YuMi Deadly Maths

Year 2 Teacher Resource:

MG – Clever calendars

Prepared by the YuMi Deadly Centre
Faculty of Education, QUT

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QUT

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ACKNOWLEDGEMENT

We acknowledge the traditional owners and custodians of the lands
in which the mathematics ideas for this resource were developed,
refined and presented in professional development sessions.

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Year 2 Measurement and Geometry

Clever calendars

Learning goal

Students will:

- use calendars for a variety of purposes
- explain that calendars can look different
- explain that Aboriginal peoples and Torres Strait Islander peoples may recognise different seasons
- explore examples of calendars for Indigenous people.

Content description

Measurement and Geometry – Time

- Name and order months and seasons (ACMMG040)
- Use a calendar to identify the date and determine the number of days in each month (ACMMG041)

Big idea

Measurement – time as sequence of time

Resources

Maths Mat, whiteboards, numbers, calendars, stories

Jane Christophersen, 2005, *My Home in Kakadu*, Broome, WA: Magabala Books, www.magabala.com
http://www.bom.gov.au/iwk/ (Teacher reference)
http://www.csiro.au/Organisation-Structure/Divisions/Ecosystem-Sciences/Indigenous-seasonal-calendars.aspx (Pictures of different tribes' calendars)
Katrina Germein, 1999, *Big Rain Coming*, Port Melbourne, Vic: Roland Harvey Books

Reality

Local knowledge

What are calendars? Discuss how we use calendars, e.g. writing dates for upcoming events, celebrations, appointments, start/end school, student discos. Refer to classroom calendar if applicable.

Read the story: *My Home in Kakadu*. Discuss the Six Seasons of Kakadu at the end of the story in relation to the calendar used in the local area.

Prior experience

Students discuss small and large amounts of time:

- *What do you use to keep track of time? What different units of time do you use?*
- *What do you do at different times?*
- *How can you measure time?*

Explore the seasons of summer, autumn, winter, spring.

Kinaesthetic

Discuss the four seasons and develop an action for each, e.g. summer – swimming, autumn – leaves falling, winter – shivering, spring – objects growing. Call out each season in order, then randomly, and have students do the appropriate action. Reverse: Teacher does the action and students call out the season.

Abstraction

Body

Use Maths Mat: Ask students to construct a calendar for a specific month e.g. March. What parts do you need? How do you know how many? Why are they grouped in sevens? How many groups of seven are there? What do we call these? Name the days of the week. Where will Day 1 go? Who has a birthday in March? What day could it go on? Have every student place a number and name on a day in the month of March. Can they self-correct or work with each other to do this? Invite other students to build on the ideas constructed. What day of the week is the last day of the month? What is the next month? Where will it begin? What will be the first day of April? In which season do March and April fall?

Place cards for the 12 months of the year in order on the ground. Have students who have birthdays in January through to December line up behind the appropriate card for their birthday month. Count and remember the number of students who have a birthday in the same month as yours.

Divide students into two groups. One group identifies one of the six Kakadu seasons of the Indigenous calendar and dramatises it from the website picture; the other group names and dramatises a conventional month/season. Consider local seasons and local names, e.g. summer/winter, dry/wet, windy season, etc.

Reverse: Teacher dramatises an Indigenous/conventional season and students name the season.

Hand

Do the following:

- Have students construct calendars with a range of materials/media.
- Have them place significant events on their calendar.
- Have students study a variety of standard calendars and make comparisons.
- What do they discover? Do all calendars use the same conventions?
- Read a range of "calendar" stories.
- Explore seasonal activities.
- Students draw the seasons of the calendar used in their local area.

Mind

Close your eyes and imagine … winter. What do you see, feel, smell, do? etc.

In your mind, see, feel, smell, dramatise the weather in different seasons.

Students visualise the various seasons, Kakadu, summer, autumn, winter, spring, as the teacher nominates them.

Creativity

Students make a personal calendar that represents conventional months and seasons and/or Indigenous seasons.

Mathematics

Language/ symbols

calendar, days, months, year, seasons, today, tomorrow, yesterday, week, weekend, wet, dry, windy

Practice

1. Develop a class birthday chart for the months of the year with a top row merging to display the seasons each identified by a colour. Extend the season colour to the relevant months.
2. Have students construct a calendar in their books, read, write and say the labels for month, days, season. Have them place significant events on the calendar and tell/ discuss "time" stories. Identify month commonalities and differences. Identify and examine season sequences.
3. Discuss and explore calendars.
    - Consider the various examples of calendars, e.g. familiar and Indigenous.
    - Explain that calendars often connect time to the local seasons, weather patterns and natural events.
    - Identify similarities and differences:
        - between examples of calendars
        - between Indigenous and familiar calendars.
    - Discuss uses for indigenous calendars.

Connections	Have students study a variety of standard calendars and make comparisons. *What always remains the same?* What do they discover? Identify number of days in a year, a season, a month, a week. *Do all calendars use the same conventions?* Compare Aboriginal and conventional calendars with the Torres Strait Islander Seasonal Calendar on the QSA website: Torres Strait Islander Seasonal Calendar http://www.qsa.qld.edu.au/downloads/approach/indigenous_read011_0801_2.pdf

Reflection

Validation	Students identify when and how they use calendars in their world; e.g. day of the week they have sport practice/dancing lessons after school; date for a friend's birthday party. *What is something we do that takes about a day/week/month?*
Application/ problems	Provide applications and problems for students to apply to different real-world contexts independently, e.g. *I heard there is supposed to be bad luck on the 13th, especially Friday the 13th. What months have a Friday the 13th this year?*
Extension	**Flexibility**. *What is something you do in summer that you do not do in any other season?* **Reversing**. Students are able to point to a calendar and identify the day, date, season and reverse by saying a day, date, season and locating these on a calendar (calendar → language; reverse language → calendar). **Generalising**. *Calendars and seasons help us to organise our thinking and planning. People use them to record events and plan their activities. They are reminders of what we need to do.* **Changing parameters**. *Calendars are good for days, weeks, months and years, what do we use to measure smaller units of time?* *What different types of calendars are there for different purposes?* Have students research calendars used in other cultures. *Do they work the same way?* Investigate: *Does everyone have the same season at the same time? Does everyone have seasons?* *Are the seasons changing? Is it hotter, wetter?* etc. Discuss the effect of global warming.

Teacher's notes

- Use a language-based and visual approach to embed Aboriginal and Torres Strait Islander perspectives in this lesson.
- Students need to be taught the skill of visualising: closing their eyes and seeing pictures in their minds, making mental images; e.g. show a picture of a kookaburra, students look at it, remove the picture, students then close their eyes and see the picture in their mind; then make a mental picture of a different bird.
- Suggestions in Local Knowledge are only a guide. It is very important that examples in Reality are taken from the local environment that have significance to the local culture and come from the students' experience of their local environment.
- Useful websites for resources: www.rrr.edu.au; https://www.qcaa.qld.edu.au/3035.html
- Explicit teaching that **aligns with students' understanding** is part of every section of the RAMR cycle and has particular emphasis in the Mathematics section. The RAMR cycle is not always linear but may necessitate revisiting the previous stage/s at any given point.
- Reflection on the concept may happen at any stage of the RAMR cycle to reinforce the concept being taught. Validation, Application, and the last two parts of Extension should not be undertaken until students have mastered the mathematical concept as students need the foundation in order to be able to validate, apply, generalise and change parameters.