Natural Maths Planning Sheet Term: 4 Week: 6 Big Idea: Probability

Top 5	Key Vocabulary	Australian Curriculum Achievement Standard
1. I can calculate the probability of an event occurring and describe it using words, fractions, decimals and percentages 2. I can place different probabilities on a number line 3. I can conduct chance experiments and list possible outcomes 4. I can compare observed and expected frequencies 5. I can solve everyday problems involving probability	• Fractions • Decimals • Percentages • Number line • Chance experiments • Possible outcomes • Observed frequencies • Expected frequencies • Problem-solving	• Describe probabilities using fractions, decimals and percentages (ACMSP144) • Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies (ACMSP145) • Compare observed frequencies across experiments with expected frequencies (ACMSP146)

Date	Monday	Tuesday	Wednesday	Thursday	Friday
Mental Routine		Students brainstorm words that could be used to describe the probability of an event occurring.	Students describe the likelihood of certain events occurring though their learnt probability vocabulary.	Students list possible outcomes through answering questions from an online resource.	Students list possible outcomes through answering questions from an online resource.
Main Part of Lesson	Students participate in a whole-class game of *Greedy Pig*, formulating game strategies and applying them accordingly. Students calculate the probability of rolling a 1 with the die. Students consider how they could change the rules of the game to increase the likelihood of players losing.	Students view and recreate a basic probability line. Students calculate the probability of certain events occurring and place them on a probability line accordingly. Students create their own events, determine their probability and place them on their probability line. Students consider different variations of the *Greedy Pig* game and, using their probability line, determine in which version the player is most likely to win.	Students determine the expected outcomes of rolling a single die. Students calculate how many times they expect to roll a 1 if they roll a die 6 times and 30 times.	Students conduct a chance experiment to compare the expected and observed outcomes of rolling a single die.	Students brainstorm chance experiments they could conduct in the classroom. In small groups students choose a chance experiment to conduct. Before conducting their chance experiments, students answer the following questions in their group: • What are you testing? • How are you testing this? • What are the possible outcomes? • How will you record your data? • What is the total frequency of your chance experiment? • What is your expected outcome? Students then conduct their chance experiments in their group.

Reflection	Students answer the following questions: • Could you calculate the probability of Miss. Cole rolling a 1 with the die? How could you describe this? • From this, could you work out a game strategy? If so, what was your strategy?	Students reflect on what traffic light they are on in probability vocabulary and consider how this has developed from Monday's lesson.	Students reflect on new understandings they have developed from Tuesday's lesson.	Students share a bright spot and a challenge from the day's lesson with a partner.	Students reflect on what traffic light they are on in conducting chance experiments and consider how this has developed from Wednesday's lesson.

Natural Maths Planning Sheet Term: 4 Week: 7 Big Idea: Probability

Date	Monday	Tuesday	Wednesday	Thursday	Friday
Mental Routine	Students determine the probability of certain events occurring through answering questions provided by an online resource, with the multiple-choice answers hidden.	Students determine the probability of certain events occurring as a fraction, decimal and percentage through answering questions provided by an online resource.	Students determine the probability of certain events occurring, limiting their use of a calculator, answering questions provided by an online resource.		
Main Part of Lesson	Students are provided with strategies to convert between fractions, decimals and percentages. Students apply these strategies to a real-life problem involving marbles. In solving this problem, students are required to demonstrate their ability to convert between fractions, decimals and percentages.	Students are given further opportunity to practice converting between fractions, decimals and percentages through exploring the probabilities involved in playing cards.	Students continue exploring the probabilities involved in playing cards, comparing expected and observed outcomes of picking a card at random.	-	-
Reflection	Students reflect on their ability to convert between fractions, decimals and percentages, representing their perceived ability with a fraction, decimal or percentage (i.e. 20%, ¼, 0.333…)	Students refer back to their 'Top 5' sheet, ticking applicable 'I can…' statements and providing warm and cool comments.	Once again, students refer back to their 'Top 5' sheet, ticking applicable 'I can…' statements and providing warm and cool comments.	-	-

Natural Maths Planning Sheet Term: 4 Week: 8 Big Idea: Probability

Date	Monday	Tuesday	Wednesday	Thursday	Friday
Mental Routine	Students actively view a full episode of the game show *Deal or No Deal*. Students identify probabilities evident in the show.	Students actively watch segment of a *Deal or No Deal* episode titled 'The Unluckiest Contestant.' Students observe the pattern and predict what may happen next.	Students actively watch a segment of a *Deal or No Deal* episode titled 'The Luckiest Contestant.' Students identify the changing probabilities within the segment.	Students participate in a whole-class game or *Deal or No Deal* using an online resource.	
Main Part of Lesson	Students determine the likelihood of being selected at random to be a contestant on *Deal or No Deal* as a fraction, decimal and percentage. Students consider how they can increase their chances of appearing on *Deal or No Deal* to 20%, 50% and 75% by inviting family and friends.	Students determine the probability of a contestant selecting a case with a blue, pink and green amount on the first turn, giving their answers as a fraction, decimal and percentage. Following the observed pattern, students predict what will happen next, giving the probability of this occurring as a fraction, decimal and percentage.	Students consider why the contestant, with $100,000 and $200,000 remaining on the board, refuses the bank offer of $115,000, explaining their answer with a fraction, decimal and percentage. Students also decipher why a case-holder may suggest their case contains $200,000 to avoid being selected by the contestant, including a fraction, decimal and percentage in their answer.	Students consider when they should have left the game. Students consider what they would have done differently in the game of *Deal or No Deal.*	-
Reflection	Students use their probability vocabulary to describe the chance of appearing on Deal or No Deal. Students consider whether they would pay for the chance to be selected as a contestant.	Students reflect on whether they consider themselves to be lucky. Students also consider whether luck or probability knowledge plays a larger role in *Deal or No Deal*.	Students reflect on strategies they may employ as a contestant on *Deal or No Deal*.	Students refer back to their 'Top 5' sheet, ticking applicable 'I can…' statements and providing warm and cool comments.	-