# Mathematics

## Stage One

Number

Pupils encounter activities and experiences. Participation is fully prompted. They may be passive or resistant. They may show simple reflex responses. Pupils show emerging awareness of activities and experiences. They may have periods when they appear alert and ready to focus their attention. They may give intermittent reactions.
Students:

- show sensory awareness to number rhymes, songs, stories and finger games
- experience numbers within everyday activities
- show reflex responses to sensory stimuli involving objects being put together and taken apart and the words to describe these activities
- experience objects being built and knocked down

Measurement

Students:

- experience consistent everyday routines
- experience activities involving sequencing familiar events and the vocabulary of time
- explore objects that have different masses, lengths and capacities

Space

Students:

- experience the feel and begin to give intermittent responses to 2D and 3D objects
- experience activities involving position, direction and movement

## Stage Two

Number

Students begin to respond consistently to familiar people, events and objects. They react to new activities and experiences. They begin to show interest in people events and objects. They accept and engage in coactive exploration. Students begin to be proactive in their interactions. They communicate consistent preferences and affective responses. They recognise familiar people, events and objects. They perform actions, often by trial and improvement and they remember learned responses over short periods of time.
Students:

- lift objects towards their face in shared investigations/activity
- show consistent response to games, rhymes, songs etc using number
- show consistent response to objects and counting activities
- respond consistently to activities involving putting together and taking apart
- show consistent and intentional response to games, stories etc. using number
- show consistent and intentional response to objects and counting activities
- co-operate within a shared or supported activity using counting
- co-operate within a shared or supported activity involving putting together and taking apart

Measurement

Students:

- respond consistently to activities involving sequencing familiar events and vocabulary of time
- respond to activities involving measurement
- communicate consistent preferences for activities involving sequencing events, e.g. object timetable
- co-operate with supported participation within activities involving measurement

Space

Students:

- develop an awareness of object permanence
- explore and respond consistently to shared activities involving 2D and 3D solids
- react and engage in co-active exploration of position, direction and movement
- show a learned response to these activities

**Stage Three**

Number

Students begin to communicate intentionally. They seek attention though eye contact, gesture or action. They participate in shared activities with less support. They sustain concentration for short periods. They explore materials in increasingly complex ways. They remember learned responses over more extended periods.

Students greet known people and may initiate interactions. They can remember learned response over increasing periods of time and may anticipate known events. They may respond to options and choices with actions and gestures. They actively explore objects and events for more extended periods.

Students:

- show anticipation of familiar number rhymes, songs, games etc
- show interest when participating in shared one to one counting activities
- sustain concentration when participating in concrete counting activities
- explore and manipulate objects representing numbers for extended periods
- give a consistent response to repeated concrete number activities over time

Measurement

Students:

- recognise a time sequence of activities and anticipate the next occurrence
- explore and manipulate a range of concrete materials
- sustain concentration on activities involving measurement

Space

Students may:

- sustain concentration on activities involving 2D shapes and 3D solids
- sustain concentration during activities involving position, direction and movement
- actively explore 2D shapes and 3D solids independently
- initiate actions during activities involving position, direction and movement

**Stage Four**

Number

Students show an interest in number activities and counting.

Students:

- show an interest in number rhymes, songs, stories and games
- show an interest in counting activities
- joins in the sound patterns of the number games
- respond to 'give me more'
- respond to 'gone' (being none left)
- pick up objects one at a time

Measurement

Students start to initiate activities involving measurement.

Students:

- join in with filling and emptying containers
- attempt to fill and empty containers independently
- understand activities timetable with symbols/objects of reference
- match objects of the same size, e.g. matching two small toy cars

Space

Students demonstrate the concept of object permanence. They demonstrate an interest in position and the relationship between objects.

Students:

- search for objects that have been hidden
- make towers of bricks
- roll objects down a slope
- participate in rolling activities with a partner
- stack objects, e.g. stacking cups
- participate in threading activities
- align objects
- put objects in and out of a container
- join in matching games involving 2D and 3D shapes

**Stage Five**

Number

Students are able to respond to and join in with familiar number rhymes, stories, songs and games; they indicate one or two by using fingers or sounds and they demonstrate awareness of contrasting quantities.

Students:

- join in with familiar number rhymes, stories etc
- respond to familiar number rhymes, songs etc
- hold up a single finger on request
- hold up two fingers on request
- select one object on request

- match objects with 1:1 correspondence e.g. put 1 flower in each pot
- place objects into sets of 'one' or 'lots'
- identify 'one' and 'lots' from pictures, piles of objects etc
- join in games that involve adding and taking away, e.g. musical chairs
- give out 1 object to each person in a group where there is a correct number of objects

Measurement

Students are able to compare the overall properties of one object with that of another where there is a marked difference and to find big and small objects on request.

Students:

- identify 'big' or 'small' objects on request
- identify 'heavy' or 'light' objects on request
- compare the overall size /weight of one object with another where there is a marked difference
- pour water from one container to another (may overfill)
- fill and empty containers with sand, pasta etc
- show some awareness of the function of a clock

Space

Students explore the position of objects and sort and match sets of objects.

Students:

- make a tower of 4 bricks
- roll a cylinder down a slope
- place large pegs in a board at random
- complete threading toy
- place 5 objects in a line
- put objects in a container
- take objects from container
- match 2D shapes with help
- attempt to shade within an outline
- find named objects in their usual place
- complete simple inset puzzle
- begin to sort objects by shape
- match objects with help

**Stage Six**

Number

Students are able to demonstrate an understanding of one-to-one correspondence in a range of contexts. They rote count reliably to five in familiar activities and games, count reliably to three and make sets of up to three objects. They demonstrate an understanding of the concept of 'more/fewer'.

Students:

- join in rote counting to 5
- use numbers to 5 in familiar number games, rhymes etc
- count reliably to 3

- count 3 objects, pointing as they count
- count out 3 objects consistently
- count when playing
- give one object to each person in a group
- display awareness that there are too few/too many to complete 1:1 matching
- request more of correct objects to complete 1:1 matching

Measurement

Students are able to compare the overall size of two objects where the difference is not great. They demonstrate awareness of vocabulary such as more or less in practical situations.

Students:

- demonstrate an awareness of more and less in practical situations e.g. more drink, sweets etc
- pour water into a container and stop before it overflows
- compare the overall size of one object with another where the difference is not great, e.g. can find the bigger of two Russian dolls
- show awareness of key times, e.g. 8 o'clock -bedtime , 3 o'clock -home time

Space

Students are able to demonstrate an understanding of object permanence, manipulate three dimensional shapes and show understanding of words, signs and symbols that describe positions.

Students:

- manipulate 3D shapes e.g. build towers
- match 2D shapes
- trace shapes to indicate awareness of space
- explore shapes by shading
- make balls/cylinders from play dough
- cut shapes from play dough
- place large pegs on board making line from left to right
- place small pegs on board at random
- match colours- red, blue, yellow
- demonstrate understanding of positional words; in, on, under
- sort objects according to shape
- sort according to colour
- place up to 3 items in the same order as model.(pictures, objects, colours etc)
- copy simple patterns
- name 1 object from a set of 4 which has been covered

**Stage Seven**

Number

Students rote count to 10 and reliably count at least 5 objects. They begin to recognise numerals from 1-5. They respond appropriately to key vocabulary and questions such as 'How many?' 'Add one' and 'Take one'.

Students:

- rote count to 10
- count along 5 objects

- count out 5 objects
- match numbers 1-5
- recognise numbers 1-5
- understand numbers 1-5 represent constant amounts
- give numbers 1-5 when asked
- put quantities on numbers 1-5
- begin to recognise differences in quantity between 2 sets of up to 5 objects
- using objects to 3, take one away and count how many now
- using objects to 3, add one more and count how many now
- in practical situations respond to add one and take one away

Measurement

At this stage the student is able to use familiar words when comparing sizes and quantities.
They begin to make simple estimates.
Students:

- find the biggest from a choice of 3
- find the smallest from a choice of 3
- find the longest from a choice of 3
- find the shortest from a choice of 3
- use familiar words to describe quantity, e.g. more, less, full, empty
- use familiar words to describe sizes, e.g. biggest, smallest, longest, shortest
- pour water into a container and stop at a given point
- begin to make simple estimates, e.g. how many cubes fit into a box
- sequence daily activities
- identify o'clock on a clock face

Space

Students respond to forwards and backwards and use familiar words when describing position. They pick out named shapes from a collection.
Students:

- sort 2D shapes
- sort by primary colours
- create models using 3D shapes
- match 3D solids
- begin to give a named shape from a collection on request
- join dots to draw square, triangle, rectangle
- fits shape into outlines where part of the outline is missing
- trace a named shape e.g. square, triangle, rectangle, circle
- copy a row of alternate coloured pegs on a board
- copy a row of alternate coloured pegs onto a separate board
- recognise forward direction
- recognise backwards direction
- move an object forward on request
- move an object backwards on request

- copy and thread a pattern of beads
- identify and use positional words, e.g. in, on, under

**Stage Eight**

Number

Students rote count beyond 10, and continue rote counting onwards from a given small number. They count up to 10 objects, estimate a small number and check by counting and compare two given sets of objects, saying which is more/less. They begin to recognise numerals from 1-9 and relate them to sets of objects. In practical situations, they add one or take away one from a set of objects. They begin to use ordinal number (first, second, third) when describing position.

Students:

- rote count to 20
- continue rote counting from a given small number
- begin to count objects to 10
- estimate a small number to 3
- recognise a small number to 3 without counting
- use first, second, third
- match numbers 1-10
- recognise numerals to 10
- find numbers on a number line to 5
- trace numbers to 10
- write numerals to 5, 10
- join dots using numbers to 5
- relate numbers to number of objects to 5
- begin to order numbers 1-5
- add 1 more for numbers of objects 1-5
- take away 1 from numbers of objects 1-5
- record data using pictures
- compare 2 given numbers 1-5 saying which is more or less
- find the number before and the number after to 10

Measurement

Students compare directly, two lengths or heights where the difference is marked. They show awareness of time through some familiarity with names of days of the week and significant times in their day.

Students:

- compare directly 2 lengths where the difference is very great
- compare directly 2 heights where the difference is very great
- indicate the long/short one
- indicate the tall/short one
- recognise days of the school week
- recognise and identify significant times of the day on a clock face e.g. lunch time, home time, bed time
- pour water to the top line of a measuring beaker and stop

Space

Students use mathematical vocabulary to describe the shape and size of solids and flat shapes. They identify shapes in simple models, pictures and patterns.

Students may:

- select objects given 2 attributes, e.g. red squares
- sort 3D shapes
- put shapes into outlines to make pictures
- reproduce from memory a sequence of 4 pictures or objects
- continue sequences on a peg board using 3 colours
- begin to describe by gesture the shape and size of solids and flat shapes
- copy a square, triangle, rectangle and circle

**Stage Nine**

Number

Students count, read and order numbers to 10 then 20, in a range of settings. They write numbers to 10 with increasing accuracy and solve problems involving addition and subtraction using numbers to 10. They use knowledge of numbers to explore and describe simple everyday numerical situations including the use of money.

Students:

- rote count to 30
- rote count backwards from 10
- name the number that comes after to 10, 20
- name the number that comes before to 10, 20
- recognise numerals to 10, 20
- recognise all Australian coins
- count out groups of objects with 1:1 correspondence to 10, 20
- count groups of objects to 10, 20
- see at a glance how many are in small collections and attach correct number names to such collections
- order numbers to 10, 20
- find the number before/after a given number to 10, 20
- copy numerals to 10, 20
- write numerals from memory from 0 to 20
- write numbers in words to 10
- recognise “0” as zero
- order objects and sets, for example, largest to smallest
- use ordinal numbers $1^{st}$ – $10^{th}$
- be aware of terms “ more, make, total, add, sum, altogether, take, leave, how many left, how many have gone, last”
- use number line to count forwards and backwards to 10, 20
- demonstrate an understanding of addition as the combining of 2 or more groups with numbers 1 – 10, 1 – 20
- demonstrate an understanding of subtraction as the taking away of objects from a group of objects with numbers 1 -10, 1 – 20
- make equal groups of objects, e.g. two fours

- show how sets of up to 10, 20 objects can be separated into groups e.g. : “Show me 10, how many fives” (quotition division)
- show how sets of up to 10, 20 objects can be shared into equal sets, e.g. 8 lollies shared between 2 people equals 4 each (partition division)
- demonstrate ½ and ¼ with concrete aids, e.g. orange, pizza
- understand the concept of equality
- perform simple addition using concrete materials to 10, 20
- perform simple subtraction using concrete materials from 10, 20
- perform addition by counting on to 10, 20

Measurement

Students compare lengths, weights and capacities by direct comparison. They order everyday events logically and use the vocabulary of time. They relate time to, and describe time in terms of familiar recurring phenomena within their own life.

Students:-

- recognise and place hands on a clock
- recognise that hands on a clock move as time passes
- use hand claps at regular intervals to measure and describe the passage of time
- name days of the week not necessarily in sequence
- identify today
- join rote recital of months of the year
- investigate which 2 containers hold the most/least
- place 3 objects in order of size
- compare directly 2 weights where the difference is very great by hefting
- decide which of 2 objects being held is heavier
- compare and order 2 objects by length
- compare and order 2 objects by weight
- compare and order 2 objects by capacity

Space

Students reorganise, sort, describe and manipulate 2D and 3D shapes in terms of properties and position.

Students:

- recognise and name common 2D/3D shapes
- identify common 2D/3D shapes in the immediate environment
- draw common 2D/3D shapes and describe their properties e.g. curved, straight, flat
- create a drawing or collage using a variety of 2D shapes
- create a diorama using a variety of common 3D shapes
- fold 2D shapes to investigate lines of symmetry
- sort 2D/3D shapes according to their properties
- describe an object in relation to another e.g. in front, beside

**Stage Ten**

Number

Students count, read, write and order accurately whole numbers to at least 50 and are beginning to understand place value. They recognise odd and even numbers to at least 20 and other simple number sequences. They recognise coins and notes.

Students:

- rote count to 50, 100
- rote count backwards from 20
- name the number that comes after to 50, 100
- name the number that comes before to 50, 100
- recognise numerals to 50, 100
- recognise all Australian money notes
- order all Australian coins in value
- count out groups of objects with 1:1 correspondence to 50, 100
- count out groups of objects to 50, 100
- order numbers to 50, 100
- find the number before/after a given number to 50, 100
- write numerals to 50, 100
- write numbers in words to 10, 20
- count between two given numbers to 50, 100 e.g. 19 – 35
- sequence a set of given numbers up to 50, 100
- rote count by 2s, 5s, 10s, 20s, 50s to 50, 100
- recognise odd and even numbers to 10, 20, 50, 100
- record addition and subtraction equations using +, - and = signs, to 10, 20
- use calculator to perform simple addition and subtraction to 10, 20
- understand, use and begin to read: " tally, predict, estimate, halve, divide, multiply, fractions, half, quarter, equal, parts"
- use concrete materials to model place value to 20, 50, 100Eg use of MAB, unifix, icy pole sticks
- recognise and write symbols ½ and ¼ identify ½ and ¼ of shaded objects

Measurement

Students begin to use informal units of length, weight and capacity. They are aware that time can be measured by clocks and begin to recognise o'clock times. They compare objects using direct comparison and simple representation.

Students:

- sequence days of the week
- identify tomorrow
- distinguish week days and weekends
- know that the hands on a clock indicate the time
- know that the minute hand points to 12 at o'clock
- know that the hour hand indicates the hour
- know that the second hand sweeps a full circle in a minute
- place 5 objects in order of size
- measure and compare the weight of 2 objects using informal units
- measure and compare the length of 2 objects using informal units

- measure and compare the capacity of 2 objects using informal units
- use a simple pictograph to record data

Space

Students extend their understanding of 2D and 3D shapes through symmetry and deconstruction of a 3D shape. They begin to explore simple maps.

Students:

- identify elaborate 2D/3D shapes e.g. hexagon, pyramid
- recognise and draw lines of symmetry in 2D shapes
- recognise corners and boundaries in 2D shapes
- identify shapes that have no symmetry
- deconstruct common 3D shapes into nets e.g. cube, cylinder
- identify and explain the main features of a map of a familiar area e.g. classroom
- construct maps of familiar area e.g. student's bedroom

**Stage Eleven**

Number

Students count on by 10s from any given number up to 500. They model numbers to 500 and are beginning to recall number facts. They solve and record multiplication and division problems and use calculators to check their answer. They count like coins and begin to understand the value of money. Students describe and calculate simple multiplication as repeated addition such as 3 x 5 = 5 + 5 + 5; and division as repeated subtraction, such as 8 divided between 4, and as partitioning of a set into equal-sized subsets.

Students:

- rote count to 500 from any given number
- rote count backwards from 50
- use concrete materials to model numbers to 500 e.g. use of MAB, unifix, icy pole sticks
- identify 10 more than a given number to 100, 500
- identify 10 less than a given number to 100, 500
- double any number to 10
- give half of any even number to 20
- add 3 single digit numbers
- subtract 2 single digit numbers from 20, 50
- recall addition and subtraction facts to 10
- know 2 times table
- add single digit to 2 digit number using concrete materials (eg 22+4=26)
- subtract single digit from 2 digit number using concrete materials (eg 37-5=32)
- solve multiplication problems using concrete materials to 10, 20
- solve division problems using concrete materials to 10, 20 e.g. 10 ÷ 2 = 5
- understand that multiplication is repeated addition
- understand that division is repeated subtraction
- record multiplication problems using the signs x and =
- record division problems using the signs ÷ and =
- use calculator to perform multiplication and division to 10, 20

- count coins in multiples of 5 cents, 10 cents, 20 cents, 50 cents, $1 and $2.
- read and write amounts in numerals up to $2, using $ and cent symbols and decimal point
- order all Australian notes according to value
- understand the value of money e.g. “What can you buy for $1 and $5”
- tender amounts up to $1
- add and subtract 2 amounts of money up to $1, using money e.g. 30c + 40c = 70c

Measurement

Students are aware of the relationship between digital and analogue clocks. They compare events and time scales using appropriate standard units and understand the concept of future and past. They use the vocabulary of time
Students:

- know months of the year in sequence
- name and sequence the four seasons
- understand the concept of school day and holiday
- tell time to the hour (analogue)
- tell time to the hour (digital)
- be aware the clock indicates significant times of the day e.g. lunch time, home time, bed time etc
- be aware that time is measured in seconds, minutes and hours
- place 10 objects in order of size
- use a simple beam balance to compare and order the weights of objects
- suggest suitable units to measure length/weight/capacity
- suggest suitable equipment to measure length/weight/capacity
- recognise the need for uniform units for measuring
- use cm as a standard measure of length
- create a simple bar graph using real objects

Space

Students apply their understanding of shapes, to make 2D/3D constructions. They begin to understand the purpose of maps.
Students:

- design 2D shapes using drawing, templates and computing technology
- create a variety of 2D puzzles e.g. tangrams, jigsaws
- construct 3D models using a range of technologies. e,g. lego, playdough & sticks
- apply simple transformations to shapes e.g. turn, flip, slide
- indicate location as a relative position e.g. left and right
- locate specific places of interest on a local map e.g.  shopping centre

**Stage Twelve**

Number

Students recognize and model numbers up to 1000. Students begin to vertically set out addition and subtraction equations, without carrying. They extend their use of the calculator and refine their understanding of multiplication, division and fractions. They understand the equivalent value of money, and the concept of rounding up. They use fractions in daily living situations.

Students:

- order numbers and count to 1000, by 1s, 10s and 100s
- record numbers to 1000
- skip count by 2s, 4s and 5s from 0 to 100
- rote count backwards from 100
- use concrete materials to model numbers to 1000 e.g. use of MAB, unifix, icy pole sticks
- be able to break down 3 digit numbers into hundreds, tens and units (extended notation)
- write numbers in words to 50
- solve vertically, addition and subtraction equations to 100, without carrying or renaming
- use calculator to solve addition and subtraction equations to 100
- use calculator to solve multiplication and division equations to 100
- use written number sentences such as 20÷4=5 to summarise sharing (partition division) and "how many" (quotation division) processes
- use fractions with numerators greater than one, for example ¾ of a block of chocolate
- order money amounts e.g. 20 cents is less than $2
- add and subtract multiple amounts of money to $1 e.g. 20c + 40c + 10c = 70c
- understand equivalent value of money e.g. 2 X50 cent coins equal $1, 10X20 cent coins equal $2
- be able to round up to the nearest dollar e.g. $6.45 is rounded up to $7
- describe simple fractions ½, 1/3, ¼ as equal size parts of a whole or of a number e.g. "½ of the pizza or ½ of my pencils"
- know 2, 5 and 10 times tables

<u>Measurement</u>

Students begin to match important events to short and long term time scales. They recognise the importance of a calendar and begin to use formal measuring units like kilogram, centimetre, metre and litre.

Students:

- match important events to days of the week e.g. Tuesday is swimming day
- match important events to months of the year e.g. Christmas is in December
- know that time can be kept by use of analogue and digital clocks
- tell time to ½ hour on an analogue clock
- tell time to ½ hour on a digital clock
- be aware that time is measured in days, weeks and years
- recognise key elements of a calendar
- measure the weight of objects in kilograms
- measure the length of objects in centimetres,metres
- measure the capacity of objects in litres
- describe temperature using the terms cold/warm/hot

<u>Space</u>

Students recognise the patterns of 2D/3D shapes and tessellations in the environment and that they can be manipulated according to orientation. Students use directional language to locate a point on a map.

Students:

- recognise patterns in the environment including 2D/3D shapes and tessellations
- construct tessellations using a variety of 2D shapes

- describe orientation as horizontal, vertical and diagonal
- understand that the point where two straight lines intercept makes an angle
- rotate lines to create angles
- identify right, acute/sharp and obtuse/blunt angles in 2D/3D shapes
- provide directions for a pathway on a map using specific locations and direction language e.g. left/right

**Stage Thirteen**

Number

Students can recognize and model numbers to 10000. Students consolidate their understanding of vertical addition and subtraction with and without carrying or renaming. Their calculator skills are further enhanced by solving more complicated problems and money transactions.

Students:

- Use concrete materials to model numbers to 10000 e.g. use of MAB, unifix, icy pole sticks
- Count forwards and backwards in tens from starting numbers like 23 or 79
- Solve vertically, addition equations to 100, with carrying
- Solve vertically, subtraction equations to 100 with renaming
- Estimate, approximate and perform mental computations up to 3 digits
- Use a calculator to perform 2 and 3 digit multiplication equations
- Use a calculator to solve 2 and 3 digit division problems
- Understand and describes the term “remainder”
- Understand the value of money e.g. “What can you buy for $10 and $20”
- Count out mixed coins to $1
- Tender amounts up to $10
- Add and subtract money up to $10
- Calculate change from $10 in whole dollar amounts e.g. $4 from $10 equals $6 change
- Use a calculator to add and subtract money to $10
- Add and subtract simple common fractions using physical models (eg 2/4 plus ¼ equals ¾)

Measurement

Students begin to tell the time accurately on a digital clock and to ¼ of an hour on an analogue clock. They measure in a linear fashion using a variety of equipment and understand the numeric relationship between units of measure.

Students:

- recognise the relationship between seconds and minutes
- recognise the relationship between minutes and hours
- know the relationship between digital and analogue clocks
- tell time to ¼ hour on an analogue clock
- tell time to hours and minutes on a digital clock
- use a timeline of daily events
- know how to position a ruler to make a linear measurement
- use a ruler to measure length in cm
- draw a line of a given length in cm
- use a trundle wheel to measure length in metres

- recognise the written form of formal units of measurement in full and abbreviated form.
  e.g. kilogram/kg, millilitre/ml, centimetre/cm etc
- compare data using a simple bar graph e.g. a graph of student height

Space

Students identify the properties of 2D/3D shapes and construct 3D models from 2D materials.

Students :

- identify 3D shapes in terms of faces, edges and angles
- construct prisms and pyramids from 2 dimensional nets
- construct spheres from flexible 2 dimensional pieces of materials
- use a grid to refer to objects on a map

**Stage Fourteen**

Number

Work on multiple digit equations is consolidated in all four operations. Students understand the inter-relationship of the four operations by the use of fact families. Real life banking situations are explored through the introduction of ATMs, keycards, Internet Banking and online shopping.

Students:

- Skip count forwards and backwards using multiples of 2, 3, 4, 5 and 10 to 100
- Solve vertically multiple digit addition equations with carrying e.g. 3, 4 or 5 digit numbers
- Solve vertically multiple digit subtraction equations with borrowing e.g. 3, 4 or 5 digit numbers
- Estimate results of computations and recognise if the answer is at, above or below this estimate
- Use a calculator to perform multiple digit multiplication equations
- Use a calculator to solve multiple digit division equations
- Use a calculator to add and subtract money to $20
- Uses fact families e.g. 5+6=11 6+5=11 11-5=6 11-6=5 and 5x7=35 7x5=35 35÷7=5 35÷5=7
- Round off to the nearest 10
- Understand that 0 is a place holder (e.g. value of 0 in 207 & $3.05)
- Understand the value of money e.g. “What can you buy for $50 and $100”
- Tender amounts up to $20
- Add and subtract money up to $20
- Add and subtract amounts of money including calculation of change from $1, $10
- Automatically recall multiplication facts – 2s, 5s, 10s
- Understand that personal banking can be accessed through an ATM or through Internet Banking
- Understand purpose and use of a debit card/key card
- Understand process of shopping online e.g. eBay

Measurement

Students begin to recognise all the elements of a calendar and use it to determine dates, months and events. They tell time to 5 minute intervals and can use a stop watch to accurately measure short events. They draw graphs to represent their findings and use formal units of measure such as cm, mm, ml, gm and ˚C.

Students:

- recognise the relationship between hours and days

- recognise the relationship between days and weeks
- match analogue time to the hour and ½ hour on a digital clock
- match digital time to the hour and ½ hour on an analogue clock
- tell time to five minute intervals on an analogue clock
- find given days and dates on a calendar
- draw the hands on an analogue clock to match a digital time
- know a kilogram is made up of smaller units called grams
- know a metre is made up of smaller units called cm's and mm's
- know a litre is made up of smaller units called mls
- identify the unit being used when measuring
- understand that temperature can be measured numerically
- collect data and display it using a column or bar graph
- understand that when two straight lines meet an angle is created

Space

Students use grid references to reproduce drawings and locate points on a map. They develop an awareness of North, South, East and West (four main compass points).

Students:

- identify angles in everyday objects
- use scaled grids to reproduce a figure (enlarged or reduced)
- locate positions using grid references on a map e.g. a street directory
- identify places on maps and diagrams
- have an awareness of the concepts of north, south, east and west e.g. Western Australia, Northern Territory
- indicate North, South, East and West from a given starting point

**Stage Fifteen**

Number

Students refine their computation skills in order to estimate and predict total amounts. Personal budgeting strategies are introduced and money skills are extended. They begin to access key-cards, ATMs, Internet Banking and online shopping for their personal use.

Students:

- Skip count forwards and backwards using multiples of 2, 3, 4, 5, 10 and 100 to 1000
- Estimate answer to a problem and compare with the actual answer
- Compute with whole numbers up to 30 and above using four operations
- Use brackets to determine order of operations.
- Automatically recall multiplication facts up to 10x10
- Understand simple fractions, percentages and decimals e.g. ½ = .5 = 50%
- Order numbers (for example, positive and negative temperatures), positive fractions and decimals.
- Use inverse operations to validate answers to problems
- Reads, writes and understands money amounts up to $100, $1000
- Tender amounts using coins and notes up to $100,
- Add and subtract money amounts up to $100, $500

- Calculate change from $50, $100
- Multiply and divide amounts by 1 digit up to $100.
- Use the least number of coins needed to make money amounts
- Round off to the nearest 10c
- Create personal budgets up to $100
- Multiply using the symbol @ (e.g. 5@ 35c= $1.75)
- Estimate total cost by rounding (e.g. when shopping)
- Create personal and household budgets up to $500.
- Operate personal bank account via a key-card and ATM
- Access personal bank account via Internet Banking
- Understand the purpose of a bank or personal cheque
- Be able to comprehend a personal account bank statement
- Be aware that goods and services can be purchased online e.g. eBay, Amazon
- Be able to purchase goods online e.g. eBay, Amazon

Measurement

Students measure length, capacity, weight, time and temperature using appropriate equipment and recognised formal units. They read clocks accurately and use timetables, schedules and calendars. They represent mathematical findings in graph form and can measure temperature in degrees Celsius.

Students:

- find months and weeks on a calendar
- recognise the relationship between weeks and months
- recognise the relationship between months and years
- tell time to the minute on an analogue clock
- interpret timetables in relation to familiar events
- use calendar to plan for upcoming events
- use a metre ruler to measure in units of 10 cm
- measure temperature in degrees Celsius using a thermometer
- measure rainfall in mls from a rain gauge
- draw a pie graph to represent data e.g. graph of student hair colours
- label graphs using title and axis
- recognise a right angle and an acute (sharp) angle
- use kilometres as a unit of measure e.g. town to town distances
- understand that objects of large mass are measured in tonnes

Space

Students extend their ability to read maps and give clear directions using appropriate language and eight compass points.

Students:

- construct and compare a variety of angles e.g. acute, right, straight, reflex and obtuse
- give travel directions and describe positions using simple compass points
- locate positions on maps of areas beyond their immediate environment
- find the shortest route between two points on a map
- recognise and demonstrate the eight compass points