Linking SNAP 2006 to the Curriculum
Numeracy is the ability to effectively use the mathematics required to meet the general demands of life at home and at work and for participation in community and civic life. Numeracy is a fundamental component of learning across all areas of the curriculum. The key role that teachers of history play in the development of numeracy includes teaching students specific skills and providing them with opportunities to select, use, evaluate and communicate mathematical ideas in a range of situations.

The *History Years 7–10 Syllabus* states that numeracy in history involves “the construction and interpretation of timelines, graphs and other statistical data”. A key objective is to develop student knowledge and understanding about time and chronology. This includes different perceptions of time, the conventions used to describe historical periods of time, and chronological frameworks of people, events and historical forces. Students also develop skills in interpretation, analysis and empathy. Sources such as graphs, charts, tables and written information need to be interpreted and analysed by students in Stage 4 to draw conclusions and recognise different perspectives about individuals, groups, events and issues. Competence in numeracy skills will enable students to make informed judgements that will advance their understanding of historical information. History teachers are ideally placed to explicitly teach the numeracy skills needed in history.

**Numeracy skills required in History and assessed in SNAP**

**Working Mathematically**
- Asking appropriate numeracy questions
- Using strategies to solve problems
- Communicating with appropriate numeracy terminology
- Checking solutions to problems
- Providing reasons for solutions
- Relating numeracy skills in one situation to the numeracy skills in another situation

**Number**
- Using place value
- Using number facts
- Representing and comparing fractions and percentages
- Calculating with whole numbers, decimals and fractions
- Describing the likelihood of experimental results
- Predicting results from sample data

**Data**
- Identifying data in tables, charts and graphs
- Organising data in tables, charts and graphs
- Interpreting data in tables, charts and graphs

**Measurement**
- Understanding and comparing time

**Space**
- Using compass directions
- Using precise terminology to give position
- Using scale

The syllabus referred to is *History Years 7–10 Syllabus*, Board of Studies, April 2003.
Tour de France

In these questions students are required to identify data (time) and make correct calculations of total time and time differences. The numbers in this question are distances on a map and the times needed to travel the distances. This question requires students to calculate using scale and time concepts as well as using appropriate strategies to work mathematically.

In history, students develop skills in working with numerical information that will assist them to gain an understanding of the time period they are studying. Reading and interpreting data from a source is a necessary skill in history. Students need to examine the data and interpret it so they can decide the relevance of the data to the historical event they are investigating.

Teaching strategies

Use a source such as The timetable of the daily life in a monastery from Investigating Global History, Gary Nicholls et al, Thomson Nelson, 2001.

<table>
<thead>
<tr>
<th>The timetable of the daily life in a monastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midnight</td>
</tr>
<tr>
<td>1:00 am</td>
</tr>
<tr>
<td>2:00 am</td>
</tr>
<tr>
<td>6:00 am</td>
</tr>
<tr>
<td>6:30 am</td>
</tr>
<tr>
<td>7:00 am</td>
</tr>
<tr>
<td>8:00 am</td>
</tr>
<tr>
<td>9:00 am</td>
</tr>
<tr>
<td>10:00 am</td>
</tr>
</tbody>
</table>

In winter, prime prayer was a few hours later and other changes were made throughout the day

1. Ask students to calculate how many hours between Matins prayer and Prime prayer, number of hours monks worked in a day and number of hours monks spent sleeping. Students may use the degree, minutes, seconds button on their calculator to check the accuracy of mental or written strategies they used.

2. Identify differences between morning and afternoon activities as a class. Find a reason for differences.

3. Identify differences for summer and winter activities and discuss reasons for differences with the class.
Teaching strategies (cont'd)

4. Have students complete the following table using the data from *The timetable of the daily life in a monastery*.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Amount of time spent on activity</th>
<th>Percentage (%) of time spent on activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prayer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sleeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Demonstrate how to construct a divided bar graph of the percentages for work, prayer, eating, sleeping and other activities.
   a. Draw a horizontal rectangle measuring 100 mm, where 1 mm represents 1%.
   b. Divide the rectangle into the five activities according to percentages from the table.
   c. Show the class how to devise a key for each activity and the importance of an appropriate title for the graph.

6. Draw conclusions about a monk's life using the graph.
7. Discuss the restrictions on a monk's life.
8. Write a recount of the day in a life of a monk using the timetable and other materials read in class.

Syllabus references

*Outcome 4.8* locates, selects and organises relevant information from a number of sources, including ICT, to conduct basic historical research.

Numeracy content within the study of history in both Mandatory and Elective syllabuses involves the construction and interpretation of timelines, graphs and other statistical data (p 20).
Question 39

In this question students are required to interpret a timeline using a scale. The dates are presented in a table and students need to be able to read and interpret information and use this information to make calculations and solve problems.

In history, students develop an understanding of time and continuity. Students should understand the concept of sequencing, as this table does not present the events in chronological order, and students should understand the system of dating using BC and AD, BC (also known as BCE) and AD (also known as CE).

Timelines are useful for students to compare and write about events. The skill of accurately placing times and their corresponding events on a timeline using appropriate scale involves an understanding of the relativity of time and length. Equal periods of time need to be represented by equal lengths on the timeline.

Teaching strategies

Use the table Some Events in Ancient Roman History on page 3 of Times, Tours and Tables (SNAP 2006 stimulus magazine) for this activity.

- Examine the table with students. Ask students to put the dates in chronological order. This activity can be done in groups and have each group explain the reasons for choosing the order that they present.
- Discuss how centuries are named in history and ask students to name the relevant centuries shown in the table. To assist with the convention of labelling centuries, the teacher could guide students in completing the following table.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rome conquers Spain</td>
<td>206 BC</td>
<td>Third century BC</td>
</tr>
<tr>
<td>Eastern Mediterranean conquered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Julius Caesar invades Britain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rome’s conquest of Britain</td>
<td>43 AD</td>
<td>First century AD</td>
</tr>
<tr>
<td>Boudica’s revolt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is important for students to understand that centuries are named using ordinal numbers (1st, 2nd, 3rd...). In common usage, an ordinal number is an adjective which describes the numerical position of an object. For this reason there is no zero century.

- Students draw the events on a timeline, working in pairs, using a scale of 1 cm to 5 years. A large sheet of paper should be provided for this task. Ensure students understand the use of equal divisions for the scale and the labelling conventions of a timeline showing BC and AD. The dates on a timeline, from 2000 BC to 2000 AD, are shown below:

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  2000  1500  1000  500  500  1000  1500  2000
  BC   AD
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The numbers decrease from left to right for BC and increase from left to right for AD.

- Ask students to research the six events in the table to find out their significance in the history of the Roman Empire. Discuss with the class the impact of each event.
- Have students research the history of the Roman Empire and complete a longer timeline of Ancient Rome for the classroom wall, using teacher direction.

Syllabus reference

Outcome 4.4 identifies major periods of historical time and sequences people and events within specific periods of time. Students learn about the terminology and concepts of historical time, including year, decade, generation, century, age, BC/AD, BCE/CE.

Numeracy content within the study of history in both Mandatory and Elective syllabuses involves the construction and interpretation of timelines, graphs and other statistical data (p 20).