**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK:  1 | STRAND: Probability and Data | **SUB-STRAND:****Chance 1**  | **WORKING MATHEMATICALLY:** **MA3-1WM**  |
| OUTCOMES: MA3-19SP | Conducts chance experiments and assigns probabilities as values between 0 and 1 to describe their outcomes. |
| **CONTENT:**  | **Recognise that probabilities range from 0 to 1.** \* Order commonly used chance words on an [interval](http://syllabus.bos.nsw.edu.au/glossary/mat/interval/?ajax" \t "_blank" \o "Click for more information about 'interval') from zero ('impossible') to one ('certain'), eg 'equally likely' would be placed at one half or 0.5 |
|  | * Pre- assessment activity- Children are to work independently. Give each child a probability line marked 0 to 1. Ask students to record a series of events on the line from 0 (impossible) to 1 (certain).
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| WARM UP / DRILL | * Play Heads and Tails. Students have to put their hands on their head or their tail. The teacher flips a coin. If Heads are flipped all the student with their hands on their Tails must sit down. If Tails are flipped then all students with their hands on their Heads must sit down. Last person standing is the winner.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | * A student had to be chosen from Ann’s class. There were 11 boys and 11 girls in total

in her class. The teacher wrote their names on separate pieces of paper, and then took out one of the papers without looking. What is the probability of selecting a boy? |
| 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
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| RESOURCES | Warm up activity: coin to flip, i-pads to record events, IWB , Chance word cards and probability lines, *Pigs Might Fly* by Emily Rodda, blank spinner and recording sheets.  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * **Explicitly teach** and review the metalanguage of chance and how to record likelihood of events on a probability line. The teacher will draw a probability line on the board from 0-1. Discuss chance words the students may already know and put them on the line. Use 0.5 or ½ to show equal chance.
* Ask:

What events the children can think of that would be impossible? Certain? Likely? Unlikely? Equal chance?* **Define and reinforce metalanguage** used in the unit eg. Chance, event, likelihood, certain, possible, likely, unlikely, impossible, experiment, outcome, probability.
* **IWB-**

 Use flashcards with chance words on them to stimulate scenarios and probabilities.Use interactive die to explore the probability of rolling a certain number. Ask what would happen if we covered up the 6 and made it another 2? **Read** *Pigs Might Fly* Emily Rodda | LEARNING SEQUENCERemediationS2 or Early S3 | * Describes and compares chance events in social and experimental contexts.
* **Maths Builder** http://www.scootle.edu.au/ec/viewing/S5111/index.html

Investigation: View weather forecast in local paper. Children will predict the likelihood of conditions (sunny, showers, windy, storms or overcast) over the week. Record results and reflect on predictions. |
| LEARNING SEQUENCES3 | * **Chance Words**- Children are given the following chance words on cards: always, never, sometimes, often, never, might, equal chance, probably, certainly, possible, mostly. In groups the students are asked to order them on the number line from 0 (impossible) to 1(certain). Students compare with other groups and discuss.
* **What are the chances**- Think of events for the following chance words and record them on i-pad or audio for the class: Impossible, Unlikely, Equal chance, Likely, Certain.
* **Investigation**-

Each child is given a spinner they are asked to match the likelihood of a chosen colour to one of the chance words and decimal fractions. Test predictions and compare answers with classmates. * Assessment- Use a blank spinner. Children are asked to colour the 8 segments using only 6 colours. Children are then asked to match a chance word/fraction to the likelihood of each outcome. Ask students to justify their answer.
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| LEARNING SEQUENCEExtension Early S4 | * Extension- Studdyladder.com.au: Chance 0 to 1.
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| **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.