of vertices and numbers of edges in a variety of contexts  | Identifies, describes, compares and analyses the properties of prisms and pyramids including: number of faces, shape of faces, number and type of identical faces, number of vertices and numbers of edges in a variety of unfamiliar contexts |
| Describes some of the similarities and differences between prisms and pyramids with teacher assistance | Describes some of the similarities and differences between prisms and pyramids  | Describes similarities and differences between prisms and pyramids | Describes similarities and differences between prisms and pyramids in a variety of contexts  | Describes and analyses similarities and differences between prisms and pyramids in a variety of unfamiliar contexts |
| Uses the term ‘apex’ in some content to describe the highest point above the base of a pyramid or cone with teacher assistance | Uses the term ‘apex’ in some content to describe the highest point above the base of a pyramid or cone  | Uses the term ‘apex’ to describe the highest point above the base of a pyramid or cone | Uses the term ‘apex’ to describe the highest point above the base of a pyramid or cone in a variety of familiar contexts | Uses the term ‘apex’ to describe the highest point above the base of a pyramid or cone in more challenging activities and in a variety of unfamiliar contexts |
| Connect three-dimensional objects with their nets and other two-dimensional representations | Visualises and sketches some three-dimensional objects from different views, including top, front and side views with teacher assistance | Visualises and sketches some three-dimensional objects from different views, including top, front and side views  | Visualises and sketches three-dimensional objects from different views, including top, front and side views | Visualises, sketches and analyses three-dimensional objects from different views, including top, front and side views | Visualises, sketches and analyses three-dimensional objects from different views, including top, front and side views in a variety of familiar / unfamiliar contexts |
| Examines a diagram and discusses whether it is or is not the net of a closed three-dimensional object with teacher assistance | Examines a diagram and discusses whether it is or is not the net of a closed three-dimensional object in some contexts | Examines a diagram to determine whether it is or is not the net of a closed three-dimensional object | Examines, visualises and sketches a diagram to determine whether it is or is not the net of a closed three-dimensional object in a variety of contexts  | Examines, visualises and sketches a diagram to determine whether it is or is not the net of a closed three-dimensional object in a variety of unfamiliar contexts |
| Visualises and names some prisms and pyramids given diagrams of their nets with teacher assistance | Visualises and names some prisms and pyramids given diagrams of their nets  | Visualises and names prisms and pyramids given diagrams of their nets | Visualises, names and analyses prisms and pyramids given diagrams of their nets a variety of contexts  | Visualises, names and analyses prisms and pyramids given diagrams of their nets in a variety of unfamiliar contexts  |

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| Two Dimensional Space 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Manipulates, classifies and draws two-dimensional shapes including equilateral, isosceles and scalene triangles and describes their properties MA3-15MG | Classifies two-dimensional shapes and describes their features | Manipulates, identifies names and compares some right-angled, equilateral, isosceles and scalene triangles with teacher assistance | Manipulates, identifies names and compares some right-angled, equilateral, isosceles and scalene triangles | Manipulates, identifies names and compares right-angled, equilateral, isosceles and scalene triangles | Manipulates, identifies names and compares right-angled, equilateral, isosceles and scalene triangles in a variety of contexts  | Manipulates, identifies names and compares right-angled, equilateral, isosceles and scalene triangles in a variety of unfamiliar contexts  |
| Explores by measuring some side and angle properties of some equilateral, isosceles and scalene triangles with teacher assistance | Explores by measuring some side and angle properties of some equilateral, isosceles and scalene triangles  | Explores by measuring side and angle properties of equilateral, isosceles and scalene triangles | Explores by measuring side and angle properties of equilateral, isosceles and scalene triangles in a variety of contexts  | Explores by measuring side and angle properties of equilateral, isosceles and scalene triangles in a variety of unfamiliar contexts |
| Explores by measuring side and angle properties of some squares, rectangles and parallelograms and rhombuses with teacher assistance | Explores by measuring side and angle properties of some squares, rectangles and parallelograms and rhombuses  | Explores by measuring side and angle properties of squares, rectangles and parallelograms and rhombuses | Explores by measuring side and angle properties of squares, rectangles and parallelograms and rhombuses in a variety of contexts  | Explores by measuring side and angle properties of squares, rectangles and parallelograms and rhombuses in a variety of unfamiliar contexts  |
| Selects and classifies some two-dimensional shape from a description of its features with teacher assistance | Selects and classifies some two-dimensional shape from a description of its features | Selects and classifies a two-dimensional shape from a description of its features  | Selects, classifies and analyses various two-dimensional shapes from a description of their features in a variety of contexts  | Selects, classifies and analyses various two-dimensional shapes from a description of their features in a variety of unfamiliar contexts Provides description for other students |
| Identifies and draws some regular and irregular two-dimensional shapes from descriptions of their side and angle properties with teacher assistance | Identifies and draws some regular and irregular two-dimensional shapes from descriptions of their side and angle properties | Identifies and draws regular and irregular two-dimensional shapes from descriptions of their side and angle properties | Identifies, draws and analyses regular and irregular two-dimensional shapes from descriptions of their side and angle properties in a variety of contexts  | Identifies, draws and analyses regular and irregular two-dimensional shapes from descriptions of their side and angle properties in a variety of unfamiliar contexts  |
| Describe translations, reflections and rotations of a two-dimensional shape using the terminology | Uses some of the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes with teacher assistance | Uses some of the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes  | Uses the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes | Uses the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes in a variety of contexts  | Uses the terms 'translate', 'reflect' and 'rotate' to describe the movement of two-dimensional shapes in a variety of unfamiliar contexts |
| Describes some of the effect when a two-dimensional shape is translated, reflected or rotated, eg when a vertical arrow is rotated 90**°**, the resulting arrow is horizontal with teacher assistance wi | Describes some of the effect when a two-dimensional shape is translated, reflected or rotated, eg when a vertical arrow is rotated 90**°**, the resulting arrow is horizontal | Describes the effect when a two-dimensional shape is translated, reflected or rotated, eg when a vertical arrow is rotated 90**°**, the resulting arrow is horizontal | Describes the effect when a two-dimensional shape is translated, reflected or rotated, eg when a vertical arrow is rotated 90**°**, the resulting arrow is horizontal in a variety of contexts  | Describes the effect when a two-dimensional shape is translated, reflected or rotated, eg when a vertical arrow is rotated 90**°**, the resulting arrow is horizontal in a variety of unfamiliar contexts  |
| Identify line and rotational symmetries (ACMMG114) | Identifies and quantifies some of the total number of lines (axes) of symmetry (if any exist) of two-  dimensional shapes, including the special quadrilaterals and triangles content with teacher assistance | Identifies and quantifies some of the total number of lines (axes) of symmetry (if any exist) of two-  dimensional shapes, including the special quadrilaterals and triangles  | Identifies and quantifies the total number of lines (axes) of symmetry (if any exist) of two-  dimensional shapes, including the special quadrilaterals and triangles | Identifies and quantifies the total number of lines (axes) of symmetry (if any exist) of two-  dimensional shapes, including the special quadrilaterals and triangles and more complex shapes in a variety of contexts  | Identifies and quantifies the total number of lines (axes) of symmetry (if any exist) of two-  dimensional shapes, including the special quadrilaterals and triangles and more complex shapes and in a variety of unfamiliar contexts  |
| Identifies some shapes that have rotational symmetry and determine the 'order' of rotational symmetry with teacher assistance | Identifies some shapes that have rotational symmetry and determine the 'order' of rotational symmetry  | Identifies shapes that have rotational symmetry and determine the 'order' of rotational symmetry  | Identifies shapes that have rotational symmetry and determine the 'order' of rotational symmetry in a variety of contexts  | Identifies shapes that have rotational symmetry and determine the 'order' of rotational symmetry in a variety of unfamiliar contexts |
| Applies the enlargement transformation to familiar two-dimensional shapes with and without the use of digital technology  | Makes enlargements of some two-dimensional shapes, pictures and maps, with and without the use of digital technologies with teacher assistance | Makes enlargements of some two-dimensional shapes, pictures and maps, with and without the use of digital technologies  | Makes enlargements of two-dimensional shapes, pictures and maps, with and without the use of digital technologies  | Makes enlargements of two-dimensional shapes, pictures and maps, with and without the use of digital technologies in a variety of contexts  | Makes enlargements of two-dimensional shapes, pictures and maps, with and without the use of digital technologies in a variety of unfamiliar contexts  |
| Compares representations of some shapes, pictures and maps in different sizes, eg student drawings enlarged on a photocopier with teacher assistance | Compares representations of some shapes, pictures and maps in different sizes, eg student drawings enlarged on a photocopier | Compares representations of shapes, pictures and maps in different sizes, eg student drawings enlarged on a photocopier | Compares and analyses representations of shapes, pictures and maps in different sizes, eg student drawings enlarged on a photocopier, in a variety of contexts  | Compares and analyses representations of shapes, pictures and maps in different sizes, eg student drawings enlarged on a photocopier, in a variety of unfamiliar contexts  |

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| Angles 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Measures and constructs angles, and applies angle relationships to find unknown angles MA3-16MG | Estimate, measure and compare angles using degrees | Identifies some of the arms and vertex of an angle where both arms re invisible, such as for rotations and rebounds with teacher assistance | Identifies some of the arms and vertex of an angle where both arms are invisible, such as for rotations and rebounds  | Identifies the arms and vertex of an angle where both arms are invisible, such as for rotations and rebounds | Identifies the arms and vertex of an angle where both arms are invisible, such as for rotations and rebounds in a variety of contexts  | Identifies the arms and vertex of an angle where both arms are invisible, such as for rotations and rebounds in a variety of unfamiliar contexts  |
| Measures some of the angles of up to 360º using a protractor with teacher assistance | Measures some of the angles of up to 360º using a protractor  | Measures angles of up to 360º using a protractor | Measures and calculates angles of up to 360º using a protractor in a variety of contexts  | Measures and calculates angles of up to 360º using a protractor in a variety of unfamiliar contexts  |
| Construct angles using a protractor | Constructs some angles of up to 360º with teacher assistance | Constructs some angles of up to 360º in some content | Constructs angles of up to 360º | Constructs angles of up to 360º in a variety of contexts  | Constructs angles of up to 360º in a variety of unfamiliar contexts  |
| Identifies some right angle is 90º, a straight angle is 180º and an angle of revolution is 360º with teacher assistance | Identifies some right angle is 90º, a straight angle is 180º and an angle of revolution is 360º  | Identifies that a right angle is 90º, a straight angle is 180º and an angle of revolution is 360º | Identifies that a right angle is 90º, a straight angle is 180º and an angle of revolution is 360º in a variety of contexts  | Identifies that a right angle is 90º, a straight angle is 180º and an angle of revolution is 360º in a variety of unfamiliar contexts |
| Identifies and describes angle size in degrees for each of the classifications, acute, obtuse and reflex with teacher assistance | Identifies and describes angle size in degrees for each of the classifications, acute, obtuse and reflex  | Identifies and describes angle size in degrees for each of the classifications, acute, obtuse and reflex | Identifies and describes angle size in degrees for each of the classifications, acute, obtuse and reflex in a variety of contexts  | Identifies and describes angle size in degrees for each of the classifications, acute, obtuse and reflex in a variety unfamiliar contexts  |
| Estimates some angles in degrees and checks by measures and is accurate with teacher assistance | Estimates some angles in degrees and checks by measures and is accurate | Estimates angles in degrees and checks by measures  | Estimates angles in degrees and checks by measures and is accurate in a variety of contexts  | Estimates angles in degrees and checks by measures and is accurate in a variety of unfamiliar contexts  |

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| Position 1 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Locates and describes position on maps using a grid-reference system MA3-17MG  | Use a grid-reference system to describe locations (ACMMG113)  | Finds some locations on maps, including maps with legends, given their grid references with teacher assistance | Finds some locations on maps, including maps with legends, given their grid references  | Finds locations on maps, including maps with legends, given their grid references  | Finds locations on maps, including maps with legends, given their grid references in a variety of contexts  | Finds locations on maps, including maps with legends, given their grid references in a variety of unfamiliar contexts  |
| Describes some particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4' with teacher assistance | Describes some particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4'  | Describes particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4' | Describes particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4' ina variety of contexts  | Describes particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4' in a variety of unfamiliar contexts |
| Describe routes using landmarks and directional language (ACMMG113)  | Finds a location on a map that is in a given direction from a town or landmark, eg locate a  town that is north-east of Broken Hill in some content with teacher assistance | Finds a location on a map that is in a given direction from a town or landmark, eg locate a  town that is north-east of Broken Hill in some content | Finds a location on a map that is in a given direction from a town or landmark, eg locate a  town that is north-east of Broken Hill  | Finds a location on a map that is in a given direction from a town or landmark, eg locate a  town that is north-east of Broken Hill in some unfamiliar content | Finds a location on a map that is in a given direction from a town or landmark, eg locate a  town that is north-east of Broken Hill in a variety of unfamiliar content |
| Describes some of the direction of one location relative to another, eg 'Darwin is north-west of Sydney' with teacher assistance | Describes some of the direction of one location relative to another, eg 'Darwin is north-west of Sydney’ | Describes the direction of one location relative to another, eg 'Darwin is north-west of Sydney'  | Describes and analyses the direction of one location relative to another, eg 'Darwin is north-west of Sydney' in a variety of contexts  | Describes and analyses the direction of one location relative to another, eg 'Darwin is north-west of Sydney' in a variety of unfamiliar contexts |
| Follows a sequence of two or more directions, including compass directions, to find and identify a particular location on a map with teacher assistance | Follows a sequence of two or more directions, including compass directions, to find and identify a particular location on a map | Follows a sequence of two or more directions, including compass directions, to find and identify a particular location on a map | Follows a sequence of two or more directions, including compass directions, to find and identify a particular location on a map in a variety of contexts  | Follows a sequence of two or more directions, including compass directions, to find and identify a particular location on a map in a variety of unfamiliar contexts  |
| Uses a given map to plan and show some routes from one location to another, eg draw a possible route to the local park or use an Aboriginal land map to plan a route with teacher assistance | Uses a given map to plan and show some routes from one location to another, eg draw a possible route to the local park or use an Aboriginal land map to plan a route | Uses a given map to plan and show a route from one location to another, eg draw a possible route to the local park or use an Aboriginal land map to plan a route  | Uses a given map to plan and show a route from one location to another, eg draw a possible route to the local park or use an Aboriginal land map to plan a route in a variety of contexts  | Uses a given map to plan and show a route from one location to another, eg draw a possible route to the local park or use an Aboriginal land map to plan a route in a variety of unfamiliar contexts |
| Describes some routes taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park' with teacher assistance | Describes some routes taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park'  | Describes a route taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park'  | Describes and devises a route taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park' in a variety of contexts  | Describes and devises a route taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park' in a variety of unfamiliar contexts |

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# *Mathematics Syllabus*

# *Stage Three Year Six*

Number and Algebra

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| Whole Number 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Orders, reads and represents integers of any size and describes properties of whole numbers MA3-4NA | Investigate everyday situations that use integers; locate and represent these numbers on a number line (ACMNA124) | Identifies and reads some integers to order and represent positive and negative integers on a number line with teacher assistance  | Identifies and reads some integers to order and represent positive and negative integers on a number line | Identifies, reads, orders and represents positive and negative integers in everyday situations and on a number line  | Identifies, reads, orders, represents and applies positive and negative integers in everyday situations and on a number line  | Identifies, reads, orders, applies and represents more complex positive and negative integers in complex everyday situations and on an infinite number line  |
| Identify and describe properties of prime, composite, square and triangular numbers(ACMNA122) | Identifies and describes some factors of prime and composite numbers with teacher assistance  | Identifies and describes some factors of prime and composite numbers | Identifies and describes properties of prime and composite numbers | Identifies, applies and describes properties of more complex prime and composite numbers | Identifies, applies and describes properties of increasingly more complex prime and composite numbers to complex everyday situation |
| Identifies and describes some numbers and larger square and triangular numbers with or without concrete materials with teacher assistance  | Identifies and describes some numbers and larger square and triangular numbers with or without concrete materials  | Identifies and describes properties of square and triangular numbers | Identifies, applies and describes properties of square and triangular numbers | Identifies, applies and describes properties of square and triangular numbers in a variety of situations |

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| Addition and Subtraction 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and applies appropriate strategies for addition and subtraction with counting numbers of any size MA3-5NA | Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving addition and subtraction with whole numbers(ACMNA123 | Beginning to select, explain, and apply mental and written strategies to solve problems with teacher assistance  | Selects, explains and applies some efficient mental and written strategies to solve problems involving addition and subtraction using whole numbers | Selects, explains, and applies efficient mental and written strategies to solve problems involving addition and subtraction using whole numbers | Selects, explains, and applies efficient mental and written strategies to solve complex problems involving addition and subtraction using whole numbers in a variety of contexts  | Selects, explains, and applies efficient mental and written strategies to solve on complex and unfamiliar problems involving addition and subtraction using whole numbers |
| Selects and applies some efficient mental and written strategies to solve problems involving addition and subtraction using whole numbers with and without appropriate digital technologies and with teacher assistance  | Selects, explains, and applies some efficient mental and written strategies to solve problems involving addition and subtraction using whole numbers with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve problems involving addition and subtraction using whole numbers with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve complex problems involving addition and subtraction using whole numbers with and with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve on complex and unfamiliar problems involving addition and subtraction using whole numbers with and without appropriate digital technologies |

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| Multiplication and Division 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and applies appropriate strategies for multiplication and division, and applies the order of operations to calculations involving more than one operation MA3-6NA | Select and apply efficient mental and written strategies, and appropriate digital technologies, to solve problems involving multiplication and division with whole numbers(ACMNA123) | Selects, explains, and applies some efficient mental and written strategies to solve problems involving multiplication and division using whole numbers with teacher assistance | Selects, explains, and applies some efficient mental and written strategies to solve problems involving multiplication and division using whole numbers | Selects, explains, and applies efficient mental and written strategies to solve problems involving multiplication and division using whole numbers | Selects, explains, and applies efficient mental and written strategies to solve complex word problems involving multiplication and division using whole numbers | Selects, explains, and applies efficient mental and written strategies to solve complex and unfamiliar problems involving multiplication and division using whole numbers |
| Selects, explains, and applies some efficient mental and written strategies to solve problems involving multiplication and division using whole numbers with and without appropriate digital technologies with teacher assistance | Selects, explains, and applies some efficient mental and written strategies to solve problems involving multiplication and division using whole numbers with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve problems involving multiplication and division using whole numbers with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve complex problems involving multiplication and division using whole numbers with and without appropriate digital technologies | Selects, explains, and applies efficient mental and written strategies to solve complex and unfamiliar problems involving multiplication and division using whole numbers with and without appropriate digital technologies |
| Explore the use of brackets and the order of operations to write number sentences(ACMNA134) | Investigates and establishes some order of operations with teacher assistance  | Investigates and establishes some order of operations | Investigates and establishes order of operations | Investigates, applies and establishes order of operations for complex number sentences | Investigates, applies and establishes order of operations for complex and unfamiliar number sentences |
| Investigates and establishes some order of operations using real life contexts with teacher assistance  | Investigates and establishes some order of operations using real life contexts | Investigates and establishes order of operations using real life contexts | Investigates, applies and establishes order of operations using real life complex contexts | Investigates, applies and establishes order of operations using real life complex and unfamiliar contexts |
| Writes some numbers sentences to represent real life situations involving mixed operations and grouping symbols with and without the use of technology with teacher assistance  | Writes some numbers sentences to represent real life situations involving mixed operations and grouping symbols with and without the use of technology | Writes numbers sentences to represent real life situations involving mixed operations and grouping symbols with and without the use of technology | Writes complex numbers sentences to represent real life situations involving mixed operations and grouping symbols with and without the use of technology | Writes complex and unfamiliar numbers sentences to represent real life situations involving mixed operations and grouping symbols with and without the use of technology |

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| Fractions and Decimals 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Compares, orders and calculates with fractions, decimals and percentages MA3-7NA | Compare fractions with related denominators and locate and represent them on a number line(ACMNA125) |  |  | Compares, orders and records simple fractions using diagrams, number line or equivalent fractions. |  |  |
|  |  |  | Uses mental strategies (mult. or div.) to find equivalent fractions and write them in their simplest form. |  |  |
| Solve problems involving addition and subtraction of fractions with the same or relateddenominators(ACMNA126) |  |  | Solves addition and subtraction problems.  |  |  |
| Find a simple fraction of a quantity where the result is a whole number, with and without the useof digital technologies(ACMNA127) |  |  | Finds a simple fraction of a quantity where the result is a whole number, with and without the useof digital technologies |  |  |
| Add and subtract decimals, with and without the use of digital technologies, and use estimationand rounding to check the reasonableness of answers(ACMNA128) |  |  | Adds and subtracts decimals, with and without the use of digital technologies, and use estimation and rounding to check the reasonableness of their answers |  |  |
| Multiply decimals by whole numbers and perform divisions by non-zero whole numbers wherethe results are terminating decimals, with and without the use of digital technologies(ACMNA129) |  |  | Multiplies decimals by whole numbers and perform divisions by non-zero whole numbers wherethe results are terminating decimals, with and without the use of digital technologies |  |  |
| Multiply and divide decimals by powers of 10(ACMNA130) | Multiplies and divides some decimals by 10 and 100 using concrete materials and with teacher assistance  | Multiplies and divides some decimals by 10 , 100 and 1000 | Multiplies and divides decimals by powers of 10, 100 and 1000 | Multiplies and divides decimals by powers of 10, 100 and 1000 in a variety of contexts Solves word problems by multiplying and dividing decimals by powers of 10 to 1000 | Multiplies and divides decimals by powers of 10 to complex and unfamiliar contexts Solves complex and unfamiliar word problems by multiplying and dividing decimals by powers of 10 to 1000 in a variety of unfamiliar contexts  |
| Make connections between equivalent fractions, decimals and percentages(ACMNA131) | Recognises and makes some connections between equivalent fractions, decimals and percentages with teacher assistance | Recognises and makes some connections between equivalent fractions, decimals and percentages | Makes connections between equivalent fractions, decimals and percentageseg 25/100 = 25% = 0.25 | Makes, reflects and explains connections between equivalent fractions, decimals and percentages in a variety of contexts  | Makes, reflects, explains, interprets and represents connections between equivalent fractions, decimals and percentages in complex and unfamiliar contexts  |
| Relates some of fractions and use in everyday contexts with teacher assistance  | Relates some of fractions and use in everyday contexts  | Relates the use of fractions in everyday contexts  | Relates, interprets and applies the use of fractions in everyday and variety of contexts eg/ ¾ hour = 45 mins | Relates, interprets and applies the use of fractions in unfamiliar contexts eg/ ¾ hour 45 mins |
| Represents some percentages 25, 50 and 75% in everyday contexts with teacher assistance | Represents some percentages 25, 50 and 75% in everyday contexts  | Represents percentages 25, 50 and 75% in everyday contexts  | Represents and explains percentages 25, 50 and 75% in a variety of contexts  | Represents, explains and interprets percentages in a variety of unfamiliar contexts  |
| Represents some decimals as fractions with teacher assistance e.g. 1.37=137%=137/100 | Represents some decimals as fractions e.g. 1.37=137%=137/100 | Represents decimals as fractions e.g. 1.37=137%=137/100 | Represents and explains decimals as fractions in a variety of contexts e.g. 1.37=137%=137/100 | Represents, explains and interprets decimals as fractions e.g. 1.37=137%=137/100 |
| Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items with andwithout the use of digital technologies(ACMNA132) | Investigates and calculates some percentage discounts of 150% on simple numbers and with concrete material and teacher assistance  | Investigates and calculates some percentage discounts of 10%, 25% and 50% on simple numbers  | Investigates and calculates percentage discounts of 10%, 25% and 50% on sale items | Investigates, applies and calculates percentage discounts of 10%, 25% and 50% on complex problems on sale items | Investigates, applies and calculates on complex and unfamiliar problems discounts. eg/ 12%, 35% on sale items and re-calculates the new sale price  |

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| Patterns and Algebra 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Analyses and creates geometric and number patterns, constructs and completes number sentences and locates points on the cartesian plane MA3-8NA | Continue and create sequences involving whole numbers, fractions and decimals; describe the rule used to create the sequence(ACMNA133) |  |  | Continue and create sequences involving whole numbers, fractions and decimals; describe the rule used to create the sequence(ACMNA133) |  |  |
|  | Introduce the Cartesian coordinate system using all four quadrants(ACMMG143) |  |  | Introduce the Cartesian coordinate system using all four quadrants(ACMMG143) |  |  |

*Measurement and Geometry*

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| Length 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length MA3-9MG | Connect [decimal](http://syllabus.bos.nsw.edu.au/glossary/mat/decimal/?ajax) representations to the metric system (ACMMG135) | Recognises the equivalence of some whole-number and decimal representations of measurements of length, eg 165 cm is the same as 1.65 m with teacher assistance  | Recognises the equivalence of some whole-number and decimal representations of measurements of length, eg 165 cm is the same as 1.65 m  | Recognises the equivalence of whole-number and decimal representations of measurements of length, eg 165 cm is the same as 1.65 m    | Recognise, interprets and applies the equivalence of whole-number and decimal representations of measurements of length, in a variety of contexts  | Recognises, interprets and applies the equivalence of whole-number and decimal representations of varying units of measurements of length in unfamiliar contexts |
| Interprets decimal notation for some lengths and distances, eg 13.5 cm is 13 centimetres and 5 millimetres with teacher assistance | Interprets decimal notation for some lengths and distances, eg 13.5 cm is 13 centimetres and 5 millimetres  | Interprets decimal notation for lengths and distances, eg 13.5 cm is 13 centimetres and 5 millimetres | Interprets and applies decimal notation for lengths and distances in a variety of contexts  | Interprets and applies complex decimal notation for lengths and distances in unfamiliar contexts  |
| Records some lengths and distances using decimal notation with teacher assistance  | Records some lengths and distances using decimal notation to three decimal places, eg 2.753 km | Records lengths and distances using decimal notation to three decimal places, eg 2.753 km | Records and applies lengths and distances using decimal notation to four decimal places, eg 2.7531 km in a variety of contexts  | Records and applies lengths and distances using decimal notation to any given decimal place in a variety of unfamiliar contexts  |
| Convert between common metric units of length (ACMMG136) | Recognises the difference between metres and kilometres | Converts between some metres and kilometres  | Converts between metres and kilometres | Applies and converts between metres and kilometres to a variety of contexts  | Applies and converts between metres and kilometres to a variety of familiar and unfamiliar contexts  |
| Compares lengths and distances in millimetres , centimetres and metres | Converts between some millimetres, centimetres and metres to compare some lengths and distance | Converts between millimetres, centimetres and metres to compare lengths and distances | Converts between millimetres, centimetres and metres to compare lengths and distances to a variety of contexts  | Converts between millimetres, centimetres and metres to compare lengths and distances in a variety of familiar and unfamiliar contexts |
| Solve problems involving the comparison of lengths using appropriate units (ACMMG137) | Identifies perimeters of rectangles   | Investigates and compares some perimeters of rectangles with the same area  | Investigates and compares perimeters of rectangles with the same area   | Investigates and compares perimeters of multiple rectangles with the same area | Investigates, compares and analyses perimeters of multiple rectangles with the same area |
| Solves problems involving length and perimeter with teacher assistance | Solves some problems involving length and perimeter, including problems involving different units of length, eg 'Find the total length of three items measuring 5 mm, 20 cm and 1.2 m' with teacher assistance | Solves a variety of problems involving length and perimeter, including problems involving different units of length, eg 'Find the total length of three items measuring 5 mm, 20 cm and 1.2 m' | Solves a variety of problems involving length and perimeter, including problems involving different units of length, eg 'Find the total length of three items measuring 5 mm, 20 cm and 1.2 m' to a variety of contexts  | Solves a variety of problems of increasing complexity involving length and perimeter, including problems involving different units of length applied to a variety of real life and unfamiliar contexts  |

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| Area 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit to calculate areas, including areas of squares, rectangles and triangles MA3-10MG | Solve problems involving the comparison of areas using appropriate units (ACMMG137) | Explores the relationship between the area of a triangle and the area of the rectangle of the same length and perpendicular height using concrete materials with teacher assistance       | Explains the relationship between the area of a triangle and the area of the rectangle of the same length and perpendicular height using concrete materials eg use a copy of the given triangle with the given triangle to form a rectangle    | Explains the relationship between the area of a triangle and the area of the rectangle of the same length and perpendicular height       × base × perpendicular height'   | Explains and applies the relationship between the area of a triangle and the area of the rectangle of the same length and perpendicular height         | Explains and applies the relationship between the area of a triangle and the area of the rectangle of the same length and perpendicular height in a variety on contexts          |
| Establishes the relationship between the base length, perpendicular height and area of a triangle with teacher assistance  | Establishes the relationship between the base length, perpendicular height and area of a triangle by recording, using words, the method for finding the area of any triangle, with teacher assistance  | Establishes the relationship between the base length, perpendicular height and area of a triangle by recording, using words, the method for finding the area of any triangle, eg'Area of triangle = 1 /2 x base x perpendicular height | Establishes and applies the relationship between the base length, perpendicular height and area of a triangle by recording, using words, the method for finding the area of any triangle in a variety of contexts  | Establishes and applies the relationship between the base length, perpendicular height and area of a triangle by recording, using words, the method for finding the area of any triangle, and applies knowledge in a variety of familiar and unfamiliar contexts |
| Investigates and compares the areas of some rectangles that have the same perimeter, eg compare the areas of all possible rectangles with whole-number dimensions and a perimeter of 20 centimetres with teacher assistance | Investigates and compares the areas of some rectangles that have the same perimeter, eg compare the areas of all possible rectangles with whole-number dimensions and a perimeter of 20 centimetres | Investigates and compares the areas of rectangles that have the same perimeter, eg compare the areas of all possible rectangles with whole-number dimensions and a perimeter of 20 centimetres  | Investigates, compares and applies the areas of rectangles that have the same perimeter, eg compare the areas of all possible rectangles with whole-number dimensions and a perimeter of 20 centimetres in a variety of contexts  | Investigates and compares the areas of rectangles that have the same perimeter and determines the number of different rectangles that can be formed using whole-number dimensions for a given perimeter in a variety of familiar and unfamiliar contexts  |
| Solves some problems involving the areas of rectangles (including squares) and triangles with teacher assistance | Solves some problems involving the areas of rectangles (including squares) and triangles | Solves a variety of problems involving the areas of rectangles (including squares) and triangles | Solves and explains a variety of problems involving the areas of rectangles (including squares) and triangles in a variety of contexts  | Solves, explains and interprets a variety of problems of increasing complexity involving the areas of rectangles (including squares) and triangles within a real life and unfamiliar contexts |

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| Volume and Capacity 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit to estimate measure and calculate volumes and capacities, and converts between units of capacity.MA3-11MG | Connect volume and capacity and their units of measurement(ACMMG138) | Connects, selects, demonstrates and finds some volume and capacity and their units of measurement using concrete materials and with teacher assistance | Connects, selects, demonstrates and finds some volume and capacity and their units of measurement | Connects, selects, demonstrates and finds volume and capacity and their units of measurement | Connects, selects, demonstrates, finds and equates volume and capacity and their units of measurement in a variety of contexts  | Connects, selects, demonstrates, finds, equates and applies volume and capacity and their units of measurement to unfamiliar contexts |
|  | Connect decimal representations to the metric system (ACMMG135) | Connects some decimal representations to the metric system using concrete materials and with teacher assistance | Connects some decimal representations to the metric system  | Connects decimal representations to the metric system  | Connects, selects and interprets decimal representations to the metric system in a variety of contexts  | Connects, selects and interprets decimal representations to the metric system up to three decimal places in unfamiliar contexts |
|  | Convert between common metric units of capacity.(ACMMG136) | Converts between simple common metric units of capacity using concrete materials and with teacher assistance | Converts between some common metric units of capacity  | Converts between common metric units of capacity | Converts and interprets common metric units of capacity in a variety of contexts  | Converts, interprets and provides reasoning when converting common metric units of capacity in unfamiliar contexts |
|  | Calculate the volumes of rectangular prisms.(ACMMG160) | Calculates the volumes of some rectangular prisms using concrete materials and with teacher assistance using repeated addition for repeated layers  | Calculates the volumes of some rectangular prisms with or without teacher assistance using repeated addition for repeated layers | Calculates the volumes of rectangular prisms | Calculates, constructs and applies a formula to determine the volume of rectangular prisms for a variety of contexts  | Calculates, constructs and applies a formula to determine the volume of rectangular prisms with varying dimensions for a variety of familiar and unfamiliar contexts  |

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| Mass 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Selects and uses the appropriate unit and device to measure the masses of objects, and converts between units of mass MA3-12MG | Connect [decimal](http://syllabus.bos.nsw.edu.au/glossary/mat/decimal/?ajax) representations to the metric system (ACMMG135) | Recognises the equivalence of some whole-number representations of measurements of mass and with teacher assistance   | Recognises the equivalence of some whole-number and decimal representations of measurements of mass   | Recognises the equivalence of whole-number and decimal representations of measurements of mass, eg 3 kg 250 g is the same as 3.25 kg     | Recognises and applies the equivalence of whole-number and decimal representations of measurements of mass, to a variety of real life contexts  | Recognises, applies and analyses the equivalence of whole-number and decimal representations of measurements of mass, to a variety of real life and unfamiliar contexts  |
| Explores whole-number masses with teacher assistance  | Interprets some decimal notation for masses, eg 2.08 kg is the same as 2 kilograms and 80 grams  | Interprets decimal notation for masses, eg 2.08 kg is the same as 2 kilograms and 80 grams  | Interprets and applies decimal notation for masses, eg 2.08 kg is the same as 2 kilograms and 80 grams, to a variety of real life contexts  | Interprets and applies decimal notation for masses, eg 2.08 kg is the same as 2 kilograms and 80 grams, to a variety of real life and unfamiliar contexts   |
| Measures mass using scales in whole kilograms and with teacher assistance  | Measures some mass using scales and record using decimal notation of up to three decimal places, eg 0.875 kg  | Measures mass using scales and record using decimal notation of up to three decimal places, eg 0.875 kg | Measures and applies mass using scales and record using decimal notation of up to three decimal places, eg 0.875 kg, in a variety of contexts  | Measures and applies mass using scales and record using decimal notation of up to three decimal places, eg 0.875 kg, in a variety of unfamiliar contexts |
| Convert between common metric units of mass (ACMMG136) | Recognises the difference between kilograms and grams and between kilograms and tonnes with teacher assistance   | Converts between some kilograms and grams and between kilograms and tonnes  | Converts between kilograms and grams and between kilograms and tonnes    | Converts between kilograms and grams and between kilograms and tonnes, and applies knowledge to a variety of contexts | Converts and explains between kilograms and grams and between kilograms and tonnes, and applies knowledge to a variety of unfamiliar contexts |
| Solves some problems involving same units of mass, eg find the total mass of three items weighing 50 g, 70 g and 25 g with teacher assistance | Solves some problems involving different units of mass, e.g. find the total mass of three items weighing 50 g, 750 g and 2.5 kg  | Solves problems involving different units of mass, e.g. find the total mass of three items weighing 50 g, 750 g and 2.5 kg  | Solves a variety of problems with increasing difficulty involving different units of mass, e.g. find the total mass of three items weighing 50 g, 750 g and 2.5 kg in a variety of contexts  | Solves a variety of problems, including word based, with increasing difficulty involving different units of mass, e.g. find the total mass of three items weighing 50 g, 750 g and 2.5 kg in a variety of familiar and unfamiliar contexts  |
| Identifies the mass of one litre of water and identifies one kilogram | Relates the mass of one litre of water to one kilogram, with teacher assistance | Relates the mass of one litre of water to one kilogram | Relates and applies the mass of one litre of water to one kilogram | Relates and applies the mass of one litre of water to one kilogram in a variety of unfamiliar contexts |

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| Time 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
| Uses 24-hour time and am and pm notation in real-life situations, and constructs timelines MA3-13MG | Interpret and use timetables (ACMMG139) | Reads, interprets and uses timetables with teacher assistance        | Reads, interprets and uses some timetables from real-life situations, including those involving 24-hour time w    | Reads, interprets and uses timetables from real-life situations, including those involving 24-hour time    | Reads, interprets and uses timetables of increasing complexity, from real-life situations, including those involving 24-hour time in a variety of contexts    | Reads, interprets, uses and creates timetables, from real-life and unfamiliar contexts including those involving 24-hour time  |
| Uses simple timetables, to prepare a basic travel itinerary, with teacher assistance | Uses some bus, train, ferry and airline timetables, including those on the internet, to prepare simple travel itineraries  | Uses bus, train, ferry and airline timetables, including those on the internet, to prepare simple travel itineraries  | Uses bus, train, ferry and airline timetables, including those on the internet, to solve problems and prepare simple travel itineraries in a variety of contexts  | Uses bus, train, ferry and airline timetables, including those on the internet, to solve unfamiliar problems and prepare travel itineraries |
| Draw and interpret timelines using a given scale | Determines a suitable scale and attempts to draw a timeline using the scale with teacher assistance    | Determines a suitable scale and attempts to draw a timeline using the scale     | Determines a suitable scale and draws an accurate timeline using the scale, eg represent events using a many-to-one scale of 1 cm = 10 years | Determines and applies scale and draws an accurate timeline using the scale in a variety of contexts     | Determines and applies a more complex scale and draws an accurate timeline within a variety of familiar and unfamiliar contexts    |
| Interprets a simple given timeline with teacher assistance | Interprets some timelines using the given scale | Interprets a given timeline using the given scale | Interprets and explains a complex given timeline using the given scale in a variety of contexts  | Interprets and explains a detailed timeline using a complex given scale in a variety of familiar and unfamiliar contexts  |

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| Three Dimensional 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
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| Two Dimensional 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
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| Angles 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
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| Position 2 |
| Outcomes | Contentdescriptor | Limited | Basic | Sound | High | Outstanding |
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