**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: **3** | 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 | | |
| ASSESSMENT FOR LEARNING(PRE -ASSESSMENT) | | * Worksheet :   Naplan test Yr 3 Number 2007 q 34, Yr 5 Number 2007 q 48 | | |
| WARM UP / DRILL | | * **Skwirk IWB <http://www.skwirk.com.au/index.php?option=com_class&view=contents&type=1&layout=medialist&cattitle=Chance&catid=781>**   **Predicting and recording how many outfits can be made from a set number of pants and tops of different colours.** | | |
| 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. | | |
| 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, worksheets, paper and textas for board games, events for lesson 1 to  categorise, coloured pegs, bucket, counters, number boards 1-20, | | |

**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. They 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 | * **Certain, Uncertain**   The teacher writes headings ‘Certain’ and ‘Uncertain’ on a sheet of paper.  In pairs, students are asked to list under the headings things that they think are sure to happen (‘certain’) at school on the day and then things that they think are not sure to happen (‘uncertain’) at school on the same day. Students discuss their findings.  *Variation:* Extend the activity to include other categories using the language of chance  eg impossible, uncertain, certain. |
| LEARNING SEQUENCES2 | * **Pegs**   In groups, students are given a bucket of pegs. The bucket could have 10 blue and 10 yellow pegs. Students are asked to sort and count the pegs and then return them to the bucket. Students are asked to predict all possible combinations of pegs if two pegs are randomly taken from the bucket. They select one possible combination and, without looking, take two pegs out of the bucket. They see if the actual result matches their predicted result and discuss. Students repeat the selection several times returning the pegs to the bucket after recording their selection. They write a description of the activity explaining their observations.  **Investigation:** Invent a board game where chance determines the outcome with the roll of a dice or the spin of a spinner (Based on characters from Literacy Study or other KLA area) |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * **Removing Counters**   Students make a game board containing the numbers 1 to 12. In pairs, each student is given 12 counters to place on any of the numbers on their game board. Students can choose to place more than one counter on particular numbers and no counters on others. Students take turns to roll and add two dice. If they have placed counters on the total obtained, they remove them. The first player to remove all their counters from their game board wins. Students discuss the likelihood of rolling certain totals.  What is fair? Predictions Cars on the Curve game http://www.beaconlearningcenter.com/Lessons/Lesson.asp?ID=216  Assessment/activity Board of Studies-Assessment Resource Centre(ARC) – Stage 2 Maths “Is it fair?” |
| **EVALUATION & REFLECTION** | 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