Numeracy learning progression and History

Purpose of the literacy and numeracy progressions

The purpose and intent of the progressions are to provide a tool to:

- locate the literacy and numeracy development of students

- plan for student progress in literacy and numeracy

- facilitate shared professional understanding of literacy and numeracy development

- support a whole school approach to literacy and numeracy development.

Literacy and numeracy in the learning areas

The learning areas provide rich opportunities for extending and enriching literacy and numeracy. To effectively plan for differentiated teaching of literacy and numeracy in the learning areas, teachers draw on their knowledge of the Australian Curriculum and their knowledge of their students. Recognising that students learn at different rates, the progressions provide a continuum for teachers to identify and build on students' literacy and numeracy skills. The intention is that students will develop their literacy and numeracy expertise purposefully, in meaningful contexts.

Using this advice and the progressions to plan for student progress in literacy and numeracy

This advice illustrates how the progressions can be used in History to support student progress in literacy and numeracy. This advice:

- identifies the sub-elements of the progressions that are most relevant to studying History
- identifies some aspects of an achievement standard that include literacy or numeracy demands
- lists some relevant indicators at one or more levels of the progressions to illustrate how the progressions might be unpacked to support student progress in literacy and numeracy in the study of History

Figure 1 illustrates how the progressions are to be used by teachers to identify where students are positioned on the literacy and numeracy continuum and plan for their ongoing development within the learning areas. Therefore, this advice can support use of the progressions in developing explicit and targeted programs to ensure students are able to access discipline-specific knowledge, concepts, understanding and skills. While advice is provided on the most relevant sub-elements of each progression for the discipline of History, whole school planning may address other sub-elements to progress students' literacy and numeracy.

History

Targeted Achievement Standard	Indicators of literacy development related to the standard		
Year 8	Level LiS2	Level LiS5	Level LiS8
Students: • interpret, process, analyse and organise information from a range of primary and secondary sources and use it as evidence to answer inquiry que[...] • analyse origin[...] and purpose, and draw conclusi[...]s about their	• responds to spoken texts (uses facial expressions, movements, turns towards the speaker) • responds to short phra[...] [re]lying on key words, tone of voi[...] and intonation • follows a simple [...] • recognises and g[...] syllable rhyming • repeats familiar words hea[...] or conversation	• listens to texts to engage with learning area content • [...]cific information[...] lear[...]ng area text • atte[...]ls to sequence wh[...] recounting • [...]tells, [...]ded po[...] • [...]licit [...]thers' con[...]bution to check own com[...]rehension) • u[...]essive vocabulary to support co[...]rehension (listens for temporal co[...]ectives such as first, then, finally	• identifies and paraphrases key points of a speaker's arguments (interprets speeches and uses own words to identify key historical events and [...]ses la[...] [...]e po[...] • identifies any shifts in direction, line of argument or purpose made by the speaker (critically analyses a speech to identify audience and purpose)

1 Identify aspects of the achievement standard being targeted in the learning program and assessment. Identify the literacy and numeracy demands of this learning.

2 Locate students' current level of literacy and numeracy development. Note that students may straddle two or more levels within a progression.

3 Develop targeted learning programs that address the literacy and numeracy levels of students and support them to meet the literacy and numeracy demands of the aspect of the achievement standard.

4 Provide feedback to students on their achievement of the standard.

5 Plan for their progression in learning in relation to:
• the achievement standard
• next level in their literacy and numeracy progression

Figure 1: Annotated example of how to use learning area advice and the progressions to progress learning in History

Numeracy in History

Students develop numeracy capability as they engage in the historical inquiry process and learn how to organise and interpret historical events and developments. Numeracy content within the study of History can involve the construction and interpretation of timelines, graphs, tables, maps, scales and statistics. Students develop confidence and proficiency in applying these skills to represent, comprehend and analyse quantitative data to make meaning of the past. For example, analysing numerical data enables students to elicit, interpret and critically analyse evidence and to develop an understanding of the historical concepts of significance, cause and effect, and continuity and change. The concepts of cause and effect, and continuity and change are also developed as students come to understand the sequence and pattern of events through the development and use of timelines, as well as calendars and dates to recall information on topics of historical significance and to illustrate the passing of time, multiple causes, rate of change and observe patterns of change.

Using the numeracy progression to support students in History

The most relevant sub-elements of the numeracy progression for History are: Quantifying numbers, *Operating with percentages, Comparing units, Understanding units of measurement, Measuring time* and *Interpreting and representing data.*

Quantifying numbers

This sub-element involves students becoming increasingly able to count, recognise, read and interpret large and small numbers. In History, students are required to interpret the passing of time over decades, centuries, and millenniums. Quantifying numbers provides a foundation for students' understanding of chronology by providing them with the skills to understand and communicate observed trends and patterns.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 7	**QuN11**
Students: • sequence events and developments within a chronological framework, using dating conventions to represent and measure time.	**Understanding place value** • reads and writes numbers applying knowledge of the place value periods of ones, thousands, millions (how numbers are written with the digits organised in groups of three – 10 000 is read as ten thousand, 100 000 is read as one hundred thousand) • partitions numbers by their place value into tens of thousands, thousands, hundreds, tens and ones and beyond (partitions the year 1888 by place value to identify the relevant century) • estimates whole numbers to the nearest hundred thousand, ten thousand, etc. (the Roman Empire lasted 500 years)
	QuN12
	Understanding place value (directed numbers) • orders negative numbers (recognises that 700 BCE occurred 200 years before 500 BCE) **Representing place value** • recognises, reads and interprets very large and very small numbers (identifies and interprets measurements of periods of time (millennium, century, decade, year))

Operating with percentages

This sub-element involves students using percentages to represent quantities. It is particularly useful to History for developing an understanding of continuity and change and cause and effect. Students also often use percentages to gather quantitative evidence as part of an inquiry process.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 10	**OwP5**
Students: • explain patterns of change and continuity over time • analyse the causes and effects of events and developments • process, analyse and synthesise information from a range of primary and secondary sources and use it as evidence to answer inquiry questions.	**Adding a percentage as multiplying** • increases and decreases quantities by a percentage (measures percentage change over time, such as percentage increase in population of Australia in the postwar years to analyse cause and effect, World War II and displaced peoples, or continuity and change, shifts in demographics over time)
	OwP6
	Repeatedly adding a percentage • uses percentage increases or decreases as an operator (compares percentage increases or decreases over time, such as life expectancy in Aboriginal and Torres Strait Islander communities in the second half of the 20th century to analyse cause and effect or identify patterns of continuity and change)

Comparing units

This sub-element addresses comparing units in ratios, rates and proportions. The sub-element can be applied in History to identify patterns of continuity and change over time in one or more aspects of society, such as population, distribution of wealth and power, or the role and impact of particular individuals, groups or events. It can also be applied to develop an understanding of the significance of an event, or can be used to elicit evidence to support conclusions.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 9	**CoU3**
Students: • refer to key events and the actions of individuals and groups to explain patterns of change and continuity over time • analyse the causes and effects of events and developments and make judgments about their importance • explain the significance of events and developments over the short and long term • interpret, process, analyse and organise information from a range of primary and secondary sources and use it as evidence to answer inquiry questions.	**Applying proportion** • interprets proportion as the equality of two ratios or rates (voting in Australia before and after the suffrage movement, Australian casualties or death rates in different theatres of war during World War I as a proportion of the population) • explains and applies the difference between direct and indirect proportion (direct – the growth of cities led to increasing mortality, indirect — the more factories, the lower the standard of living)

Understanding units of measurement

This sub-element describes how a student becomes increasingly able to recognise attributes that can be measured and how units of measure are used and calculated. In History, this sub-element provides an important foundation for developing scaled timelines that sequence events and indicate the time between events and their duration.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 7	**UuM5**
Students: • sequence events and developments within a chronological framework, using dating conventions to represent and measure time.	**Repeating a single informal unit to measure** • explains that the distance measured is the space between the marks or 'ends' of each unit, not the marks themselves (interprets timelines to identify the time between events or their duration)
	UuM8

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
	Converting units • converts between formal units of measurement (develops scaled timelines by beginning with the duration and identifying appropriate increments)

Measuring time

This sub-element describes how a student becomes increasingly aware of the passage of time. In History, this sub-element provides an important foundation for developing scaled timelines that sequence events, historical periods and indicate the time between events and their duration.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 8	**MeT4**
Students: • sequence events and developments within a chronological framework with reference to periods of time.	**Relating units of time** • explains the relationship between different units of time (a millennium is 10 centuries, a century is 100 years, a decade is 10 years; places a year within a century – places 1975 in the 20th century) • determines elapsed time using different units (uses scaled units of time - years, decades, centuries - to calculate the duration of significant historical events or developments)
	MeT5
	Time zones • uses appropriate units for measuring both large and small durations of time (identifies, calculates and interprets measurements of periods of time – millennium, century, decade, year; uses concepts to denote periods of time – ancient, medieval, modern)

Interpreting and representing data

This sub-element describes how a student becomes increasingly able to recognise and use visual and numerical displays to describe data associated with statistical investigations. Making sense of data is vital to studying History. Students use data to develop displays to explore cause and effect relationships and patterns of continuity and change. They interpret statistical displays to support their own interpretations and to think critically about claims made by others, either questioning or confirming them.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
Year 10	**IRD4**
Students: • explain patterns of change and continuity over time • analyse the causes and effects of events and developments • explain different interpretations of the past and recognise the evidence used to support these interpretations • develop and justify their own interpretations about the past.	**Shape of data displays** • determines and calculates the most appropriate statistic to describe the data (uses the mean to describe changes in population growth when there are no outliers that will skew the data) • uses simple descriptive statistics (arithmetical mean or median) as measures to represent typical values of a distribution (uses the median age of the population in Australia during the postwar period, when interpreting the impact of immigration) • compares the usefulness of different representations of the same data (compares and determines which is more useful – a line graph or a bar chart to illustrate change over time)
	IRD5
	Graphical representations of data • uses graphical representations relevant to the purpose of the collection of the data (selects a line graph to demonstrate change over time, selects a population pyramid to show the makeup of a population) • recognises that continuous variables depicting growth or change vary over time (shows change in Australia's population in the 20th century) • interprets and describes patterns in graphical representations in real-life situations (describes patterns in inflation rates, employment rates, migration rates over time) • interprets the impact of outliers in data (interprets the impact of a significant event, such as the wave of migration following the end of the Vietnam War on population statistics in Australia)
	IRD6
	Recognising bias

Targeted Achievement Standard	Examples of how indicators relate to the AC standard. *Individual student numeracy may be at different levels of the progression as indicated in Figure 1.*
	- applies an understanding of distributions to evaluate claims based on data (evaluates claims made regarding migration by comparing with census data) - recognises and explains bias as a possible source of error in media reports of survey data (evaluates the validity of evidence provided by data to investigate whether most refugees have arrived by sea)