**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | STRAND: Measurement and Geometry | **SUB-STRAND:** **Time 1** | **WORKING MATHEMATICALLY:** **MA2-1WM** |
| OUTCOMES: MA2-13MG | **Reads and records time in one-minute intervals and converts between hours, minutes and seconds** |
| **CONTENT:**  | **Tell time to the minute and investigate the relationship between units of time (ACMMG062)**\* Record in words various times shown on analog and digital clocks. |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Hold up cards with digital times on them. Ask children to write the time in words.
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| WARM UP / DRILL | * Counting by 5’s.
* **Game**: Explain that the classroom is going to represent a clock. Front of room is 12, back of room is 6, right of room is 3, left of room is 9. **Show digital card** with either o'clock, half past, quarter to or quarter past. Students have to face the correct direction. If students turn the wrong way they must sit down.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | It is 9 o’clock in the morning. The big hand has rotated around the clock twice. How many minutes have past? |
| 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 | <http://www.schools.nsw.edu.au/learning/7-12assessments/naplan/teachstrategies/yr2012/index.php?id=numeracy/nn_meas/nn_meas_s2c_12>Teacher clock, clocks- 1 between 2 or small group, matching cards- digital times and words. |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * **Reading Analog Clocks**

The teacher presents the following scenario: ‘Madeline is very good at reading digital clocks. All of the clocks in her house are digital. For Madeline’s birthday her grandparents bought her an analog wristwatch but she is having trouble reading the time.’ Students are asked to write to Madeline, helping her to tell the time with her new watch. They are encouraged to use diagrams as part of their response.* Using teacher clock, provide examples of the long hand pointing to each number 12, 1, 2, 3, 4, 5 and 6 in random order and have students count by fives to give the number of minutes past the hour. Record on board the time in words.
* Tell students *If it is thirty minutes after the hour we can also say half past.*
* Combine the short hand and long hand by asking the students to identify the hour and the number of minutes after or past the hour. Include examples of o'clock and examples of the minute hand pointing to a number. Write the times on the board in words and digital.
* *NB: Teaching students to read the time by this method makes it easier to teach minutes after the hour when the minute hand is 'off a number'. With the bulk of time information being presented in digital form it is not a real problem that students read analogue time as 'thirty minutes after/past**five' (NAPLAN –Teaching Strategies)*
 | LEARNING SEQUENCERemediationS1 or Early S2 | * In small groups, students play ‘quarter past’/ ‘quarter to’ bingo.
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| LEARNING SEQUENCES2 | **Investigation*** Students work in pairs to provide examples of the long hand pointing to each number to show various minutes around the clock face. Have students count by fives and ones to give the number of minutes past the hour/to the hour. Write down times their partner makes made using words. Start with ‘past’ times and then progress to ‘to’ times.
* Students match cards – times in words to digital times.
* Assessment – Matching written times to digital times
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| LEARNING SEQUENCEExtension Late S2 or Early S3 | * Select start and finish times for a TV show or event (or arrival and departure times if using a transport timetable).
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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.