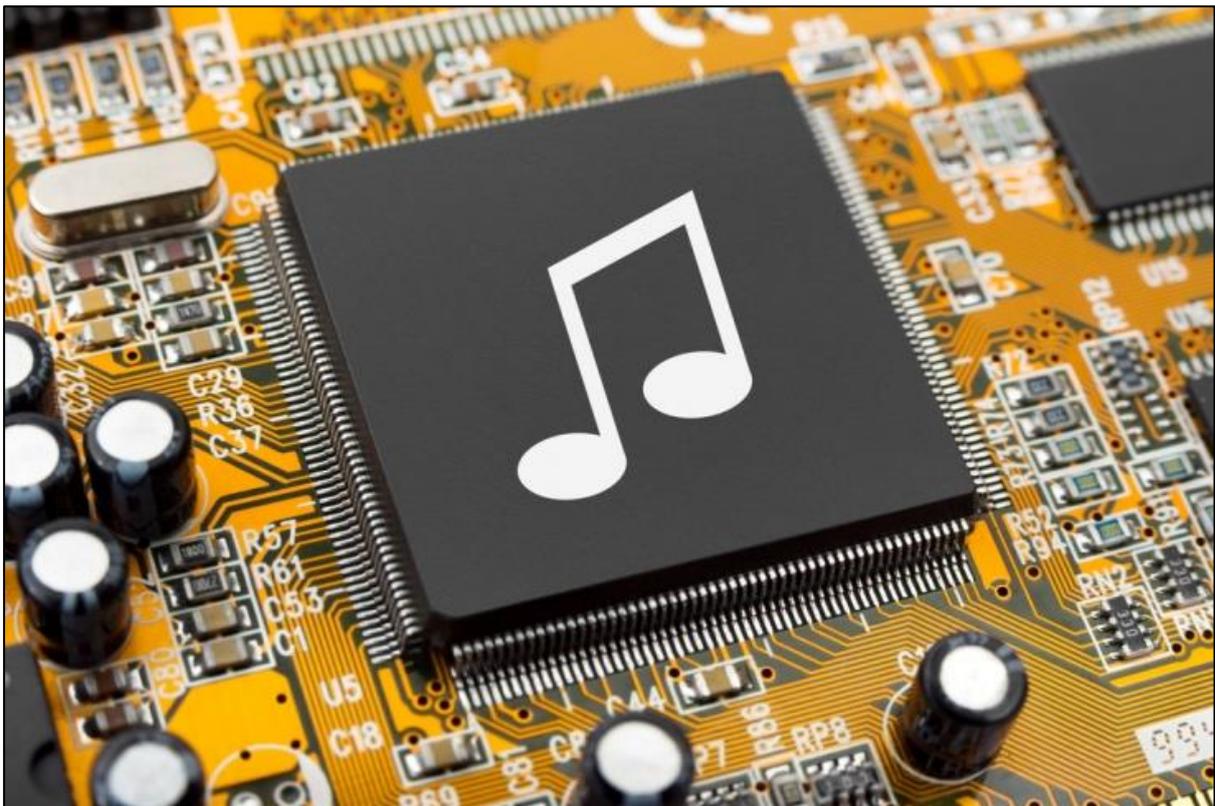


Higher Music Technology Course Support Notes



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Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

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Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the Higher Music Technology Course. They are intended for teachers and lecturers who are delivering the Course and its Units. They should be read in conjunction with the *Course Specification*, the *Course Assessment Specification* and the Unit Specifications for the Units in the Course.

Higher Music Technology

Internally assessed mandatory Units

Music Technology Skills — 6 SCQF credit points

Understanding 20th and 21st Century Music — 6 SCQF credit points

Music Technology in Context — 6 SCQF credit points

Course assessment/added value

Component 1: Assignment (practical) — 70%

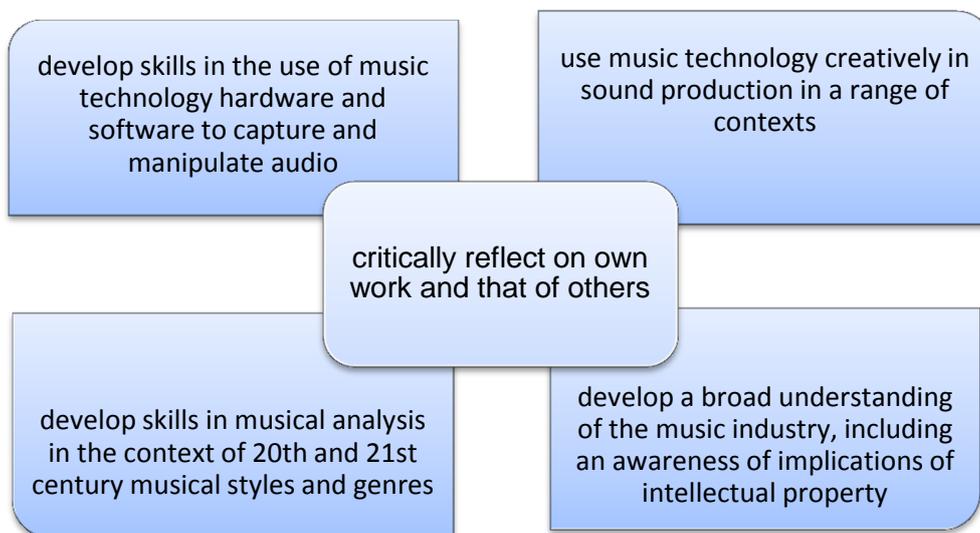
Component 2: Question Paper — 30%

General guidance on the Course

Aims

The purpose of the Higher Music Technology Course is to enable learners to develop their knowledge and understanding of music technology, and of music concepts, particularly those relevant to 20th and 21st century music, and to engage in the development of technical and creative skills through practical learning. This Course will provide opportunities for learners to develop their interest in music technology and to develop skills and knowledge relevant to the needs of the music industry.

The aims of the Course are to enable learners to:



What do these aims mean, in practical terms?

Develop skills in the use of music technology hardware and software to capture and manipulate audio

For many learners, music technology is already a part of their lives. Home computers and mobile phones have made it possible for learners to create and mix music as a hobby. There are many free websites and programs which are easily accessible to beginners, and this means learners may already have an interest and ability in using music technology.

In the delivery of this Course, teachers and lecturers may well make use of the free resources, and should encourage their learners to do the same.

This Course is open and flexible in the hardware and software requirements. Centres currently using music programs for composition, or that offer courses in Music Technology, may well already have suitable equipment to capture and work with audio.

Use music technology creatively in sound production in a range of contexts

Recorded music surrounds us in our everyday lives — radio jingles, TV adverts, film soundtracks, gaming music, aerobics classes, on mp3 players, in TV programmes, on telephones when placed on hold, ringtones: these are just a few

suggestions, there are many, many more. In this Course, learners should be encouraged to use their music technology skills creatively. Discuss with them where their interests lie, some may play computer and video games, others may love their modern dance class, some might make films which they post on websites. Encourage them to listen to the music that is already used in these, and to consider how they could produce music for these familiar contexts. There is great opportunity to allow for personalisation and choice, and to allow learners to produce and develop music in ways that are of interest to them.

Develop skills in musical analysis in the context of 20th and 21st century musical styles and genres

A range of concepts from the 20th and 21st centuries will be explored, examined, investigated and researched by learners. At this level, the genres considered should include jazz funk, soul/R 'n' B, indie, new wave, electroacoustic, reggae, world music and 20th/21st century classical music, in addition to those studied at lower levels. Aural discrimination skills will be developed throughout the course and concepts will be applied across all Units.

Develop a broad understanding of the music industry, including an awareness of implications of intellectual property

A very real and current issue in the music industry is that of intellectual property rights. As they explore aspects of the music industry, learners will gain a basic awareness of the legal situation with regard to using other people's music, and protecting their own.

Critically reflect on own work and that of others

Self-evaluation should be a regular and natural part of producing music. Learning to recognise what works well, what doesn't, what could be improved, are skills that will help to train the ear, and improve on the quality of the product. By sharing ideas, learners will develop skills to critically reflect on work produced by themselves and others.

Progression into this Course

Entry to this Course is at the discretion of the centre. However, learners would benefit from having some or all of the following skills and knowledge before starting this Course.

Skills and knowledge developed through any of the following, while **not mandatory**, are likely to be helpful as a basis for further learning in this Course.

Other SQA qualifications

- ◆ National 5 Music Technology Course

Other experience

Learners may have relevant skills and knowledge from their own interests and informal learning.

Skills, knowledge and understanding covered in this Course

This section provides further advice and guidance about skills, knowledge and understanding that could be included in the Course.

Note: teachers and lecturers should refer to the *Course Assessment Specification* for mandatory information about the skills, knowledge and understanding to be covered in this Course.

The Course engages the learner through practical music activities. Learners will develop their ability to express themselves through music, encouraging creativity and autonomy. The Course also enables learners to gain knowledge and understanding of music and technological concepts. Across the Course, skills and experiences which complement each other are developed.

The mandatory skills will be developed throughout the Course. The table below shows where there are significant opportunities to develop these in the individual Units, and how the Units build up the skills, knowledge and understanding required for Course assessment.

Mandatory skills and knowledge	Music Technology Skills	Understanding 20th and 21st Century Music	Music Technology in Context
skills in using music technology hardware and software to capture and manipulate audio	✓		
knowledge of music technology hardware	✓		
knowledge of features and functions of music technology software	✓		
application of music technology in creative ways			✓
planning, implementation and evaluation of a sound production			✓
awareness of a range of contexts in which music technology can be applied			✓
knowledge and understanding of 20th and 21st century music styles and genres and how they relate to the development of music technology		✓	

a broad understanding of the music industry, including an awareness of implications of intellectual property		✓	
ability to critically reflect on own work			✓

Teachers and lecturers should ensure that learners are fully aware of the wide range of skills, knowledge and understanding that they are developing in the Units and Course as a whole.

It is also important to highlight any transferable learning that is taking place which supports the development of skills for learning, skills for life and skills for work.

Progression from this Course

This Course or its components may provide progression to:

- ◆ other SQA qualifications in Music Technology or related areas
- ◆ further study, employment and/or training

and ultimately, for some, to:

- ◆ degrees in music and audio technology and related disciplines
- ◆ careers in the creative music industries

Hierarchies

Hierarchy is the term used to describe Courses and Units which form a structured progression involving two or more SCQF levels.

It is important that any content in a Course and/or Unit at one particular SCQF level is not repeated (unless required for consolidation) if a learner progresses to the next level of the hierarchy. The skills and knowledge should be able to be applied to new content and contexts to enrich the learning experience. This is for centres to manage.

The Units in the Music Technology Courses from National 3 to Higher level are designed in a hierarchy. This means that learners may be able to achieve and be certificated for a Unit at the level above the level of the Course they are doing. This could be achieved for example by learners within the class group completing similar practical activities and their work being differentiated and benchmarked against the Assessment Standards and evidence requirements at different SCQF levels.

It is very important for centres to ensure that learners who progress to the next SCQF level progressively build and broaden their skills, knowledge and understanding at the next SCQF level. This is of particular importance in Courses with a common hierarchical Unit and Course structure.

Appendix 2 contains tables showing the relationship between the mandatory National 5 and Higher concepts. These tables may be useful for:

- ◆ designing and planning learning activities for teaching mixed level groups
- ◆ ensuring seamless progression between levels
- ◆ identifying important prior learning for learners at Higher

Teachers and lecturers should also refer to the Outcomes and Assessment Standards for each level when planning delivery.

Further advice on teaching mixed groups is given in the next section of these support notes, with additional detailed guidance in the *Unit Support Notes*.

Approaches to learning and teaching

Music Technology, like all new and revised National Courses, has been developed to reflect Curriculum for Excellence values, purposes and principles. The approach to learning and teaching developed by individual centres should reflect these principles.

An appropriate balance of teaching methodologies should therefore be used in the delivery of the Course. Whole-class, direct teaching opportunities should be balanced by activity-based learning on practical tasks. The use of a variety of active learning approaches is encouraged, including peer teaching, individual and group presentations and investigatory tasks, with learners actively involved in developing their skills, knowledge and understanding. Learning should be planned so that skills are developed simultaneously with knowledge and understanding. It is important that teachers and lecturers plan teaching and learning experiences carefully to take account of the prior skills of learners. Practical activities and investigations lend themselves to group work, and this should be encouraged

A key principle of Curriculum for Excellence qualifications is that they allow learners to acquire skills, knowledge and understanding in a meaningful and integrated way. This not only assists with retention of skills so that they may be transferable and capable of being applied to new and different contexts but it also enables the time available for delivering a Course to be used more efficiently, creating more time for learning. This same principle can also be applied to assessment. Assessment activities, used to support learning, may usefully be blended with learning activities throughout the Course.

For example:

- ◆ using assessment information to set learning targets and next steps
- ◆ adapting teaching and learning activities based on assessment information
- ◆ boosting learner confidence by providing supportive feedback

Self- and peer-assessment techniques should be encouraged wherever appropriate.

Learning and teaching activities should be designed to develop both:

- ◆ skills and knowledge to the standard required by **each Unit** and to the level defined by the associated Outcomes and Assessment Standards
- ◆ ability to apply the breadth of knowledge and understanding listed in the *Course Assessment Specification*, as required to complete the **Course assessment** successfully

Learning about Scotland and Scottish culture will enrich the learners' learning experience and help them to develop the skills for learning, life and work they will need to prepare them for taking their place in a diverse, inclusive and participative Scotland and beyond. Where there are opportunities to contextualise approaches to learning and teaching to Scottish contexts, teachers and lecturers should consider this.

Sequencing and delivery — Units and the Course

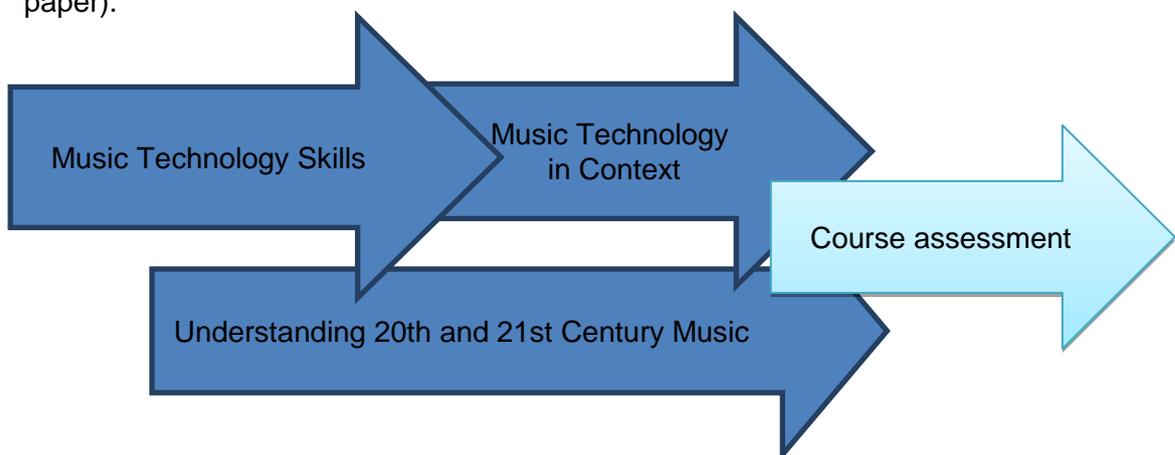
Centres should be aware that there are many different ways of delivering the Higher Music Technology Course. The following information provides some advice on possible approaches.

Delivery approach 1: Stand-alone delivery of Units

Any of these Units may be delivered independently. For example, a learner who has studied the Music (performing) Course may wish to extend their knowledge of modern music, without getting involved in the technological aspects of sound engineering. In this case, the Understanding 20th and 21st Century Music Unit would be useful to study on a stand-alone basis. Another learner may wish to develop (or consolidate) practical skills in capturing and manipulating audio to support their own hobby interests; in this case, the Music Technology Skills Unit could be taken as a stand-alone qualification.

Delivery approach 2: Concurrent delivery of Units

This approach allows the technology skills to be developed concurrently with the relevant music understanding, and is a straightforward way of building up skills and knowledge, culminating in the Course Assessment (assignment and question paper).



Unit 1 — **Music Technology Skills** — is likely to be the starting point for the Course. In this Unit, learners will develop the essential technological skills and knowledge for the Course. Learners will be introduced to the relevant hardware and software required to capture audio. This could include (for example) using a microphone, inputting notes using a MIDI sequencing program, and recording an electric guitar directly into a computer. A wide range of skills will be taught during these processes — selecting appropriate microphones and placements, setting gain levels, ensuring instruments are tuned, inputting MIDI data etc. Once captured, the sound(s) should be manipulated and edited, using appropriate processes and effects.

Learning could be based around short demonstrations, followed by hands-on activities for the learners.

While developing basic skills in Unit 1, learners can begin to develop their music knowledge and listening skills through Unit 2 — **Understanding 20th and 21st Century Music**.

In Unit 2, learners will study a range of styles and genres of music. Technology concepts will also be explored and learners will begin to understand the influence of music technology on music, and conversely, how music has influenced music technology. Key people, who have led the way in these developments, could be researched by learners individually, and then presented to peers.

Unit 3 — Music Technology in Context — develops the practical skills learned in Unit 1, and combines these skills with relevant concepts learned in Unit 2. Learners will bring these together to produce a minimum of two short pieces of work from two clearly different contexts which will demonstrate their ability to capture sound, manipulate it, and then mix it down to an audio master. Possible contexts could include recording a rock band, recording a choir, creating a short sound track for a film, a short radio broadcast, arranging or composing using a sequencing program, producing sound effects for drama, combining narration of a story or poem with some music, creating an advertising jingle, and using samples and loops.

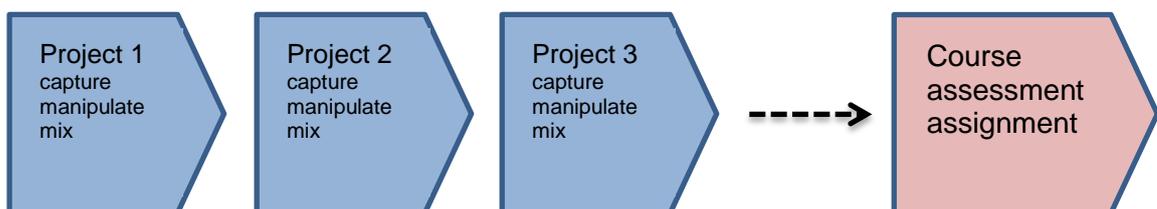
Delivery approach 2b: Mix first — capture later

In delivery approach 2a, described above, the learner starts by learning how to capture sounds, then how to manipulate them, and finally how to mix them to produce a finished product. An alternative, and equally valid, approach is to develop skills of manipulating and mixing first, using supplied audio files. In effect, the learning of Units 1 and 3 would be combined, covering Assessment Standards 1.2 and 1.3 of Music Technology in Context first. The skills of capturing audio, involving choosing appropriate devices, microphone placement and designing signal paths would be developed later.

Where resources are limited, a combination of delivery examples 2 and 3 may be necessary, with different groups carrying out practical activities in different sequences, so that limited access to computers, or to sound capture equipment, can be shared equitably.

Delivery approach 3: Integrated approach using series of mini-projects

An alternative method of approach could involve a series (more than the three shown in the diagram below) of mini-projects, each building additional technical skills and knowledge.



Each new project could include new aspects of audio capture, audio manipulation and mixing, but presented in a new context. Learners could work in small groups on different projects at the same time. This approach would allow school events (concerts, shows, events) to be incorporated naturally into the course delivery, with possible opportunities for inter-disciplinary working. These series of projects could allow learners to produce evidence required for the Music Technology Skills and Music Technology in Context Units. Gradually, over the duration of the Course, skills and understanding would be developed to the stage where learners were ready to undertake the final Course assessment assignment.

The Understanding 20th and 21st Century Music Unit could be delivered as a separate but concurrent strand, or it might be possible to integrate some or all of the learning into carefully chosen projects.

Delivery approach 4: Combining delivery of the Music Technology Course with the Music Course

The similarity in structure of the Music Technology and Music Courses, and the fact that both Courses require learners to spend significant amounts of time working alone or in groups, with the teacher or lecturer often working as a facilitator, mean that it might be possible, with careful planning, to deliver both Courses simultaneously to a small mixed group of learners.

An example week planner for a five-period week is shown below — this could be adapted for other timetable structures. Shaded cells show where the teacher or lecturer would be actively involved in teaching; in unshaded cells, learners would be working independently or in groups.

	Music (performing)	Music Technology
1	performing	teaching technology skills
2	performing	technology practical work
3a	music concepts (20/21C) for both groups	
3b	composing	technological concepts
4	composing	project work
5	concepts	research

Developing skills for learning, skills for life and skills for work

It is important that learners have opportunities to develop broad generic skills as an integral part of their learning experience.

Guidance on the development of skills for life, skills for learning and skills for work is to be found in the support notes for each of the component Units.

Approaches to assessment

The publication *Building the Curriculum 5* sets out a framework for assessment which offers guidance on approaches to recognising achievement, profiling and reporting. Research in assessment suggests that learners learn best, and attainment improves, when learners:

- ◆ understand clearly what they are trying to learn, and what is expected of them
- ◆ are given feedback about the quality of their work, and what they can do to make it better
- ◆ are given advice about how to go about making improvements
- ◆ are fully involved in deciding what needs to be done next, and who can give them help if they need it

Where possible, approaches to assessment should encourage personalisation and choice for learners in assessment methods and processes and support learning and teaching. *Building the Curriculum 5: a Framework for Assessment* also recommends that learners receive accurate and regular feedback regarding their learning and are actively involved in the assessment process.

It is important that different approaches to assessment are used by teachers and lecturers to suit the varying needs of learners. Teachers and lecturers should also use inclusive approaches to assessment taking account of any specific needs of their learners.

Assessment should:

- ◆ cover subject content at the appropriate level without bias or stereotyping
- ◆ use content, resources and assessment materials that recognise the achievements and contributions of different groups
- ◆ where appropriate, provide a balance of assessment methods and encourage alternative approaches

In day-to-day teaching and learning there may be opportunities in the delivery of the Units in a Course to observe learners providing evidence which satisfies completely or partially, a Unit or Units. This is *naturally occurring evidence* and this evidence can be recorded as evidence using an observation checklist.

Unit assessment

See the *Unit Support Notes* for guidance on approaches to assessment of the Units of the Course.

Preparation for Course assessment

Each Course has additional time which may be used at the discretion of the teacher or lecturer to enable learners to prepare for Course assessment. This time may be used near the start of the Course and at various points throughout the Course for consolidation and support. It may also be used for preparation for Unit assessment, and towards the end of the Course, for further integration, revision and preparation and/or gathering evidence for Course assessment.

Information given in the *Course Specification* and the *Course Assessment Specification* about the assessment of added value is mandatory.

Course assessment consists of two components — an assignment (70 marks) and a question paper (30 marks).

The Assignment will be one piece of work which will demonstrate planning, evaluating and application of knowledge and skills gained throughout the course. Learners can choose to develop one of their pieces of work from Unit 3, or to apply their skills in a new context. The production should demonstrate audio capture, manipulation and production of an audio master. Learners could evidence their planning, progress and evaluating using screen shots, written text, blog, podcast etc. Marks will be awarded for each of the 3 areas – planning, implementing and evaluating.

The Question Paper will assess learners' knowledge and understanding of music styles and genres of the 20th and 21st century, music concepts and aspects of music technology. It will consist of questions in response to music excerpts in a range of 20th and 21st century styles and genres. A range of question types will be used, assessing understanding of relevant music and technological concepts.

Within the notional time for the Course assessment, time will be required for:

- ◆ preparation for the assignment
- ◆ carrying out the stages of the assignment
- ◆ assessing the process and completed solution
- ◆ consolidation of learning
- ◆ preparation for the question paper

Combining assessment across Units

If an integrated approach to Course delivery is chosen (see above), then there will be opportunities for combining assessment across Units. For example, a single project or production could provide evidence for aspects of Units 1 and 3.

If using this approach, teachers or lecturers should track evidence of individual Outcomes so that learners who do not achieve the complete assessment can still gain recognition for the Outcomes they have achieved.

Equality and inclusion

The requirement to develop practical skills involving the use of equipment may present challenges for learners with physical, visual or aural impairment. In such cases, reasonable adjustments may be appropriate.

Alternative arrangements for Course assessment (at Higher and above) can be organised with the approval of SQA. Assessment arrangements can be approved if SQA is satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will in fact generate the necessary evidence of achievement.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in these Course Support Notes is designed to sit alongside these duties but is specific to the delivery and assessment of the Course.

It is important that centres are aware of and understand SQA's assessment arrangements for disabled learners, and those with additional support needs, when making requests for adjustments to published assessment arrangements. Centres will find more guidance on this in the series of publications on Assessment Arrangements on SQA's website: www.sqa.org.uk/sqa//14977.html.

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- ◆ Assessment Arrangements (for disabled learners and/or those with additional support needs) — various publications are available on SQA's website at: www.sqa.org.uk/sqa/14977.html.
- ◆ [*Building the Curriculum 4: Skills for learning, skills for life and skills for work*](#)
- ◆ [*Building the Curriculum 5: A framework for assessment*](#)
- ◆ [*Course Specifications*](#)
- ◆ [*Design Principles for National Courses*](#)
- ◆ [*Guide to Assessment \(June 2008\)*](#)
- ◆ Principles and practice papers for curriculum areas
- ◆ [*SCQF Handbook: User Guide*](#) (published 2009) and SCQF level descriptors (reviewed during 2011 to 2012): www.sqa.org.uk/sqa/4595.html
- ◆ [*SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*](#)

Appendix 2: Concept tables

These tables show the relationship between the mandatory National 5 and Higher concepts, and also include concepts likely to have been studied at National 3 and 4. This table may be useful for:

- ◆ designing and planning learning activities for classes with some learners working at National 5 level, and some at Higher level
- ◆ ensuring seamless progression between levels
- ◆ identifying important prior learning for learners at Higher

Teachers and lecturers should also refer to the Outcomes and Assessment Standards for each level when planning delivery.

	Technological terms	Styles and genres
National 3	beat capture channel distortion/overload dry/wet frequency (Hertz, kHz) microphone MIDI sequenced data session log track (names / list) virtual instrument tracks volume	jazz blues rock disco
National 4	apps arrange window arrangement clipping feedback file management frequency response intro/outro lead vocal polar patterns (cardioid and omnidirectional) popping and blasting proximity effect sibilance take tempo	ragtime swing skiffle synth pop electronica dance music rap

National 5	glitch hum cyclical/loop play list polar patterns (figure of eight, hypercardioid) sampler signal-to-noise ratio sound card spillage/leakage toolbox transpose	rock 'n' roll Scottish Celtic rock 60s pop punk country hip hop musicals
Higher	ambience clipping file compression impedance patch parameters track object velocity	jazz funk soul/R 'n' B indie new wave electroacoustic reggae world music 20th/21st century classical music

	Melody/ harmony	Rhythm/tempo	Texture/ structure/form	Timbre/ dynamics
National 3	ascending descending step (stepwise) leap (leaping) repetition sequence improvisation chord chord change	accent/accented beat/pulse BPM (beats per minute) 2, 3 or 4 beats in the bar on the beat/off the beat repetition slower/faster pause drum fill	unison/octave harmony/chord solo accompanied/ unaccompanied repetition riff ostinato	acoustic/electronic striking (hitting), blowing, bowing, strumming, plucking acoustic guitar, electric guitar piano, organ, synthesiser drum kit voice/vocals crescendo (cres) diminuendo (dim)
National 4	major/minor (tonality) broken chord/ arpeggio change of key pedal scale octave vamp scat singing	syncopation 2 3 4 6 4 4 4 8 anacrusis accel(erando) rall(entando) a tempo	binary — AB ternary — ABA verse and chorus (song structure) middle 8 imitation	woodwind instruments string instruments brass instruments percussion instruments bass guitar distortion muted backing vocals voices — S A T B

National 5	atonal cluster inverted pedal chromatic whole tone scale glissando modulation countermelody pitch bend tone/semitone	ritardando (rit) cross rhythms	strophic walking bass homophonic polyphonic coda bridge / link passage instrumental break	arco pizzicato rolls voices – mezzo soprano, baritone
Higher	relative major/minor interval inversion	time changes irregular time signatures	through-composed	harmonics accents staccato marks phrase marks

Learners are also expected to use a range of controls, effects and processes in their Assignment, drawn from the following lists:

Controls and effects	
N3	delay, EQ (equalisation), gain/trim, mono(phonic), panning, playback, record, reverb(eration), stereo(phonic), time domain
N4	compression/expansion, effects (FX), fader, line level, microphone level, tone control, transport bar/controls
N5	auxiliary in(put)/out(put) (Aux), auxiliary send/return, boost EQ/cut EQ, chorus effect and depth, close mic'd, dB (decibels), gated reverberation (reverb), LFO, limiter, noise gate, pitch bend, punch in/out, wah-wah/envelope filter
H	cut-off frequency, graphical EQ, harmoniser, low-pass and high-pass filters, modulation controller, parametric EQ, phase/phaser/flanger, pitch shift, pre/post-fade, portamento, shelving EQ, time compression/time expansion, Q (bandwidth), shelving equalisation, tremolo/vibrato, triggering

Processes	
N3	backup copy, format, mix/mixing/balance, normalising, sampled, save, audio/stereo master, USB (port)
N4	click track, copy, cut and paste, effects pedals, final mix, general MIDI (GM), guide vocal, import/export, input/output, mute, overdub, peak, sequencer, signal path, synchronisation (sync), WAV/AIFF file
N5	beat-matching, digital processor, drop in/out, fade in/out, import/export, latency, locators, markers, multi effects processor, quantisation, vocal enhancer
H	ADSR envelope (attack/decay/sustain/release), crossfade, filter, insert point, plug-ins, sample editor, sample frequency, submix, threshold

Appendix 3: Useful online resources

Online resources (websites, microsites, wikis, newsfeeds, databases, etc) can provide a valuable source of easily accessible and up-to-date information on a wide range of music technology hardware, software and topics. Some suggested online resources are listed below.

Websites	Resources
Intellectual property	
PRS for Music	Information about licencing
Association of Independent Music	Wide range of advice and downloadable resources
British Academy of Songwriters, Composers and Authors (BASCA)	Downloadable paper on IP in educational resources section
The British Recorded Music Industry (BPI)	Useful glossary of terms, and information on copyright, in visitors area
Merlin (merlinnetwork.org)	Copyright protection agency for musicians
Musicians Union (MU)	Wide range of advice for professional musicians
PPL	Information for performers and music makers
UK Music	Supporting the UK music industry
Ofcom	Information on broadcasting licences
Microphones and recording	
Recording-microphones	A website with good description of microphone types, and tips on recording and many useful links
planetoftunes	General website with sections on sound theory, sound recording, MIDI sequencing and much more
PRC Recording	A recording studio with a useful hints and tips section
Making your microphone placement work	An 'audio tuts+' resource with useful hints and tips
General information	
Sae Institute	Follow link to reference library for a wide range of useful documents on audio technology
Renaissance recording Studio, Nashville	Sections on microphone technique, tracking tips and mixing tips
120years.net	useful information about music technology developments
Royalty-free music and sound effects	
Stonewashed (Vilkki Studios) AudioMicro	Sources of royalty-free music and sound effects which can be used in tasks and projects

Administrative information

Published: June 2014 (version 1.1)

History of changes to Course Support Notes

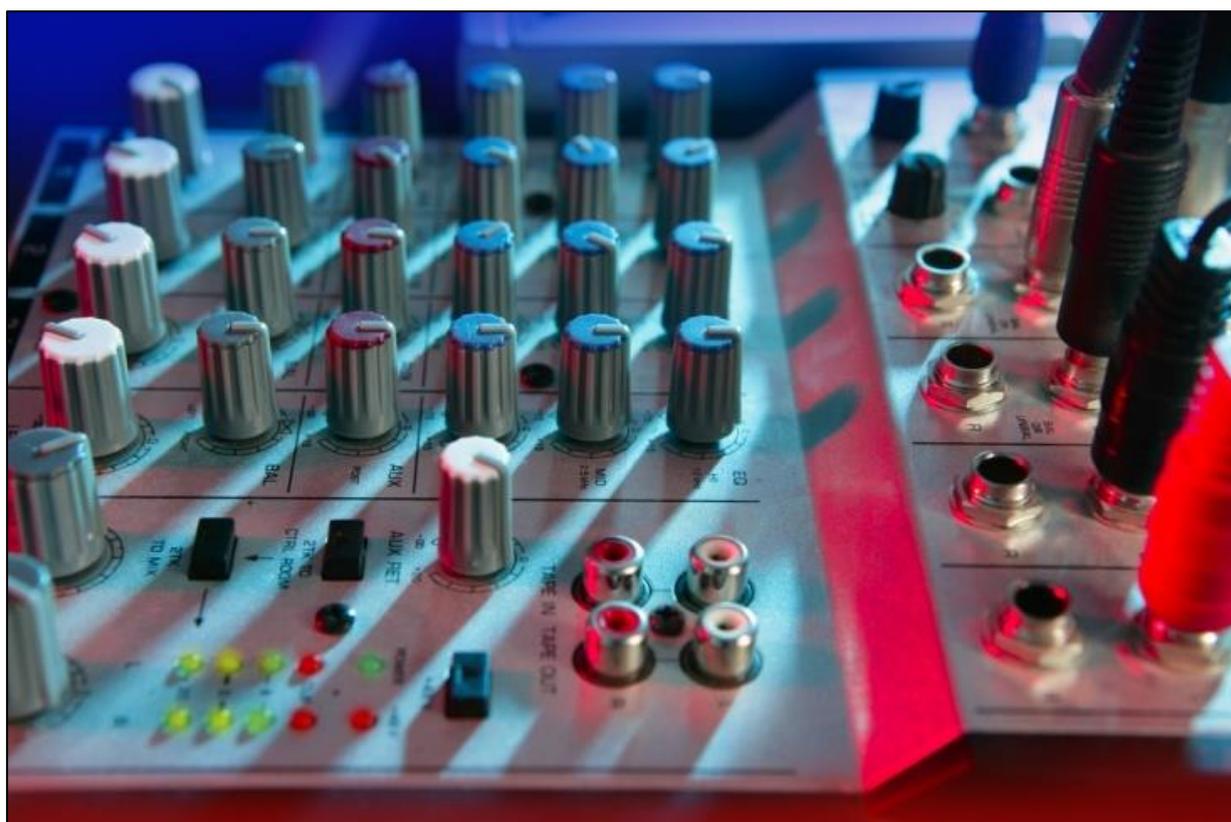
Course details	Version	Description of change	Authorised by	Date
	1.1	Concept tables in Appendix 2, including lists of genres, amended and updated.	Qualifications Development Manager	June 2014

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Unit Support Notes — Music Technology Skills (Higher)



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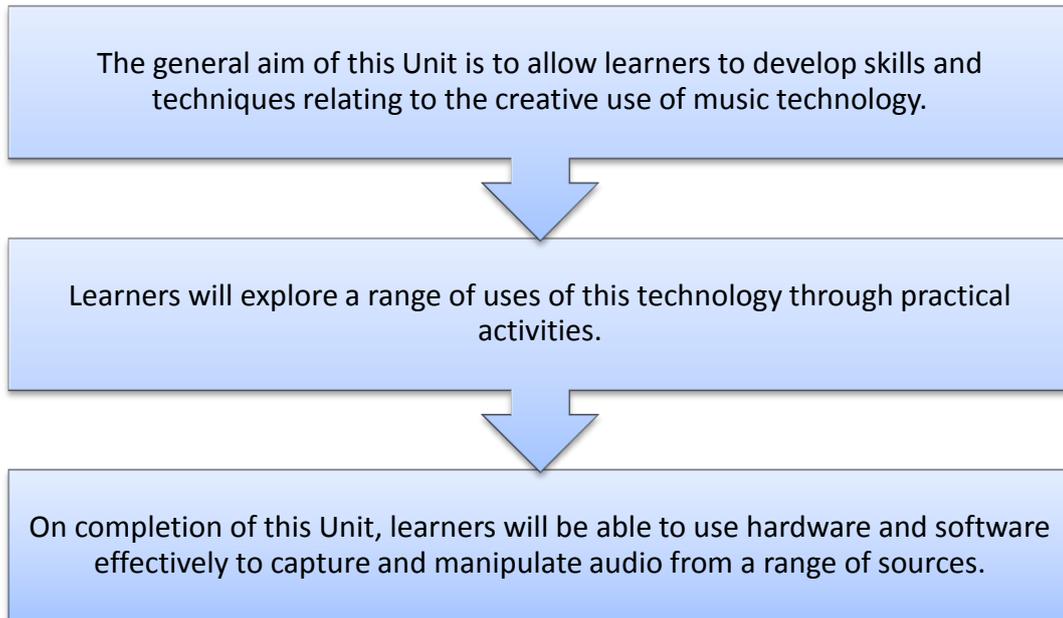
Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the *Music Technology Skills (Higher) Unit*. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- ◆ the Music Technology Skills (Higher) *Unit Specification*
- ◆ the Higher Music Technology *Course Specification*
- ◆ the Higher Music Technology *Course Assessment Specification*
- ◆ the Higher Music Technology *Course Support Notes*
- ◆ appropriate assessment support materials

General guidance on the Unit



This Unit will also give learners the opportunity to develop a range of transferable skills for life, learning and work.

The Unit can be delivered:

- ◆ as a stand-alone Unit
- ◆ as a part of the Higher Music Technology Course

Progression into this Unit

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ National 5 Music Technology Course or relevant Units

Skills, knowledge and understanding covered in this Unit

Information about skills, knowledge and understanding is given in the Higher Music Technology *Course Support Notes*.

If this Unit is being delivered on a free-standing basis, teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

If the Unit is being delivered as part of the Higher Music Technology Course, the teacher or lecturer should refer to the 'Further mandatory information on Course

coverage' section within the *Course Assessment Specification* for detailed content.

Progression from this Unit

On successful completion of this Unit, the following Units and Courses provide appropriate progression pathways for learners:

- ◆ other Music or Music Technology Units at SCQF level 6

Approaches to learning, teaching, and assessment

The Unit is designed to provide flexibility and choice for both the learner and the teacher or lecturer.

Learning and teaching activities should be designed to stimulate learners' interest, and to develop skills and knowledge to the standard required by the Outcomes and to the level defined by the associated Assessment Standards.

Tasks and activities throughout the Unit should be linked to relevant contexts. The *Unit Specifications* and *Course Specifications* define the skills and knowledge required, but leave complete freedom to the teacher or lecturer and learner to select interesting contexts in which to develop these. This provides scope for personalisation and choice, as relevant and motivating contexts can be used.

The *Course Support Notes* provide further broad guidance on approaches to learning and teaching which applies to all the Units of the Course, and should be read before delivering this Unit.

When delivering the Unit as part of the Higher Music Technology Course, reference should be made to the appropriate content statements within the 'Further mandatory information on Course coverage' section to ensure the required breadth of knowledge is covered.

Approaches to delivering and assessing each Outcome

The learner must demonstrate attainment of **both** of the Outcomes and their associated Assessment Standards. Assessment must be valid, reliable and fit for purpose.

SQA does not specify the methods of assessment to be used; teachers and lecturers should determine the most appropriate method for their learners. In many cases, evidence (which may be oral or observational) will be gathered during normal classroom activities, rather than through formal assessment instruments.

Centres are expected to maintain a detailed record of evidence, including oral or observational evidence. Evidence in written or presentation format should be retained by the centre for verification.

Authentication of evidence

All evidence should be gathered under supervised conditions.

In order to ensure that the learner's work is their own, the following strategies are recommended:

- ◆ personal interviews with learners where teachers or lecturers can ask additional questions about the completed work

- ◆ asking learners to do an oral presentation on their work
- ◆ ensuring learners are clear about acknowledging sources
- ◆ using checklists to record the authentication activity

Assessment evidence may be produced in a variety of formats including presentations, digital photographs and video, audio files, podcasts and blogs, and these can be stored by the learner (or teacher or lecturer) within a proprietary e-portfolio, or simply by storing them in a secure folder. It should be noted that centres should verify that this evidence is indeed that of the learner and ensure that no credit is given for archive information without further analysis or comment by the learner.

Assessment of learners can be carried out at any point during teaching and learning in this Unit, where evidence of competence is demonstrated.

Outcome 1 The learner will:

- 1 Use hardware and software effectively to capture audio from a range of sources, by:
 - 1.1 selecting and using appropriate audio input devices and sources
 - 1.2 applying appropriate microphone placement and techniques
 - 1.3 designing and constructing the signal path for multiple inputs
 - 1.4 setting appropriate input gain and monitoring levels
 - 1.5 overdubbing tracks

Guidance on delivery of Outcome 1

During the early stages of delivering this Unit learners could be introduced to underpinning knowledge, such as an overview of the basic components of a sound wave including amplitude and frequency. They should learn the basics of how a microphone converts a sound wave into a suitable signal for capture and storage on different mediums, for instance digital hard-drive or analogue tape. If the teacher or lecturer is using recording software on a digital audio workstation (DAW) it will be beneficial to show examples of different recorded sound waves as a visual aid to understanding differences in levels and frequencies.

An element of teaching and learning should include an explanation of the differences between dynamic and condenser microphones and suitable uses for each. Those teachers and lecturers with specialist knowledge of this area may wish to expand on these two types by discussing other types of microphone such as optical, laser, ribbon or piezoelectric however this is not an essential element of the Unit. In addition, there should be concise information on microphone polar patterns and suitable uses for different types. As a minimum this should include cardioid, omnidirectional and bi-directional or figure of 8. Where resources allow, learners should experiment with different polar patterns to capture audio and should compare results from different types. There are now numerous relatively inexpensive multi-purpose microphones available on the market which are able to switch between polar patterns and can replace the need to buy several different mics.

Each centre delivering the Unit should direct learning and teaching towards the equipment they have and should focus on the function and features of each part

of the recording/mixing/editing system. Where a centre has more than one type of recording set-up, learners should be encouraged to investigate the functions and features of each.

Teaching approaches for Outcome 1 should be varied and could include a mix of demonstration, exposition, practical activities, group work and individual experimentation.

At this level of course, learners will be expected to record live audio with a minimum of 3 microphones. They should experiment with a variety of arrays and configurations including a combination of spot/close micing and coincident pairs. They should be encouraged to compare and discuss results from different set ups such as A-B, X-Y and M/S and which work best in different situations when combined with spot microphones. When recording with a combination of microphones, learners should be made aware of concepts including phase, the proximity effect and inter-channel time differences.

It is good practice to encourage learners to experiment with several different types of music and instrumentation when applying microphone techniques and to experiment with audio capture of other sound sources such as birdsong, classroom noise or nearby traffic for example. It is recommended that when recording music ensembles, learners are encouraged to play instruments for each other and should assist each other with set ups including microphone placement. Learners should investigate different microphone placement techniques for different audio sources and should discuss the resulting recordings with their peers.

Learners should be encouraged to plan projects and should consider the desired outcome before embarking on the actual recording. They will need to consider which type of microphones to use and whether they wish to capture the audio source alone or whether or not it is desirable to also capture background noise such as room reverberation or audience reaction to a performance. These will have influence over the choice and positioning of microphones and learners should try several different methods in order to discover the most effective methods.

During this Outcome learners have the option to combine audio from sources not necessarily captured by microphone although there must also be various mic inputs as mentioned previously. Other sources could include direct injection of line level input from guitar and keyboards, virtual instrument plugins or pre-recorded samples sourced from elsewhere. These should all be monitored at a suitable level and input gain should be set appropriately to achieve a reliable signal to noise ratio. At this stage learners will need to consider spillage between inputs and should consider the suitability of overdubbing tracks to correct any errors in performance or recording. It is important that learners consider the change in context of any track that is recorded as an overdub in isolation from the other elements of the recording.

It may be beneficial for learners to work in groups where each member is allocated different responsibility from the others such as one member being responsible for interconnecting recording equipment, another deals with microphone placement, another is responsible for setting recording levels and others may decide on the audio to be recorded, eg a rock band or brass quintet. Roles and responsibilities could be rotated as each new recording is made. Where there are learners within a group who have prior knowledge and

experience of recording equipment, both hardware and/or software, they should be encouraged to assist the less experienced with recording and mixing techniques.

The focus is on developing a good range of essential skills, so recordings need not necessarily be completed works; short examples to demonstrate understanding and competence of the task are more appropriate.

It is important throughout the Unit that the teacher or lecturer emphasises the importance of health and safety and good practice when working with electrical and other equipment. Learners should be taught how to correctly set up equipment so that cable and microphone stands etc. do not create hazards.

Outcome 2 The learner will:

- 2 Use hardware and software effectively to manipulate audio from a range of sources, by:
 - 2.1 applying creative/corrective equalisation
 - 2.2 applying dynamic processing and time domain and other effects
 - 2.3 applying a range of mixing techniques to achieve a balanced and creative mix
 - 2.4 editing tracks
 - 2.5 editing multiple takes into a single take

Guidance on delivery of Outcome 2

Outcome 2 could be delivered through a combination of practical activities and demonstrations. Listening to examples of professionally recorded tracks will enhance the learner's understanding of the various concepts in Outcome 2. Learners should be encouraged to experiment with different effects and mixing techniques and should be offered the opportunity to critique each other's mixes.

Where possible pre-recorded examples of varied audio recordings could be made available for the learners to practice different mixing and manipulating techniques. This could allow for comparisons between professionally recorded material and the treatment by the learner. The teacher or lecturer should demonstrate the function of the mixing set-up and should demonstrate how to apply equalization both as a corrective tool and as a creative process. They should demonstrate how to use time domain effect to enhance the recording and should explain stereo imaging and the use of pan controls and faders to achieve a balanced and creative mix.

Once learners understand the theoretical applications of effects and processors including equalisation and are familiar with the operation of available equipment, they may find it most beneficial and interesting to work on material that they have recorded either themselves or with peers. The teacher or lecturer should fully explain the function and purpose of EQ and should encourage learners not to overuse it. They should be urged to initially mix the audio without altering tonal content or adding any effects until they are happy with the balance of sounds and should then consider applying changes if necessary.

Corrective EQ is fairly likely where a combination of mic'ing techniques are being used and artefacts introduced such as excess noise or bass accentuation due to the proximity effect can occur. It will also benefit the learner if there is discussion around the use of EQ and the emphasis of instruments and sounds in some genres of music differing from others. These discussions can centre on achieving a balanced and appropriate audio spectrum depending on the genre. Learners should be encouraged to listen to commercial recordings of a genre and to evaluate the main elements of the sound and how it is created. Examples could include modern country music where the vocal is the predominant instrument, vocal treatment in rock music where it tends to be at a lower level than guitars and drums, rock "n" roll where the emphasis is on guitars and keyboards or reggae with an emphasis on bass frequencies.

The subject depth of time domain and dynamic effects is vast and not suitable to be covered fully within the confines of a 40-hour Unit; however, it is important to explain the usage and purpose of those most commonly used, ie compression, noise gates and reverberation. Learners should be taught appropriate use of these processors through demonstration and experimentation. Listening to examples of use of effects will greatly enhance understanding and learners should try to recreate effects within their own recordings where possible. Learners should be made aware of overuse of effects and specific sounds and instruments which can negatively affect a final mix if inappropriately applied.

Outcome 2 is largely about learning the function and facilities of equipment to allow the learner to apply techniques for enhancing audio therefore a strong emphasis should be placed on developing discretionary listening skills. When applying mixing techniques the learner will be expected to make judgements on the quality of recordings and performances. Outcome 2 asks the learners to edit multiple takes into a single take. This will require the learner to select the best recordings and to make guilt free edits for a final version. In addition, the learner will be making judgements over placement of instruments within the stereo image and will be attempting to make a balanced and appropriate final mix. Peer discussion and evaluation should be undertaken in the classroom where candidates can comment on the effectiveness or not of the use of mixing techniques whether or not the learner has achieved the result they originally planned.

If the delivery centre has appropriate equipment then learners could be encouraged to combine both audio and MIDI tracks in a recording; however this is not a requirement of the Unit. Many editing techniques and functions are the same for both audio and MIDI in software-based DAWs, use of both together will reinforce understanding of the editing software.

Once learners have mastered the basic techniques and functions of the mixing and editing software they should be encouraged to work on mixes of material which they have recorded. Understanding will be enhanced if the learner attempts several contrasting treatments of the same recording and then evaluates each example.

Guidance on assessment of Outcomes 1 and 2

For this Unit, learners must provide evidence of their ability to use a range of hardware and software to capture and manipulate audio. Evidence may be generated through a single activity or as naturally occurring evidence produced over a series of activities. Evidence may include appropriate screen shots, track

sheets, session data files and audio files, supplemented by observational evidence of the Assessment Standards.

This Unit may be assessed as two discrete Outcomes or may be approached holistically with a final task being the instrument of assessment. Whichever method is adopted, the teacher or lecturer should monitor and record progress throughout and should keep records of each element of the Unit being achieved.

The assessment may be in the form of a series of tasks set by the teacher or lecturer which should cover each element of the Outcome to which it refers or all elements if a single activity.

Different types of tasks could include:

- ◆ recording a radio show
- ◆ capturing and manipulating sound effects for a film/TV show
- ◆ recording a small musical ensemble or choir
- ◆ live recording of a show followed by discrete overdubs and editing at a later stage

Learners may be given a single brief which covers both Outcomes or may be issued with two discrete briefs, one for each Outcome. Regardless of which method is used, the brief should state standards which include a minimum of:

- ◆ three microphones to be used simultaneously for audio capture
- ◆ one other audio source
- ◆ one track to be overdubbed
- ◆ three takes to an individual instrument or audio source for comping/editing purposes
- ◆ compression applied to one track
- ◆ reverb added to one track
- ◆ pan applied to two tracks
- ◆ two tracks edited

Final mixes and any supporting evidence submitted should demonstrate a robust understanding of all of the standards set out in the Outcomes. Recordings should be free of any extraneous artefact and should exhibit accurate levels. There should be no obvious audible edits and the teacher or lecturer should retain evidence of where all standards have been applied to tracks with the use of a check sheet.

Learners should retain a session log(s) for each recording undertaken and they should note any changes made. This may include screen grabs which should be dated and will demonstrate progress within a recording or mix down but will also provide evidence of each of the assessment standards being met. The log should reflect the session type, microphone placement and selection, track lists, overdubs and timings.

The teacher or lecturer should keep observational checklists for each of the assessment standards which cannot be exemplified through screen capture or purely listening to a recording, for example appropriate selection, placement and routing of audio input devices and microphones. The learner may also be asked to produce a diagram of each of these elements of Outcome 1. Where

appropriate, teachers or lecturers may wish to use video evidence of a recording setup.

All audio files should be accurately labelled and stored for evidence purposes.

Useful resources

Each centre delivering this Unit will have different resources. A typical resource list could include:

- ◆ Three dynamic microphones with stands
- ◆ Appropriate cabling for microphones, other audio sources and monitors
- ◆ Multi-track recording/editing/mixing equipment
- ◆ Monitoring system
- ◆ Outboard or built in effects processors and EQ

There are many different recording systems available, some stand-alone and others computer-based. Some of the most popular software-based recording packages currently are Protools, Logic, Reason, Garageband and Ableton Live. Other products are also suitable, including apps for mobile devices.

It would be beneficial to learners if they have access to a digital audio workstation based around a computer with appropriate software and hardware. A suitable system might include:

- ◆ Computer with 4GB RAM
- ◆ Hardware audio interface with a minimum of three microphone inputs and line inputs
- ◆ Hardware audio interface with stereo output
- ◆ Appropriate cabling for microphones, other audio sources and monitors
- ◆ MIDI keyboard
- ◆ Monitoring system
- ◆ Headphones
- ◆ Recording/sequencing software with effects/EQ plugins
- ◆ External digital storage device

Developing skills for learning, skills for life and skills for work

Learners are expected to develop broad generic skills as an integral part of their learning experience. The *Unit Specification* lists the skills for learning, skills for life and skills for work that learners should develop through this Course. These are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and must be built into the Unit where there are appropriate opportunities. The level of these skills will be appropriate to the level of the Unit.

The table below highlights some opportunities to develop these skills during this Unit.

3 Health and wellbeing	
3.1 Personal learning	Researching information about microphone types Exploring the effects of changing microphone placements
4 Employability, enterprise and citizenship	
4.2 Information and communication technology (ICT)	Using software to manipulate audio Interfacing audio capture equipment with computer systems
5 Thinking skills	
5.2 Understanding	Explaining the purpose and effects of a range of ways of manipulating audio
5.3 Applying	Making appropriate choices of input devices Applying a range of audio manipulation techniques
5.4 Analysing and evaluating	Reflecting on results of tasks, and making appropriate improvements

The Unit may also provide opportunities to develop or consolidate other skills for life, learning and work, including:

- ◆ reading and writing
- ◆ working with others
- ◆ enterprise and citizenship

Equality and inclusion

The requirement to develop practical skills involving the use of equipment may present challenges for learners with physical, visual or aural impairment. In such cases, reasonable adjustments may be appropriate.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in this document is designed to sit alongside these duties but is specific to the delivery and assessment of the Unit.

Alternative approaches to Unit assessment to take account of the specific needs of learners can be used. However, the centre must be satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will, in fact, generate the necessary evidence of achievement.

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- ◆ Assessment Arrangements (for disabled learners and/or those with additional support needs) — various publications on SQA’s website: www.sqa.org.uk/sqa/14977.html.
- ◆ [*Building the Curriculum 4: Skills for learning, skills for life and skills for work*](#)
- ◆ [*Building the Curriculum 5: A framework for assessment*](#)
- ◆ [*Course Specifications*](#)
- ◆ [*Design Principles for National Courses*](#)
- ◆ [*Guide to Assessment \(June 2008\)*](#)
- ◆ *Principles and practice papers for curriculum areas*
- ◆ *Research Report 4 — Less is More: Good Practice in Reducing Assessment Time*
- ◆ *Coursework Authenticity — a Guide for Teachers and Lecturers*
- ◆ [*SCQF Handbook: User Guide*](#) (published 2009) and SCQF level descriptors (reviewed during 2011 to 2012): www.sqa.org.uk/sqa/4595.html
- ◆ [*SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*](#)
- ◆ SQA Guidelines on e-assessment for Schools
- ◆ SQA Guidelines on Online Assessment for Further Education
- ◆ SQA e-assessment web page: www.sqa.org.uk/sqa/5606.html

Administrative information

Published: June 2014 (version 1.1)

History of changes to Unit Support Notes

Unit details	Version	Description of change	Authorised by	Date
	1.1	Assessment Standards 1.1 and 2.2 amended for consistency with Unit Specification.	Qualifications Development Manager	June 2014

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Unit Support Notes — Understanding 20th and 21st Century Music (Higher)



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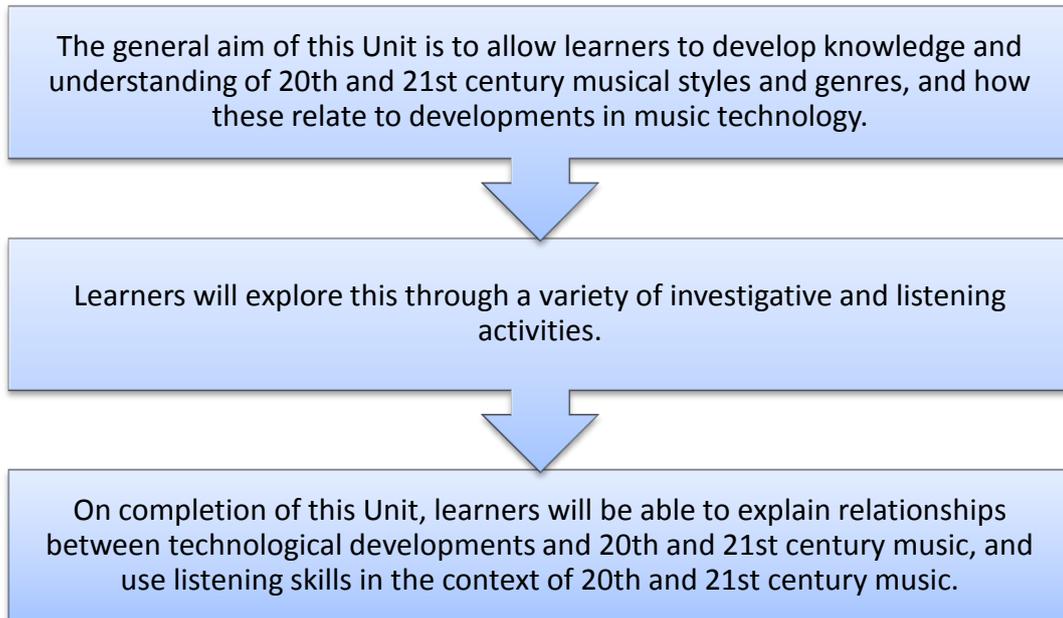
Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

Introduction

These support notes are not mandatory. They provide advice and guidance to support the delivery of the *Understanding 20th and 21st Century Music (Higher)* Unit. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- ◆ The Understanding 20th and 21st Century Music (Higher) *Unit Specification*
- ◆ the Higher Music Technology *Course Specification*
- ◆ the Higher Music Technology *Course Assessment Specification*
- ◆ the Higher Music Technology *Course Support Notes*
- ◆ appropriate assessment support materials

General guidance on the Unit



This Unit will also give learners the opportunity to develop a range of transferable skills for life, learning and work.

The Unit can be delivered:

- ◆ as a stand-alone Unit
- ◆ as a part of the Higher Music Technology Course

Progression into this Unit

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ National 5 Music Technology Course or relevant Units

In terms of prior learning and experience, relevant experience of playing any musical instrument or singing and basic numeracy skills would be of value.

Skills, knowledge and understanding covered in this Unit

Information about skills, knowledge and understanding is given in the Higher Music Technology *Course Support Notes*.

If this Unit is being delivered on a free-standing basis, teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

If the Unit is being delivered as part of the Higher Music Technology Course, the teacher or lecturer should refer to the 'Further mandatory information on Course coverage' section within the *Course Assessment Specification* for detailed content.

Progression from this Unit

Progression opportunities for learners will vary. They may include further study in a related subject area at the same SQCF level, providing greater breadth to the learner's achievements. Alternatively they could include progression onto the same Course at a higher SCQF level. On completion of this Unit, learners could consider moving onto:

- ◆ other Music or Music Technology Units at SQCF level 6

Approaches to learning, teaching, and assessment

The Unit is designed to provide flexibility and choice for both the learner and the teacher or lecturer.

Learning and teaching activities should be designed to stimulate learners' interest, and to develop skills and knowledge to the standard required by the Outcomes and to the level defined by the associated Assessment Standards.

Tasks and activities throughout the Unit should be linked to relevant contexts. The *Unit Specifications* and *Course Specifications* define the skills and knowledge required, but leaves complete freedom to the teacher or lecturer and learner to select interesting contexts in which to develop these. This provides scope for personalisation and choice, as relevant and motivating contexts can be used.

The *Course Support Notes* provide further broad guidance on approaches to learning and teaching which applies to all the component Units of the Course, and should be read before delivering this Unit.

When delivering the Unit as part of the Higher Music Technology Course, reference should be made to the appropriate content statements within the 'Further mandatory information on Course coverage' section to ensure the required breadth of knowledge is covered.

Approaches to delivering and assessing each Outcome

The learner must demonstrate attainment of **both** of the Outcomes and their associated Assessment Standards. Assessment must be valid, reliable and fit for purpose.

SQA does not specify the methods of assessment to be used; teachers and lecturers should determine the most appropriate method for their learners. In many cases, evidence (which may be oral or observational) will be gathered during normal classroom activities, rather than through formal assessment instruments.

Centres are expected to maintain a detailed record of evidence, including oral or observational evidence. Evidence in written or presentation format should be retained by the centre for verification.

Authentication of evidence

All evidence should be gathered under supervised conditions.

In order to ensure that the learner's work is their own, the following strategies are recommended:

- ◆ personal interviews with learners where teachers or lecturers can ask additional questions about the completed work

- ◆ asking learners to do an oral presentation on their work
- ◆ ensuring learners are clear about acknowledging sources
- ◆ using checklists to record the authentication activity

Assessment of learners can be carried out at any point during teaching and learning in this Unit, where evidence of competence is demonstrated.

Note: Although there are two Outcomes to this Unit, the order is not significant, and it is recommended that they are delivered in an integrated way.

Outcome 1 The learner will:

- 1 Explain the relationships between technological development and 20th and 21st century music, by:
 - 1.1 describing genres in terms of their key innovators, attributes and technologies used
 - 1.2 explaining how a technological development has influenced a number of genres
 - 1.3 explaining how a key innovator has influenced development in musical technology
 - 1.4 explaining the need to protect intellectual property

Outcome 2 The learner will:

- 2 Use listening skills in the context of 20th and 21st century music, by:
 - 2.1 identifying examples of a wide range of genres and their main attributes
 - 2.2 identifying examples of a wide range of relevant music concepts

Guidance on delivery of Outcomes 1 and 2

Learners should be given the opportunity to study a variety of musical styles that have been used and become popular at different points in the 20th and 21st centuries. Appropriate genres for study at Higher include (but are not limited to) rock 'n' roll, Scottish, Celtic rock, 60s pop, punk, country music, hip hop, musicals, jazz funk, soul/R 'n' B, indie, new wave, electroacoustic, reggae, world music and 20th/21st century classical music. This study should incorporate the development of musical instruments and the methods used to record music over this period.

Learners should become familiar with a range of technological developments, which might include relevant examples from: player pianos, acoustic horn/cylinder, wax cylinders, gramophone records, vinyl LPs, 45 rpm records, radio, juke box, CD players, MP3 players, electric guitar (solid body), electronic organ, reel-to-reel magnetic tape, stereo LPs, guitar pick-up, 8-track recording/multi-track recording (analogue and digital), audio/MIDI interface, virtual instruments, performance software, stereo LPs, bass guitar, electronic

drum kit, cassette recorder/player/tape, DJ decks/mixer, minidisc, sequencer, streaming audio.

A range of music concepts, including the following should be studied and exemplified, so that they can be described and identified in music excerpts. Note that the first row of the table shows concepts required for National 5, while the second row shows the additional concepts for Higher.

Melody/harmony	Rhythm/tempo	Texture/ structure/form	Timbre/ dynamics
atonal cluster inverted pedal chromatic whole tone scale glissando modulation countermelody pitch bend tone/semitone	ritardando (rit) cross rhythms	strophic walking bass homophonic polyphonic coda bridge/link passage instrumental break	arco pizzicato rolls voices — mezzo soprano, baritone
relative major/ minor interval inversion	time changes irregular time signatures	through-composed	harmonics accents staccato marks phrase marks

A variety of approaches may be adopted. These should include opportunities for personal learning and development, making use of online resources for guided research.

Learning activities could include:

- ◆ giving learners the opportunity to experience an appropriate range of music, relating the styles of music to social backgrounds of the time, the mechanical means by which new music could be heard by a wider audience and the impact the music had on listeners' lives; particularly appropriate genres could include soul music
- ◆ developing listening skills, learners use worksheets to describe their impressions of the music they hear, their personal responses to music, learning about musical instruments and the geographic and cultural context of music; in the study of music in the indie genre, comments could include a typical band's instrumental line-up, the production of low-budget recordings and the use of effects in the mix
- ◆ the study of specific elements of genres such as Impressionist musicians and artists
- ◆ visiting an art gallery or museum followed by an engineered production to act as background music /sounds for chosen exhibits, using a musique concrète style as it would have been heard on a stereo reel to reel tape compared with a current multi-channel sound system

- ◆ creating sound design effects (Foley) for a chosen scene from a play, a radio or film script
- ◆ a group assignment based on a chosen genre dealing with a combination of the music, the performers and the mechanical means by which the music was recorded such as soul music or new wave
- ◆ class discussions as a follow-on to a teacher- or lecturer-led analysis of a selected style based on varied critical reaction to listening experiences within the class; the equipment used to record and produce tracks could be studied and identified by careful audio perception
- ◆ group discussion as a follow-up to a teacher- or lecturer-led analysis of a chosen genre such as Impressionism
- ◆ individual, short responses to a piece of music to be used as discussion material for a group or a class where the writer/reporter bases research on a key innovator in a particular genre and discusses the technologies used, for example, Herbie Hancock's use of jazz keyboard in the jazz-funk genre
- ◆ learner review sessions where individuals or groups create questions for the rest of the class based on their choice of genre such as the sound of new wave in the songs and instrumental line-up of Debbie Harry with Blondie
- ◆ researching and then explaining the use of a major technological development and the effect that development had on a range of musical genres; learners could select from stereo LPs or cassette recorders or sequencers or DJ mixer decks

For Outcome 1, learners must refer to at least two different genres in their studies. They should prepare their findings in an appropriate format that can be presented to others. This could include visual, written, oral or electronic formats.

Intellectual property

Learners should be guided to explore music copyright in order that they can understand and then explain, in simple terms, the need to protect intellectual property. The teacher or lecturer may describe current copyright legislation and explain the process of obtaining copyright clearance.

The teacher or lecturer may demonstrate relevant case studies of copyright infringement, listening to examples of music, encouraging class discussion. In small groups learners could investigate high profile cases where the proper copyright clearance procedures were not followed so that learners can gain an understanding of the potential consequences of not obtaining the appropriate license and clearances.

Learners must be aware of, and adhere at all times to the requirements of current legislation in relation to the creation, performance and use of music/samples and other forms of intellectual property. Learners will undertake investigations and suggest possible course of actions to avoid copyright infringement.

Guidance on assessment of Outcomes 1 and 2

To support a pass in this Unit, teachers or lecturers should be able to provide evidence on which the assessment is based, demonstrating that the learner has satisfied the requirements of both of the Unit's Outcomes.

Throughout the Unit the teacher or lecturer will select the most appropriate method of gathering and recording evidence from individual learners.

Appropriate evidence could include:

- ◆ brief reports on research into selected genres, styles and technologies
- ◆ oral responses to questions put to the learner
- ◆ an oral or audio/visual presentation by an individual learner to a group or class
- ◆ the learner's notes on a case-study of one example of an intellectual property issue
- ◆ answers to questions in response to music excerpts

Useful resources

A suggested range of resources for learners embarking on this Unit include:

- ◆ good quality audio play-back facilities with stereo speakers
- ◆ decent quality headphones for individual work
- ◆ computer systems with appropriate software for the playing of CDs and DVDs
- ◆ access to the web for individual and group research including the Performing Arts Resource Guide in the Library of Congress (Washington DC), Archival Sound Recordings in the British Library, Mixing with BBC Sound Engineers the Petrucci Music Library and downloadable materials from popular sites
- ◆ photographic evidence of recording and playback devices used during the period of study
- ◆ access to recordings of televised documentary programmes that deal with specific genres from the period of study
- ◆ interactive classroom boards for presentations to a group or class
- ◆ a range of CDs and DVDs that demonstrate the variety of music styles through the 20th and 21st centuries
- ◆ personal music players for the playback of downloaded music
- ◆ where available, music scores of appropriate examples from different genres
- ◆ textbooks, CD and DVD cover notes, programme notes for reference and support purposes

Developing skills for learning, skills for life and skills for work

Learners are expected to develop broad generic skills as an integral part of their learning experience. The *Unit Specification* lists the skills for learning, skills for life and skills for work that learners should develop through this Course. These are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and must be built into the Unit where there are appropriate opportunities. The level of these skills will be appropriate to the level of the Unit.

The table below highlights some opportunities to develop these skills during this Unit.

3 Health and wellbeing	
3.1 Personal learning	Researching information about selected genres and styles Social development through team working Learning effective participating skills Considering the impact of IP legislation on case studies and own practice
4 Employability, enterprise and citizenship	
4.2 Information and communication technology (ICT)	Using search engines to research technological developments, genres and styles Producing text-based and audio-visual reports on research findings Learning and understanding the potential use of technological knowledge for future employment
5 Thinking skills	
5.2 Understanding	Using knowledge of genres and styles to identify examples in music excerpts Using knowledge of musical concepts to identify examples in music excerpts Using knowledge of musical literacy in the identification of core elements in genres and styles
5.3 Applying	Appreciating the consequences of developments by key figures in various genres Explaining the application of IP legislation in the music industry

The Unit may also provide opportunities to develop or consolidate other skills for life, learning and work, including:

- ◆ reading and writing
- ◆ working with others
- ◆ enterprise and citizenship

Equality and inclusion

The approaches to learning including suggested learning activities have been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning activities and selecting from the various ways in which evidence may be prepared and presented for assessment purposes.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in this document is designed to sit alongside these duties but is specific to the delivery and assessment of the Unit.

Alternative approaches to Unit assessment to take account of the specific needs of learners can be used. However, the centre must be satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will, in fact, generate the necessary evidence of achievement.

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- ◆ Assessment Arrangements (for disabled learners and/or those with additional support needs) — various publications on SQA’s website:
www.sqa.org.uk/sqa/14977.html.
- ◆ [*Building the Curriculum 4: Skills for learning, skills for life and skills for work*](#)
- ◆ [*Building the Curriculum 5: A framework for assessment*](#)
- ◆ [*Course Specifications*](#)
- ◆ [*Design Principles for National Courses*](#)
- ◆ [*Guide to Assessment \(June 2008\)*](#)
- ◆ *Principles and practice papers for curriculum areas*
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- ◆ *Coursework Authenticity — a Guide for Teachers and Lecturers*
- ◆ [*SCQF Handbook: User Guide*](#) (published 2009) and SCQF level descriptors (reviewed during 2011 to 2012):
www.sqa.org.uk/sqa/4595.html
- ◆ [*SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*](#)
- ◆ SQA Guidelines on e-assessment for Schools
- ◆ SQA Guidelines on Online Assessment for Further Education
- ◆ SQA e-assessment web page: www.sqa.org.uk/sqa/5606.html

Administrative information

Published: June 2014 (version 1.1)

History of changes to Unit Support Notes

Unit details	Version	Description of change	Authorised by	Date
	1.1	References to genres and technological developments (pp 40–41) updated to match mandatory documents.	Qualifications Development Manager	June 2014

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Unit Support Notes — Music Technology in Context (Higher)



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Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

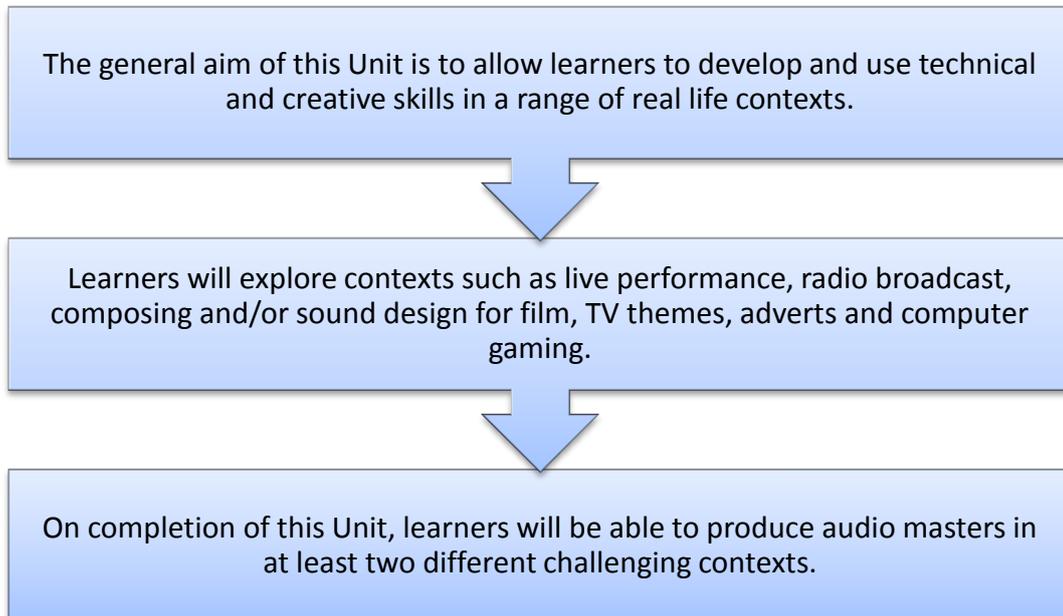
Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the *Music Technology in Context* (Higher) Unit. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- ◆ the Music Technology in Context (Higher) *Unit Specification*
- ◆ the Higher Music Technology *Course Specification*
- ◆ the Higher Music Technology *Course Assessment Specification*
- ◆ the Higher Music Technology *Course Support Notes*
- ◆ appropriate assessment support materials

General guidance on the Unit

Aims



This Unit will also give learners the opportunity to develop a range of transferable skills for life, learning and work.

The Unit can be delivered:

- ◆ as a stand-alone Unit
- ◆ as a component of the Higher Music Technology Course

Progression into this Unit

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ National 5 Music Technology Course or relevant Units

In terms of prior learning and experience, basic skills in numeracy and aural discriminatory ability would also be of value.

Skills, knowledge and understanding covered in this Unit

Information about skills, knowledge and understanding is given in the Higher Music Technology *Course Support Notes*.

If this Unit is being delivered on a free-standing basis, teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

If the Unit is being delivered as part of the Higher Music Technology Course, the teacher or lecturer should refer to the 'Further mandatory information on Course coverage' section within the *Course Assessment Specification* for detailed content.

Progression from this Unit

On successful completion of this Unit, the following Units and Courses provide appropriate progression pathways for learners:

- ◆ other Music or Music Technology Units at SQCF level 6

Approaches to learning, teaching, and assessment

The Unit is designed to provide flexibility and choice for both the learner and the teacher or lecturer.

Learning and teaching activities should be designed to stimulate learners' interest, and to develop skills and knowledge to the standard required by the Outcomes and to the level defined by the associated Assessment Standards.

Tasks and activities throughout the Unit should be linked to relevant contexts. The *Unit Specifications* and *Course Specifications* define the skills and knowledge required, but leave complete freedom to the teacher and learner to select interesting contexts in which to develop these. This provides scope for personalisation and choice, as relevant and motivating contexts can be used.

The *Course Support Notes* provide further broad guidance on approaches to learning and teaching which applies to all the Units of the Course, and should be read before delivering this Unit.

When delivering the Unit as part of the Higher Music Technology Course, reference should be made to the appropriate content statements within the 'Further mandatory information on Course coverage' section to ensure the required breadth of knowledge is covered.

Approaches to delivering and assessing the Unit Outcome

The learner must demonstrate attainment of **all** of the Assessment Standards of the Outcome. Assessment must be valid, reliable and fit for purpose.

SQA does not specify the methods of assessment to be used; teachers and lecturers should determine the most appropriate method for their learners. In many cases, evidence (which may be oral or observational) will be gathered during normal classroom activities, rather than through formal assessment instruments.

Centres are expected to maintain a detailed record of evidence, including oral or observational evidence. Evidence in written or presentation format should be retained by the centre for verification.

Authentication of evidence

All evidence should be gathered under supervised conditions.

In order to ensure that the learner's work is their own, the following strategies are recommended:

- ◆ personal interviews with learners where teachers or lecturers can ask additional questions about the completed work
- ◆ asking learners to do an oral presentation on their work
- ◆ ensuring learners are clear about acknowledging sources

- ◆ using checklists to record the authentication activity

Assessment evidence may be produced in a variety of formats including presentations, digital photographs or video, podcasts and blogs, and these can be stored by the learner (or teacher or lecturer) within a proprietary e-portfolio, or simply by storing them in a secure folder. It should be noted that centres should verify that this evidence is indeed that of the learner and ensure that no credit is given for archive information without further analysis or comment by the student.

Assessment of learners can be carried out at any point during teaching and learning in this Unit, where evidence of competence is demonstrated.

Outcome 1 The learner will:

- 1 Produce audio masters in different and challenging contexts by:
 - 1.1 using a wide range of skills in audio capture
 - 1.2 using a wide range of skills to manipulate audio and sequenced data
 - 1.3 mixing down to an audio master in appropriate file format(s)

Guidance on delivery of the Outcome

Learners must produce (at least) two clearly different short pieces of work which will demonstrate their ability to capture sound, manipulate it, and then mix it down to an audio master.

Suitable contexts could include:

- ◆ recording a rock band including overdubs
- ◆ recording a choir using appropriate single point stereo mic techniques
- ◆ creating a short sound track for a film including sound design and music
- ◆ producing a short radio broadcast including music, speech and stings
- ◆ arranging or composing using a MIDI program
- ◆ producing sound effects for drama using appropriate mic placement
- ◆ recording narration of a story or poem, and adding music
- ◆ creating an advertising jingle
- ◆ making use of samples and loops

At this level, learners are expected to choose the context and scope for their pieces of work. Two pieces from different contexts are required for assessment, but learners will benefit from investigating as wide a range of contexts as possible, through short research assignments, then choosing two to work on.

Learners may find it helpful if they are given realistic examples of acceptable and achievable creative projects. The teacher or lecturer and learners could select short sequences from some of the following media; film; television; radio; animation and computer games, exploring possible reasons for the choice of sounds and music used to set the mood, establish environment, support narrative, establish character, convey emotions, create and support transition. Learners should be encouraged to bring their own interests into discussions, to the point of providing the focus material for discussion and analysis.

Through discussion, the teacher or lecturer can involve the learners in creating a sound design map which clearly identifies the sound and music placed in the sequence viewed; this could be in a linear depiction, timeline, or storyboard. This map should be as detailed as possible and draw on the music and technology concepts in Appendix 2 of the Course Support Notes. This process will allow learners to develop their understanding of how various sounds and music supports the narrative/image, sets the mood, establishes environment, convey emotions, and how it can establish character. This can also provide an example framework for learners to use in the planning stages of their project.

Learners could be selected into small working groups and given a short sequence from a film. Through collaboration they could decide what form of sound design map they will produce for this task, then present and discuss their findings. The individual learner is prepared to then plan and execute a sound design map for their selected creative production.

Through analysis of audio clips, and short research tasks, learners can explore production techniques used in music of the 20th and 21st centuries and incorporate these approaches into their projects. The genres explored can be led by learner's interest.

Learners must ensure that all intellectual copyright for music produced and selected for their project has not been infringed.

Through well-chosen examples, teachers and lecturers can demonstrate the manipulation of loops and samples. Building up beats, bass parts and programming filter sweeps and other virtual instrument controllers can provide the learner with new perspectives on the scope and use of sequencing within larger DAW software.

Learners are expected to use skills developed in Unit 1 to set up and dismantle equipment, and to observe industry conventions and standards on health and safety at all times. For example, when using microphones, learners should be aware that microphone polar patterns, techniques and placement are critical to the capture/recording quality, and that the exact placement and application is dependent on factors such as acoustic environment, instrumentation and performer. At this level learners will begin to use polar pattern/positioning in an informed and creative manner, basing their decisions on industry standards and experimentation.

Teachers and lecturers could informally steer learners towards good practice in micing, recording and mixing techniques through encouraging access to web-based resources, and developing links with other learners through (eg) groups and blogs and by following up individual interests in the techniques used by notable practitioners discussed in Unit 2.

Working with musicians, producers or music groups will require learners to liaise closely with performers developing organisational, interpersonal and communication skills.

The creative use of equalization and panning, developed in Unit 1, should be applied in a variety of contexts. Learners can be provided with an audio session and tasked with creatively applying the EQ on each track; the teacher or lecturer would observe and discuss learner's decisions. The learners would then bounce tracks to an audio master.

The use of dynamic processors such as compressors, limiters and expanders/gates could be taught through demonstrations explaining the purpose and application of the controls. The learners can now begin to use compression dynamics processes as tone shaping tools within their audio sessions.

Listening to and analysing short clips from a variety of sources can exemplify typical and creative application of time domain and modulation effects. A practical demonstration using different effects on selected track/tracks would be useful. The learner can then apply effect(s) to the tracks within their audio session and bounce down to an audio master.

Journal Of Progress And Reflection

Learners should be encouraged to maintain a journal which could be in the form of a written journal, blog, or diary. This should include:

- ◆ a timeline of progress through exploring and researching, planning and creating, and producing the end product
- ◆ reflections on their accomplishments

This journal, while not required for Unit assessment, will provide good preparation and practice for the Course assessment assignment.

Guidance on assessment of the Outcome

Evidence will be the audio master(s) of two short examples, supplemented by observational evidence of the Assessment Standards.

This may be supplemented by naturally-occurring evidence. Examples of this are described below.

Photographs can be taken of mic positions and stage setups for live recordings etc and stored digitally in a learner's folder on the audio drive of a DAW. The use of screenshots and other methods of visual capture, and storage of plugin settings, could also be stored alongside.

When recording choirs and performances using live mixing, digital video evidence of fader movements, mutes and corrective EQ could be gathered by co-learners and/or the teacher or lecturer.

Learners should be encouraged to save date marked chronological sessions as a means of showing progression towards a final product.

Podcasting and blogging regularly about their planning, experiences and learning can very quickly build up a valuable searchable resource for successive learners not only within their centre but nationally and perhaps beyond.

Learners could do an oral presentation on their work and store this within their e-portfolio as evidence of planning and evaluation.

Developing skills for learning, skills for life and skills for work

Learners are expected to develop broad generic skills as an integral part of their learning experience. The *Unit Specification* lists the skills for learning, skills for life and skills for work that learners should develop through this Course. These are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and must be built into the Unit where there are appropriate opportunities. The level of these skills will be appropriate to the level of the Unit.

The table below highlights some opportunities to develop these skills during this Unit.

3 Health and wellbeing	
3.1 Personal learning	Researching information about a range of contexts where music technology may be used, and identifying industry standards and best practice. Considering the impact of IP legislation on practice
4 Employability, enterprise and citizenship	
4.2 Information and communication technology (ICT)	Using hardware and software to capture and manipulate audio Producing text-based and audio-visual reports on research findings
5 Thinking skills	
5.3 Applying	Applying skills and knowledge from other Units in new contexts
5.4 Analysing and evaluating	Analysing existing professional productions and recordings. Evaluating the processes and application of skills and techniques
5.5 Creating	Producing an audio master

The Unit may also provide opportunities to develop or consolidate other skills for life, learning and work, including:

- ◆ reading and writing
- ◆ working with others
- ◆ enterprise and citizenship
- ◆ analysing and evaluating

Equality and inclusion

The requirement to develop practical skills involving the use of equipment may present challenges for learners with physical, visual or aural impairment. In such cases, reasonable adjustments may be appropriate.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in this document is designed to sit alongside these duties but is specific to the delivery and assessment of the Unit.

Alternative approaches to Unit assessment to take account of the specific needs of learners can be used. However, the centre must be satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will, in fact, generate the necessary evidence of achievement.

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History of changes to Unit Support Notes

Unit details	Version	Description of change	Authorised by	Date

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