

# YuMi Deadly Maths

Year 1 Teacher Resource:

## **MG – My special time**

Prepared by the YuMi Deadly Centre  
Faculty of Education, 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 1 Measurement and Geometry

### My special time

<b>Learning goal</b>	Students will: <ul style="list-style-type: none"><li>• tell time to the hour and half-hour</li><li>• match analog and digital time representations.</li></ul>
<b>Content description</b>	Measurement and Geometry – Using units of measurement <ul style="list-style-type: none"><li>• Tell time to the half-hour (<a href="#">ACMMG020</a>)</li></ul>
<b>Big idea</b>	Measurement – time – notion of unit
<b>Resources</b>	Rope (3.5 m – 5 m long), thin masking tape, velour cords, digit cards 1–12, digit key-ring cards 1–12, 00 and 30 cards, paper plates, cardboard, felt pens, scissors

### Reality

**Local knowledge** Discuss special times in the local environment, e.g. sunrise, sunset, seasonal times. Other special times: time we get up, go to school, have lunch, watch our favourite TV show, go to bed. Look at the clock on the wall to discuss its features: *What is the purpose of the hour/minute hand? What does it tell us? What does a clock help us to do? Has anyone seen another type of clock? What does it look like? What lasts about a half hour?* [TV show; music lesson].

**Prior experience** Check that students understand the concepts of time and also the concept of half – half an apple, half an orange, half an hour.

**Kinaesthetic** *Today for our deadly start we are going to have fun with telling the time. We will use this rope laid out in a straight line.* Ask students to predict where half of the rope is. A student stands at predicted halfway point. *How will we check whether that is correct?* [Fold/take one end of the rope back to the other end of the rope.] Mark the half position with thin masking tape.

Make a circle with the rope, keeping the half in line with the two ends. With a long piece of cord, demonstrate that we can cut the circle in halves from where the two ends meet back to the halfway mark. Position 12 students around the circle holding digit cards 1–12. *What is this starting to look like?* Stand one student in the centre who holds a long velour cord and another shorter velour cord. Two other students will take an end of each to be able to move the “hands” of the clock forwards. Both students stand at (or in line with) 12. *What time is this?* [12 o'clock] The student with the shorter cord moves from being in line with 12 to being in line with 1, to 2, and so on in a clockwise direction. At each number, students say the time, *12 o'clock, 1 o'clock, 2 o'clock* etc. After all the o'clocks have been completed, ask, *Where is the big hand pointing when we say the time of the hour?* [12] *If the big hand moved and was pointing to the 6, how far around the clock has it gone?* [halfway] *What do we say when we get halfway around the clock?* [Half past 1, 2, 3 etc.] Emphasise that we have travelled halfway around the clock (some students may relate to the fact that 6 is half of 12). Each time the long minute hand gets to the 6 at halfway, students say *half past 1* etc.

Next to the circle clock, make a rectangle with a long piece of cord. One student stands in the rectangle and holds the hour key-ring cards, 1–12, and standing beside them another student holds both the 00 and 30 cards. This represents a digital clock.

Students move the hands of the analog clock or corresponding numbers in the digital clock to show all the hour times, and corresponding half-hour times and finally random hour/half-hour times, saying the times as they move the velour hands or the digit cards.

### Abstraction

**Body** Divide the classroom into four quadrants, representing north, south, east, west. At the midpoints of each wall, sticky tape the numbers 12, 3, 6, 9 to represent the numbers on a

clock face. Students stand at their desks and use their left hand with elbow close to their waist as the hour hand and their right hand outstretched as the minute hand to make hour and half-hour times with their bodies.

Play “What’s the time Mr Wolf?”: The teacher stands some distance in front of the students (all face in the one direction). The teacher shows some special times with analog and/or digital times to the hour or half-hour. Students are in one horizontal line behind the teacher. As the teacher displays a random time, the students read and call out the shown time; they move a big step forward for every hour and a little step for the half hour, e.g. 4:30 means 4 big steps and a little step. The game keeps going until the teacher shows 12:00, dinner time, *Now I’m going to eat you*. The teacher (or student), turns and tries to catch as many students as possible. The game may be repeated to cover as many times as possible.

<b>Hand</b>	Students make an analog clock using cardboard paper plates that they number 1–12 around the circumference and pin card clock hands in the centre. They also make a cardboard digital clock with two sets of two horizontal parallel slits, separated by a drawn colon, one set of slits for the hours and the other for the minutes, 00 and 30, to slide through (am and pm can be denoted by a dot). Students show hour and half-hour times on both the analog paper plate and cardboard digital clocks.
<b>Mind</b>	Students visualise times called randomly by the teacher. With eyes still closed, they position their arms to show some given analog times. Reverse: Students open their eyes and say the time that the teacher is modelling in an analog representation (remember to reverse arms – left arm is the minute hand and right arm is the hour hand).
<b>Creativity</b>	Students design a poster that shows and records, either analog or digital or both, the time of the special times in the day for them with the appropriate activity.

## Mathematics

<b>Language/symbols</b>	time, clock, analog, digital time, hour, minute, hour hand, minute hand, o’clock, half, half-hour, half past, clockwise, long, longer, short, shorter, movement of hands, forwards
<b>Practice</b>	<ol style="list-style-type: none"> <li>1. Using the analog and digital clocks they have made, students in pairs test one another to make a given time.</li> <li>2. Reverse: Display an hour or half-hour time/s and draw activity/s that could be happening at the time/s.</li> <li>3. Match analog faces with the corresponding digital times.</li> </ol>
<b>Connections</b>	Compare hours in a day to days in a week, weeks in a month and months in a year. Make the connection to the fraction, half, regarding both the minute and hour hands: <i>If the minute hand is on the six, the hour hand is halfway between two hour numerals; digital time shows :30 at half past (half an hour) and :00 for the full hour (o’clock).</i>

## Reflection

<b>Validation</b>	Students look at time in their world and discuss things they can do that take about a half-hour and things that take about an hour. Map their day by listing times for breakfast, lunch, dinner, bed, favourite TV show, and show them on analog and digital clocks.
<b>Application/problems</b>	Provide applications and problems for students to apply to different contexts independently, e.g. read the time from the class clock as students come in or go out to breaks or to specialist lessons.
<b>Extension</b>	<b>Flexibility.</b> Students are able to read and show both analog and digital time, understanding that half past nine is the same as nine thirty.

**Reversing.** Go from:

- language to making the time on the clock to activity involved
- time on the clock to language to activity involved
- given activity to language to making time on the clock.

**Generalising.** *Time keeps on going forward. Time never stops. It is important to make good use of our time.*

**Changing parameters.** *Where would the minute hand be if we wanted to show quarter past the hour, quarter to the hour? How did people tell the time before clocks were invented?*

## Teacher's notes

- Students need to understand that as the minute hand is moving quickly around the clock from one o'clock to the next o'clock, the hour hand is slowly moving from one number on the analog clock face to the next. At half past the hour, the minute hand is halfway round the clock at 6, but the hour hand is also halfway between one hour and the next. This needs to be represented by moving both hands when the time is half past the hour.
- Key-ring cards are made by laminating individual digit cards 1–12, placing them in order behind one another and punching two equidistant holes in each card. Then connect the cards using a key ring for each of the two holes so that the digit cards may be flipped over to display the required digit.
- 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](http://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.