**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 4 | STRAND: Statistics and Probability | **SUB-STRAND:****Chance** 2  | **WORKING MATHEMATICALLY:** **MA2-1WM** |
| OUTCOMES: MA2-19SP | Describes and compares chance events in social and experimental contexts  |
| **CONTENT:**  | **Describe possible everyday events and order their chances of occurring (ACMSP092)*** use the terms '[equally likely](http://syllabus.bos.nsw.edu.au/glossary/mat/equally-likely-outcomes/?ajax" \o "Click for more information about 'equally likely'" \t "_blank)', 'likely' and 'unlikely' to describe the chance of everyday events occurring, eg 'It is equally likely that you will get an [odd](http://syllabus.bos.nsw.edu.au/glossary/mat/odd-number/?ajax" \o "Click for more information about 'odd'" \t "_blank) or an [even number](http://syllabus.bos.nsw.edu.au/glossary/mat/even-number/?ajax" \o "Click for more information about 'even number'" \t "_blank) when you roll a die'
* compare the chance of familiar events occurring and describe the events as being 'more likely' or 'less likely' to occur than each other
* order events from least likely to most likely to occur, eg 'Having 10 children away sick on the same day is less likely than having one or two away'
* compare the likelihood of obtaining particular outcomes in a simple chance experiment, eg for a collection of 7 red, 13 blue and 10 yellow marbles, name blue as being the colour most likely to be drawn out and recognise that it is impossible to draw out a green marble
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Review

Students contribute a page to the “Never Ever” book. That is an event that will never happen.Class reviews each page and discusses. |
| WARM UP / DRILL | * Make 50/100

Children play in pairs. Each person takes turns to roll 2 dice and add together. Record addition in one column and tally dice throws in anther. First to reach 50/100 wins. Compare how many dice throws it took for each student to reach their total. |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | * There are 30 green marbles, 12 blue marble and 6 red marbles in a bag. Predict which marble is more likely to be drawn out of the bag.
* As you take 10 marbles out of the bag, record the results by using tally marks. After you have recorded the result, compare the actual results with your predictions.
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| QUALITY TEACHING ELEMENTS | **INTELLECTUAL QUALITY** | **QUALITY LEARNING ENVIRONMENT** | **SIGNIFICANCE** |
| Deep knowledge Deep understandingProblematic knowledgeHigher-order thinkingMetalanguageSubstantive communication | Explicit quality criteriaEngagementHigh expectationsSocial supportStudents’ self-regulationStudent direction | Background knowledgeCultural knowledgeKnowledge integrationInclusivity ConnectednessNarrative |
| RESOURCES | Interactive whiteboard, Internet, metalanguage signage, paper,dice, pens and textas, board games, recording template for game, Computers,”Never ever” book template, coins, recording template for heads/tails coin toss. |

 **TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| **☐Likely or not?**The teacher prepares cards with ‘always’, ‘likely’, ‘unlikely’ and ‘never’ on them and orders them on the floor. Pose the question:‘How likely is it that someone in another class has a vegemite sandwich today?’Students stand behind the chance card that they think is the best answer to the question and explain their reasons. Students survey one or more classes and find out whether their prediction was accurate.☐Explain to childrenIt is possible to predict the outcome of an event. There are many experiments that can be done to show the chance of things happening. Some common experiments include:throwing (1 or more) dice* tossing (1 or more) coins
* flicking a coloured spinner
* selecting playing cards from a pack
* selecting coloured marbles from a bag
* taking coloured socks from a drawer

It may be possible to predict the chance of something happening when there is a range of possible outcomes. Complete an experiment and review how to tally results with children☐**Language:**might, certain, probably, likely, unlikely, possible, impossible, predict, maybe, might not, will happen, will not happen, can happen, cannot happen, good chance, poor chance, fair, not fair, could happen, never ‘I don’t think that will ever happen.’ ‘It could possibly rain tomorrow. ’It might happen. | LEARNING SEQUENCERemediationS1 or Early S2 | * **Questioning**

Students are encouraged to ask questions about the likelihood of events happening eg ‘Is Mr Benton coming up to visit our class?’, ‘Is Stan’s mum going to have a baby boy or girl?’ *Extension:* Students write questions using the terms ‘likely’ and ‘unlikely’. |
| LEARNING SEQUENCES2 | * **Expected Result**

Students are asked to predict the result of 10 tosses of a coin.Possible questions include:. What outcomes can occur when the coin is tossed once?. What is the likelihood of tossing ‘tails’ on any one toss?. How many ‘heads’ and ‘tails’ do you expect there to be?. Did the expected result and the actual result match?. Did tossing ‘tails’ on the previous toss increase the likelihood of tossing ‘tails’ on the next toss? Why?. Which outcome, ‘heads’ or ‘tails’, is more likely?Students are encouraged to suggest how the experiment could be improved and implement their plan. This activity could be extended to tossing two coins. |
| LEARNING SEQUENCEExtension Late S2 or Early S3 | * **Gathering Data**

Students choose a simple board game to play with a group of 4. Each student makes their way around the board and as they do they record the throws and the type of throw (either a 2 or 6 etc) they threw to move each step. At the end of the game the students answer questions and convert results into a bar graph using the Excel program . |
| **EVALUATION & REFLECTION** | Prepare a graph for children to interpret.Student engagement: Achievement of outcomes:Resources: Follow up: |

* All assessment tasks should be written in **red** and planning should be based around developing the skills to complete that task.
* Assessment rubrics or marking scale should be considered