**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 5 | STRAND: Measurement & Geometry | **SUB-STRAND:** **Time 2** | **WORKING MATHEMATICALLY: MA3-2WM** |
| OUTCOMES: MA3-13MG | **Uses 24-hour time and am and pm notation in real-life situations, and constructs timelines** |
| **CONTENT:**  | **Interpret and use timetables (ACMMG139)*** Use bus, train, ferry and airline timetables, including those accessed on the internet, to prepare simple travel itineraries
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Fire off ten questions and challenge the students to answer as quickly and accurately as possible based around the concept of time.
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| WARM UP / DRILL | * Students estimate the length of time taken to complete specified activities. Discuss the difference between estimated time and actual time.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | A train leaves at 09:45 and arrives at 15:46. How long does the journey last? |
| 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 |  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| **Whole Class discussion*****Planning a timetable*** for **a day** at school camp.* Identify which activities are compulsory and how long they take. You will need to consider the following in your timetable, which will be presented using the 24 hr clock.
* Allow for eating and cleaning up time.

Consider the following in the timetable:Departure time from schoolTime of arrival at campWhole group meetingSetting up time (dorms)Compulsory activity (see below)Meal breaks including morning tea, lunch, afternoon tea, dinner and supper.Free timeShowersNight time activityLights out* Compulsory activities: high ropes, canoeing, mountain bike riding, orienteering. Each group completes one compulsory activity on Day 1.

 * Students should be able to communicate using the following language:- timetable, timeline, scale, 12-hour time, 24-hour time, hour, minute, second, am notation, pm notation.
 | LEARNING SEQUENCERemediationS2 or Early S3 | Three trains travel from City Station to Farmland Station on the same morning. The Express leaves City 10 minutes after the All Stations train, but arrives at Farmland 10 minutes before it.The All Stations takes 50 minutes to reach Farmland and arrives at 10:30.The Goods train leaves 20 minutes before the All Stations and arrives at Farmland 20 minutes after the Express. * Work out the timetable. That is; what time does each train leave City Station and what time does each train arrive at Farmland Station?
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|  | LEARNING SEQUENCES3 | * **Investigation: Pair/Independent Activity**

Following from whole class discussion1. Calculate the total time from the time you leave school until lights out.
2. Calculate the time taken for the following: travelling in bus; activities; free time including showers and settling in time; eating and cleaning up; other.
3. Produce a timetable and present it in a table format using a Word Document or Excel spread sheet.
4. Show the time allocations for each category in either a bar or pie graph ie travel time, eating time etc
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|  | LEARNING SEQUENCEExtension Early S4 |  |
|  | **EVALUATION & REFLECTION** |  |

* 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.