



Purpose of the literacy and numeracy learning 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 learning 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.

Literacy and numeracy in The Arts

Arts learning programs based on Australian Curriculum: The Arts Years 7-10 can provide opportunities for students to:

- develop aspects of the literacy and numeracy identified in the learning progressions that are also associated with specific arts practices, forms, skills, techniques and processes including processes for analysing, evaluating, critiquing and reflecting and interpreting ideas, meanings and messages
- apply and build on literacy and numeracy capabilities acquired in other learning areas and in earlier years of schooling. This might involve applying knowledge and skills in different contexts, for different purposes or deepening and broadening prior learning to explore new aspects of a concept or skill.

Through Arts learning students develop verbal and auditory working memory, visuo-spatial reasoning and their ability to interpret and use symbols and symbol systems to create meaning. These skills are transferrable across learning contexts and support development of literacy and numeracy capabilities.

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

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

- identifies the sub-elements of the learning progressions that are most relevant to studying Music
- identifies some aspects of an achievement standard that include literacy or numeracy demands
- lists some relevant indicators at one or more levels of the learning progressions to illustrate how the learning progressions might be unpacked to support student progress in literacy and numeracy in the study of Music
- identifies how students can develop literacy and numeracy purposefully and in meaningful contexts through learning in Music.

Figure 1 illustrates how the learning progressions are to be used by teachers to identify where students are at on the literacy and numeracy continuum and plan for their ongoing development within the learning areas. Therefore, this advice can support use of the learning 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 learning progression for the discipline of Music, whole school planning may address other sub-elements to progress students' literacy and numeracy.

Targeted Achievement Standard	Indicators of literacy development related to the standard		
A. Year 9	B. Level LIS2	C. Level LIS5	D. Level LIS8
<p>Students:</p> <ul style="list-style-type: none"> interpret, process, analyse and organise information from a range of primary and secondary sources and use it as evidence to answer inquiry questions 	<ul style="list-style-type: none"> responds to spoken texts (uses facial expressions, movements, turns towards the speaker) responds to spoken phrases relying on key phrases, tone of voice and intonation follows a simple sequence of instructions recognises simple rhyming words (see Phonological awareness) repeats familiar words heard in a text or conversation 	<ul style="list-style-type: none"> listens to texts to engage with learning area content recalls specific information from learning area text attempts to sequence and report ideas uses simple strategies (asking questions to elicit extra information, asking others' contributions to check own comprehension) 	<ul style="list-style-type: none"> identifies and paraphrases key points of a speaker's arguments (interprets speeches and uses own words to identify key historical events and arguments) uses simple strategies used by the speaker to engage with the text and explains the point/s of view expressed) identifies any shifts in direction, purpose or focus in the text (e.g. identify shifts in the text such as whose voice is missing? How has language been used to include or exclude?)

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

Numeracy in Music

Students use and develop numeracy as they learn in music when they use calculation, estimation and measurement knowledge and skills to collect and make sense of information. For example, they might draw their knowledge of fractions (halving, quartering, accumulating fractional parts, re-imagining the whole) when they learn to read and write music notation. They could also use and extend their numeracy capability when they consider the structure and form of music works, pitch (intervals, scales, octave identification), harmony, tuning systems, concepts relating to beat, pulse, rhythm, metre and sub-division and acoustics.

Music learning involves learning to recognise and use patterns and sequences when composing, performing and listening. Visuo-spatial skills and reasoning can be developed through singing, playing instruments and performing in ensembles.

Learning in Music across Years 7-10 draws on practical implications of these aspects of numeracy. For example, ensembles might tune their instruments to a common note or students might discuss why intonation is important and what this means for them as an instrumentalist or vocalist or why their band sounds different when they are playing in a room that is carpeted. Students can also analyse numerical data to research, interpret and analyse evidence about music works and how they are presented, performed, shared and appreciated.

Both mathematics and music use symbols to communicate and share ideas across times, locations and cultures ideas. In both disciplines, students can learn conventions for reading, interpreting and writing these symbols. Students can discuss these ideas through performance and composition activities that involve using or exploring different notation forms/systems such as graphic (semantic and non-semantic), spectrographic representation, culturally-specific notation, proportional notation, Western staff notation, interactive notation, historical and contemporary forms of tablature/TAB or types of chord notation.

Using the numeracy learning progression to support students in Music

The most relevant sub-elements of the numeracy learning progression for Music are *Number patterns and algebraic thinking and Comparing units*.

Number patterns and algebraic thinking

Figuring out how a pattern works brings predictability and allows the making of generalisations. This sub-element describes how a student becomes increasingly able to identify a pattern as something that is a discernible regularity in a group of numbers or shapes. For example, as students develop their understanding of the concepts of beat, pulse, metre and rhythm they become increasingly adept at recognising characteristic patterns.

It is important to note that, even though the achievement standards in Years 7-10 Music do not include overt references to Number patterns and algebraic thinking, these skills are essential and implied in the following aspects of the achievement standard:

Targeted Achievement Standard	Examples of how indicators relate to the AC standard <i>Individual student numeracy may be at different levels of the learning progression as indicated in Figure 1</i>
Year 8	NPA4/5
<p>Students:</p> <ul style="list-style-type: none"> • identify and analyse how the elements of music are used in different styles • apply this knowledge in their performances and compositions • evaluate musical choices they and others from different cultures, times and places make to communicate meaning as performers and composers • manipulate the elements of music and stylistic conventions to compose music • interpret, rehearse and perform songs and instrumental pieces in unison and in parts, demonstrating technical and expressive skills • use aural skills, music terminology and symbols to recognise, memorise and notate features, such as melodic patterns in music they perform and compose. 	<p>A student:</p> <p>Continuing number patterns</p> <ul style="list-style-type: none"> • continues patterns where the difference between each term is the same number (for example, improvises a bass part using notes of the same value) • sequences numbers to identify a pattern or rule (counts in different groupings, for example, to identify simple or compound time) <p>Generalising patterns</p> <ul style="list-style-type: none"> • identifies elements, including missing elements, in a one-operation number pattern (for example, counting 1234, 2234, 3234 etc. to maintain time when performing or counting bars when playing in an ensemble).

Measurement and geometry

Students will build on their knowledge of *measurement* when they learn the basics of acoustics (the science of sound) relevant for singing, playing instruments and working in performance spaces. For example, they might observe the relationship between the length of a vibrating string or column of air or the surface area of a drum-head and the pitch of a sound (longer/larger = lower).

Comparing units

This sub-element addresses comparing units in ratios, rates and proportions. A ratio describes a situation in comparative terms, for example, the ratio of frequencies of two notes an octave apart is 2:1. A proportion is when a comparison is used to describe a related situation in the same comparative terms. For example, a 30-member school band might include 6 trumpets, 10 clarinets, 4 flutes, 6 saxophones, 1 bass, 2 trombone players and 2 percussionists. Knowing that there are 6 trumpet players compared to 10 clarinet players but also that proportionally $\frac{6}{30}$ or a $\frac{1}{5}$ of the band are trumpet players compared to $\frac{10}{30}$ or $\frac{1}{3}$ being clarinet players requires students to use proportional reasoning skills.

Aside from Pythagoras' writings about the power and healing qualities of music he also documented knowledge about basic ratios that exist in pitches created by resonating strings or air columns of different lengths. This knowledge underpins cross-cultural views about intervals that are most consonant to the human ear and debates about what is dissonant. Over time, mathematicians and musicians have used and extended these theories through, for example, development of tuning systems such as equal temperament or the design and construction of musical instruments.

Targeted Achievement Standard	Examples of how indicators relate to the AC standard <i>Individual student numeracy may be at different levels of the learning progression as indicated in Figure 1</i>
Year 8	CoU2
Students: <ul style="list-style-type: none">interpret, rehearse and perform songs and instrumental pieces in unison and in parts, demonstrating technical and expressive skillsuse aural skills, music terminology and symbols to recognise, memorise and notate features, such as melodic patterns in music they perform and compose.	A student: Ratios <ul style="list-style-type: none">interprets ratios as a comparison between the same units of measure (for example, A880 is one octave higher than A440 which is one octave higher than A220 or interprets ratios aurally and visually by singing or playing an instrument, for example, 1:1 = unison, 2:1 = an octave etc.) Rates <ul style="list-style-type: none">interprets rates as a relationship between two different types of quantities (for example, interprets tempo markings as beats per minute or uses sub-division – numbers of quavers or semiquavers per beat to understand or learn a rhythmic pattern or the rhythmic relationship between parts in a music work).