**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | STRAND: Measurement & Geometry | **SUB-STRAND:** **Time 1** | **WORKING MATHEMATICALLY:** **MA3-1WM** |
| OUTCOMES: MA3-13MG | **Uses 24-hour time and am and pm notation in real-life situations, and constructs timelines** |
| **CONTENT:**  | **Determine & compare the duration of events.*** Select an appropriate unit to measure a particular period of time
* Use a stopwatch to measure and compare the duration of events
* Order a series of events according to the time taken to complete each one
* Use start and finish times to calculate the elapsed time of events, eg the time taken to travel from home to school
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * ***Quiz-*** Students given points for answering questions on time
* Students given short mental problems related to the time it takes to complete a task, then record no of minutes/hours in workbook. Points given for each correct answer.
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| WARM UP / DRILL | * ***Around The World***
* ***What’s the time Mr Wolf?***
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | David has a lot of homework to do. He starts his reading homework at 3:45 and ends at 4:30. Then he does math from 4:30 until 5:00. Lastly, he studies for a science test from 5:00 - 5:30. How much total time did David spend on his homework and studying? |
| 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 | ***Stop the Clock*** - <http://resources.woodlands-junior.kent.sch.uk/maths/measures.htm>IWB Notebook on time: <http://www.tesaustralia.com/teaching-resource/Telling-the-time-7000007/>Game Cards downloadable from ***tesaustralia*** |

**TEACHING AND LEARNING EXPERIENCES**

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| --- | --- |
| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * ***Language:*** Students should be able to communicate using the following language: 12-hour time, 24-hour time, time zone, daylight saving, local time, hour, minute, second, am (notation), pm (notation).
* ***Explicit Mathematical Teaching***

Australia is divided into three time zones. Time in Queensland, New South Wales, Victoria, and Tasmania is Eastern Standard Time (EST); time in South Australia, and the Northern Territory is half an hour behind EST; and time in Western Australia is two hours behind EST. The terms ‘am’ and ‘pm’ are used only for the digital form of time recording and not with the ‘o’clock’ terminology. The abbreviation am stands for the Latin words ‘ante meridiem’ which means ‘before midday’. The abbreviation pm stands for ‘post meridiem’ which means ‘after midday’. Midday and midnight need not be expressed in am or pm form.‘12 noon’ or ‘12 midday’ and ‘12 midnight’ should be used, even though 12:00 pm and 12:00 am are sometimes seen. It is important to note that there are many different ways of recording dates, including abbreviated forms. Different notations for dates are used in different countries, i.e. 8th* ***Language***

The words 'minute' (meaning 'small') and 'minute' (a time measure), although pronounced differently, are really the same word. A minute (time) is a minute (small) part of one hour. A minute (angle) is a minute (small) part of a right angle. | LEARNING SEQUENCERemediationS2 or Early S3 | * Each child takes a turn doing something for one minute (draw a picture, jump, write their name over and over etc.) and the other child times by watching the second hand do a full revolution.
* **Investigation**

 Students time activities in class that might take 60 seconds (1 minute) 2 minutes, 5 minutes, etc. then practise estimating how long a task has taken. During the activity watch the second hand, minute hand and hour hand make revolutions* Children record : 60 minutes = 1 hour (long hand 1 revolution) 60 seconds = 1 minute (second hand 1 revolution)
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| LEARNING SEQUENCES3 | * ***Investigation: Timing Experiments***

Students estimate and order the amount of time selected events will takeand then check by timing the events with a stopwatch eg❚ the time for a ball dropped from the top floor of a building to reach the ground ❚ the time for a car seen in the distance to reach a chosen point. Students record the times in a table and order the events.* ***Stopwatches***

Students read digital stopwatch displays showing time from left to right in minutes, seconds and hundredths of a second. Students use stopwatches to time various events and order them according to the time taken. Students discuss cases where accurate timing is important eg athletics, swimming, television advertisements.* *Students research the world records of different sports. They then record and order them.*
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| LEARNING SEQUENCEExtension Early S4 | * ***Solve problems involving international time zones***

Compare times in, and calculate time differences between, major cities of the world, eg 'Given that London is 10 hours behind Sydney, what time is it in London when it is 6:00 pm in Sydney?' Interpret and use information related to international time zones from maps (Problem Solving) Solve problems involving international time as it relates to everyday life, eg determine whether a particular soccer game can be watched live on television during normal waking hours (Problem Solving)  |
| **EVALUATION & REFLECTION** | Student Engagement: |

* 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.