

# 1. Constructing a Timeline

## 1.1 Objectives

- Understand the nature and origin of time
- Reinforce that the method of recording time is not decimal
- Understand the passage of time and the sequence of events
- Students read, record and calculate with 12-hour time, and interpret calendars and simple timetables related to daily activities. (M3.2)
- Relate that understanding to a graphical representation of time

## 1.2 Required Materials

- Ruler & coloured pencils
- Hypothetical sequence of events
- Blank Timeline (provided to students)
- Network access and data projector
- Go Maths Student Journal 3B

## 1.3 Program

Lesson Element	Time
<ul style="list-style-type: none"> <li>➤ Introduce timelines and display lesson timeline.</li> <li>➤ Appoint a timekeeper.</li> </ul>	5
<ul style="list-style-type: none"> <li>➤ General discussion. How is time defined? What is a year? Show Earth/Sun model. How many days in a year? What about leap years? How many hours in a day? Why? Show meridian image &amp; discuss Greenwich.</li> </ul>	8
<ul style="list-style-type: none"> <li>➤ Handout blank timeline with hypothetical sequence of events &amp; task questions.</li> <li>➤ Go through slideshow with students following and filling in blank timeline</li> </ul>	8
<ul style="list-style-type: none"> <li>➤ Students to use completed timeline to answer questions.</li> <li>➤ Students who finish before others commence the timeline on p 90 of Go Maths</li> <li>➤ Continue with slideshow to reveal solutions</li> </ul>	10
<ul style="list-style-type: none"> <li>➤ Reflection - Minutes &amp; seconds - is there any thing smaller? The official definition of a second - 32,768 oscillations of a quartz crystal. How small is the smallest unit of time?</li> </ul>	5
<ul style="list-style-type: none"> <li>➤ Go Maths p90</li> </ul>	

## 1.4 Reflection

Excellent interest and enthusiasm around the introductory discussion. The variety of material served well to keep the boys engaged throughout. Ran out of time for the reflection at the end but completed the main exercise. Some mistakes in the slideshow were distracting but were overcome. Failed to collect the worksheets at the end and so have no evidence to support my feeling that almost everybody "got it".

## 2. Multiplying Decimals

### 2.1 Objectives

- Introduce the role of the decimal point in multiplication sums
- Reinforce place value for tens, ones, tenths, hundredths etc
- Use place value to break multiplications into smaller components
- Demonstrate the importance of 1 as a transition number for multiplication

### 2.2 Required Materials

- Ruler & coloured pencils
- Multiplication work sheets
- Network access and data projector
- Go Maths Student Journal 3B

### 2.3 Program

Lesson Element	Time
<ul style="list-style-type: none"><li>➤ Introduction - discussion on the nature of 1 in product sums.</li><li>➤ Multiply by more than one, what happens? Multiply by less than one, what happens?</li></ul>	3
<ul style="list-style-type: none"><li>➤ Demonstrate on the board that <math>3 \times 26</math> is very similar to <math>3 \times 2.6</math>.</li><li>➤ Show Powerpoint example and hand out work sheet</li><li>➤ Emphasise the method in the example is to be emulated by the students</li></ul>	5
<ul style="list-style-type: none"><li>➤ Students complete the first work sheet</li></ul>	10
<ul style="list-style-type: none"><li>➤ Demonstrate the multiplication method on the board showing that the number of decimal places in the question is the same as that in the answer</li><li>➤ Show Powerpoint example and hand out work sheet</li></ul>	5
<ul style="list-style-type: none"><li>➤ Students complete the second work sheet</li></ul>	10
<ul style="list-style-type: none"><li>➤ Note and discuss what happens when two numbers less than one are multiplied</li></ul>	3
<ul style="list-style-type: none"><li>➤ Go Maths p96</li></ul>	

### 2.4 Reflection

Failed to emphasise the main point of the lesson - that place values can be separated to make multiplication sums easier. Fortunately the worksheet obliged the boys to separate place values and some good was inadvertently salvaged. Must learn to stay on topic instead of rambling on about pseudo related stuff. Ran out of time and failed to adequately cover the second part of multiplying numbers that are both less than one.

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### 3. Division of Whole Numbers

#### 3.1 Objectives

- Introduce the concept of division
- Reinforce that division is the opposite of multiplication and vice-versa
- Introduce imperfect division and remainders
- Demonstrate the importance of 1 as a transition number for division

#### 3.2 Required Materials

- Coloured pencils
- Division work sheets
- Network access and data projector
- Go Maths Student Journal 3B

#### 3.3 Program

Lesson Element	Time
<ul style="list-style-type: none"> <li>➤ Discuss Division. In English we say, "How many groups of 6 does it take to make 42?"</li> <li>➤ In maths we write <math>42 \div 6</math> The result of a division sum is called a quotient</li> </ul>	5
<ul style="list-style-type: none"> <li>➤ Show PP example</li> <li>➤ Complete Qs 5 through 8</li> <li>➤ Discuss remainders and imperfect division - from Q8</li> </ul>	8
<ul style="list-style-type: none"> <li>➤ Discuss - division undoes multiplication and multiplication undoes division</li> <li>➤ Demonstrate with calculators - and without</li> </ul>	3
➤ Complete Qs 9 through 16 after instruction	10
<b>Optional - if time</b> <ul style="list-style-type: none"> <li>➤ Demonstrate remainders and the notation</li> <li>Complete Qs 17 through 20</li> </ul>	8
<ul style="list-style-type: none"> <li>➤ Contrast division and multiplication with relation to greater &amp; less than 1. Divide by greater than one - quotient is smaller Divide by less than one - quotient is larger</li> </ul>	5
➤ Go Maths p97	

#### 3.4 Reflection

Some boys were way ahead of the topic others way behind. Almost everyone completed the worksheet, but many missed the division of two decimals. As Chris pointed out, I talk too much, especially when I have set a task. If they are supposed to be doing something then let them do it without continuing to natter on. Also, don't talk to the board. Write on the board, talk to the students. Must learn to have more challenging material ready for the clever ones to carry on with while I bring the stragglers along.

## 4. SOSE - Activity 5 - Colonists' Use of Resources

### 4.1 Objectives

- Introduce the concept of a concept "map"
- Enable students to make inferences about interactions between people and natural cycles. (SRP 3.1)
- Enable students to compare how diverse groups have used and managed natural resources in different environments. (PS3.1)
- Improve students performance in group activities.

### 4.2 Required Materials

- Coloured pencils
- Source material from syllabus
- Network access and data projector
- Concept map template/ starter (provided to students)

### 4.3 Program

Lesson Element	Time
<ul style="list-style-type: none"> <li>➤ Introduce and outline the activity</li> <li>➤ Display sample concept map</li> <li>➤ Collaboratively create concept map for Rugby ..... (10:56)</li> </ul>	20
<ul style="list-style-type: none"> <li>➤ Discuss Natural Resources - mining, fishing, hunting farming and forestry industries plus water, wind, soil, sun.</li> <li>➤ What does sustainable use mean? ..... (11:14)</li> </ul>	15
<ul style="list-style-type: none"> <li>➤ Brief discussion about groups and good group behaviour..... (11:17)</li> </ul>	3
<ul style="list-style-type: none"> <li>➤ Break - Game of buzz ..... (11:23)</li> </ul>	5
<ul style="list-style-type: none"> <li>➤ Move boys to the back of the room and give instructions about the use of the source materials. (Condense into a sentence or two of their own words)</li> <li>➤ Display groups on screen. Move boys into groups and give out source materials.</li> <li>➤ Move amongst boys to monitor, assist in and eventually to approve their output. .... (11:43)</li> </ul>	20
<ul style="list-style-type: none"> <li>➤ Brief discussion and clarification if necessary.</li> <li>➤ Display groups on screen.</li> <li>➤ Move boys into groups and give out concept map starter page.</li> <li>➤ Move amongst boys to monitor, assist and eventually to approve their output..... (12:03)</li> </ul>	20

### 4.4 Reflection

This went really well. Moving the boys to the back and then into groups maintained almost perfect order. Had a real eyeball to eyeball with Isaac's group and they went on to work very cooperatively, after a terrible start. By personal interaction I managed to get several known malingerers, notably Oscar Price to participate, even contribute. Mr Cawley very shrewdly stopped the groups of eight twice to make public comment about groups working well or not. After each time they resumed better than they had been. The output concept maps were of a good standard without being excellent. But from boys who didn't know what a concept was at commencement, I was pleased. More learning about group behaviour and concept mapping than about the actual content though.

## 5. SOSE - Activity 11 - Designing a Sustainable Future

### 5.1 Objectives

- Revise prior material regarding resource use and link to it
- Enable students to make inferences about interactions between people and natural cycles. (SRP 3.1)
- Students use knowledge of people's contributions in Australia's past to cooperatively develop visions of preferred futures. (TCC 3.3)
- Introduce students to "Think-Pair-Share"
- Reinforce acceptable group work behaviours.

### 5.2 Required Materials

- SOSE pad and pencils
- Source material from syllabus
- Network access and data projector
- Starter Tables (provided to students)

### 5.3 Program

Lesson Element	Time
➤ Introductory discussion - Resource use. Steer discussion toward the connection poor resource use and poor environmental futures.	5
➤ Remind students about good group work behaviours. Decide upon pairs moving students as necessary.	5
➤ For each item in the Table 1 have paired students consult briefly and complete their understanding of possible outcomes. ➤ Have some students read their answers and synthesise them into a combined answer in the on-screen table.	10
➤ Have the students work backwards. Now present desirable outcomes and for each item in the Table 2 have paired students consult briefly and complete their understanding of what is needed now to achieve those outcomes. ➤ Have some students read their answers and synthesise them into a combined answer in the on-screen table.	10
➤ Introduce Activity 12 - Brainstorm what students can do both individually and collectively	

### 5.4 Reflection

Ended up using one and a half lessons to complete about one half of the planned material. But I feel that what we did was of good quality. Good engagement of all boys with the paired arrangement ensuring that a component of cooperative learning was involved. It was difficult to regain their attention after each activity time but that improved as the lesson progressed - I feel that an aural signal would work well in the future. That they knew their work was being collated on screen and would form the basis of further work was a good incentive.

## 6. Adding & Subtracting Money

### 6.1 Objectives

- Emphasise real world application of working with money
- Students compare, order and represent whole numbers to 9 999 and common and decimal fractions, calculate cash transactions and describe other methods of payment. (N 3.1)
- Students identify and solve addition and subtraction problems whole numbers and decimal in context, selecting from computation methods, strategies known number facts. (N 3.2)

### 6.2 Required Materials

- Maths pad and pencils
- Source material from Text Book
- Network access and data projector
- Yellow paper to "Make a Dollar" (provided to students)

### 6.3 Program

Lesson Element	Time
<ul style="list-style-type: none"><li>➤ Introduction - personal anecdote about calculating change</li><li>➤ Introduce "Making a Dollar" - students who finish ahead of others move on to this.</li></ul>	5
<ul style="list-style-type: none"><li>➤ Rounding to the nearest dollar - usefulness in estimating</li><li>➤ Exercise 7B - 1 &amp; 2</li><li>➤ Work answers on the board</li></ul>	10
<ul style="list-style-type: none"><li>➤ Exercise 7B - 8 - In context estimating - then precise calculation</li></ul>	5
<ul style="list-style-type: none"><li>➤ Subtraction of money</li><li>➤ Exercise 7B - 6</li><li>➤ Work answers on the board</li></ul>	10
<ul style="list-style-type: none"><li>➤ Start on 7B - 7 &amp; 9</li></ul>	5
<ul style="list-style-type: none"><li>➤ See how many ways have been found to "Make a Dollar"</li></ul>	5

### 6.4 Reflection

Real life anecdote at the start was good, hooked the boys completely and captured them. Having the split task of "Making Dollar" went very well with a little competition between the fast finishers to see who could find the most combinations. I failed to explain the rounding tasks well enough in that several boys added precise sums then rounded at the end. Once again did not cover as much material as I expected.

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## 7. Adjectives, Adverbs and a Writing Task

### 7.1 Objectives

- Students are able to differentiate between adjectives and adverbs
- Students are able to creatively and correctly use adjectives in descriptive a passage
- Students are able to differentiate between similes and metaphors
- Students are able to creatively and correctly use similes and metaphors in a descriptive passage.

### 7.2 Required Materials

- Language pad and coloured pencils
- Source material from Terrace Writing Program
- Network access and data projector
- A3 worksheet (provided to students)

### 7.3 Program

Lesson Element	Time	846
➤ Introduction - descriptive methods - figures of speech and parts of speech.	5	851
➤ Discussion of adjectives and adverbs. ➤ Ensure that students know the difference	5	856
➤ Hand out the Humpback Whale Sheet and introduce. ➤ Students read and highlight the adjectives & action verbs ➤ Display highlighted words and discuss.	12	908
➤ Discussion around comparisons - how to make them and why they make descriptive writing more vivid. ➤ Introduction to similes & metaphors. ➤ Show example to distinguish between the two ➤ Students complete worksheet and give some answers	12	920
➤ Introduction to the TOPS acronym and explanation. ➤ Introduction to the task ➤ Show objects to students		927
		1206
➤ Recap of the Morning Session ➤ Clarify the task ➤ Re-arrange furniture into a square	15	1221
➤ Students choose a object to describe ➤ 5 minutes planning	10	1231
➤ Complete the writing task		1246

### 7.4 Reflection

The use of present objects to write about cut both ways. Many boys produced more than they otherwise might have, but many other boys were distracted by the objects or were diverted into irrelevant minutiae like measurements. Discussion was very animated around similes and metaphors but some boys did not grasp the difference. Many struggled to create their own metaphors using literal language instead of metaphorical. Very few boys completed their descriptions and some did not understand the TOPS process. This was because I did not explain it very well, neglecting to go through it sentence by sentence. All visual aids worked well especially the adjectives/adverbs.