



Government of **Western Australia**  
School Curriculum and Standards Authority

# MATHEMATICS

PRELIMINARY COURSE

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Year 11 and Year 12 syllabus

## **Acknowledgement of Country**

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

## **IMPORTANT INFORMATION**

This syllabus is effective from November 2023.

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## Introduction to the Preliminary courses

Preliminary courses provide a relevant option for students who cannot access the ATAR or General course content with adjustment and/or disability provisions, or who are unable to progress directly to training from school, or who require modified and /or independent education plans. Preliminary courses are designed for students who have been identified as having a recognised disability under the *Disability Discrimination Act 1992*, and who meet the above criteria.

The Preliminary courses are:

- Business Management and Enterprise
- English
- Food Science and Technology
- Health and Physical Education
- Materials Design and Technology
- Mathematics
- Religion and Life
- Visual Arts.

Preliminary courses provide opportunities for practical and well-supported learning to help students develop a range of skills to assist them upon leaving school. They acknowledge the broad range of abilities of students with special needs and the need for adapted approaches to teaching and learning.

Preliminary courses may form all or part of a student's program of study. Schools will make decisions about the content to be taught in each course on the basis of individual student needs, goals and priorities.

## Rationale for the Mathematics Preliminary course

The Mathematics Preliminary course recognises some students have significant limitations in basic mathematical understanding and application. However, these same students have the potential to learn, especially when involved in a learning program which connects with their current experience and knowledge. The course focuses on functional numeracy embedded in familiar and meaningful contexts which are relevant to young adults.

In the Preliminary Mathematics course, the main emphasis is on developing a student's understanding of the basic mathematics concepts that they need in order to make sense of, and to be able to function as independently as possible within their home, community and work environments.

This course develops students' understanding of how our number system works in order to recognise the magnitude of numbers. Students develop basic number sense in relation to everyday routine, familiar mathematical tasks. They solve simple daily problems involving money and time, which is a particular focus for functional numeracy. Students develop the skills to solve simple everyday problems involving the four arithmetic operations, measurement, and chance and data.

The course also includes a focus on the spatial concepts involved in location and using simple maps, so that students can independently move from, for example, their home to a work environment. Students also work with shape in 2-dimensional and 3-dimensional contexts. They become familiar with diagrams and language associated with spatial problems, and recognise their existence in everyday contexts.

## Aims

The Mathematics Preliminary course aims to develop students':

- understanding and application of functional numeracy concepts, with a particular focus on their understanding of whole numbers, money and time
- use of counting, basic facts, mental calculations or a calculator to solve everyday problems, and using their understanding of the magnitude of numbers to know whether an answer makes sense within the context
- understanding of the measurement concepts related to length, mass and capacity
- understanding of spatial concepts so they can follow directions to locate places and positions, and to recognise and use the characteristics of common 2D and 3D shapes
- understanding of concepts of chance and data so that students can use this to predict common events, and to interpret commonly-used forms of data, such as timetables.

# Organisation

## Structure of the syllabus

This Year 11 and Year 12 syllabus is divided into four units.

The content in this Mathematics Preliminary course has been scoped developmentally over the four units as illustrated in the table below. It is not expected that all students will cover all four units over the four semesters in Years 11 and 12. The sequence of content allows students to learn the fundamental mathematics knowledge, understandings and skills they need in order to live independent lives.

The table below is an overview of the scoping of the content over the four units.

Content	Year 11		Year 12	
	Unit 1	Unit 2	Unit 3	Unit 4
1. Whole number	1.1	2.1	3.1	4.1
2. Addition and subtraction of whole numbers	1.2	2.2	3.2	4.2
3. Money	1.3	2.3	3.3	4.3
4. Addition and subtraction of money	1.4	2.4	3.4	4.4
5. Multiplication and division		2.5	3.5	4.3
6. Multiplication and division of money		2.6	3.6	4.6
7. Time	1.5	2.7	3.7	
8. Measurement	1.6	2.8	3.8	
9. Location	1.7			
10. Shape and transformation	1.8			
11. Chance and data			3.9	4.7

NOTE: It is recognised that some students may need more time on each of the sections, and that some students may not complete all of the defined content. Teachers are best placed to decide which units to include within the Individual Learning Plan for each student.

Each unit includes:

- a unit description – a short description of the focus of the unit
- unit outcomes – a set of statements describing the learning expected as a result of studying the unit
- unit content – the content to be taught and learned
- suggested learning activities – describing everyday situations that may be used to teach mathematics

## Representation of the general capabilities

The general capabilities encompass the knowledge, skills, behaviours and dispositions that will assist students to live and work successfully in the twenty-first century. Teachers may find opportunities to incorporate the capabilities into the teaching and learning program for the Mathematics Preliminary course. The general capabilities are not assessed unless they are identified within the specified unit content.

### Literacy

Literacy involves students listening to, reading, viewing, speaking, writing and creating texts, and using and modifying language for different purposes in a range of contexts. It encompasses knowledge and skills students need to access information, make meaning, interact with others, and participate in activities within and beyond school.

### Numeracy

Numeracy encompasses the knowledge, skills, behaviours and dispositions that students need to use mathematics in a wide range of situations. When teachers identify numeracy demands across the curriculum, students have opportunities to transfer their mathematical knowledge and skills to contexts outside the mathematics classroom. Students are provided with opportunities to apply mathematical understanding and skills in familiar real world contexts including finance, maps and plans and data from an information driven world.

### Information and communication technology capability

The nature and scope of information and communication technology (ICT) capability is not fixed, but is responsive to ongoing technological developments. Students develop capability in using ICT for tasks associated with information access and management, information creation and presentation, problem solving, decision making, communication, creative expression, and evidence-based reasoning. Students develop knowledge, skills and dispositions around ICT and its use, and the ability to transfer these across environments and applications. Students use ICT to investigate and develop mathematical understanding over a range of topics. They may use digital tools to visualise and manipulate shapes in design, for data representation and calculation.

### Critical and creative thinking

This capability combines two types of thinking – critical thinking and creative thinking. Critical thinking involves students learning to use information to solve problems. Creative thinking involves students in learning to generate and apply new ideas, and seeing or making new links that generate a positive outcome. Students are provided with the mathematical knowledge, skills and understanding to use in practised contexts for a range of workplace, personal, further learning and community settings. These problems involve recognising the context and choosing the appropriate mathematics to use.



### **Personal and social capability**

Personal and social capability encompasses students' personal/emotional and social/relational dispositions. It develops effective life skills for students, including understanding and handling themselves, their relationships, learning and work. The more students learn about their own emotions, values, strengths and capacities, the more they are able to manage their own emotions and behaviours, and to understand others and establish positive relationships. Students' personal and social competence are enhanced through the application of mathematics as part of their life skills. In addition, students are encouraged to work collaboratively with mentors as well as independently as part of their mathematical explorations and investigations.

### **Ethical understanding**

Students learn to behave ethically as they recognise ethical issues with others, discuss ideas, and learn to be accountable as members of a democratic community. As ethics is largely concerned with what we ought to do and how we ought to live, students need to understand how people can come to ethical decisions.

### **Intercultural understanding**

Intercultural understanding involves students learning to value their own cultures and practices and those of others. Intercultural understanding encourages students to make connections between their world and the worlds of others, and to work through differences.

## **Representation of cross-curriculum priorities**

The cross-curriculum priorities address contemporary issues which students face in a globalised world. Teachers may find opportunities to incorporate the priorities into the teaching and learning program for the Mathematics Preliminary course. The cross-curriculum priorities are not assessed unless they are identified within the specified unit content.

### **Aboriginal and Torres Strait Islander histories and cultures**

This priority provides opportunities for all learners to develop their knowledge of Australia by exploring the world's oldest continuous living cultures. Students develop their knowledge of Aboriginal and Torres Strait Islander communities' history, traditions and culture in appropriate contexts.

### **Asia and Australia's engagement with Asia**

This priority reflects Australia's extensive engagement with Asia in social, cultural, political, and economic spheres. Students may have the opportunity to develop an understanding of Asian societies, cultures, beliefs and environments, and the connections between the peoples of Asia, Australia, and the rest of the world.

### **Sustainability**

Education for sustainability develops the knowledge and skills necessary for people to act in ways that contribute to more sustainable patterns of living. Sustainability education encourages students to think about the future, focusing on preserving and protecting environments. Actions that support more sustainable patterns of living require consideration of connected systems (environmental, social, cultural, and economic) in our world.

# Unit 1

## Unit description

In Unit 1, students respond to and use the language of quantity. They quantify small collections by subitising or counting and label and compare them. Students also share small collections by distributing one at a time. They respond to language associated with addition and subtraction and become familiar with the addition symbol. They start to read and write simple number sentences with support. Students recognise and name coins and notes and understand the fact that dollars are worth more than cents. They respond to the language of shopping and solve simple problems up to \$10 using counting and subitising. Students are supported in linking the '+' symbol to putting money or collections together and the '-' symbol to giving away or spending money. They write number sentences involving whole dollars. They use the language of time and learn about the need for clocks and calendars, understanding how days, seasons and weeks are divided. Students respond to the comparative language of measurement, describe the attributes and directly compare two objects. They give and follow simple oral directions in a familiar place and work with simple maps. Students use spatial language and recognise, name and compare 2D shapes and 3D objects, making models and re-orienting them to fit in a space. Teachers are encouraged to apply the content of this unit in contexts which are meaningful and of interest to their students.

This unit includes the following content areas:

- 1.1 Whole numbers
- 1.2 Addition and subtraction of whole numbers
- 1.3 Money
- 1.4 Addition and subtraction of money
- 1.5 Time
- 1.6 Measurement
- 1.7 Location
- 1.8 Shape and transformation

## Suggested contexts

The unit content can be introduced and applied in a variety of contexts that are accessible to students.

Suggested contexts may include:

- numbers in relation to everyday living; for example, on buses, letter boxes, lockers, numerical labels, and for shopping
- money in relation to handling cash, buying items and making calculations of the cost of two or three items
- time in relation to planning activities during the day or over a number of days
- comparing the physical measurements of familiar objects in students' surroundings
- locating the position of objects in the immediate area
- identifying shapes and using associated simple language to describe their transformation

## Unit outcomes

By the end of this unit, students will:

- read, write, say, subitise and count whole numbers up to ten, and compare sets of different size, and describe order
- use addition or subtraction to quantify up to ten objects in simple situations
- apply subitising, counting, addition and subtraction skills to money as whole numbers up to ten
- use time to sequence events, and terminology to talk about the passing of time
- compare objects by length, mass or capacity
- locate themselves and objects within familiar environments
- Use appropriate language when locating places in their real world, and interpret maps and diagrams.
- Identify common shapes and their transformation in two or three dimensions

## Unit content

This unit includes the knowledge, understandings and skills described below.

Students will be provided with opportunities to:

- engage in mathematical activities
- carry through tasks
- seek assistance to solve problems
- communicate results.

1.1 Whole number	
Content descriptors	Examples
1.1.1. Respond to and use the language of quantity to compare collections, for example, more, most, less, lots, none, and same.	Compare sets to work out who has won a game of skittles.
1.1.2. Use subitising to say how many in a collection of up to six items.	Use subitising to say how many skittles have fallen over.
1.1.3. Say numbers in order forwards and backwards <ul style="list-style-type: none"> <li>• Up to 5</li> <li>• Up to 10.</li> </ul>	
1.1.4. Use one-to-one correspondence to count collections to say how many. <ul style="list-style-type: none"> <li>• Up to 5 items</li> <li>• Up to 10 items.</li> </ul>	Use one-to-one correspondence and the correct number sequence to count how many people at the table, to work out how many drinks are needed if they are to have one each.
1.1.5. Read and write numbers as digits up to 5, 10.	Read and/or write labels on containers to show how many objects it has, for example, screws in a jar.

1.1 Whole number		
	Content descriptors	Examples
1.1.6	Connect the written numbers (symbols) with the appropriate collections.	Read the numbers written on two jars to say which of them has more screws.
1.1.7	Use numbers (oral and written) to compare two collections: saying which set is bigger or smaller.	Read and write room numbers, bus numbers and numbers on football jumpers.
1.1.8	Use numbers as labels and use ordinal numbers to show first, second, third, fourth and last.	Read and write a number next to each person's name to show who came first, second, etc.
1.1.9	Share out small sets by distributing items one at a time.	Share out a packet of biscuits evenly and use counting to say how many biscuits each person has.

1.2 Addition and subtraction of whole number		
	Content descriptors	Examples
1.2.1	Know that: when two sets are combined, the result is a larger set, and when a set is separated, the result is a smaller set.	State they have more marbles after they have been given some to add to an existing set.
1.2.2	Respond to, and use the language of, addition and subtraction; for example, and, add, plus, take, difference, change, less, more, bigger, smaller.	State they have less after they have given some of their marbles away to a friend. Use the words 'take away' to describe the operation.
1.2.3	Use subitising or counting to solve simple everyday addition and subtraction problems involving small numbers. <ul style="list-style-type: none"> <li>Up to 5 items</li> <li>Up to 10 items.</li> </ul>	Use subitising or counting to work out the total number of slices of ham if they have three pieces and they need six more to finish making sandwiches.
1.2.4	Link the + symbol with the idea of putting sets together.	Connect the problem above to write a number sentence to describe the addition, as $3 + 6 = 9$ .
1.2.5	Link the – symbol with the idea of taking sets apart.	Connect the problem "How many sandwiches would be left if they start with nine and three are eaten" to the arithmetic operation as a subtraction $9 - 3 = 6$ .
1.2.6	With support, read and/or write a number sentence related to simple everyday addition and subtraction problems involving small numbers.	Write $3 + 5 = 8$ to represent a story, such as "3 students playing basketball and 5 students joined them, now there are 8 students playing basketball."

1.3 Money		
	Content descriptors	Examples
1.3.1	Recognise and name the dollar coins and notes and the cent coins.	Chooses the correct coin/note, \$2 coin or a \$5 note to pay for a purchase.
1.3.2	Know that dollars are worth more than cents.	Choose to use a \$2 coin instead of a 50c coin to purchase more lollies.
1.3.3	Respond to and use the language of money and shopping; for example, dollars, cents, spend, cost, change, pay, buy.	Ask for change after they have paid for an item.
1.3.4	Read and write simple dollar amounts; for example, \$1, \$2, \$5.	Read simple price tags and use the dollar amount that is closest to pay.
1.3.5	Count collections of \$1 coins; up to \$5, up to \$10.	When given a number of \$1 coins, count them to say how much money they have. Compare two collections of \$1 coins to say which has more.

1.4 Addition and subtraction of money		
	Content descriptors	Examples
1.4.1	Know that when two amounts of money are combined, the result is a larger amount; and when some money is spent or given away, the result is a smaller amount.	State they have more money after they have been given some to add to the money they have in their wallet.
1.4.2	Respond to and use the language of addition and subtraction in shopping contexts; for example, and, add, plus, take, spend, change, less, more, bigger, smaller.	State they have less money after they have spent some of their money. Use the words 'take away' to describe this operation.
1.4.3	Use subitising or counting to solve simple everyday addition and subtraction money problems involving small amounts of whole dollars. <ul style="list-style-type: none"> <li>Up to \$5</li> <li>Up to \$10.</li> </ul>	Use subitising to work out how much money they have left if they have 5 \$1 coins and give away 2 of them.
1.4.4	With support, link the + symbol with the idea of putting amounts of money together.	
1.4.5	With support, link the – symbol with the idea of giving away or spending money.	Connect the problem, "How much money is left if I have 5 \$1 coins and give away 2 of them" to write the operation as a subtraction problem $\$5 - \$2 = \$3$ .
1.4.6	With support, read and/or write a number sentence related to simple everyday addition and subtraction problems involving small amounts of whole dollars.	Use counting to work out how much money they have in a situation where they have 5 \$1 coins and someone gives them 3 more \$1 coins. Connect the problem above to write the operation as an addition problem $\$5 + \$3 = \$8$ Read and/or write $\$5 - \$2 = \$3$ to represent a story they have solved. Saying, for example, "I had \$5 and spent \$2 on a drink, now I have \$3 left."

1.5 Time	
Content descriptors	Examples
1.5.1 Respond to, and use words related to, time; for example, wait, next, after, night-time, lunch-time, o'clock, day.	Respond to instructions related to time such as: "Wait until lunch time." The student waits until lunchtime and completes the task or activity during lunchtime.
1.5.2 Use familiar routine sequences of events to predict what comes next; for example, after recess it's time for maths.	Students start to pack up when they hear or see typical finishing time events, such as the bus driver talking to the teacher.
1.5.3 Use and/or follow a pictorial sequence of events.	Follow a picture sequence to get ready for swimming lessons or work placement.
1.5.4 Know that clocks are used to tell the time of day and calendars are used to say what day it is.	Students refer to a watch or clock and attempt to tell the time when asked to say what time it is.
1.5.5 Notice time passing during the day and the change of seasons.	Students order a sequence of pictures to show the passing of time during day, or to show the sequence of seasons. They know that winter is cold and they need to wear more clothes.
1.5.6 Know the day is broken up into morning, afternoon and night-time.	Students create a 'timetable' to show typical events during morning and afternoons at school.
1.5.7 Know the names of the days of the week and the difference between week days and weekends.	Students make a week's calendar to show on which days typical routine events occur.
1.5.8 Know the names of the seasons and the typical features of each season.	Students investigate the difference between the seasons, and create charts to show these differences.

1.6 Measurement	
Content descriptors	Examples
1.6.1 Respond to and use the comparative language of measurement; for example, big, small, tall, heavy, not heavy, and light.	Students compare their own height with others and say who is taller. Compare school bags to say which is heavier.
1.6.2 Respond to and use words that describe each of the attributes: length, mass, capacity and area; for example, long, wide, narrow, tall, distance – all describe the attribute of length.	Discuss the words used to describe the dimensions of an object, such as a garden bed; long, wide, narrow. Create a list of all of the words used to describe length, and discuss which cannot be used to describe a garden bed; for example, tall.
1.6.3 Directly compare two objects by their length, mass, capacity or area to say which is longer, heavier, holds more, or covers more.	Compare two lengths of wood by placing them next to each other to see which is longer or which will fit a particular gap. Heft two bags of sugar to say which is heavier. Fill one water bottle and pour from this into another to see which bottle holds more.

1.7 Location	
Content descriptors	Examples
1.7.1 Respond to, and use the language of, location; for example, next to, on, under, between.	Describe the location of an object, such as a jar of Vegemite in the fridge, using location words, such as near, between, next to.
1.7.2 Respond to and use the language of movement; for example, forward, backward, turn left.	Describe how to get to the library using words such as go left, and turn around.
1.7.3 Give and/or follow simple oral directions to locate an object or place in a familiar environment.	Follow instructions on how to find a book within a library such as: "Turn left at the TV, walk forward five steps and look on the shelf below your knees."
1.7.4 Draw a simple picture/diagram/mud-map to show the location of one object to another, or to show their position in relation to other objects.	Draw a diagram or mud map to show how to get from their classroom to the canteen, or to show where they sit within the classroom, or where the cake is located within the kitchen.
1.7.5 Use a simple picture/photo/diagram/mud-map to find an object or place in a familiar environment	Use a diagram or mud map drawn by another student to work out where they sit within the classroom or to find the cake within the kitchen.

1.8 Shape and transformation	
Content descriptors	Examples
1.8.1 Respond to and use spatial language, such as flat, pointy, round, corner and straight, to describe 2D and 3D shapes.	Sort shapes and objects, naming the features of the shapes, saying, for example: "These are all round, these all have straight edges."
1.8.2 Recognise and name familiar 2D and 3D shapes found in the environment.	Use a template of a 2D shape, or a model of a 3D object, to find examples of this shape within their environment.
1.8.3 Use spatial language and names of shapes to describe likeness and difference between shapes.	Describe the shape of, for example, wheels on various vehicles, and say how they are the same and how they are different.
1.8.4 Sort and classify objects according to obvious features of shape or function.	Sort out various grocery items and stack them on shelves, using their shape or function to determine where they should be placed.
1.8.5 Copy a simple diagram made from familiar 2D shapes.	Use two or three 2D shapes to make a border around a picture frame.
1.8.6 Match 2D and 3D shapes to diagrams or photos.	Match a template of a 2D shape, or a model of a 3D object, to shapes found within a photo of a local environment, such as a basketball court or bus station.
1.8.7 Interpret 3D shapes from 2D drawing in print texts and on a computer screen.	Make a model of a space ship using, for example, Lego, to match a drawing of one.
1.8.8 Make solid or skeletal 3D shapes by copying another shape, a diagram or photo.	Use wood, play-dough, straws or sticks to make various pyramids from a series of pyramid drawings. Describe how they are alike and how they are different.
1.8.9 Turn or re-orientate a 2D or 3D shape to fit a given space or position.	Turn jigsaw pieces to make them fit; turn grocery items to place them in a confined space in a pantry.

## Unit 2

### Unit description

In Unit 2, students extend their whole number work to larger collections, and include sharing, counting and using concrete materials to start learning and recalling basic addition facts. Students continue to read and write number sentences with support and familiarise themselves with the subtraction symbol. They count collections of up to \$20 made up of \$1 or \$2 coins, \$5 or \$10 notes using many-to-one correspondence and skip counting, and make comparisons of various amounts of money. Students start to understand the purpose of banks. They make choices between addition or subtraction to solve a problem and input the relevant symbol in the calculator, deciding if the answer is appropriate. Students start to solve equal group multiplication and division problems involving up to 20 items or dollars and connect the multiplication and division symbols to their meaning. Students order the months of the year and daily events, representing them on a diagram. They have an approximate idea of how long a minute and an hour are and read time to the half hour on analogue and digital clocks. They start to read dates from a calendar. Students compare and order three or more objects, use repeated uniform units and choose same size units to make comparisons and use measurement in practical contexts, such as cooking. Teachers are encouraged to apply the content of this unit in contexts which are meaningful and of interest to their students.

This unit includes the following content areas:

- 2.1 Whole number
- 2.2 Addition and subtraction of whole numbers
- 2.3 Money
- 2.4 Addition and subtraction of money
- 2.5 Multiplication and division of whole numbers
- 2.6 Multiplication and division of money
- 2.7 Time
- 2.8 Measurement

### Suggested contexts

The unit content will be introduced and applied in a variety of contexts that are accessible to students.

Suggested contexts may include:

- numbers in relation to everyday living, such as on buses, letter boxes, lockers, numerical labels and for shopping
- money in relation to handling cash, buying items, and making calculations of the cost of a basket of items in the supermarket
- time in relation to daily activities, such as going to school, watching TV, or planning social events.



## Unit outcomes

By the end of this unit, students will:

- read, write, say and count whole numbers up to twenty, and compare sets of different size, and describe order
- choose and use addition or subtraction to quantify up to twenty objects in familiar everyday situations
- apply counting, addition and subtraction skills to money as whole numbers up to \$20
- use multiplication and division to replace repeated addition, such as  $6 + 6 + 6 = 3 \times 6 = 18$
- apply multiplication and division skills to money as whole numbers up to \$20
- quantify time in using the standard units (including seconds, minutes, hours, days) and use them appropriately in daily contexts
- develop a sense of common units to measure length, mass and capacity.

## Unit content

This unit includes the knowledge, understandings and skills described below.

Students will be provided with opportunities to:

- engage in mathematical activities involving the physical manipulation of stimulus material
- follow instructions and carry through tasks
- seek assistance to solve problems
- communicate results.

The number formats for the unit are counting numbers, whole numbers and ordinal numbers.

2.1 Whole number	
Content descriptors	Examples
2.1.1 Say numbers in order forwards and backwards up to 20 (and beyond).	Say the number sequence forwards and backwards using a number chart to show where they are up to.
2.1.2 Identify and use the patterns in the number system to say number sequences forwards and backwards by twos and fives to 20 (and beyond).	Colour every second (fifth) number on a number chart and then use this to say the sequence forward and backwards.
2.1.3 Use one-to-one correspondence to count collections to say how many, up to 20 items (and beyond).	Use one-to-one correspondence to count how many people in the class; to work out how many slices of bread needed for sandwiches.
2.1.4 Read and write numbers as digits: up to 20 (and beyond).	Write numbers in a grid in order to make their own number chart for use in other activities, or to make a track game.
2.1.5 Connect the written numbers (symbols) with the appropriate collections.	Read and/or write labels on containers to show how many objects, such as screws in a jar.
2.1.6 Use numbers (oral and written) to compare two collections: saying which set is bigger or smaller.	Read the numbers written on a collection of jars to say which of them has the most screws.

2.1 Whole number	
Content descriptors	Examples
2.1.7 Use numbers as labels and to show order: ie, first, second, third, fourth and last.	Read and write room numbers, bus numbers or numbers on a football jumper (up to 20 or beyond).
2.1.8 Share out up to 20 items (and beyond) by distributing one at a time.	Share out cards evenly and use counting to say how many each person has.

2.2 Addition and subtraction of whole numbers	
Content descriptors	Examples
2.2.1 Use counting to solve simple everyday addition and subtraction problems involving small numbers up to a total of 20 items (and beyond).	Count how many bananas and how many oranges to work out how much fruit is in the bowl. Use this to work out whether there is enough for one piece of fruit for each person in the room.
2.2.2 Use materials and visualisation to learn, remember and recall basic addition facts: <ul style="list-style-type: none"> <li>• +/- 1</li> <li>• +/- 2</li> <li>• +/- 0.</li> </ul>	Use tens frames (or egg cartons) to show, for example, five items and add one more; write this as $5 + 1 = 6$ and then practise saying this over and over.
2.2.3 Use basic facts (+/- 0, 1 and 2), partitioning and extensions to basic facts to solve everyday addition and subtraction problems involving small numbers up to 20 items.	Use the basic number fact, 5 add 2 equals 7, to work out 15 add 2 equals 17, to solve a problem, such as: "I have \$15 and am given another \$2. How much money do I have?" Thinking: "15 is the same as ten and five. Five add two equals seven, seven add ten is seventeen."
2.2.4 Link the + symbol with the idea of putting sets together.	Connect the addition problem (presented orally) to the number fact. For example, "There were 7 red and 8 green lollies. How many lollies are there?" is written as $7 + 8 = 15$
2.2.5 Link the – symbol with the idea of taking sets apart.	Connect the subtraction problem (presented orally) such as: "There were 15 lollies on a plate, 7 of them were red and the rest were green, how many were green?" to the number fact $15 - 7 = 8$ .
2.2.6 With support, read and/or write a number sentence related to simple everyday addition and subtraction problems involving numbers up to (and beyond) 20.	Write $13 + 2 = 15$ to represent a story, such as: "There were 13 students playing basketball and 2 students joined them; now there are 15 students playing basketball".

2.3 Money	
Content descriptors	Examples
2.3.1 Use the patterns in the number system to say the counting sequences of 2s, 5s, 10s and 20s.	Colour every second (fifth/tenth) number on a number track and use this to count by twos and by \$2s (5s or 10s). Use the number track to practise saying the sequence together and in games like 'buzz.'
2.3.2 Use one-to-one correspondence to count collections of \$1 coins by ones, up to \$20.	Count \$1 to build piles to a requested amount; for example, make \$15 or make \$18. Write a label to show how much is in each pile.
2.3.3 Use many-to-one correspondence to count collections of \$1 coins by: twos, fives and tens up to \$20.	Count \$1 coins by twos and fives to make piles to a requested amount. For example, make \$16 counting, 2, 4, 6, ...

2.3 Money	
Content descriptors	Examples
2.3.4 Use many-to-one correspondence to count collections of \$2 coins and \$5 and \$10 notes up to \$20.	Count \$2 coins 2, 4, 6, and \$5 notes 5, 10, 15, 20, to make piles of coins up to \$20, and record how much money they have. Use a 'bank book' to record how much money they have. Read how much money someone else has in their bank account. Hand over the correct amount of money, such as \$15, when shopping.
2.3.5 Read, write and make simple whole dollar amounts up to \$20.	Count a mix of \$1 and \$2 coins, and \$5 and \$10 notes, to work out how much money they have in their wallet.
2.3.6 Compare and order amounts of money (whole dollars only).	Say who has more money in their wallet by counting and comparing the amounts.
2.3.7 Understand that banks can be used to save money and that we can access this money using a card.	Visit banks or ATMs to operate the machines to withdraw money.

2.4 Addition and subtraction of money	
Content descriptors	Examples
2.4.1 Use counting to solve everyday addition and subtraction problems involving small amounts of whole dollars up to \$20.	Count up, to add the cost of two cheeseburgers, and then count down from 20, in order to work out how much change they should get.
2.4.2 Use basic facts (+/- 0, 1, 2) and partitioning to solve everyday addition problems involving small amounts of whole dollars up to \$20.	Use $6 + 2 = 8$ to mentally work out the cost of two items, $\$16 + \$2 = \$18$ . Thinking "\$16 is the same as \$10 and \$6"
2.4.3 Read and/or write number sentences related to everyday addition and subtraction problems involving small amounts of whole dollars.	Write $\$20 - \$2 = \$18$ to represent a story, such as: "I had \$20 and spent \$2 on a drink; now I have \$18 left." Tell someone else what each of the numbers in the number sentence means: "Twenty dollars is how much I started with. I spent two dollars on a drink and then I had eighteen dollars left."

2.4 Addition and subtraction of money	
Content descriptors	Examples
2.4.4 Input the +, - and = symbols on a calculator in the correct order to calculate everyday addition and subtraction problems involving whole dollars up to \$20.	Carry out transactions with an appropriate mix of coins and then use a calculator to carry out the calculation. Use a calculator and shopping lists or supermarket advertisements to simulate buying groceries
2.4.5 Decide whether to use addition or subtraction to solve everyday problems on a calculator, involving whole dollars up to \$20.	Practise the use of the calculator to work out the cost of a basket of items. Draw a diagram to help decide whether to use addition or subtraction to work out how much more one item is compared to another.
2.4.6 Use their understanding of the magnitude of numbers to decide whether an answer on a calculator is appropriate for the problem they have just solved.	To buy a pair of thongs for \$16, use a calculator to work out how much change they should get from \$20. Look at the answer and decide whether the number is 'about right'.

2.5 Multiplication and division	
Content descriptors	Examples
2.5.1 Use counting to solve familiar equal group (multiplication and division) problems involving small numbers up to 20 items.	Draw a picture, or use grid paper and counting, to solve problems such as: 8 people need one sandwich each, two pieces of bread for each person. How many slices of bread are needed?
2.5.2 Read and/or write addition and subtraction number sentences related to equal group problems involving small whole numbers	Follow through each problem, such as the one above, and have students write: $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16$ with support. Consolidate solving word problems as above by writing the addition number sentence. Make the connection $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16$ is the same as $8 \times 2 = 16$ . Have students say how many 2s are in each addition sentence, including verbalising the process: "Eight groups with two in each makes sixteen", and that is, "Eight people have two slices of bread each. That is sixteen slices of bread."
2.5.3 Connect the $\times$ symbol with the idea of repeated addition and the $\div$ symbol with the idea of sharing equal groups	Make the connection $6+6=12$ is the same as $12 \div 2 = 6$ Solve division problems, such as: "Twelve people make two teams. How many in each team?" with support, by drawing pictures and counting. Follow through each problem, such as the one above, and have students write $12 \div 2 = 6$ . Write $12 \div 2 = 6$ and then input this into a calculator to check that the answer matches the solution.

2.6 Multiplication and division of money	
Content descriptors	Examples
2.6.1 Use counting to solve familiar equal group (multiplication and division) problems involving small amounts of whole dollars up to \$20.	Draw a picture, or use grid paper, and use counting to solve problems, such as: "How much does it cost for 3 jars of Vegemite at \$5 per jar?" Follow through each problem, such as the one above, and have students write $\$5 + \$5 + \$5 = \$15$ , with support.
2.6.2 Read and/or write addition and subtraction number sentences related to equal group problems involving small amounts of whole dollars.	Consolidate solving word problems, as above, by writing the addition number sentence. Make the connection that $\$5 + \$5 + \$5 = \$15$ is the same as $3 \times \$5 = \$15$ . Have students say how many 5s are in each addition sentence, including verbalising the process: "Three groups with five in each makes fifteen," and that is, "Three people have five dollars each; that is fifteen dollars."

2.6 Multiplication and division of money	
Content descriptors	Examples
2.6.3 Connect the $\times$ symbol with the idea of repeated addition and the $\div$ symbol with the idea of sharing equal groups	Make the connection that $\$6 + \$6 = \$12$ is the same as $\$12 \div 2 = \$6$ . Solve division problems, such as: "Twelve dollars between two people. How much does each get?" with support, by drawing pictures and counting. Follow through each problem, such as the one above, and have students write: $12 \div 2 = 6$ . Write $12 \div 2 = 6$ and then input this into a calculator to check that the answer matches the solution.

2.7 Time	
Content descriptors	Examples
2.7.1 Respond to and use language associated with units of time, such as minute, day, hour, week, month, year, July, Tuesday.	Refer to their pictorial diary and say they have soccer practice on Tuesday afternoons. Use the school diary to help identify when the events of the day occur.
2.7.2 Order familiar daily events into a typical sequence; for example, draw a diagram to show the order of events during a school day.	Create a pictorial diary to show what happens within each time period within the school day. Draw timelines of the school's daily activities and relate them to the analogue clock.
2.7.3 Have an approximate idea of how long a minute and an hour are.	Meet challenges, such as: "Sit still for a minute", while watching the second hand on the clock make one rotation. Play games where you can time activities, such as subbing players on and off a team every 2 minutes.
2.7.4 Read time to the hour and half hour on an analogue clock, and read the digits to tell the time on a digital clock.	Read the hour and half hours on analogue and digital clocks to decide when it is lunch time, home time, time for art, and so on.

2.7 Time		
	Content descriptors	Examples
2.7.5	Know there are 60 minutes in an hour, 24 hours in a day and 7 days in a week.	Use a journal to keep track of the passing of time, and count the days of the week and the weeks of the term.
2.7.6	Know the days of the week and the months of the year in order.	Recite the days of the week and months of the year in daily warm-up activities.
2.7.7	Read the date from a calendar and in typical written forms, such as 12/10/2015, 12th October 2015.	Relate special events, such as birthdays or long weekends, to dates on a calendar or diary
2.7.8	Notice the passing of seasons and the passing of a year.	In science, keep a record of the weather, noticing whether it is sunny, cloudy, hot, cold, windy, wet, dry, humid; and connect these with the names of the seasons.

2.8 Measurement		
	Content descriptors	Examples
2.8.1	Use comparative language of measurement to describe the order of particular attributes, such as tall, taller tallest.	Allow student to make direct comparisons of the objects by physically handling the materials where possible, with or without assistance Direct comparison of three bags of rice, hefting them to decide which is the heaviest.
2.8.2	Directly compare three or more objects by their length, mass, capacity or area, placing them in order from longest to shortest; heaviest to lightest; holds most to holds least; covers the most area.	Compare lengths of three pieces of string for weaving in art by laying them side by side Compare the capacity of two bottles/jugs by pouring from one to the other.
2.8.3	Use the number of repeated uniform units to measure the length, mass, capacity or area of objects in everyday contexts. For example, this desk is seven of my hand-spans wide; it is 23 steps to the library.	Use non-standard units, such as hand spans or steps, to measure lengths. Measure the area of the teacher's desk by counting how many sheets of paper will cover it. Measure the capacity of a jug by counting the number of cups needed to fill it.
2.8.4	Choose to use the same size units in order to compare the size of two objects by length, mass, capacity, or area.	Compare students' measurement of distance between one desk and another and notice that the numbers are different. Discuss the need to choose units that are the same length in order to compare sizes.
2.8.5	Develop a sense of the size of the common units of length (metre and centimetre), mass (kilogram and gram), and capacity (litre and millilitre).	Introduce the size of standardised units <ul style="list-style-type: none"> <li>• metre rulers</li> <li>• centimetre is about the width of little finger.</li> <li>• 1 litre of milk, 500 mL of juice</li> <li>• 1 kilo of sugar or flour</li> </ul> Compare length, mass and capacity of items to say whether they are more or less than the size of a metre, kilo, litre, 500 mL.
2.8.6	Read and use cup and spoon measures and half measures in practical contexts, such as cooking.	Read a recipe and use full and half cup and spoon measures to make pikelets or scones.

## Unit 3

### Unit description

In Unit 3, students further develop their understanding of skip counting and patterns in the number system to deal with quantities of 50 and beyond. They use place value to understand and compare the magnitude of numbers, increasing the number of addition facts they learn and recall, and solve problems, using partitioning when appropriate. Students gain more independence in dealing with number sentences, choosing between addition and subtraction or between multiplication and division and deciding if the answer on the calculator is appropriate. They count mixed collections of up to \$50, and learn how much change to expect in simple situations. Students make deposits and withdraw small amounts keeping track of how much is left in the 'bank'. They understand that saving money is helpful and use an EFTPOS card to make a purchase. Students skip count to solve familiar equal group problems involving up to 50 items or dollars and use the calculator to deal with numbers up to 1000. They read the time to the 5 minutes, estimate the duration of tasks, use addition and subtraction to calculate the total time needed for tasks to be completed and read simple timetables. Students start to use words and abbreviations associated with standard units, read and use calibrated scales and estimate how long or heavy an object is. Using the language of chance, they recognise that events can be either predictable or unpredictable. They list possible outcomes of familiar events and can identify events that are impossible. Teachers are encouraged to apply the content of this unit in contexts which are meaningful and of interest to their students.

This unit includes the following content areas:

- 3.1 Whole number
- 3.2 Addition and subtraction of whole numbers
- 3.3. Money
- 3.4. Addition and subtraction of money
- 3.5. Multiplication and division of whole numbers
- 3.6. Multiplication and division of money
- 3.7 Time
- 3.8. Measurement
- 3.9 Chance and data.

### Suggested contexts

The unit content will be introduced and applied in a variety of contexts that are accessible to students.

Suggested contexts may include:

- numbers in relation to everyday living; for example, on buses, letter boxes, lockers, numerical labels and for shopping
- making purchases and handling notes and coins, as well as using a credit/debit card
- time in relation to social activities, such as planning when events will happen, and how long to allow for their completion.
- measurement of length in the immediate surroundings using tapes and rulers
- using appropriate units to measure quantities in cooking
- chance associated with familiar events, such as a bus or train being early or late; an expected baby is a girl

## Unit outcomes

By the end of this unit, students will:

- use place value to set two numbers up to 100 in correct order
- use addition and subtraction skills effectively, and recognise when answers are appropriate
- apply counting, addition and subtraction skills to money as whole numbers up to \$100
- use multiplication and division skills effectively and recognise when answers are appropriate
- apply multiplication and division skills to money as whole numbers up to \$50
- choose the correct arithmetic operations on a calculator when completing a money calculation
- interpret and use clocks, timetables and calendars to help manage their daily lives
- use appropriate units to describe length, mass and volume, and read scales correctly when measuring these quantities
- identify the likelihood of different outcomes for familiar events, and list the possible outcomes in such cases.

## Unit content

This unit includes the knowledge, understandings and skills described below.

Students will be provided with opportunities to:

- engage in mathematical activities
- carry through tasks
- seek assistance to solve problems
- communicate results.

The number formats for the unit are counting numbers, whole numbers and ordinal numbers.

3.1 Whole number	
Content descriptors	Examples
3.1.1 Count collections by ones, twos, fives and tens to say how many, up to (or beyond) 50 items.	Count by twos, fives or tens when asked to find a quick and easy way to count how many straws/marbles/screws they can fit in their hand. Bundle straws into groups of tens, with a few left over, and then count by tens and ones to say how many.
3.1.2 Identify and use the patterns in the number system to say number sequences forwards and backwards by ones, twos, fives and tens, up to (or beyond) 50.	Say the number sequence forwards and backwards by ones, twos, fives and tens, using a number chart, or the constant function on a calculator, to keep track of where they are up to. Colour every second (fifth/tenth) number on a number chart and use this to say the sequence forwards and backwards in daily warm-up activities.



3.1 Whole number	
Content descriptors	Examples
3.1.3 Use the patterns in the number systems to read and write numbers (as digits), up to (or beyond) 50.	Write numbers in a grid in order to make their own number chart for use in other activities, or to make a track game.
3.1.4 Connect the written numbers (as digits) with the appropriate collections.	Read and/or write labels on containers to show how many objects, such as screws in a jar
3.1.5 Use place value to understand the magnitude of numbers and to compare and order two or three numbers up to (or beyond) 50	Bundle straws/pop sticks/bread tags into groups of tens and ones, write the numbers to show how many in each set, then compare two (or more) sets to say which has the most. Read the numbers written on a collection of jars to say which of them has the most screws, comparing how many tens first. For example: "In 26 there are two tens, and in 41 there are four tens, so 41 must be larger."

3.2 Addition and subtraction	
Content descriptors	Examples
3.2.1 Use counting (by ones, twos, fives and tens) to solve everyday addition and subtraction problems involving small numbers, with a total up to (or beyond) 50.	Use matches/unifix cubes bundled into tens and count by tens to solve word problems, such as: "I had 35 mangoes and gave my neighbour 27. How many do I have left?"
3.2.2 Use materials and visualisation to learn, remember and recall basic addition facts: <ul style="list-style-type: none"> <li>• doubles</li> <li>• near doubles</li> <li>• combinations to ten</li> <li>• the rest.</li> </ul>	Use tens frames (or egg cartons) to show doubles; for example, five add five, recording this as $5 + 5 = 10$ . Ask students to remember the visual image of the double and to recite it on a regular basis. Use tens frame doubles, such as $5 + 5 = 10$ , to extend the addition by one or two, to give $5 + 6 = 11$ , or $5 + 7 = 12$ . Write and verbalise the pattern as you go, saying: "Five add five is ten, five add six is one more, so five add six is eleven."
3.2.3 Use basic facts and place value partitioning to solve everyday addition and subtraction problems involving small amounts of up to (or beyond) 50.	Use material bundled into tens or patterns grid/dot paper to solve problems, such as: "26 adults and 17 children give how many people?" Break 26 into 20 and 6, and 17 into 10 and 7, then mentally adding 20 and 10 to get 30 and 6 and 7 (one more than 6 + 6) makes 13. Add 30 and 13. That makes 43.
3.2.4 Read and/or write number sentences related to everyday addition and subtraction problems.	Connect the statement: "Twenty six adults and seventeen children makes forty three people altogether" to the number fact $26 + 17 = 43$ , after solving a problem such as the one above. Connect the subtraction problem (presented orally) such as: "There were 25 lollies on a plate; 17 of them were red and the rest were green. How many were green?" to the number sentence $25 - 17 = 8$ .

3.2 Addition and subtraction	
Content descriptors	Examples
3.2.5 Input the +, - and = symbols on a calculator in the correct order to solve everyday addition and subtraction problems involving numbers up to (or beyond) 50.	Enter this type of subtraction problem into the calculator to check the answer. Use trial and error to determine the correct order which numbers and symbols are input into the calculator to solve a problem, given the student already knows the answer.
3.2.6 Decide whether to use addition or subtraction to solve everyday problems on a calculator involving 'unfriendly' numbers up to (or beyond) 50.	Choose between + and – to solve a problem, such as: "There are 46 students at school today, and 19 of them are girls. How many are boys?" Use a flow chart to correctly indicate the input as $46 - 19 = 27$ .
3.2.7 Use their understanding of the magnitude of numbers to decide whether an answer on a calculator is appropriate for the problem they have just solved.	Decide whether a given answer solved on a calculator is about right. For example, if a student gets 45 as the answer for the problem above, it is too close to 46, so this cannot be correct. (If they input 64 instead of 46, the answer will be 45).

3.3 Money	
Content descriptors	Examples
3.3.1 Use the patterns in the number system to say the counting sequences of 2s, 5s, 10s and 20s up to (and beyond) 50.	Colour every second (fifth/tenth) number on a number chart and use this to count by twos and by \$2s (\$5s or \$10s).
3.3.2 Use one-to-one correspondence to count collections of \$1 coins by ones up to (or beyond) \$50.	Use the chart to practise saying the sequence together and in games like 'buzz.' Count \$1s to build piles of coins to a requested amount, such as \$37, or make \$48. Write a label to show how much is in each pile.
3.3.3 Use many-to-one correspondence to count collections of \$1 coins by twos, fives, and tens, up to (or beyond) \$50.	Count \$1 coins by twos, fives and tens to make piles to a requested amount; for example, make \$45 counting, 5, 10, 15, ...
3.3.4 Use many-to-one correspondence to count collections of: <ul style="list-style-type: none"> <li>• \$10 notes</li> <li>• \$2 coins</li> <li>• \$5 notes</li> <li>• \$20 notes</li> <li>• mixed collections.</li> </ul>	Count \$10 notes to make different amounts, and draw a diagram to show how each amount is different, labelling each amount. Count a collection of \$5 notes to say how much is in their wallet. Decide whether this is enough to buy a new tee shirt.
3.3.5 Read, write and make simple whole dollar amounts up to \$20, \$50, \$100.	Count a combination of \$2 coins and \$5, \$10 and \$20 notes to make appropriate amounts for purchases at the local supermarket.

3.3 Money	
Content descriptors	Examples
3.3.6 Use place value understanding to compare and order amounts of money (whole dollars only)	Read price labels in the clothing section of a supermarket and combine notes and coins to make the required amount. For example, put together three ten dollar notes and two \$2 coins to make \$34 to purchase a pair of shorts. Compare prices of tee shirts, for example, \$37 and \$45, by comparing how many tens first. There are three tens in 37 and four tens in 45, so the \$45 tee shirt must cost more.
3.3.7 Deposit and withdraw small amounts of money from a 'bank' and keep track of how much money is in the 'bank'.	Role play depositing and withdrawing money from a bank. Keep a record of how much money before and after each transaction. Visit banks or ATMs to operate the machines to withdraw money.
3.3.8 Understand that it is helpful to save money for later use, such as paying for electricity or buying a TV.	Keep a simple budget to keep track of where money is spent and why.
3.3.9 Use an 'EFTPOS card' to make a purchase of one or two items, knowing they have enough money, and how much money they have after the transaction.	Use an EFTPOS card to purchase items at the local deli or shop, and check how much money was in the bank before the transaction and after. Keep a record of these amounts and use the size of the numbers to say whether this is 'about right'.

3.4 Addition and subtraction of money	
Content descriptors	Examples
3.4.1 Use counting (by ones, twos, fives and tens) to solve everyday addition and subtraction problems involving small amounts of whole dollars up to \$50.	Count backwards by 5s to subtract \$15 from \$50 to work out how much change.
3.4.2 Use basic facts and place value partitioning to solve everyday addition problems involving amounts of whole dollars up to \$50.	Count forwards by tens to add the cost of two items. For example, \$20 add \$27, saying: "27 pause, 37, 47, that's \$47 altogether". Use tens frames to explain the addition of \$23 and \$17: "23 equal two ten frames and three, and 17 is a ten frame and seven. Three and seven makes a ten, add ten, add twenty gives 40, that's \$40."
3.4.3 Make simple purchases and know how much change to expect from a \$20 or \$50 note, or using a debit card.	Add the price of several grocery items to find how much they will cost; pay for them and recognise the change they get is 'about right' based on the size of the numbers. Round several items up to the next dollar amount and add them to work out how much money to give for a purchase.

3.4 Addition and subtraction of money	
Content descriptors	Examples
3.4.4 Read and/or write number sentences related to everyday addition and subtraction problems involving small amounts of whole dollars or cents.	Write a number sentence to show the addition or subtraction sequence completed to make a purchase. With support, add the price of several items, and then subtract this from \$50 to work out how much change they should expect.
3.4.5 Input the +, - and = symbols on a calculator in the correct order to solve everyday addition and subtraction problems involving whole dollars up to \$50 or \$100.	Draw a flow chart to help decide whether to use addition or subtraction on a calculator to work out how much more one item is compared to another.
3.4.6 Decide whether to use addition or subtraction to solve everyday shopping problems on a calculator, involving whole dollars up to \$50 or \$100.	
3.4.7 Use the understanding of the magnitude of numbers to decide whether an answer on a calculator is appropriate for the problem just solved.	Decide whether a given answer solved on a calculator is about right. For example, if a student uses the calculator to add three items, \$13 + \$18 + \$27, if they get an answer of \$22, this cannot possibly be correct as it is smaller than the last number. (If a student input $1 + 3 + 1 + 8 + 2 + 7$ they will get 22).

3.5 Multiplication and division	
Content descriptors	Examples
3.5.1 Use skip counting to solve familiar equal group (multiplication and division) problems involving small whole numbers, such as, 2, 4, 6, 8,...up to 50 items.	Draw a picture, or use grid paper, and counting to solve problems such as: "Four hockey teams with 11 players in each. How many players altogether?"
3.5.2 Use the + and – symbols to read and/or write number sentences related to equal group problems involving small whole numbers.	Follow through a problem, such as the one above, to have students write: $11 + 11 + 11 + 11 = 44$ , with support. Connect the number facts to the word problem: "There are four teams of hockey players with eleven people in each. That makes forty-four people."
3.5.3 Link the x symbol with the idea of repeated addition and the ÷ symbol with the idea of sharing equal groups.	Make the connection $11 + 11 + 11 + 11 = 44$ is the same as $4 \times 11 = 44$ . Follow through and say: "Four groups with eleven in each makes forty four, and that is, four teams of eleven players makes forty-four players altogether." Use drawing and counting to solve equal sharing problems, such as: "Share 35 Tim Tams between 7 students. How many each?"

3.5 Multiplication and division	
Content descriptors	Examples
3.5.4 Use the $\times$ and $\div$ symbols to read and/or write number sentences related to equal group problems involving small whole numbers. For example, write $2 \times 6 = 12$ to represent a story, such as: "There were 2 teams with 6 people in each. That makes 12 people altogether."	Write a number sentence using either the $\times$ or the $\div$ to show what they have just done. For example, $35 \div 7 = 5$ . Demonstrate what effect the $\times$ and $\div$ symbols have in various number sentences, such as: $10 \times 2 = 20$ , $10 \div 2 = 5$ , $2 \times 10 = 20$ , $2 \div 10 = 0.2$ . Demonstrate each number sentence with pictures of grouping of objects.
3.5.5 Input the $\times$ , $\div$ and $=$ symbols on a calculator in the correct order to solve everyday equal group problems involving whole numbers up to 50.	Make connections, with a word problem and a number sentence, such as the Tim Tam problem above, and use a calculator to discuss the solution.
3.5.6 Decide whether to use multiplication or division to solve everyday equal group problems on a calculator, involving whole numbers up to 50.	Draw pictures to help decide whether to use $\times$ or $\div$ to solve a problem on a calculator, such as: "How much does it cost for twelve jars of honey at \$6 per jar?"
3.5.7 Use the understanding of the magnitude of numbers to decide whether the answer on a calculator is appropriate for the problem they have just solved.	After using the calculator to solve problems such as the one above, "How much does it cost for twelve jars of honey at \$6 per jar?" Judge whether the answer is 'about right'. For example, if the answer is \$2 then this cannot be correct, as it is less than the cost of one jar. (If students input $12 \div 6$ , they will get an answer of 2)

3.6 Multiplication and division of money	
Content descriptors	Examples
3.6.1 Use skip counting to solve familiar equal group (multiplication and division) problems involving small amounts of whole dollars, such as, \$2, \$4, \$6, \$8, ...up to \$50	Draw a picture, or use grid paper and counting, to solve problems, such as: "How much does it cost for three lasagne packs at \$4 per pack, and three lots of frozen mixed vegetables at \$4 per pack?"
3.6.2 Make simple purchases of multiple items and know how much change to expect from a \$20 or \$50 note, or the balance on a debit card.	
3.6.3 Use the $+$ and $-$ symbols to read and/or write number sentences related to equal problems involving small amounts of whole dollars up to \$50.	Follow through a problem, such as the one above, with support, to write, $\$4 + \$4 + \$4 + \$4 + \$4 + \$4 = \$24$ . Connect the number facts to the word problem: "Four dollars six times makes twenty four dollars. This is how much three lasagnes and three packs of mixed vegetables cost."
3.6.4 Link the $\times$ symbol with the idea of repeated equal amounts of money, and the $\div$ symbol with the idea of sharing out equal amounts of money.	Make the connection that $\$4 + \$4 + \$4 + \$4 + \$4 + \$4 = \$24$ is the same as $6 \times \$4 = \$24$ , saying: "Six lots of four dollars makes twenty four dollars."

3.6 Multiplication and division of money	
Content descriptors	Examples
3.6.5 Use the $\times$ and $\div$ symbols to read and/or write number sentences related to equal group money problems involving small amounts of whole dollars (up to \$50). For example, write $\$20 \div \$2 = \$10$ to represent a story, such as: "I had \$20 and shared it equally with my brother. Now we both have \$10 each."	Solve equal sharing problems, such as: "Share \$35 between 5 students. How many each?" by using drawing and counting. Write a number sentence using either the $\times$ or the $\div$ to show what they have just done. $\$35 \div 5 = \$7$ . Demonstrate the effect the $\times$ and $\div$ symbols have in various number sentences, such as; $35 \times 5 = 175$ , $35 \div 5 = 7$ , $5 \times 35 = 175$ and $5 \div 35 = 0.1429$ , and demonstrate each number sentence with pictures of grouping of objects.
3.6.6 Input the $\times$ , $\div$ and $=$ symbols on a calculator in the correct order to solve everyday equal group problems involving whole dollars up to 50, 100 or 1000 (and beyond).	Input number sentences, such as $35 \div 5$ and $35 \div 7$ , into a calculator and discuss the answer in relation to the sharing problem.
3.6.7 Decide whether to use multiplication or division to solve everyday equal group problems on a calculator, involving whole dollars up to 50.	Draw pictures to help decide whether to use $\times$ or $\div$ to solve a problem on a calculator, such as how much it costs for twelve jars of honey at \$6 per jar. Use the calculator to solve problems like those above.
3.6.8 Use the understanding of the magnitude of numbers to decide whether the answer on a calculator is appropriate for the problem just solved.	State whether the calculator answer to the problem: "How much does it cost for twelve jars of honey at \$6 per jar?" is 'about right'. For example, if the answer is \$2, then this cannot be correct as it is less than the cost of one jar. (If students input $12 \div 6$ , they will get 2)

3.7 Time	
Content descriptors	Examples
3.7.1 Read time to the quarter hour, and to five minute durations on an analogue clock	Read hour, half and quarter hours on analogue and digital clocks to decide when it is recess time, assembly time, bus time, and so on.
3.7.2 Add and subtract simple time measurements in order to calculate the total time needed to complete a task.	Work out how long a journey will take. For example: "The train takes an hour and the walk is half an hour, so it will take an hour and a half to get to my brother's house."
3.7.3 Read and use straightforward timetables or schedules to work out when events start and finish.	Read digital time on a bus, train or plane timetable to find when the next bus, train or plane will arrive.
3.7.4 Estimate simple time durations. For example, it will take me 15 minutes to finish this task.	Use a digital watch or clock to record how long it takes to complete certain activities, such as: how long to eat lunch on a number of days. Decide which day took longer. Use this to estimate how long it will take to eat lunch on the next day.

3.8 Measurement	
Content descriptors	Examples
3.8.1 Use the words (and abbreviations) associated with standard units of length, mass and capacity measure. For example, metre (m), centimetre (cm), litre (L), millilitre (mL), kilograms (kg), and grams (g).	Use grams or kilograms as units in weights, and capacity as litres or millilitres when cooking. Use centimetres to measure ribbon or string. Use metres and millimetres when measuring building materials, such as wood from the hardware store.
3.8.2 Read and use simple whole number calibrated scales in practical contexts, such as cooking or building. Read and use common centimetre and metre measurements on rulers and tape measures; for example, 20 cm. Read and use common millilitre and litres measurements on measuring jugs : e.g. 250mL. Read and use common gram and kilogram measures on digital scales, such as 150 grams.	Read numbers and units on grocery items to say which holds more, using litres and millilitres, or which weighs more, using grams or kilograms. Fill a measuring jug with 150 mL of stock and weigh out 250 grams of lentils to make a soup recipe. Use a ruler to measure 20 cm of ribbon for a race. Use a tape measure to measure heights to work out who is tallest. Use a tape measure to show the heights of famous football or basketball players.
3.8.3 Estimate how long or how heavy an object is, or how much a container holds, in familiar everyday contexts	Make estimations, such as whether something weighs more than a kilo bag of sugar, or whether there's enough drink in a bottle for two people.

3.9 Chance and data	
Content descriptors	Examples
3.9.1 Respond to and use the language of chance, such as likely, possible, impossible, will, won't, might happen.	Refer to the amount of cloud and how cold it is to say whether it is likely or unlikely to rain. Recognise that if an event is likely to happen, they know that it is possible, but that it is not a certainty that it will.
3.9.2 Recognise that events are sometimes unpredictable and sometimes more predictable.	Use appropriate language relating to future events, such as: "I will probably go swimming after school."
3.9.3 Use daily sequences of familiar events to predict what might happen, or which of two events is more or less likely to happen.	Identify events that happen on a frequent basis and events that happen less often, such as: "We always do sport on a Friday, but we only go to the beach a couple of times a year." Use daily routines to predict what is likely to happen, such as: "After lunch we will be doing music, and after school I might go to the beach."
3.9.4 Identify possible and impossible events in their daily lives.	Sort events to say which are possible, such as walk to the shops, and which are impossible, such as walking to the moon.
3.9.5 List possible outcomes of familiar events or activities.	Identify and list the six possible outcomes for tossing one six-sided die. List the activities possible after lunch and say which are more likely than others.
3.9.6 Recognise that repetition of chance events can produce different results.	Discuss a disruption to a typical day, such as if a bird flies into a classroom, to decide whether this is likely to happen again, and what could be done to prevent this.

## Unit 4

### Unit description

In Unit 4, students use their knowledge of whole numbers, place value and patterns in the number system to quantify collections up to 100 and order numbers up to 10 000 and beyond, reading and writing them. Students use a broader range of strategies to solve addition and subtraction problems and input the relevant symbols in a calculator to solve problems involving numbers up to 1000. They continue to check the appropriateness of the answers they get on a calculator. Students use the decimal point to separate whole dollars from cents and make up everyday amounts with mixed coins and notes. They compare and order mixed collections, make decisions based on value for money and continue to make small 'bank' transactions, understanding the difference between credit and debit cards. They start to solve problems involving cents and make purchases knowing how much change to expect from a \$100 note and can write simple budgets. Students solve problems using materials and visualisations and learn and recall basic multiplication facts involving numbers up to 100. They continue to use the calculator to deal with multiplication and division involving quantities of 1000 items or dollars and beyond and make purchases of multiple items. Students collect, sort, classify and organise simple data about everyday contexts. They record and represent data using tallies and pictographs based on one-to-one correspondence. They draw simple column graphs and compare them to identify 'more' or 'less' including by using addition and subtraction. Teachers are encouraged to apply the content of this unit in contexts which are meaningful and of interest to their students.

This unit contains the following content areas:

- 4.1 Whole numbers
- 4.2 Addition and subtraction of whole numbers
- 4.3 Money
- 4.4 Addition and subtraction of money
- 4.5 Multiplication and division of whole numbers
- 4.6 Multiplication and division of money
- 4.7 Chance and data

### Suggested contexts

The unit content will be introduced and applied in a variety of contexts that are accessible to students.

Suggested contexts may include:

- numbers in relation to everyday living, such as on buses, letter boxes, lockers, numerical labels, and for shopping
- making purchases and handling notes and coins, as well as using a credit/debit card
- chance associated with familiar events, such as a bus or train being early or late, an expected baby is a girl
- data from students, such as eye and hair colour, preferred TV shows



- data related to life skills or simulated workplace activities; for example, sorting, counting or putting away cutlery, clothing and packaged food.

## Unit outcomes

By the end of this unit, students will:

- use place value to determine the magnitude of numbers
- use addition and subtraction skills effectively, and recognise when answers are appropriate
- apply counting, addition and subtraction skills to money as whole numbers up to \$1000
- use multiplication and division skills effectively, and recognise when answers are appropriate
- apply multiplication and division skills to money as whole numbers up to \$1000
- choose the correct arithmetic operations on a calculator when completing a money calculation
- collect data about familiar everyday events and display this in graphs
- interpret simple graphs related to familiar everyday events
- identify the likelihood of different outcomes for familiar events and list the possible outcomes in such cases.

## Unit content

This unit includes the knowledge, understandings and skills described below.

Students will be provided with opportunities to:

- engage in mathematical activities
- carry through tasks
- seek assistance to solve problems
- communicate results.

The number formats for the unit are counting numbers, whole numbers and ordinal numbers.

4.1 Using whole number	
Content descriptors	Examples
4.1.1 Count collections (by ones, twos, fives and tens) to say how many up to 100 items (and beyond).	Choose to count by twos, fives or tens when asked to find a quick and easy way to count a handful of objects, such as straws, marbles or screws. Student bundles straws into tens and some left over, and then counts by tens and ones to say how many.
4.1.2 Identify and use the patterns in the number systems to say number sequences forwards and backwards by ones, tens and hundreds up to 100, 1 000, 10 000 and beyond.	Say the number sequence forwards and backwards by ones, tens and hundreds, using a number chart or the constant function on a calculator to keep track of their progress.
4.1.3 Use the patterns in the number systems to read and write numbers (as digits) up to 100,	Use the names of the columns (hundreds, tens and ones) to help read and write numbers found in newspapers or

4.1 Using whole number	
Content descriptors	Examples
1 000 and 10 000 (and beyond).	online.
4.1.4 Connect the written numbers (as digits) with the appropriate collections up to 100.	Read and write labels on containers to say how many items are found within.
4.1.5 Use place value to understand the magnitude of numbers and to compare and order two or three numbers up to 100, 1 000, 10 000 (and beyond).	Use materials, grid or dot paper, to make a model of a number. For example, 77, (or 222), showing how much bigger the tens place (or the hundreds place) is than the ones place. Compare numbers using place value of the first digit on the left, such as in 72 there are 7 tens, and in 27 there are two tens, so 72 is larger.

4.2 Using addition and subtraction	
Content descriptors	Examples
4.2.1 Use efficient counting strategies, basic facts and place value partitioning to mentally solve everyday addition and subtraction problems involving totals up to 50.	Model the use of an efficient strategy, such as using doubles, to solve a problem. For example, $24 + 25$ can be solved using $24 + 24 + 1 = 49$ . Student to practise this strategy regularly.
4.2.2 Read and/or write number sentences related to everyday addition and subtraction problems.	Make connections from word problems, such as: "How many students miss out on a new shirt if there are 32 students and only 18 shirts?" and the number sentence $32 - 18 = 14$ .
4.2.3 Input the +, - and = symbols on a calculator in the correct order to solve everyday addition and subtraction problems involving numbers up to 50, 100 or 1000 (and beyond).	Solve difference problems using the subtraction "-" symbol on the calculator, inputting the larger number first.
4.2.4 Decide whether to use addition or subtraction to solve everyday problems on a calculator, involving numbers up to 50, 100 or 1 000, (and beyond).	Discuss how 'difference' problems are the same as 'take away' problems. Draw a part/whole diagram to work out whether to use addition or subtraction on a calculator to solve a comparison problem, such as: "John is 132 cm tall and Sandy is 124 cm tall. How much taller is John?"
4.2.5 Use the understanding of the magnitude of numbers to decide whether an answer on a calculator is appropriate for the problem just solved.	Check the result on a calculator by comparing the solution to the input values. For example, if the student gets 256 for the problem above: "John is 132 cm tall and Sandy is 124 cm tall, how much taller is John?", this cannot possibly be the correct. The answer should be a number less than the bigger number.

4.3 Money	
Content descriptors	Examples
4.3.1 Know that the decimal point separates whole dollars from cents, which are parts of dollars.	Round amounts in shopping catalogues to the next whole dollar up. For example, \$4.50 for yogurt means that it costs more than four dollars and less than five dollars. Round this up to \$5.
4.3.2 Know that 100 cents makes a dollar.	Using old cent coins, or laminated paper copies, count collections, make piles of ten one cent coins and count these by tens to make ten tens or one dollar.
4.3.3 Count collections of cent coins to make up dollar amounts <ul style="list-style-type: none"> <li>collections of like coins</li> <li>collections of mixed coins.</li> </ul>	Count collections of 5 cent coins to make a given amount. Count collections of 10 cent coins to make a given amount. Count a mixed collection of 5 and 10 cent coins to make an amount for a purchase; for example, a cheeseburger.
4.3.4 Count mixed collections of dollars and cents.	Count a mixture of dollar and cent coins to make up enough to purchase everyday items, such as milk and bread.
4.3.5 Read, write and make everyday amounts of dollars and cents. For example, \$10.50, including amounts up to \$1 000 (and beyond).	Read shopping catalogues which show mixed amounts of dollars and cents. Round the price up to the next dollar amount and add these rounded amounts to work out an estimate of how much money is needed. Make up the required amount out of a collection of mixed notes and coins.
4.3.6 Use understanding of place value to compare and order amounts of money (involving dollars and cents), making decisions about which everyday items are best value for money.	Use place value to compare prices of i-pads, for example, rounding the cents up if needed, to say which shop sells the cheapest.
4.3.7 Deposit and withdraw money into a bank account using an EFTPOS card.	Role play depositing and withdrawing money from a bank. Keep a record of how much money before and after each transaction.
4.3.8 Understand the difference between a debit and a credit card and that there is a cost involved in using credit (fees and interest charged).	Examine and compare simple debit and credit card statements, using the analogy of borrowing money from an uncle/aunt to show the difference between debit and credit cards.
4.3.9 Read and make sense of itemised bank account details for a debit and/or credit card.	Look at a bank account statement online and work out what money has been spent, when, and what effect this had on the total amount.

4.4 Using addition and subtraction of money	
Content descriptors	Examples
4.4.1 Use efficient counting strategies, basic facts and place value partitioning to solve everyday addition and subtraction problems involving combinations of dollars and cents up to \$50	Use basic facts and place value to add. For example: "I have \$2.50 and Grannie gave me \$30.20." Calculate: "Thirty and two makes thirty two dollars" (jotting down 32 to help keep track). "Fifty and twenty makes seventy cents." (jotting down 70 to help keep track). "That makes thirty two dollars and seventy cents."
4.4.2 Make simple purchases and know how much change to expect from a \$100 note.	Pay for petrol and purchase a drink and a sandwich using a \$100 note. Round the amounts up and work out how much change will be 'about right' based on the size of the numbers.
4.4.3 Read and/or write number sentences related to everyday addition and subtraction problems involving combinations of dollars and cents and calculating the change.	Write a number sentence to record shopping transactions. For example, petrol cost \$63.70, a drink cost \$4.50, a sandwich cost \$8.50. Write this as $\$63.70 + \$4.50 + \$8.50 = \$76.70$ , then $\$100 - \$76.70 = \$23.30$ .
4.4.4 Use a calculator to solve everyday addition and subtraction problems involving combinations of dollars and cents up to \$50, \$100 or \$1000 (and beyond).	Add the cost of the petrol, drink and sandwich on the calculator, and subtract this amount from 100.
4.4.5 Decide whether to use addition or subtraction to solve everyday problems on a calculator, involving combinations of dollars and cents up to \$50, \$100 or \$1000 (and beyond).	Choose whether to use addition or subtraction, using a part/whole diagram if necessary. If one of the parts is missing, it is subtraction, if the whole is missing, then it is addition.
4.4.6 Use their understanding of the magnitude of numbers to decide whether an answer on a calculator is appropriate for the problem they have just solved.	Check the result on a calculator, by comparing the solution to the input values, to decide whether the answer is 'about right', or if the answer cannot possibly be correct, based on the size of the numbers. For example, in the scenario above, an answer more than \$100 cannot possibly be correct.
4.4.7 Write and use a simple budget for everyday expenses, such as food and transport costs.	Calculate the cost of a holiday and write a simple budget for a plan to save the money required.

4.5 Multiplication and division	
Content descriptors	Examples
4.5.1 Use skip counting to solve familiar equal group problems involving small numbers, such as 10, 20, 30, ... up to 100 items	Count by tens to work out how many corn plants are needed to fill 8 rows, with ten plants in each row.
4.5.2 Link the $\times$ symbol with the idea of repeated addition and the $\div$ symbol with the idea of sharing equal groups.	Practise repeated group situations, such as: "There are 8 lamingtons per box. How many lamingtons in 12 boxes?" And: "How many boxes are needed for 56 lamingtons?" Students to choose which arithmetic operation to use.
4.5.3 Use the $\times$ and $\div$ symbols to read and/or write number sentences related to equal group problems involving whole numbers.	Write the number sentence $4 \times 18 = 72$ to represent a statement, such as: "There were 4 football teams with 18 people in each, which makes 72 people altogether."

4.5 Multiplication and division	
Content descriptors	Examples
<p>4.5.4 Use materials and visualisation to learn, remember and recall basic multiplication facts:</p> <ul style="list-style-type: none"> <li>• <math>\times 1</math>, <math>\times 2</math>, <math>\times 0</math></li> <li>• <math>\times 5</math>, <math>\times 10</math></li> <li>• <math>\times 4</math> and <math>\times 8</math></li> <li>• <math>\times 3</math> and <math>\times 6</math></li> <li>• <math>\times 7</math></li> <li>• <math>\times 9</math>.</li> </ul>	<p>Make arrays on grid paper to represent 1 group of 2, 2 groups of 2, 3 groups of 2, and so on, recording the multiplication sentence with each array. Ask students to remember the visual image of the arrays and to recite on a regular basis. Use turn-arounds; for example, <math>5 \times 2 = 10</math> is the same as <math>2 \times 5 = 10</math>, to help students to learn and remember tables.</p> <p>Make arrays to show and use doubles; for example, <math>3 \times 2 = 6</math>, so <math>3 \times 4 = 12</math>, to help students to learn and remember tables.</p> <p>Use patterns in the 9-times table to help students to learn and remember tables.</p>
<p>4.5.5 Use familiar basic facts, and extensions to basic facts, to solve everyday multiplication problems involving simple numbers.</p>	<p>Use <math>5 \times 2 = 10</math> to work out <math>50 \times 2 = 100</math> and to solve a problem, such as: "I swam two 50 metres laps. How far did I swim?"</p>
<p>4.5.6 Input the <math>\times</math>, <math>\div</math> and <math>=</math> symbols on a calculator in the correct order to solve everyday equal group problems involving numbers up to 50, 100 or 1000 (and beyond).</p>	<p>Solve a series of different division problems and use the <math>\div</math> symbol on the calculator. Discuss why the problems can be solved with division.</p>
<p>4.5.7 Know that when two whole number quantities are multiplied, the result is a bigger quantity.</p>	<p>Use a calculator to solve a series of multiplication problems and addition problems with the same numbers and compare the size of the answers. For example, <math>20 \times 30 = 600</math>, <math>20 + 30 = 50</math>.</p>
<p>4.5.8 Know that when a whole number quantity is divided by a whole number, the result is a smaller quantity.</p>	<p>Solve a series of different division problems using the <math>\div</math> symbol on the calculator, inputting the larger number first, then the smaller number first. Record the answers and discuss the size of the number in the answers and which must be right, given the context.</p>
<p>4.5.9 Decide whether to use multiplication or division to solve every day equal group problems on a calculator, involving numbers up to 50, 100 or 1000 (and beyond).</p>	<p>Use a diagram to help decide whether a problem should be solved using <math>\times</math> or <math>\div</math> on a calculator. If the whole is unknown, then multiplication is required; if the whole is known, and either the number of groups, or the number in each group is unknown, then division is required.</p>
<p>4.5.10 Use the understanding of the magnitude of numbers to decide whether the answer on a calculator is appropriate for the problem just solved.</p>	<p>Decide whether the answer on a calculator is about the right amount, or if the size of the number means that it cannot possibly be correct. For example, when sharing 75 sheep equally between 5 pens, an answer of 375 per pen is too large.</p>

4.6 Multiplication and division of money	
Content descriptors	Examples
4.6.1 Use skip counting to solve familiar equal group problems involving small amounts of whole dollars, such as \$10, \$20, \$30, \$40... to \$100.	Count by tens to work out how much pay is due for 7 hours work at \$10 per hour.
4.6.2 Use familiar basic facts and extensions to basic facts to solve everyday multiplication problems involving money.	Use $15 \times 3$ to calculate the cost for 3 pairs of shoes at \$15 a pair. Use strategies, such as $10 \times 3 = 30$ , $5 \times 3 = 15$ , and $30 + 15 = 45$ , so the total cost will be \$45.
4.6.3 Make simple purchases of multiple items and know how much change to expect from a \$100 note, or the balance on a debit card, using a calculator if required.	Use rounding of the unit price of an item, such as a loaf, and then multiplication to estimate the total cost of 5 loaves of bread, for example.
4.6.4 Use the $\times$ and $\div$ symbols to read and/or write number sentences related to simple equal group money problems involving combinations of dollars and cents.	Extend the above example to estimate the cost for five loaves of bread and four packets of ham, using rounding, multiplication and addition and subtraction. Estimate the change from \$100 (the amount tendered) to pay for the items.
4.6.4 Input the $\times$ , $\div$ and $=$ symbols on a calculator in the correct order to solve everyday equal group problems involving familiar combinations of dollars and cents up to 50, 100 or 1000 (and beyond).	Write the number sentence $\$2.50 \times 4 = \$10$ to represent a story, such as: "I bought 4 hats for \$2.50 each, so I spent \$10 altogether." Use a calculator to work out exactly how much five loaves of bread and four packets of ham cost.

4.6 Multiplication and division of money	
Content descriptors	Examples
4.6.5 Decide whether to use multiplication or division to solve everyday equal group problems on a calculator, involving familiar combinations of dollars and cents up to 50, 100 or 1000 (and beyond).	Use a diagram to help decide whether a money problem should be solved using $\times$ or $\div$ on a calculator. If the whole is unknown then multiplication is required, if the whole is known and either the number of groups, or the number in each group is unknown, then division is required.
4.6.6 Use the understanding of the magnitude of numbers to decide whether the answer on a calculator is appropriate for the problem just solved	Check the result on a calculator by comparing the solution to the input values. For example, how much change from \$100 after buying five loaves of bread and four packets of ham? If the answer is more than \$100, then it cannot possibly be correct.

4.7 Chance and data	
Content descriptors	Examples
4.7.1 Collect simple data about familiar everyday contexts.	Record whether the weather is sunny, cloudy, rainy, cold, windy, and so on.
4.7.2 Sort, classify and organise simple data under suitable headings.	After students write their favourite food on a sticky note, sort the types of foods into categories, such as fruit and vegetables, meat, dairy foods, and so on.
4.7.4 Read and interpret simple tallies, lists or tables related to familiar contexts.	Make a tally to record which fruit is the most favourite in the class or school.

4.7 Chance and data	
Content descriptors	Examples
4.7.5 Create simple block or pictographs with a one-to-one or many-to-one correspondence between data and symbols, using appropriate labels and titles.	Place the categories decided for students' favourite foods under a line, and the sticky notes for each category above the line, to build a simple block graph.
4.7.6 Read and interpret simple block graphs and pictographs related to familiar contexts to say which category has most/more, least.	After creating a simple block graph or pictograph to show favourite foods, count and record the number within each category, and compare to say which is most popular.
4.7.8 Draw simple column graphs related to familiar contexts (with axis provided), using appropriate labels and titles.	Record how students get to school in a tally and then use these data to create a simple graph on grid paper, labelling the horizontal axis with, for example, 'how we get to school' and the vertical axis with, for example, 'number of students'. Include a title for the graph.
4.7.9 Read and interpret simple column graphs related to familiar contexts.	Read a graph from a science lesson and compare, for example, how fast different plants grow over a period of time, saying how much more one grew compared to another.
4.7.10 Compare and order categories within column graphs to say which has most/more, least, and use addition or subtraction to say by how much.	Read column graphs from newspapers, internet and the Australian Bureau of Statistics.

## School-based assessment

Approaches to assessment should support teachers to identify, broaden and deepen their understanding of what students can do, and assist teachers to determine the educational priorities for each student.

The unit content forms the basis of a teaching, learning and assessment program. The content points in each unit form the basis of teaching and learning opportunities for students, and also provide examples of assessable activities on which teachers can make informed judgements.

Teachers are required to develop an assessment outline for each unit.

The assessment outline must:

- include a set of assessment tasks
- include a general description of each task
- indicate the unit content to be assessed
- include the approximate timing of each task (for example, the week the task is conducted, or the issue and submission dates for a task).

To cater for individual needs and student capabilities, a range of assessment tasks will be developed by the teacher, appropriate for a student's expected ways of learning.

The assessment tasks will provide opportunities for teachers and students to reflect on progress towards individual learning goals. Teachers make decisions about each student's readiness to progress to the next level of proficiency on his or her individual learning goals using a range of assessment tools.

Tools for the collection of evidence to support student progress towards individual learning goals may include:

- observation rubrics
- oral and/or written tasks, or any combination of oral and written tasks
- work experience feedback and/or reports.

Decisions about whether it is appropriate to offer adjustments to students in course work and assessment tasks are the responsibility of the school.

### Unit completion

Schools report on each student's learning progress for a unit in Preliminary courses as either completed or not completed.

To be deemed to have completed the course, the school determines whether a student meets the following criteria:

- completion of the education and assessment program for the unit (unless the school accepts that there are exceptional and justifiable circumstances)
- evidence of progress in demonstrating the unit outcomes, including sufficient attendance and engagement, either independently or with support.

The *WACE Manual* contains essential information on principles, policies and procedures for school-based assessment that needs to be read in conjunction with this syllabus.