**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 4 | STRAND: Measurement and Geometry | **SUB-STRAND:** Time 2 | **WORKING MATHEMATICALLY:** MA2-1WM, MA2-2WM |
| OUTCOMES: MA2-13MG | | **Reads and records time in one-minute intervals and converts between hours, minutes and seconds** | | |
| **CONTENT:** | | **Convert between units of time (ACMMG085)**  \* Convert between units of time and recall time facts, eg 60 seconds = 1 minute, 60 minutes = 1 hour, 24 hours = 1 day  \* Explain the relationship between the size of a unit and the number of units needed, eg fewer hours than minutes will be needed to measure the same duration of time (Communicating, Reasoning) | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Cut and Paste match up- include other examples  |  |  | | --- | --- | | 60 seconds | 1 minute | | 60 minutes | 1 hour | | 24 hours | 1 day | | | |
| WARM UP / DRILL | | * Jump for 60 seconds. Jump for 1 minute. Discuss what we just did! | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | A boy ran for 1 minute, another ran for 60 seconds and the last one skipped for 10 lots of 6 seconds. Who was active for the longest? | | |
| 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 | | 24 hour timeline, class display of time conversions, calendar, calculators | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Demonstrate converting between units of time60 seconds = 1 minute 24 hours = 1 day 365 days = 1 year 366 days = 1 leap year 12 months = 1 year TimeDiscuss: *How many hours are there in one day?* *How many hours from midnight to midday?* A day starts at 12 o'clock at night (midnight) and finishes at 12 o'clock (midnight) 24 hours later. Have students find 4 o'clock on the table above. Did they find two times for 4 o'clock? Ask what activities they might be doing at: ~ 4 o'clock in the morning.  ~ 4 o'clock in the afternoon. Repeat for other pairs of times on the daily timeline.  **How Many Days?** The teacher poses the problem ‘How many days have you attended school this term/year?’ Students calculate a solution. Students are asked ‘ How many other ways can you express this information?’ e.g. in hours, in minutes. Students use a calculator to check their answers. This activity could be extended by asking ‘How many hours have you spent at recess and lunch this week?’ Students could record information in days, hours or minutes on a spreadsheet and then draw a graph. **Discuss the relationship between the size of the unit and the number of units needed e.g. fewer hours than minutes will be needed to measure the same duration of time.** | LEARNING SEQUENCERemediationS1 or Early S2 | * Record the ‘start’ time and ‘end’ time of at least two favourite TV shows on an analogue and/or digital clock. What is the duration of each show? Which show is longest/ shortest? |
| LEARNING SEQUENCETimetable | * **Investigation**   Display this timeline which shows the daily activities for Jarryd, a school student. In pairs, students read the timeline for his day, then answer the questions. *What does Jarryd do at 6 o'clock in the morning? What does Jarryd do at 7 o'clock at night? How many hours/ minutes between these times?* *Is this a school day, a weekend or a holiday? How do you know?* *What is one activity, which is not listed, that Jarryd could be doing between 7 o'clock and 8 o'clock in the morning?* *There is a large blank space at the beginning and the end of this 24-hour* *timeline. What would Jarryd be most likely doing then? How many hours/ minutes/ seconds did he do it?* *If this was your 24-hour timeline what are some changes that you would need to make? It may be a change in a time or an activity*.   * Assessment: Are they able to convert units of time –days/ hours/ minutes/ seconds. Redo pre test match up cut and paste. |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Have students make a clock face with the twelve-hour markings shown in the inner circle and the twenty-four markings on an outer circle. Use this to convert between am/pm notation and 24-hour time. |
| **EVALUATION & REFLECTION** |  |