Overview

Key Learning Area/Subject:	Semester:			Year:
Mathematics	One		2018	
Unit of Work Title:	Duration/Timing:			Stage:
What are the chances?	Semester 1 – 1 hour per week,	, 21 weeks		4&5
	20 hours total			
Program:	Class:			Author:
Secondary (Senior School)	ххххх			Leanne Veillette, Merrilyn Sackett
	Student Name	Grade & Stage	Initials	
		S. 10.		

Description:

During this unit of work, students will develop their problem solving skills and extend their use of mathematical language in everyday life. Taking different scenarios into account they will begin to learn and use words to describe the likelihood of that event occurring. They will use mathematical reasoning to predict the outcome of daily situations and in turn begin to plan for likely events, such as packing bags for a day out with suitable attire for the expected weather.

Students will have the opportunity explore the element of chance and probability within different activities by participating in tasks and recording the outcomes. Students will take part in investigations to explore the outcomes and the likelihood of achieving different results depending on the initial factors. They will be encouraged to make predictions when taking the likelihood of an outcome into account, carry out the experiment, record the results and compare their results to their prediction.



Outcomes, Questions and Activity Bank

C	Dutcome	Content Key Guiding Question		Learning Across Curriculum Codes	Activity Bank (think about ALL abilities)
MALS – 1WM	Responds to and uses mathematical language to demonstrate understanding.	Describe the likelihood of familiar events using informal terms, eg might, certain, probable, likely, unlikely, possible, impossible Use the language of chance in everyday situations	Do students use mathematical language appropriate to the activity Do students use mathematical language in relation to probability? Do students use mathematical language in relation to probability in context?	** *	 Possible ebooks <u>https://www.youtube.com/watch?v=c9gtkhiwNAQ</u> It's probably Penny <u>https://www.youtube.com/watch?v=KIOnlfNHA</u> Cloudy with a chance of meatballs
MALS – 3WM	Uses reasoning to describe mathematical relationships.	Predict possible outcomes in everyday situations, eg decide what might occur in a movie before the ending of the story	Do students show understanding of the outcome of an event? Do students attempt to make predictions of the outcome of an investigation? Do students make an accurate prediction about the outcome of an investigation? Can students compare the outcome of an investigation with their prediction?	**	 <u>http://www.guided-math.com/2011/12/math-game-counting-and-probability.html</u> Counting and probability Shell game idea – find the ball <u>https://www.youtube.com/watch?v=luqK4PPdvPE</u>
MALS – 36SP	Gathers organises and displays data.	Sort collected data into groups Gather and display data for a specific purpose, eg to determine the range of eye colour represented in a class of students	Can students collect data? Can students collect data for a specific purpose? Can students display data? Can students display the same data using 2-3 different formats? Can students sort data?	¢⊕∞ ↓≡	M&Ms graph – make graph with M&Ms (or any item) answer question – how many red etc.

MALS – 37SP Extension outcome for appropria te students	Interprets information and draws conclusions from data displays.	Recognise that information can be presented in tables and graphs, eg a picture graph to show favourite foods, column graph to show classroom gender, sector graph to represent sports students play, table to record daily rainfall Identify information in graphs using features such as the heading/title of the graph, labels on axes, scale and key	Can students use the results of an investigation to make a conclusion? Can students read information collected from a graph?	***	Roll dice/spinner, tally answers, answer questions.
MALS – 38SP Extension outcome for appropria te students	Recognises and uses the language of chance in a range of contexts	Distinguish between events that are certain and events that are uncertain, eg having a birthday, winning a lottery Use the language of chance in everyday situations Describe the likelihood of familiar events using informal terms, eg might, certain, probable, likely, unlikely, possible, impossible	Can students use language of chance? (will/won't/maybe happen) or (certain, impossible, likely, unlikely, equally likely)? Can students distinguish between events that are certain and uncertain? Can students describe the likelihood of an event occurring? Can students make predictions in relation to the likelihood of an event occurring? Can students make preparations due to the likelihood of an event occurring?	**	 Make picture graphs, talles, bar/column graphs Make class graphs showing data – birthdays, hair colour etc With the state of the state
MALS – 39SP	Recognises the elements of chance and probability in every day events.	Recognise the element of chance in familiar events, eg tossing a coin, rolling dice Conduct simple experiments to determine the probability of an outcome, eg spin a	Do students recognise the element of chance? Can students participate in an investigation? Can students predict the outcome of an activity or investigation?	¢#	 <u>http://splash.abc.net.au/res/i/L115/index.html</u> Slushy game, identifying yes, no or maybe <u>http://splash.abc.net.au/res/i/L118/index.html</u> drinks game - identifying likely, unlikely, impossible, certain

spinner 20 times and predict, record and communicate the results	Can students record the results of an investigation? Can students compare the results to their prediction?	Ċ	Identifying likelihood of everyday events (e.g. weather patterns) examples: <u>https://www.youtube.com/watch?v=mxcqM0jGU1c</u> (possible vs. impossible)
		•	colour of lolly pulled from a bag

Learning Across the Curriculum Codes:		
The cross-curriculum priorities are:	The general capabilities are:	Areas of Importance:
Aboriginal and Torres Strait Islander histories and	Critical and creative thinking 🀲	
cultures 🖑	Ethical understanding 🕼	Civics and citizenship 🗬
Asia and Australia's engagement with Asia 🔍	Literacy ኛ	
Sustainability 🣲	Intercultural understanding	Difference and diversity ≢
	Information and communication technology	
	capability 📕	Work and enterprise 🌞
	Numeracy	
	Personal and social capability	



Outcome and Student Learning Goals

	Outcomes:	Learning Goals	Students
MALS –	Responds to and uses mathematical language to	Use mathematical language in context when describing the outcome of an event.	
1WM	demonstrate understanding.		
MALS –	Uses reasoning to describe mathematical relationships	Compare the outcome of an event to their prediction to determine if they were correct or	
3WM	mathematical relationships.	incorrect.	
MALS –	Gathers organises and displays data.	Record data using 2 methods, tally chart and bar chart.	
36SP			
MALS –	Interprets information and draws conclusions from data	Answer questions using a chart to retrieve the answers.	
37SP	displays.	GANI	
MALS	Recognises and uses the language of chance in a	Comment on the outcome of an event when it is certain or impossible.	
38SP	range of contexts		
MALS	Recognises the elements of	Make an accurate predication about the outcome of an investigation from a choice of 3	
– 39SP	every day events.	when 2 are possible and 1 is impossible.	
		Make an accurate predication about the outcome of an investigation from a choice of 2	
		when 1 is certain and 1 is impossible.	



Assessment

Assessment Overview – Semester 1 Only Units of Work										
Assessment Timeline R:\Se	Assessment Timeline R:\Senior School (2018)\Administration\Assessment Timeline 2018 Stage 4-5.docx									
Pre-Assessment	Progressive	Post								
Term 1 – Weeks 1-5	Term 1 – Weeks 610	Term 2 – Week 9-10								
Pre-assessment and learning goal development.	Term 2 – Weeks 1-8	To be carried out at least twice and can be performed								
		via one or more of the following forms:								
Pre-assessment can be performed via one or more of	To be carried out at least twice and can be performed	Anecdotal observations								
the following forms:	via one or m <mark>ore</mark> of the fol <mark>lowing fo</mark> rms:	Checklists								
Anecdotal observations	 Anecdotal observations 	Task analysis checklists								
Checklists	Checklists	Work samples								
Task analysis checklists	Task analysis checklists	Photo								
Work samples	Work samples	Videos								
Photos	Photo									
Videos	Videos	Assessment to be carried out by the class team								
		(teachers, therapists and educators)								
Assessment to be carried out by the class team	Assessment to be carried out by the class team									
(teachers, therapists and educators)	(teachers, therapists and educators)	Assessments to then be summarised in the following								
		reports								
Links to Student Documents:	Links to Student Documents:									
		Term 2 – Week 9								
		Semester 1 IP and Curriculum Report								
		Links to Student Decuments								

Teaching and Learning Sequence

See Pedagogy timetable for staff & student allocation and lesson, staff roles and lesson delivery

Term	Week	Focus	Content	Teaching and Learning Sequence (including differentiation)	Resources	Completed (insert √, date and
One	1-4	Display and interpret data	MALS – 36SP Gathers organises and displays data. Sort collected data into groups Gather and display data for a specific purpose MALS – 37SP Interprets information and draws conclusions from data displays. Recognise that information can be presented in tables and graphs MALS – 39SP Recognises the elements of chance and probability in every day events.	Lesson One – Intro with dice (Tuesday AM) Start Students to sit in allocated seats at the beginning of the lesson. In order to provide students with familiarity and routine they will sit in the same seats indicated by their picture and name being displayed in that place. Lesson components for the lesson clearly displayed at the front of the room and shared with the students so they know what to expect from the lesson. As each lesson component is completed it will be removed and put in the finished box. This allows students to recognise what they are doing next and when the lesson is finished. Learning objectives shared with the students for that lesson. 'By the end of the lesson I will be able to identify numbers on a dice' Probability YouTube choice V:\Secondary\NEW Syllabus\Stage 4- S\Mathematics\Probability\Probability youtube choice.pptx Main Students will learn about numbers on a dice and how they are displayed. As a group students will count the number of dots on a dice and identify the corresponding number. Students will then roll 2 dice, count the dots and identify the corresponding number to the total.	Dice games Dice Pen Scissors Glue Work <u>Probability YouTube</u> <u>choice</u> <u>Probability Dice</u> <u>2018.pptx</u>	Initial)

	interpret data	MALS – 36SP Gathers organises and displays data.	<u>Start</u>	Pen Scissors Glue Work	
5-7	Display and		Lesson Two – Intro with spinner (Tuesday AM)	Spinner	
			will allow students to explore the language used. It also gives a good opportunity for the students to gather as a group in order to allow for a positive transition to the next activity on the daily schedule.		
			To finish the lesson students will watch a youtube clip about words used in probability. This		
			students will each answer 1 question to evaluate their understanding of the lesson content.		
			Summary		
			work for the lesson staff to distribute work from the workboxes and complete assessment		
			students learning in relation to their learning goals. When students have completed the		
			Extension is kept in the activity box for What Are The Chances in the classroom. These activities include assessment material and additional activities to consolidate and extend		
			Extension work		
			In the correct answer.		
			Activity 3 – Students will roll 2 dice, add the numbers together to find the answer and colour		
		outcome	sentence add the dice together. Students will complete 10 examples of this.		
		probability of an	Activity 2 – Students to roll 2 dice, draw the dice on a template then complete a number		
		experiments to			
		Conduct simple	'How many times was the number 7 rolled?'		
			How many times was the number 3 rolled?		
		eg tossing a coin, rolling dice	answer 3 questions referring to their chart for the answer.		
		in familiar events,	have finished students will write the total for each number in the final column. Students to		
		element of chance	Activity 1 – Students to roll a dice 20 times and tick when a number comes up. When they		
		Decemication	students will work through individual work at their own pace.		

	Sort collected data into groups	Students to sit in allocated seats at the beginning of the lesson. In order to provide students with familiarity and routine they will sit in the same seats indicated by their picture and name being displayed in that place.	Probability YouTube	
	Gather and display data for a specific purpose MALS – 37SP Interprets	Lesson components for the lesson clearly displayed at the front of the room and shared with the students so they know what to expect from the lesson. As each lesson component is completed it will be removed and put in the finished box. This allows students to recognise what they are doing next and when the lesson is finished.	<u>Probability Spinner</u> <u>2018.pptx</u>	
	information and draws conclusions from data displays.	Learning objectives shared with the students for that lesson. 'By the end of the lesson I will be able record data and answer questions.'		
	Recognise that	Main		
	information can	As a group students will identify colours they can see on a spinner sorting into yes/no.		
	be presented in tables and graphs	spinning the spinner and recording what colour it lands on. This will be done in 2 different		
	MALS – 39SP Recognises the elements of chance and probability in every day events.	 Students will work through individual work at their own pace. Activity 1 – Students to identify the colours they can see on spinners by sorting the colours into yes or no. 		
	Recognise the element of chance in familiar events, eg tossing a coin, rolling dice Conduct simple experiments to determine the probability of an	Activity 2 – Students to spin their spinner (blue, red and green outcomes only) 10 times and record the results on a tally chart. They will answer three questions based on their results. 'How many times did the spinner land on blue?' 'How many times did the spinner land on red?' 'How many times did the spinner land on yellow?' Activity 3 – Students will spin the spinner 10 times and record their results again, this time using a bar chart. They will use the bar chart to answer 3 questions.		
	outcome	'How many times did the spinner land on blue?'		
		'How many times did the spinner land on red?'		
		'How many times did the spinner land on yellow?'		

			Extension work Extension is kept in the activity box for What Are The Chances in the classroom. These activities include assessment material and additional activities to consolidate and extend students learning in relation to their learning goals. When students have completed the work for the lesson staff to distribute work from the workboxes and complete assessment towards learning goals. Summary Students will each answer 1 question to evaluate their understanding of the lesson content. To finish the lesson students will watch a youtube clip about words used in probability. This will allow students to explore the language used. It also gives a good opportunity for the students to gather as a group in order to allow for a positive transition to the next activity on the daily schedule.		
8-11	Language	MALS – 1WM Responds to and uses mathematical language to demonstrate understanding. Describe the likelihood of familiar events using informal terms, eg might, certain, probable, likely, unlikely, possible, impossible Use the language of chance in everyday situations	Lesson Three – Mathematical language (Tuesday AM) Start Students to sit in allocated seats at the beginning of the lesson. In order to provide students with familiarity and routine they will sit in the same seats indicated by their picture and name being displayed in that place. Lesson components for the lesson clearly displayed at the front of the room and shared with the students so they know what to expect from the lesson. As each lesson component is completed it will be removed and put in the finished box. This allows students to recognise what they are doing next and when the lesson is finished. Learning objectives shared with the students for that lesson. 'By the end of the lesson I will be able identify 1 event that is possible and 1 event that is impossible.' <u>Main</u> As a group students will learn the meaning of the words 'possible' and 'impossible'. <u>Possible/impossible</u> . Students will sort some events into possible and impossible as a group. Individual work	Interwrite board Worksheet Pens Scissors Glue Cups Choice board Lollies Adapted language used from previous week to bridge the gap between yes/no & certain/impossible <u>Probability Language</u> and Spinner yes no 2018.pptx	

			MALS – 38SP	Students will be given 20 events. One at a time students will sort the likelihood of these		
			Recognises and	events occurring into possible and impossible		
			uses the language			
			of chance in a	Extension work		
			Tange of contexts	Extension work		
			Use the language	activities include assessment material and additional activities to consolidate and extend		
			of chance in	students learning in relation to their learning goals. When students have completed the		
			everyday	work for the lesson staff to distribute work from the workboxes and complete assessment		
			situations	towards learning goals.		
			Describe the			
			likelihood of	Add extension work to revisit spinner activity from previous weeks.		
			familiar events			
			using informal	Summary		
			terms	Students will each answer <mark>1</mark> qu <mark>esti</mark> on to evaluate their understanding of the lesson content.		
				To finish the lesson students will watch a youtube clip about words used in probability. This		
				will allow students to explore the language used. It also gives a good opportunity for the		
				students to gather as a group in order to allow for a positive transition to the next activity on		
				the daily schedule.		
Two	1-3	Language	MALS – 1WM	Lesson 4 Mathematical language (Tuesday AM)	Probability language	
			Responds to and	<u>Start</u>	and spinner updated	
			mathematical	Students to sit in allocated seats at the beginning of the lesson. In order to provide students	<u>2018.pptx</u>	
			language to	with familiarity and routine they will sit in the same seats indicated by their picture and		
			demonstrate	name being displayed in that place.	res no questions.par	
			understanding.		Yes no questions 2 ndf	
			Deceribe the	Lesson components for the lesson clearly displayed at the front of the room and shared with	<u>105110 questions 2.put</u>	
			likelihood of	the students so they know what to expect from the lesson. As each lesson component is		
			familiar events	what they are doing next and when the lesson is finished		
			using informal			
			terms, eg might,	Learning objectives shared with the students for that lesson.		
			certain, probable,	'By the end of the lesson I will be able identify 1 event that is possible and 1 event that is		
			possible,	impossible.'		
			impossible			

		Use the language of chance in everyday situations	Main As a group students will learn the meaning of the words 'possible' and 'impossible'. Possible/impossible. Students will sort some events into possible and impossible as a group. Individual work		
		MALS – 38SP Recognises and uses the language of chance in a range of contexts	Students will be given 20 events. One at a time students will sort the likelihood of these events occurring into possible and impossible. Students will be encouraged to read the statement independently. Staff to choose statements to read back to the student in order to assess reading vs comprehension.		
		Use the language of chance in everyday situations Describe the likelihood of familiar events using informal terms	Extension work Extension is kept in the activity box for What Are The Chances in the classroom. These activities include assessment material and additional activities to consolidate and extend students learning in relation to their learning goals. When students have completed the work for the lesson staff to distribute work from the workboxes and complete assessment towards learning goals. Summary Students will each answer 1 question to evaluate their understanding of the lesson content. To finish the lesson students will watch a youtube clip about words used in probability. This will allow students to explore the language used. It also gives a good opportunity for the students to gather as a group in order to allow for a positive transition to the next activity on		
4-6	Recording Data	MALS – 36SP Gathers organises and displays data. Sort collected data into groups Gather and display data for a specific purpose	the daily schedule. Lesson 5 Recording Data (Tuesday AM) Start Students to sit in allocated seats at the beginning of the lesson. In order to provide students with familiarity and routine they will sit in the same seats indicated by their picture and name being displayed in that place. Lesson components for the lesson clearly displayed at the front of the room and shared with the students so they know what to expect from the lesson. As each lesson component is completed it will be removed and put in the finished box. This allows students to recognise what they are doing next and when the lesson is finished.	What are the chances 2018.pptx Tally and bar chart smarties.pdf	

		MALS – 37SP	- /		
		Interprets	Learning objectives shared with the students for that lesson		
		information and	'By the end of the lesson I will be able to record data'		
		draws conclusions			
		from data			
		displays.	Main		
			Students will complete activities to record data with varying levels of support. Results will be		
		Recognise that	displayed in tally and bar chart form.		
		information can	Week 4 – coloured blocks data collection		
		be presented in	Week 5 – collect data about peoples appearance hair colour, eye colour		
		tables and graphs	Week 6 - smarties data collection		
			Each week students will then answer questions by reading information from the charts 'How		
			many X were there?'		
			Extension work		
			Extension work		
			activities include assessment material and additional activities to consolidate and extend		
			students learning in relation to their learning goals. When students have completed the		
			work for the losson staff to distribute work from the workhoves and complete assessment		
			work for the lesson start to distribute work from the workboxes and complete assessment		
			towarus learning goals.		
			Summary		
			Students will each answer 1 question to evaluate their understanding of the lesson content.		
			To finish the lesson students will watch a youtube clip about words used in probability. This		
			will allow students to explore the language used. It also gives a good opportunity for the		
			students to gather as a group in order to allow for a positive transition to the next activity on		
			the daily schedule.		
7-9	Predictions	MALS – 3WM	Lesson 6 Making predictions (Tuesday AM)	https://www.google.co	
		Uses reasoning to	Start	m.au/search?safe=stric	
		mathematical	Students to sit in allocated seats at the beginning of the lesson. In order to provide students	t&source=hp&ei=swaQ	
		relationshins	with familiarity and routine they will sit in the same seats indicated by their picture and	MttwirzODMCUm/AR	
		relationships.	name being displayed in that place.		
		Predict possible		<u>q=making+a+predictio</u>	
		outcomes in	Lesson components for the lesson clearly displayed at the front of the room and shared with	<u>n+game+for+kids&oq=</u>	
		everyday	the students so they know what to expect from the lesson. As each lesson component is	making+a+prediction+	
		situations,		game+for+kids&gs l=p	

		completed it will be removed and put in the finished box. This allows students to recognise	SV-	
	MALS – 39SP	what they are doing next and when the lesson is finished.	$\frac{27}{2}$	
	Recognises the		<u>a0.54814.12930.0.15</u>	
	elements of	Learning objectives shared with the students for that lesson.	068.33.29.0.0.0.0.416.	
	probability in	'By the end of th <mark>e lesson I will be able to make</mark> a prediction'	<u>4507.0j6j7j4j1.18.00</u>	
	every day events.		<u>1c.1.64.psy-</u>	
		Main	ab15.16.39210j0i13	
	Recognise the	As a group students will take turns to make a prediction about the outcome of an	1k1j0i22i30k1j33i22i29	
	element of chance	experiment. They will use language from previous lessons – yes/no, certain/impossible,	i30k1.0.ru9GgrAdIMc#	
	in familiar events,	possible/impossible, to make these predictions.	kpyalbx=1	
	eg tossing a coin,	As students are making the predictions the facilitator will demonstrate recording this		
	rolling dice	information in a tally chart. The facilitator will then demonstrate transferring the	What are the	
		information into a bar chart and answering questions retrieving the information from the	chances 2018 ppty	
	Conduct simple	graph. This activity will allow students to combine a the different skills they have learnt		
	determine the	throughout the topic.	What are the	
	probability of an	Students will complete the experiment and record the results. They will compare the results	<u>vviidt die tile</u>	
	outcome	to their predictions and determine I their prediction was correct or incorrect.	2010 mate	
			<u>2018.pptx</u>	
		Students will then complete work to fill in the information in their own tally tables and bar		
		charts and answer questions – 'how many people said'		
		Extension work		
		Extension work		
		activities include assessment material and additional activities to consolidate and extend		
		students learning in relation to their learning goals. When students have completed the		
		work for the lesson staff to distribute work from the workhoxes and complete assessment		
		towards learning goals		
		Summary		
		To finish the lesson students will watch a youtube clip about words used in probability. This		
		will allow students to explore the language used. It also gives a good opportunity for the		
		students to gather as a group in order to allow for a positive transition to the next activity on		
		the daily schedule.		

10	Evaluation	MALS – 1WM	Lesson 6 Evaluation of topic(Tuesday AM)		
		Responds to and			
		uses	<u>Start</u>		
		language to	Students to sit in allocated seats at the beginning of the lesson. In order to provide students		
		demonstrate	with familiarity a <mark>nd routine they will sit in the same</mark> se <mark>at</mark> s indicated by their picture and		
		understanding.	name being displaye <mark>d in that</mark> place.		
		Describe the	Lesson components for the lesson clearly displayed at the front of the room and shared with		
		likelihood of	the students so they know what to expect from the lesson. As each lesson component is		
		familiar events	completed it will be removed and put in the finished box. This allows students to recognise		
		terms eg might	what they are doing next and when the lesson is finished.		
		certain, probable,	Learning chiesting should with the students for that leaves		
		likely, unlikely,	Learning objectives shared with the students for that lesson.		
		possible,	By the end of the lesson I will be able to answer questions about probability		
		impossible	Main		
		Lise the language	<u>Walli</u> Students will be given a workbook with probability questions from throughout the competer		
		of chance in	in order to assess the progress they have made		
		everyday	in order to assess the progress they have made.		
		situations	Extension work		
			Extension is kept in the activity box for What Are The Chances in the classroom. These		
		MALS – 3WM	activities include assessment material and additional activities to consolidate and extend		
		describe	students learning in relation to their learning goals. When students have completed the		
		mathematical	work for the lesson staff to distribute work from the workboxes and complete assessment		
		relationships.	towards learning goals.		
		Predict possible	Summary		
		everyday	To finish the lesson students will watch a youtube clip about words used in probability. This		
		situations,	will allow students to explore the language used. It also gives a good opportunity for the		
			the daily schedule		
		MALS – 36SP	the daily schedule.		
		Gathers organises			
		and displays data.			
		Sort collected			
		data into groups			





Evaluations (completed twice per term)

Date:

Programming/Outcomes	Yes	No			
Were teaching and learning experiences effective?					
Were students engaged in the content/theme of the unit?					
Were students engaged for the duration of lessons?					
Did the unit support student development of identified outcomes?					
Did this unit support individual development of learning goals?					
Teaching strategies	Yes	No			
Were teaching strategies effective?					
Were staff consistent in their implementing effective teaching support?					
Differentiating	Yes	No			
Were the activities relevant and appropriate to the needs of the individual the students?					
Were individual learning supports effective?					
Assessment	Yes	No			
Were there enough opportunities to assess students?					
Was there a need to adjust tasks in order to adequately assess students learning?					
Resources	Yes	No			
Were all resources/activities prepared and set up before the commencement of a lesson?					
Comments					
What was successful?					
Students engaged with the activity and began to complete the activity as intended with adult support.					
What would you do differently next time?					
Larger dice so students could clearly see the outcome.					
Begin with work identifying numbers on a dice to ensure students are able to recognise 5 dots is the number 5.					
Sign-off:					

Program Approval:

Date	Member of Leadership Team	Signature