**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 4 | STRAND: Measurement & Geometry | **SUB-STRAND:** **Time 2** | **WORKING MATHEMATICALLY: MA3-1WM**  |
| 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)*** Read, interpret and use timetables from real life situations, including those involving 24 hour time.
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Display a train timetable. Question students about different scenarios.
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| WARM UP / DRILL | * Have students make a clock face with the twelve hour markings shown in the inner circle and the twenty four hour markings on the outer circle. Use this to convert between am/pm notation and 24 hour time.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | My bus leaves Happyville Public School at 3:10pm. It stops 3 times for 2 minutes each to set down and pick up passengers along the way. The actual time spent driving is 20 minutes. What time will I arrive at my destination? |
| 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 | Maths with Travel and Transport p34<http://www.education.nt.gov.au/__data/assets/pdf_file/0017/5291/maths_with_travel_transport.PDF> |

**TEACHING AND LEARNING EXPERIENCE**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * Explicitly communicate lesson outcomes and work quality.
* Class discussion on why we use timetables and what type of questions need to be asked to collect appropriate data.
* View a variety of timetables – see page 34 *Maths with Travel and Transport* for activities (guided/independent activity)
* Provide students with other opportunities to collect data on their own interests.
* 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 | * ***Activity 1***

Students collect a variety of television guides from different sources such as magazines, newspapers and the internet. They:* Identify and discuss features that are common to the different television guides.
* Use the television guides to plan an evening of television viewing and record their plan in a table.
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| LEARNING SEQUENCES3 | * **Investigation 1**

page 34 *Maths with Travel and Transport* for activities (guided/independent activity)* **Investigation 2**

Collect a variety of TV guides or timetables from magazines. Compare and discuss how they are similar and different. Select start and finish times for a TV show or event (or arrival and departure times if using a transport timetable). Discuss strategies that can be used for calculating the duration of a chosen event(s), e.g. Calculate the total number of whole hours that have elapsed, calculate and add the total number of minutes that have elapsed, including those involving 24 hour time.* Assessment: Students pose a series of questions, based on the information in the timetable for their peers.
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| LEARNING SEQUENCEExtension Early S4 | * Add and subtract time mentally using bridging strategies, eg from 2:45 to 3:00 is 15 minutes and from 3:00 to 5:00 is 2 hours, so the time from 2:45 until 5:00 is 15 minutes + 2 hours = 2 hours 15 minutes
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| **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.