Qualification specification

NCFE Level 1/2 Technical Award in Music Technology
QN: 603/7008/7

Qualification summary

Qualification title	NCFE Level 1/2 Technical Award in Music Technology (603/7008/7)		
Ofqual qualification number (QN)	603/7008/7	**Aim reference**	603/7008/7
Guided learning hours (GLH)	141	**Total qualification time (TQT)**	155
Minimum age	14		
Qualification purpose	This qualification is part of a suite of technical award qualifications that have been developed to meet the Department for Education's (DfE's) requirements for high-quality, rigorous qualifications that: • have appropriate content for the learner to acquire core knowledge and practical skills • allow the qualification to be graded • provide synoptic assessment • enable progression to a range of study and employment opportunities		
Grading	Level 1 pass/merit/distinction (L1P/L1M/L1D) Level 2 pass/merit/distinction/distinction* (L2P/L2M/L2D/L2D*)		
Assessment method	Externally set: non-exam assessment (NEA) and an examined assessment (EA)		
Performance points	Please check with the DfE for the most up-to-date information, should there be any changes		

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Summary of changes

This section summarises the changes to this qualification specification since the last version.

Version	Publication date	Summary of amendments
V1.1	December 2022	Information has been added to page 15 of the assessment guidance to clarify how the non-exam assessment (NEA) will be moderated by NCFE.
V1.2	June 2023	Two additional hours have been added to the NEA assessment time to allow learners 2 hours of open book preparation and research time before sitting their NEA. The GLH has been increased from 139 to 141, and the TQT has been increased from 153 to 155. The moderation section has been updated for clarification by removing the statement advising that moderators are not aware of the marks awarded by the centre's assessors while looking at samples of work. The 'How the qualification is assessed' section has been updated to clarify that there is only one attempt permitted for each assessment.
v1.3	October 2024	On page 14 the non-exam assessment and overall weighting percentages for AO5 have had a minor amendment.

Section 1: introduction

If you are using this qualification specification for planning purposes, please make sure that you are using the most recent version.

Aims and objectives

This qualification aims to:

- focus on the study of the music technology industry
- offer breadth and depth of study, incorporating a key core of knowledge
- provide opportunities to acquire a number of practical and technical skills

The objectives of this qualification are to:

- understand the place of music technology within the music business
- understand hardware components and software functions of a digital audio workstation (DAW)
- use DAW software to produce musical projects
- understand how music is composed through the study and analysis of musical elements
- analyse the developments in musical style enabled by technology
- select and apply musical elements to create stylistically appropriate musical outcomes
- use sound creation in different forms of media
- apply sound creation to achieve an outcome
- understand planning and undertake multitrack recording and mixing
- use recording equipment to capture and store multitrack audio recordings

Support handbook

This qualification specification must be used alongside the support handbook where appropriate, which can be found on the NCFE website. This contains additional supporting information to help with the planning, delivery and assessment.

This qualification specification contains all the qualification-specific information you will need that is not covered in the support handbook, such as information regarding moderation.

Entry guidance

This qualification is designed for learners aged 14 to 16 in schools and colleges, but is also accessible for post-16 learners.

It is a vocational qualification equivalent to GCSE grades 8.5 to 1.

There are no specific prior skills/knowledge a learner must have for this qualification.

Registration is at the discretion of the centre, in accordance with equality legislation, and should be made on the Portal.

Centres are responsible for ensuring that all learners are capable of achieving the aims and objectives of the qualification and complying with the relevant literacy, numeracy and health and safety requirements.

Learners registered on this qualification should not undertake another qualification at the same level, or with the same/a similar title, as duplication of learning may affect funding eligibility.

Achieving this qualification

To be awarded this qualification, learners are required to successfully demonstrate the knowledge and skills to meet the requirements of all content areas of this qualification.

The awarding of this qualification is compensatory. Learners must obtain enough marks to achieve a minimum of a level 1 pass to achieve the overall qualification. Marks can be obtained from the non-exam assessment (NEA) and/or the externally set examined assessment (EA).

Qualification title		NCFE Level 1/2 Technical Award in Music Technology
Qualification number (QN)		603/7008/7
Level		Combined level 1/2
Guided learning hours (GLH) (Total GLH has been rounded up to the nearest hour)		141
GLH breakdown		• 120 hours delivery • 1 hour 30 minutes EA • 17 hours NEA plus 2 hours preparation and research time
Non-exam assessment (NEA)	Weighting (60%)	Externally-set, internally marked and externally moderated: • synoptic project
Examined assessment (EA)	Weighting (40%)	Externally-set and externally marked: • written exam
Total	100%	Overall qualification grades: L1P, L1M, L1D, L2P, L2M, L2D, L2D*

Please refer to the content area summaries in section 2 for further information.

Progression

Depending on the grade the learner achieves in this qualification, they could progress to level 2 and level 3 qualifications and/or GCSE/A Levels.

Learners who achieve at level 1 might consider progression to level 2 qualifications post-16, such as:

- GCSE Music
- study at level 2 in a range of technical routes that have been designed for progression to employment, apprenticeships and further study; examples might include a Level 2 Certificate in Music Technology

Technical certificate qualifications provide post-16 learners with the knowledge and skills they need for skilled employment or for further technical study.

Learners who achieve at level 2 might consider progression to level 3 qualifications post-16, such as:

- A Level Music (which will support progression to higher education)
- Level 3 Applied General Certificate in Music Technology
- Level 3 Certificate in Music Technology

Learners could also progress into employment or onto an apprenticeship. The understanding and skills gained through this qualification could be useful to progress onto an apprenticeship in the industry through a variety of occupations that are available within the industry such as producer, technician and arranger.

Staffing requirements

There are no additional staffing requirements for this qualification. Please see the staffing requirements section in the support handbook.

Resource requirements

The resources required to deliver this qualification are given below.

Hardware resources will be expected to include:

- computer with suitable processing power, random access memory (RAM) and access to audio file storage
- peripherals
- data input devices
- audio output
- portable recording devices
- MIDI controllers
- audio interface
- MIDI interface
- microphones

Software resources will be expected to include:

- digital audio workstation (DAW) software features including:
  - processing plugins
  - effect plugins
  - MIDI and audio tracks

Real work environment requirement/recommendation

This is a knowledge-only qualification. Experience in the real work environment is not required.

Work/industry placement experience

This is a knowledge-only qualification. Work/industry placement experience is not required.

Purpose statement

Who is this qualification for?

The Level 1/2 Technical Award in Music Technology is designed for learners who want an introduction to the music technology industry that includes a vocational and project-based element. The qualification will appeal to learners who wish to pursue a career in the music technology industry or progress onto further study.

The Level 1/2 Technical Award in Music Technology complements GCSE qualifications. It is aimed at 14 to 16-year-olds studying key stage 4 (KS4) curriculum who are interested in the music technology industry. This qualification is designed to match the rigour and challenge of GCSE study. The qualification is graded at level 1 pass, merit, distinction and level 2 pass, merit, distinction and distinction* (equivalent to GCSE grades 8.5 to 1). More information on grading can be found in section 2 of this qualification specification.

This qualification focuses on an applied study of music technology and learners will gain a broad knowledge and understanding of working in the sector.

This qualification has been designed to sit alongside the requirements of core GCSE subjects and is appropriate for learners who are motivated and challenged by learning through hands-on experiences and through content that is concrete and directly related to those experiences.

It is distinct from GCSE Music, as it encourages the learner to use knowledge and practical tools to focus on specific creative and technical music technology outcomes. They will develop significant personal and vocational skills that can be transferred to further study or employment.

The study of music technology involves the understanding of hardware and software used in digital audio workstations (DAW), the elements of music, multitrack recording, mixing, and sound creation for media. Learners will apply their knowledge and understanding to produce compositional work, mixed sound recordings and sound creation projects for visual and other media.

This level 1/2 qualification is appropriate for learners who are looking to develop a significant core of knowledge and understanding in music technology and apply that knowledge through a project.

What will the learner study as part of this qualification?

This qualification will promote the learner's understanding of:

- the place of music technology within the music business
- hardware components and software functions of a digital audio workstation (DAW)
- the use of DAW software to produce musical projects
- how music is composed through study and analysis of musical elements
- analysing the developments in musical style enabled by technology
- selecting and applying musical elements to create stylistically appropriate musical outcomes
- using sound creation in different forms of media
- applying sound creation to achieve an outcome
- planning and undertaking multitrack recording and mixing
- using recording equipment to capture and store multitrack audio recordings

What knowledge and skills will the learner develop as part of this qualification and how might these be of use and value in further studies?

Learners will develop the following knowledge and skills:

- adapting their own ideas and responding to feedback
- evaluating their own work
- analysing data and making decisions
- planning
- practical application of hardware and software for creative purposes
- skills that are essential for the music technology industry such as team working, presentation skills, independent working, working to deadlines, and efficient use of resources
- an ability to reflect upon their preferred learning style and identify relevant study skills

Learners will develop the following skills that will inform future training and work in the music technology industry:

- decision making
- observation
- resourcefulness
- problem solving
- planning
- evaluation
- reflection
- interpersonal skills
- professional behaviours
- respect and appreciation of others
- an ability to reflect upon their preferred learning style and identify relevant study skills

Successful completion of this qualification will enable learners to progress to level 2 or level 3 qualifications in related subjects.

The knowledge and skills gained will provide a secure foundation for learners to progress into career opportunities in the music technology industry and provide a valuable platform for further study.

Which subjects will complement this qualification?

The following subject areas will complement this qualification:

- music
- design and technology
- mathematics
- IT and computer science

This list is not exhaustive, and a range of other subject areas may also be appropriate.

How the qualification is assessed

Assessment is the process of measuring a learner's skill, knowledge and understanding against the standards set in a qualification.

The qualification has **2** assessments externally set by NCFE: **one** NEA and **one** written EA. Only one attempt at each assessment is permitted.

Unless stated otherwise in this qualification specification, all learners taking this qualification must be assessed in English and all assessment evidence presented for external quality assurance must be in English.

Non-exam assessment (NEA)	
Assessment method	**Description**
NEA Externally set Internally marked and externally moderated	60% of the technical award 120 marks The completion time for the NEA is 17 hours plus 2 hours preparation and research time. The NEA will assess the learner's ability to effectively draw together their knowledge, understanding and skills from across the whole vocational area. The NEA will target the following assessment objectives (AOs): AO1, AO2, AO3, AO4 and AO5.
NEA availability	The learner should not undertake the NEA until all content areas have been delivered. This is to ensure learners are in a position to complete the NEA successfully. A different NEA brief will be released every September.

Non-exam assessment (NEA)

NEA encourages the learner to combine elements of their learning and to show accumulated knowledge and understanding across the content areas.

NEA enables the learner to show their ability to integrate and apply knowledge, understanding and skills with breadth and depth. It also requires them to demonstrate their capability to apply knowledge, understanding and skills across all content areas that are being assessed.

The NEA is internally assessed work and should be completed by the learner in accordance with the qualification specification. Information on delivery guidance and assessment hours for the internal assessment will be available in the NEA brief. To support with this, we have also created a sample NEA brief, which is available on the qualification page under support materials. A representative number of assessment hours should be timetabled into the scheme of work. Internal assessment hours must be administered outside of scheduled teaching and learning hours and should be supervised and assessed by the teacher.

Any work submitted for internal assessment must be completed during scheduled assessment hours in accordance with the scheme of work and must be authenticated and attributable to the learner. The teacher must be satisfied that the work produced is the learner's own and the learner must declare that the work is their own.

In practice, this means that all of the NEA will be completed in normal class time within scheduled assessment hours and kept separate from any teaching and learning hours.

Prior to commencing the formal NEA time learners should be allocated 2 hours of preparation and research time. This 2-hour time period is entirely open book where learners can access their teaching and learning materials, text books, internet and other published materials. From this they should develop a research support pack which can be used as their source of information when completing the NEA. For more information on the 2 hours of preparation and research time please see the tutor guidance.

The internally assessed NEA component is based on coverage of the qualification content areas, which are assessed holistically against descriptors to achieve a grade.

Each learner must create a portfolio of evidence generated from appropriate assessment tasks that demonstrates achievement of all content areas. The assessment tasks should allow the learner to respond to a real-life situation that they may face when in employment. On completion, learners must declare that the work produced is their own and the assessor must countersign this. Examples of suitable evidence for the portfolio are provided in section 2.

Examined assessment (EA)	
Assessment method	**Description**
EA Externally set Written examination Externally marked	40% of technical award Written examination: • 80 marks • 1 hour 30 minutes • a mixture of multiple-choice, short-answer and extended response questions The written EA is a terminal assessment and will assess the learner's knowledge and understanding of all content areas and target the following AOs: AO1, AO2 and AO3.
EA availability	The examination date is expected to take place in May/June every year Please refer to the external assessment timetable available on the NCFE website.

Examined assessment (EA)

EAs are set and marked by NCFE. The assessment assesses learners' knowledge and understanding of the content areas of this qualification. Centres must not assess, internally quality assure or otherwise access or review any EA materials or learner responses at any time and must adhere to the required exam regulations at all times.

The EA is on a set date and time (invigilated). NCFE specifies the date and time that the examined assessment must be administered at the centre and also publishes in advance the dates on which examined assessment results will be released.

A variety of assessment questions will be used, including multiple-choice, short-answer and extended response questions. This will enable learners to demonstrate their breadth of knowledge and understanding of the subject and ensure achievement at the appropriate level, including stretch and challenge. Questions will be written in plain English and in a way that is supportive and accessible to learners of all abilities.

As far as possible, real-world case studies and contexts that are relevant to the sector will be used. This is to engage and stimulate learners under examination conditions and to facilitate the drawing out of a wide range of knowledge and skills developed throughout their learning.

All questions will have available marks clearly identified. The EA will be carefully constructed following a rigorous quality control process to ensure that the assessment is valid.

The EA material will be sent out in time for the start of the assessment. Assessment materials must be kept secure at all times in line with the requirement of the regulations for the conduct of external assessment.

You must return all EA materials and partially or fully completed learner work to NCFE within one working day of the EA taking place or the final timetabled supervised/invigilated session.

Rationale for synoptic assessment

Synoptic assessment encourages the learner to combine elements of their learning and to show accumulated knowledge and understanding across content areas.

Synoptic assessment enables the learner to show their ability to integrate and apply knowledge, understanding and skills with breadth and depth. It also requires them to demonstrate their capability to apply knowledge, understanding and skills across a range of content areas that are being assessed.

Enquiries about results

All enquiries relating to learners' results must be submitted in line with our enquiries and appeals about results and assessment decisions policy, which is available on the policies & documents page on the NCFE website.

External assessment conditions

For more information on external assessment conditions, conducting external assessments and accessing audio files, please see the regulations for the conduct of external assessments and qualification specific instructions for delivery on the policies & documents page on the NCFE website.

There is one assessment window during the year. Please refer to the external assessment timetable on the NCFE website for the specific date.

Assessment windows

For assessments sat in windows, the centre must enter learners to the specified window. This will be either a set date and time assessment or a window in which the assessment will be completed.

For qualifications with 'entry on registration', the centre will choose the assessment window at the point of registering the learner. The last date that we will accept learner work for a specified assessment window is by that assessment window's cut-off date.

Please note: the 'cut-off date' is the last day that returned scripts will be accepted for the specified assessment window.

On completing their work at the end of the assessment window, learners must sign the assessment declaration to authenticate the work produced as their own. Centres must ensure that all assessments are submitted for marking in accordance with the assessment windows.

Scheme of assessment

The following table summarises the qualification's scheme of assessment.

Assessments	Assessment time	% weighting	Raw marks	Scaling factor	Scaled marks*	Assessment conditions	Marking
NEA	17 hours (plus 2 hours preparation and research time)	60%	120	1.000	120	Supervised	Internal, with external moderation
EA	1 hour 30 minutes	40%	80	1.000	80	Invigilated	External
Assessment total	**18 hours 30 minutes** (plus 2 hours preparation and research time)	**100%**			200		

Assessment objectives (AOs)

The assessment of our technical awards is mapped against assessment objectives (AOs). These AOs provide a consistent framework for learners and are applied synoptically, allowing learners to show their knowledge, understanding and skills from across the full breadth and depth of the qualification.

The AOs that will be assessed against the content in our technical awards are:

AO1	**Recall knowledge and show understanding** The emphasis here is for learners to recall and communicate the fundamental elements of knowledge and understanding.

AO2	**Apply knowledge and understanding** The emphasis here is for learners to apply their knowledge and understanding to real-world contexts and novel situations.
AO3	**Analyse and evaluate knowledge and understanding** The emphasis here is for learners to develop analytical thinking skills to make reasoned judgements and reach conclusions.
AO4	**Demonstrate and apply relevant technical skills, techniques and processes** The emphasis here is for learners to demonstrate the essential technical skills relevant to the vocational sector by applying the appropriate processes, tools and techniques.
AO5	**Analyse and evaluate the demonstration of relevant technical skills, techniques and processes** The emphasis here is for learners to analyse and evaluate the essential technical skills, processes, tools and techniques relevant to the vocational sector.

Assessment objective (AO) weightings

The table below shows the approximate weightings for each of the AOs in the technical award assessments.

AOs	Non-exam assessment (NEA) (%)	Examined assessment (EA) (%)	Overall weighting (%)
AO1	10%	40–45%	25–27.5%
AO2	13.33%	35–40%	24.165–26.665%
AO3	10%	20–25%	15–17.5%
AO4	40%	N/A	20%
AO5	26.67%	N/A	13.335%
Overall weighting of assessments	**60%**	**40%**	**100%**

The purpose of the qualification means that it is necessary to assess understanding through 2 means of assessment, an internal NEA and an external EA. The variance in assessment methods used allows for a range of knowledge, understanding and skills to be assessed using the most fit for purpose method.

Non-exam assessment (NEA)

Refer to the mark scheme for the current NEA where you will find the information required to mark the non-exam assessment tasks and their descriptors.

Centres will mark the NEA, and this will then be submitted to NCFE for moderation.

Examined assessment (EA)

The EA will be submitted to NCFE for marking to calculate the overall grades for learners.

Moderation

Moderation occurs before results are issued and helps us to ensure assessment judgements made by centres are in line with NCFE's guidelines and are reliable across centres. During moderation the moderator will re-assess a sample of learners' non-exam assessments (NEA) marked by assessors within the centre.

Moderators will look at a subsample of learner work (either remotely or through a visit). The sample size will be selected using JCQ sampling guidelines and include assessments from across a range of centre marks, which include a learner with the highest centre mark and a learner with the lowest non-zero centre-mark. Where an assessment has been carried out by more than one assessor, all assessors will be included in the sample, where possible.

Overall grading descriptors

To achieve a level 2 distinction, learners will be able to:

- recall and apply highly relevant knowledge and understanding in a and highly comprehensive manner regarding music technology processes, procedures, techniques and factors that influence the development of audio
- analyse and evaluate, to make reasoned judgements and reach well-supported conclusions regarding the application of processes, procedures and techniques used in realising finished audio
- effectively demonstrate highly relevant vocational skills, processes, working practices and documentation relevant to the sector when assessing holistic development against deadlines, using the planning cycle, and when planning highly relevant and effective processes, procedures and development activities and in creating and completing procedures
- critically analyse and evaluate their own demonstration of relevant vocational skills, processes, working practices and documentation relevant to the sector when reflecting on the effectiveness of processes, procedures and techniques that they have used in realising audio solutions in a highly comprehensive manner

To achieve a level 2 pass, learners will be able to:

- recall and apply mostly relevant knowledge and understanding in a mostly detailed manner regarding music technology processes, procedures, techniques and factors that influence the development of audio
- analyse and evaluate to make mostly reasoned judgements and reach coherent conclusions regarding the application of processes, procedures and techniques used in realising finished audio
- effectively demonstrate mostly relevant vocational skills, processes, working practices and documentation relevant to the sector, when assessing holistic development against deadlines, using the planning cycle, and when planning mostly relevant and effective processes, procedures, and development activities and in creating and completing procedures
- analyse and evaluate their own demonstration of relevant vocational skills; processes, working practices and documentation relevant to the sector when reflecting on the effectiveness of processes, procedures, and techniques that they have used in realising audio solutions in a mostly detailed manner

To achieve a level 1 pass, learners will be able to:

- recall and application of some knowledge and understanding, is limited but has some relevance and some detail of music technology processes, procedures, techniques and factors that influence the development of audio
- analyse and evaluate, to make adequate judgements, with some reasoning and reach straightforward conclusions regarding the application of processes, procedures and techniques used in realising audio
- safely and effectively demonstrate a reasonable level of skills, processes, working practices and documentation relevant to the sector, when assessing holistic development against deadlines, using the planning cycle, and when planning reasonable relevant and effective processes, procedures and development activities, and in creating and completing procedures
- analyse and evaluate their own demonstration of relevant vocational skills, processes, working practices and documentation, when reflecting on the effectiveness of processes, procedures and techniques that they have used in realising audio solutions, and is completed in a reasonable, straightforward manner, with some detail

Grading information

The following grades are available for the qualification: level 1 pass, level 1 merit, level 1 distinction, level 2 pass, level 2 merit, level 2 distinction, level 2 distinction*.

The qualification is linear, meaning both assessments must be taken in the same assessment series and cannot be combined across different assessment series. After both assessment are complete, the marks for each assessment are combined to give a final mark for each learner. Where raw marks do not reflect the required weighting of the assessment, a scaling factor is applied to the raw mark prior to aggregation.

Scaling factors can be found in the table below.

Assessment	Maximum raw mark	Weighting	Scaling factor	Maximum scaled mark
NEA	120 marks	60%	1.000	120
EA	80 marks	40%	1.000	80
			Total	200

For each series, grade boundaries are set by NCFE using a variety of statistical and judgemental evidence. Each learner's overall grade is determined by comparing their combined final mark with the grade boundaries for that series.

Where a learner achieves insufficient marks across the 2 assessments in the series to achieve a level 1 pass, they will be awarded an unclassified (U) result.

Section 2: teaching content and assessment guidance

This section provides details of the structure and content of this qualification.

Information in the teaching content section must be covered by the teacher during the delivery of the content areas and should be considered as mandatory teaching content.

The verb ‘understand’ encompasses both ‘knowledge’ and ‘understanding’ within the content areas of this qualification. Each content area will read ‘the learner will understand’.

To make cross-referencing assessment and quality assurance easier, we have used a sequential numbering system in this document for each content area. The numbering system used refers to a content area, subject topic, and teaching content (for example, 1.1.1 refers to the content area (first number 1), the subject topic within that learning content (second number 1.1) and the teaching content within the subject topic (third number 1.1.1)). This will support signposting feedback and tracking.

Anything within the teaching guidance is advisory and optional and is intended to provide useful advice and guidance to support delivery of the teaching content.

The types of evidence listed are for guidance purposes only. Within learners’ portfolios, other types of evidence are acceptable if all content areas are covered.

Whilst studying the qualification, learners should reflect on the importance of knowing and developing their preferred learning style. They should also be able to identify a range of individual study skills they can use in order to study effectively.

For further information or guidance about this qualification, please contact our customer support team.

Content areas

This qualification consists of 5 content areas.

Content area number	Content area title	Suggested GLH
Content area 1	Introduction to music technology and the music business	24
Content area 2	The digital audio workstation (DAW)	24
Content area 3	Musical elements, musical style and music technology	24
Content area 4	Sound creation	24
Content area 5	Multitrack recording	24

Content areas

Content areas
1. Introduction to music technology and the music business 1.1 Introduction to music technology and the music business 1.1.1 Roles and responsibilities 1.2 Development of music technology 1.3 Music business 1.3.1 Marketing 1.3.2 Promotion 1.3.3 Selling and distributing music
2. The digital audio workstation (DAW) 2.1 The digital audio workstation (DAW) 2.1.1 Hardware components 2.1.2 Software functions 2.2 Using DAW software functions 2.2.1 Creating audio using a DAW 2.2.2 Health and safety
3. Musical elements, musical style and music technology 3.1 Musical elements 3.1.1 Structural sections 3.1.2 Form 3.1.3 Melody 3.1.4 Harmony 3.1.5 Rhythm 3.1.6 Instrumentation 3.2 Musical styles 3.2.1 Musical elements and styles 3.2.2 Musical styles and technologies
4. Sound creation 4.1 Sound creation 4.1.1 Forms of media 4.1.2 Types of sound creation 4.1.3 Methods of sound creation 4.1.4 Arranging sounds 4.1.5 Exporting sound creation
5. Multitrack recording 5.1 Multitrack recording 5.1.1 Equipment in the recording studio 5.1.2 Health and safety in the recording studio 5.2 Multitrack recording sessions 5.2.1 Planning multitrack recording sessions 5.2.2 Multitrack recordings 5.2.3 Mixing 5.3 Stereo mixdowns

Teaching content

Information in this section must be covered by the teacher during the delivery of this qualification.

1. Introduction to music technology and the music business

1.1	**Introduction to music technology and the music business**
	The learner will understand roles and responsibilities within the music business, and developments in music technology.
1.1.1	**Roles and responsibilities**

	The learner will understand roles and responsibilities associated with the music business:
	
	• musical artist:
	  ○ creation and development of material
	  ○ performance of material
	• composer/songwriter:
	  ○ composition of music
	  ○ composition of lyrics
	• lyricist:
	  ○ composition of lyrics
	• arranger:
	  ○ assembly of musical material
	  ○ creation of parts
	• session musicians:
	  ○ performance of given material
	• sound designer:
	  ○ production and manipulation of sounds
	• DJ:
	  ○ selection and performance of material
	• producer:
	  ○ oversight of projects
	  ○ development and arrangement of material
	  ○ making creative decisions
	• technician:
	  ○ maintaining and repairing equipment
	• engineer:
	  ○ set up of recording hardware and software
	• manager:
	  ○ negotiating contracts
	  ○ finding opportunities for clients
	  ○ overseeing the career development of clients
	• publicist:
	  ○ creating marketing strategies
	  ○ running promotional campaigns
	  ○ developing the public image of clients
	• artist and repertoire (A&R):
	  ○ sourcing talent for record labels
	  ○ planning artist development

1.2	**Development of music technology**

	The learner will understand how music technology has developed over time and how this has affected creative practice, music production and consumer access:
	
	• recording technology:
	  ○ analogue recording:
	  ▪ magnetic tape systems:
	  • multitrack tape for 2/4/8/16/24 track
	  ○ digital recording:
	  ▪ magnetic tape-based systems:
	  • Digital Audio Stationary Head (DASH)
	  • Alesis Digital Audio Tape (ADAT)
	  ▪ hard disc systems
	  ▪ digital audio workstations (DAW)
	• electronic musical instrument technology:
	  ○ synthesisers:
	  ▪ digital
	  ▪ analogue
	  ○ samplers:
	  ▪ digital
	  ▪ analogue tape-based (for example, Mellotron)
	  ○ drum machines
	  ○ sequencers
	  ○ keyboard workstations
	  ○ Musical Instrument Digital Interface (MIDI)
	• hardware effects and processing technology:
	  ○ spring reverb
	  ○ plate reverb
	  ○ tape delay
	  ○ dynamic processors
	  ○ compact effects pedals
	  ○ digital multi-effects
	  ○ pitch correction processors
	  ○ looping devices
	• consumer audio formats:
	  ○ vinyl
	  ○ cassette
	  ○ compact disc (CD)
	  ○ minidisc
	  ○ MP3
	  ○ music video
	  ○ streaming audio

1.3	**Music business**
	The learner will understand common features of the music industry as a business.

1.3.1	**Marketing**

	The learner will understand aspects of marketing relevant to the music business:
	
	• market research:
	  ○ audience demographic
	• branding:
	  ○ development of brand
	  ○ logos
	  ○ colour schemes
	• campaign:
	  ○ visibility of musical artists and product

1.3.2	**Promotion**

	The learner will understand how musical artists use tools to promote and develop their career in the music industry:
	
	• physical promotion:
	  ○ appearances:
	  ▪ launch party
	  ▪ radio shows
	  ▪ TV shows
	  ▪ interviews
	  ○ performances:
	  ▪ gigs
	  ▪ tours
	  ▪ festivals
	  ○ materials:
	  ▪ posters
	  ▪ billboards
	  ▪ flyers
	• digital promotion:
	  ○ content:
	  ▪ social media posts
	  ▪ social media stories
	  ▪ videos
	  ▪ live streaming
	  ○ platforms:
	  ▪ websites
	  ▪ social media pages

1.3.3	**Selling and distributing music**

	The learner will understand how products within the music business are distributed and sold:
	
	• types of media products:
	  ○ single
	  ○ extended play (EP)
	  ○ album
	  ○ video

	• physical media formats:
	  ○ vinyl
	  ○ CD
	  ○ cassette
	  ○ digital versatile disc (DVD)
	• digital media formats:
	  ○ compressed audio file
	  ○ uncompressed audio file
	  ○ compressed video file
	  ○ uncompressed video file
	• merchandise:
	  ○ clothing
	  ○ visual products
	  ○ accessories
	• distribution services:
	  ○ physical:
	  ▪ manufacturing
	  ▪ shipping
	  ▪ physical retail stores
	  ○ digital:
	  ▪ aggregators
	  ▪ online stores
	  ▪ streaming platforms
	• administrative services:
	  ○ PRS for Music:
	  ▪ royalty collection
	  ○ Musicians' Union (MU)

2. The digital audio workstation (DAW)

2.1	The digital audio workstation (DAW)
	The learner will understand how hardware and software work in combination as a digital audio workstation (DAW).
2.1.1	**Hardware components**

	The learner will understand the function of the following hardware as part of a DAW and how hardware is used for the recording and editing of audio and MIDI:
	
	• the computer:
	  ○ operating system
	  ○ RAM
	  ○ hard drives
	  ○ processor
	  ○ display
	• computer peripherals/hardware:
	  ○ external storage:
	  ▪ Universal Serial Bus (USB) stick
	  ▪ solid state drive (SSD)
	  ▪ cloud storage
	  ▪ network drives
	  ○ data input devices:
	  ▪ computer keyboard
	  ▪ mouse
	  ▪ trackpad
	  ▪ touchscreen
	  ○ audio output:
	  ▪ headphones
	  ▪ speakers
	  ○ portable devices:
	  ▪ smartphones
	  ▪ tablets
	• MIDI controllers:
	  ○ MIDI keyboard
	  ○ MIDI guitar
	  ○ MIDI percussion
	  ○ MIDI wind instruments
	  ○ control surfaces:
	  ▪ faders
	  ▪ knobs
	  ▪ pads
	  ▪ data wheels
	  ▪ DJ controller
	• audio interface:
	  ○ line input:

	▪ RCA phono ▪ quarter inch jack ▪ mini jack ▪ stereo quarter inch jack o microphone input: ▪ External line return (XLR) ▪ USB ▪ quarter inch jack o instrument input: ▪ direct injection (DI) o audio output: ▪ balanced ▪ unbalanced o phantom power o gain control • MIDI interface: o MIDI IN/OUT/THRU o DIN connections o USB connections • mixing desk: o architecture: ▪ analogue ▪ digital ▪ hybrid o audio inputs o audio outputs o DAW audio interface o DAW control surface
2.1.2	**Software functions**
	The learner will understand how DAW software is used to record and edit audio and MIDI: • types of DAW software: o cloud-based o desktop applications • configuration of DAW software projects: o opening saved projects o creation of project: ▪ new project ▪ use of templates o audio bit depth settings o sample rate settings o buffer size settings: ▪ for recording ▪ for mixing ▪ latency o creating folders o saving projects and associated files o using common keyboard shortcuts:

	▪ copy: Ctrl/cmd+c ▪ paste: Ctrl/cmd+v ▪ cut: Ctrl/cmd+x ▪ save: Ctrl/cmd+s ▪ undo: Ctrl/cmd+z o setting tempo o setting time signature • configuration of track types: o audio: ▪ input selection ▪ output selection ▪ stereo tracks ▪ mono tracks o software instrument: ▪ instrument selection o MIDI: ▪ input selection ▪ output selection • software instruments: o selecting synthesiser pre-sets o selecting sampler pre-sets o synthesiser editing: ▪ envelope ▪ filter ▪ waveform o sampler editing: ▪ import of audio ▪ mapping ▪ looping • loops: o audio loops o MIDI loops • editing tools: o MIDI editing: ▪ pitch and rhythm editing grids ▪ cut ▪ copy ▪ paste ▪ quantise: • humanisation • swing ▪ velocity ▪ pitch bend ▪ controller data o audio editing: ▪ trim ▪ copy ▪ paste ▪ reverse ▪ time stretch

	▪ pitch manipulation ○ automation: ▪ volume ▪ pan ▪ instrument parameters ▪ plug-in parameters • processing plug-ins: ○ effects: ▪ time-based effects: • reverb • delay ○ modulation effects: ▪ chorus ▪ flanging ▪ phasing ○ filter effects: ▪ wah-wah ○ distortion effects: ▪ amp simulation ▪ overdrive ○ equalization (EQ): ▪ low pass filter ▪ high pass filter ▪ frequency selection ▪ Q ▪ gain ▪ attenuation ○ dynamics processing: ▪ compressor ▪ limiter ▪ gate ▪ threshold ▪ ratio ▪ attack ▪ release ▪ gain • export to audio files: ○ export project and individual parts to stereo audio ○ selection of bit depth and sample rate ○ uncompressed stereo audio file types: ▪ waveform audio file (WAV) ▪ audio interchange file (AIF) ○ compressed stereo audio file types: ▪ MP3
2.2	**Using DAW software functions**
	The learner will know and understand how to use DAW software functions.
2.2.1	**Creating audio using a DAW**
	The learner will understand how to apply software functions to create audio outcomes:

	• configuration of DAW software projects:
	  ○ creation of new projects
	  ○ setting audio bit depth
	  ○ setting sample rate
	  ○ setting audio output
	  ○ setting tempo
	  ○ setting time signature
	  ○ creating folders
	  ○ saving projects
	  ○ using keyboard shortcuts
	• capture of audio and MIDI:
	  ○ creation of audio tracks
	  ○ importing audio files
	  ○ recording audio via an interface:
	  ▪ selecting audio input
	  ▪ setting gain
	  ○ importing MIDI files
	  ○ input of MIDI using a MIDI controller
	  ○ MIDI programming:
	  ▪ mouse
	  ▪ trackpad
	  ▪ DAW edit pages
	• using DAW software to edit and refine material:
	  ○ software instruments
	  ○ loops
	  ○ editing tools
	  ○ processing plug-ins
	• exporting to a stereo audio file

2.2.2	**Health and safety**

	The learner will understand how to apply health and safety measures when using a DAW:
	
	• health and safety measures:
	  ○ identification of hazards:
	  ▪ exposure to noise
	  ▪ use of computer displays and workstations
	  ▪ slip, trip and fall hazards
	  ▪ electrical hazards
	  ○ risks associated with each hazard:
	  ▪ hearing loss
	  ▪ eye strain
	  ▪ back pain
	  ▪ sprains and breaks
	  ▪ electrocution
	  ○ risk assessment
	  ○ control measures
	  ○ reporting of hazards
	  ○ reporting of accidents

3. Musical elements, musical style and music technology

3.1	**Musical elements**
	The learner will understand how music is stylistically composed using musical elements.
3.1.1	**Structural sections**
	The learner will understand how structural sections are defined and used: • intro • verse • pre-chorus • chorus • bridge • outro • middle 8 • refrain • coda • breakdown • drop • riser
3.1.2	**Form**
	The learner will understand how structural musical forms are defined and used: • through-composed • AAA (strophic) • AB (binary) • ABA (ternary) • ABCBA (arch) • ABACA (rondo) • 12 bar
3.1.3	**Melody**

	The learner will understand melodic elements and how they are used:
	
	• scalic interval relationships:
	  ○ major (T, T, S, T, T, T, S)
	  ○ natural minor (T, S, T, T, S, T, T)
	  ○ harmonic minor (T, S, T, T, S, T+S, S)
	  ○ minor pentatonic (T+S, T, T, T+S, T)
	  ○ major pentatonic (T, T, T+S, T, T+S)
	• intervals:
	  ○ diatonic
	  ○ chromatic
	• devices:
	  ○ retrograde
	  ○ inversion

	• melodic form:
	  ○ arch form
	  ○ repetition
	  ○ sequences

3.1.4	**Harmony**

	The learner will understand harmonic elements and how they are used:
	
	• chords:
	  ○ major
	  ○ minor
	  ○ diminished
	  ○ augmented
	  ○ minor 7th
	  ○ major 7th
	  ○ suspended
	• chord progressions:
	  ○ diatonic
	  ○ chromatic

3.1.5	**Rhythm**

	The learner will understand rhythmic elements and how they are used:
	
	• simple time signatures:
	  ○ 2/4
	  ○ 3/4
	  ○ 4/4
	  ○ 5/4
	  ○ 6/4
	  ○ 7/4
	• compound time signatures:
	  ○ 6/8
	  ○ 9/8
	  ○ 12/8
	• rhythmic devices:
	  ○ syncopation
	  ○ triplets
	  ○ dotted rhythms
	• tempo:
	  ○ measurement of tempo
	  ▪ beats per minute (BPM)
	  ○ tempo changes

3.1.6	**Instrumentation**
	The learner will understand how instruments are used: • acoustic instruments: ○ strings:

	▪ plucked ▪ bowed ○ percussion: ▪ tuned ▪ untuned ○ keyboards: ▪ piano ▪ organ ○ brass: ▪ valved ▪ slide ○ woodwind: ▪ flutes ▪ reeds ○ vocals: ▪ lead ▪ backing • electronic instruments: ○ electric guitar and bass guitar ○ synthesiser ○ sampler ○ drum machine and electronic percussion • DJ technology: ○ turntables ○ CDJs ○ mixer ○ DJ software
3.2	**Musical style**
	The learner will understand how musical elements relate to musical styles and developments in technology from the 1950s onwards.
3.2.1	**Musical elements and style**
	The learner will understand how musical elements (structural sections, form, melody, harmony, rhythm, instrumentation) are used to define musical styles: • key musical styles: ○ rock and roll ○ folk ○ rock ○ soul ○ funk ○ disco ○ reggae ○ hip hop ○ electronica ○ dance ○ 21st century pop

3.2.2	**Musical styles and technologies**

	The learner will understand how technological developments have contributed to the development of musical styles:
	
	• 1950's key musical style is rock and roll:
	  ○ electric guitar
	  ○ electric bass guitar
	  ○ 2-track recording
	• 1960's key musical styles are folk, rock, soul:
	  ○ 4 and 8 track recording
	  ○ hardware effects
	  ○ analogue synthesis
	• 1970's key musical styles are funk, disco, reggae:
	  ○ drum machine
	  ○ analogue synthesis
	  ○ 16- and 24-track recording
	• 1980's key musical styles are hip hop, electronica:
	  ○ digital sampler
	  ○ digital tape recording
	  ○ digital synthesis
	  ○ MIDI
	  ○ Portastudio
	• 1990's key musical style is dance:
	  ○ hard disk-based recording
	  ○ keyboard workstation
	• 2000's key musical style is 21st century pop:
	  ○ DAW
	  ○ audio processing plug-ins
	  ○ analogue hardware revival and software emulation

4. Sound creation

4.1	**Sound creation**
	The learner will understand how sound creation is used in media and how to apply sound creation to their own work.
4.1.1	**Forms of media**
	The learner will understand how sound creation is used in each form of media: • video games • movies • TV shows • radio broadcasts • advertisements • jingles • podcasts • animations • theatre • installations
4.1.2	**Types of sound creation**
	The learner will understand types of sound creation for different forms of media: • Foley • ambience • dialogue • voice-overs • underscore • spot effects
4.1.3	**Methods of sound creation**

	The learner will understand methods of sound creation for different forms of media:
	
	• physical props:
	  ○ creation of props
	  ○ capture and editing of audio from props
	• environmental sounds:
	  ○ capture of audio in different environments
	  ○ selection and editing of environmental sounds
	• sound synthesis:
	  ○ creation of patches
	  ○ selection of waveforms
	  ○ filters
	  ○ modifiers:
	  ▪ low-frequency oscillator (LFO)
	  ○ envelope:

	▪ attack ▪ decay ▪ sustain ▪ release • digital sample manipulation: o creation of patches o import of audio o mapping o looping • effects libraries: o commercial libraries o online resources o DAW loops
4.1.4	**Arranging sounds**
	The learner will understand how to arrange sounds: • DAW arrangement tools: o video file import o audio and MIDI file import o audio and MIDI editing o tempo changes o automation o markers • sound arrangement: o layering o texture o mood o style o impact o sound choices: ▪ diegetic ▪ non-diegetic
4.1.5	**Exporting sound creation**
	The learner will understand how to export audio and video files from a DAW: • export to video and audio: o selection of format: ▪ MP4 ▪ MOV ▪ MP3 ▪ WAV ▪ AIF o render of audio to video

5. Multitrack recording

5.1	**Multitrack recording**
	The learner will understand the recording studio environment, how to use it safely, and how to plan, record and mix a multitrack recording.
5.1.1	**Equipment in the recording studio**

	The learner will understand how equipment is used to produce audio recordings:
	
	• microphones:
	  ○ dynamic microphones
	  ○ condenser microphones
	  ○ polar pattern
	  ○ frequency response
	• direct input (DI):
	  ○ level matching
	• audio interfaces:
	  ○ phantom power
	  ○ balanced and unbalanced audio inputs
	  ○ pre-amps
	  ○ audio outputs
	  ○ connectivity to DAW software
	• multitrack recorder:
	  ○ hardware
	  ○ software
	• recording processes:
	  ○ selecting input source
	  ○ microphone placement
	  ○ optimisation of gain for accurate audio capture
	  ○ overdubbing
	• additional equipment:
	  ○ microphone stands
	  ○ cables
	  ○ connectors
	  ○ pop shield
	  ○ cases
	  ○ rack units
	• monitoring:
	  ○ environment:
	  ▪ control room
	  ▪ live room
	  ○ equipment:
	  ▪ speakers
	  ▪ headphones
	  ▪ use of talkback

5.1.2	**Health and safety in the recording studio**

	The learner will understand how to identify hazards and apply health and safety measures in the studio:
	• health and safety measures:
	  ○ identification of hazards:
	  ▪ exposure to noise
	  ▪ use of computer displays and workstations
	  ▪ slip, trip and fall hazards
	  ▪ electrical hazards
	  ○ risks associated with each hazard:
	  ▪ hearing loss
	  ▪ eye strain
	  ▪ back pain
	  ▪ sprains and breaks
	  ▪ electrocution
	  ○ risk assessment
	  ○ control measures
	  ○ reporting of hazards
	  ○ reporting of accidents

5.2	**Multitrack recording sessions**
	The learner will understand how to plan and undertake multitrack recording sessions and produce mixdowns.
5.2.1	**Planning multitrack recording sessions**

	The learner will understand how multitrack recording sessions are planned:
	
	• roles and responsibilities:
	  ○ musical artist
	  ○ engineer
	  ○ producer
	• time constraints and timeline
	• length of session
	• agreed goals
	• hardware requirements
	• software requirements
	• the musical artist's requirements

5.2.2	**Multitrack recordings**
	The learner will understand how to set up and use recording equipment to create multitrack recordings: • set up equipment • test equipment and software • use equipment appropriately • apply health and safety measures • optimise gain • set monitoring for engineers and musical artists

	• undertake overdubbing
	• labelling and storage of recordings:
	  ○ naming audio files
	  ○ labelling folders
	  ○ naming projects

5.2.3	**Mixing**

	The learner will understand how to mix multitrack recordings:
	
	• balance:
	  ○ relative volume of sounds
	  ○ creation of stereo field
	• placement in the soundstage:
	  ○ height:
	  ▪ frequency
	  ▪ timbre of sounds
	  ○ width:
	  ▪ stereo placement of sounds:
	  • panning
	  • stereo image
	  ○ depth:
	  ▪ control of ambience:
	  • use of delay and reverb effects
	  • use of dynamic processing
	• corrective editing:
	  ○ removal of unwanted audio
	  ○ correction of pitch errors
	  ○ correction of rhythmic errors
	• EQ:
	  ○ low pass filter
	  ○ high pass filter
	  ○ frequency selection
	  ○ Q
	  ○ gain
	  ○ attenuation
	• effects:
	  ○ time-based effects:
	  ▪ reverb
	  ▪ delay
	  ○ modulation effects:
	  ▪ chorus
	  ▪ flanging
	  ▪ phasing
	  ○ filter effects:
	  ▪ wah-wah
	  ○ distortion effects:
	  ▪ amp simulation
	  ▪ overdrive

	• dynamics processing:
	  ○ compressor
	  ○ limiter
	  ○ gate
	  ○ threshold
	  ○ ratio
	  ○ attack
	  ○ release
	  ○ gain
	• connections:
	  ○ inserts
	  ○ auxiliaries/bus (pre- and post-fade)
	  ○ routing
	• automation:
	  ○ volume
	  ○ panning
	  ○ effect send
	• monitoring:
	  ○ headphones
	  ○ speakers:
	  ▪ main
	  ▪ near-field
	  ○ use of reference material

5.3	**Stereo mixdowns**

	The learner will understand how to mixdown and export to stereo audio files:
	
	• export to stereo audio files:
	  ○ mixdown of projects or stems to audio
	  ○ selection of bit depth and sample rate
	  ○ uncompressed stereo audio file types:
	  ▪ WAV
	  ▪ AIF
	  ○ compressed stereo audio file types:
	  ▪ MP3

Teaching guidance

In this section we provide some useful advice and guidance to support the delivery of the teaching content.

Website links are provided as sources of potentially useful information for delivery/learning of this subject area. NCFE does not explicitly endorse any learning resources available on these websites. For official NCFE endorsed learning resources, please see the additional and teaching materials sections on the qualification page on the NCFE website.

1. Teaching guidance – introduction to music technology and the music business
Learners should be given the opportunity to gain knowledge and understanding of the roles and responsibilities within the music business, the development of music technology and the music business, through a combination of class-based and practical delivery. This area is designed to introduce key concepts, allowing learners to build their knowledge in context. Delivery of 1.1.1 could take place through the creation of job descriptions, based on case studies of practitioners and the development of an organisational chart to highlight the interaction and professional relationships between the roles. Learners could explore their preferred roles, evaluating their own skills, knowledge and interests. Learners can then create a personal development plan, reviewing it with their teacher throughout their course of study. For 1.2, learners would benefit from creating timelines, presentations and journalistic pieces to show their understanding of how each piece of technology has affected the creative process, music production and consumer access over time, with reference to musical examples. For the delivery of 1.3, it is recommended that learners use case studies, allowing them to explore the music business in context. It would benefit learners to explore the marketing, and promotion of one or more of their preferred artists and relate this to how music is distributed and sold currently. **External visits/guest speakers:** • local practitioners to answer Q&A in relation to their roles in the sector • visit to a variety of recording studios with a range of music technology • practical workshops from hardware and software manufacturers • Q&A/seminar from distribution companies • Q&A/seminar from relative music bodies or unions (for example, PRS for Music, MU) • trips to industry events, seminars and product launches

1. Teaching guidance – introduction to music technology and the music business
Useful websites: • www.careersinmusic.com/ • www.theproaudiofiles.com/getting-a-job-in-the-audio-industry/ • www.musictech.net/ • www.brandingmag.com/2015/10/14/what-is-branding-and-why-is-it-important-for-your-business/ • www.musicgateway.com/blog/how-to/best-music-distribution-services • www.musictech.net/guides/essential-guide/11-tips-profile-building/ **Resources:** • All You Need to Know About the Music Business: 10th Edition by Donald S Passman • Music 4.1: A Survival Guide for Making Music in the Internet Age (Music Pro Guides) by Bobby Owsinski • How to Make It in the New Music Business by Ari Herstand

2. Teaching guidance – the digital audio workstation (DAW)

Learners should be given the opportunity to gain knowledge and understanding of the hardware components and software functions of a digital audio workstation (DAW) through a combination of class-based and practical learning.

Working towards a brief will be highly beneficial for learners. Access to project templates, finished projects, pre-recorded audio files and programmed MIDI files will be advantageous in allowing learners to explore the software functions initially. Learners would then progress to creating and developing their own arrangements and original compositions, which could be linked to areas 3 and 4.

It is recommended that learners have access to industry-standard DAWs, both hardware and software, ensuring that they are able to further apply their knowledge and skills when progressing from this course of study.

External visits/guest speakers:

- local producer/engineer to deliver a workshop on the relevant DAW
- local musician to demonstrate a range of MIDI controllers
- practitioner to demonstrate how a DAW is used professionally
- practical workshops from hardware and software manufacturers

Resources:

- The Music Tech Dictionary: A Glossary of Audio-related Terms and Technologies by Mitch Gallagher
- The MIDI Manual: A Practical Guide to MIDI in the Project Studio by David Miles Huber
- A Professional Guide to Audio Plug-ins and Virtual Instruments by Mike Collins
- Music Production: Easy Approach to Produce Music from Beginner to Expert by Woody Morgan

Useful websites:

- www.soundonsound.com/glossary
- www.audiotechnology.audiotechnology.com/
- www.musicrepo.com/music-technology-glossary-of-terms/
- www.soundonsound.com/daw
- www.musicianonamission.com/logic-pro-x-tutorial/
- www.musicianonamission.com/best-daw-2016/
- www.hse.gov.uk/legislation/

3. Teaching guidance – musical elements, musical style and music technology

Learners should be given the opportunity to gain knowledge and understanding of how music is stylistically composed using musical elements and technology, through a combination of class-based and practical learning.

Initial delivery of 3.1 could be approached from a research-based perspective, where learners are set tasks to analyse the musical elements of their preferred song choices, as well as a wide range of pre-selected songs that are outside of their listening choices, to build their knowledge and engagement with a variety of music and artists.

Learners would benefit from exploring **each** of the music styles as highlighted in 3.2.1, allowing them to understand the variance in elements (3.1) and how they are used to define musical styles. Learners could explore the technological developments within the styles over time to understand how technology has informed artistic development in context.

It is suggested that learners create a body of musical work, including a variety of different styles (3.2) using suitable musical elements (3.1), accompanied by a creation log, development journal or screencasts.

External visits/guest speakers:

- local musicians and composers to deliver workshops on music styles and elements
- visits to musical performances
- instrument manufacturers and retailers to demonstrate a variety of instruments
- specialist instrument tutors to deliver workshops
- guest speakers or workshops from hardware and software manufacturers

Resources:

- Music Theory for Computer Musicians by Michael Hewitt
- Music Theory for Dummies, 4th edition by Michael Pilhofer
- Music: The Definitive Visual History by Chris Ingham and Ian Blenkinsop
- It's all about the Music: The A-Z of Music Genres and Beyond by Dan Tanswell

Useful websites:

- www.bbc.co.uk/bitesize/guides/zw3nrwx/revision/1
- www.musictheory.net/lessons
- www.thepeoplehistory.com/music.html
- www.dummies.com/art-center/music/music-theory-popular-genres-and-forms/
- www.iconcollective.edu/basic-music-theory/

4. Teaching guidance – sound creation

Learners should be given the opportunity to gain knowledge and understanding of how sound creation is used, and how to apply sound creation and arrangement to their own work.
It is recommended that learners explore the different forms of media and are set research tasks to identify how sound creation is used within them. Analysis of a variety of different examples within each form would aid learners, such as an evaluation of how sound creation is used in scenes taken from a range of movie genres.

Learners could be given a range of teacher-set briefs that require the use, creation, application and arrangement of sounds, tailored to a specific field of media. They then could develop a portfolio of sound arrangements alongside a creation log or development journal.

Assignments to create original recorded sample packs and software instrument presets, appropriate for each form of media, would be advantageous in developing suitable audio for wider applications.

External visits/guest speakers:

- local sync agencies to deliver sessions on music for sync
- local media producers to deliver workshops on sound arrangement
- practitioners to demonstrate recording techniques for Foley
- underscore composers to demonstrate creation processes
- visits to local installations to consider use of sound

Resources:

- The Sound Effects Bible: How to Create and Record Hollywood Style Sound Effects by Ric Viers
- 100 Unusual, Novel and Surprising Ways to be a Better Sound Designer in Video Games by Rob Bridgett
- The Foley Grail: The Art of Performing Sound for Film, Games and Animation by Vanessa Theme Ament

Useful websites:

- www.epicsound.com/sfx/
- www.music.tutsplus.com/tutorials/how-to-record-high-quality-audio-for-film-tv--audio-641
- www.soundclass.weebly.com/6-spotting-for-sound-design.html
- www.soundtraining.com/synthesis-a-basic-understanding/
- www.musicianonamission.com/adsr/

5. Teaching guidance – multitrack recording

Learners should be given the opportunity to gain knowledge and understanding of the recording studio environment, how to use it safely, and how to plan, record and mix a multitrack recording.

It is recommended that learners are aware of the different phases of the multitrack recording process, from pre-production to production, then post-production.

Practical workshops and teacher demonstrations are highly recommended, including the set up and use of recording equipment, mixing, as well as the health and safety measures surrounding the recording sessions.

When focusing on production and post-production, a range of project briefs could be given. Projects could be learner-driven or teacher-directed, with clear outcomes of the expectations of the finished recording. As a result, learners should have recorded, produced, mixed and exported their own portfolio of work, as planned in their briefs.

External visits/guest speakers:

- local producers to demonstrate use of mixing tools
- local sound engineers to deliver workshops on engineering for recording sessions
- manufacturers and retailers to deliver workshops
- visits to local recording studios to see recording processes and sessions
- local musicians to provide performances and workshops

Resources:

- Mixing Secrets for the Small Studio (Sound on Sound Presents…) by Mike Senior
- The Mixing Engineer's Handbook: 4th Edition by Bobby Owsinski
- The Recording Engineer's Handbook: 4th Edition by Bobby Owsinski
- Mixing and Mastering in the Box: The Guide to Making Great Mixes and Final Masters on Your Computer by Steve Savage

Useful websites:

- www.soundonsound.com/techniques/vocal-recording-production-masterclass
- www.tapeop.com/
- www.izotope.com/en/learn/55-essential-dos-and-donts-of-vocal-production.html
- www.musictech.net/guides/essential-guide/twenty-vocal-production-tips/
- www.bhphotovideo.com/explora/pro-audio/buying-guide/audio-interfaces
- www.gearank.com/articles/types-of-mics
- www.izotope.com/en/learn/types-of-studio-monitors-and-which-to-choose-for-home-studios.html
- www.izotope.com/en/learn/18-tips-for-running-a-great-recording-session.html
- www.openmicuk.co.uk/advice/how-to-record-a-song/
- www.systematicproductions.com/media/studio_checklist.pdf
- www.musicianonamission.com/mixing-music/
- www.audio-issues.com/music-mixing/7-simple-mixing-steps/
- www.izotope.com/en/learn/10-beginner-mistakes-to-avoid-when-mixing-music.html
- www.recordingrevolution.com/mix-a-song-from-scratch/
- www.hyperbitsmusic.com/a-guide-to-automation-and-movement-in-music/

5. Teaching guidance – multitrack recording
• www.ehomerecordingstudio.com/studio-monitor-positioning/

Glossary of terms

Arrangement of sounds – using the various sounds that learners have collected or created, placing the sounds in their project to create an arrangement appropriate to the chosen media.

Audio interface – professional and semi-professional devices used to carry a variety of input connections (particularly the ability to accept balanced microphone level inputs and unbalanced line inputs) and output connections (usually at the minimum stereo line outputs and a headphone output).

Automation – programming DAW software to perform user-defined actions upon playback, most commonly, volume, panning and effects.

Balance – the control of volume of individual tracks statically and dynamically through automation, as well as appropriate track settings, such as panning.

Computer – this may include laptop and desktop machines. It is likely that learners will be aware of the operating system used on the machine as the interface between the hardware and music sequencing software.

Computer peripherals – the hardware commonly encountered, which allows for physical input to a computer (for example, a QWERTY keyboard, mouse or trackpad) and storage (for example, external hard drives/memory sticks). It is likely that many of these devices will interface via USB.

Configuring – this is to be regarded as part of the initial set up phase when initiating a recording or mixing session. This is to include the setup of projects, tracks and equipment that will be used in the recording and playback of audio, when using a DAW.

Control measures – a measure that is put in place to prevent risks caused by hazards. The use of a ‘cable tidy’ could be used to prevent the risk of trips, caused by trailing cables. Control measures will often be identified as part of a risk assessment, when considering health and safety.

Creation (audio material) – the creation of original material for use in projects. This is in reference to the creation of new recorded audio, as well as creating synthetic sounds and manipulating material via sampling.

Digital audio workstation (DAW) – the term DAW, or digital audio workstation, is used to refer to both the hardware and software elements that make up a computer-based music production environment.

Direct injection (DI) – the use of direct injection when feeding the signal from an electrical instrument to a device (for example, keyboards and bass guitars). This can also be referred to as direct input.

Dynamics – processing in a mix to control the dynamic range (loudness or quietness) of audio signals. Examples may include compression (for example, compressors, limiters) and expansion (for example, noise gates, expanders).

Editing – the use of tools which can be used to manipulate MIDI and audio. Tools include:

- arranging – using tools to create musical sequences, adjustment of tempo settings
- control of MIDI data – changing duration and pitch of input MIDI information, velocity editing and quantizing

    - also for the application of controller information to software instruments to provide dynamic control
- editing audio – including trimming, reversing, fades, splitting and joining
- balancing – control of volume and pan statically and dynamically through automation

Effects – the use and application of software effects within a DAW. This includes the use of time-based effects (for example, reverbs and delays) and any additional effects such as processing (for example, filter effects, modulation effects and distortion).

Equalisation (EQ) – the act of balancing frequency content within a mix, including the use of filtering (for example, low pass, high pass) and parametric EQ parameters (for example, gain/attenuation, frequency selection) in achieving a desired audio result.

Export – to export or 'bounce' completed projects to stereo audio files from the DAW software to a variety of audio file types (for example, WAV, AIF, mp3).

Gain – the level or strength of signal going into a device or system. An understanding of the difference between volume and gain is essential.

Hardware components – these are the physical components of the DAW that the learner will interact with to produce music.

Hazard – a potential source of harm, such as wires, noise and liquids. Often identified when completing a risk assessment through health and safety measures. A hazard would be linked to a risk, followed by control measures to prevent accidents.

Health and safety – working practices in relation to recording and mixing including exposure to noise, appropriate use of computer displays, hazards, risks and control measures.

MIDI keyboard/MIDI controllers – these are controller devices used to enter MIDI information. The most typical controller device is a musical (piano) keyboard controller. Learners at level 2 should be aware that MIDI controllers can encompass a wide range of devices – some of which are based on traditional instrument designs (for example, MIDI guitar, wind and percussion/pad controllers) and others that are commonly referred.

Microphone – a hardware device used to convert sound into an electrical signal, then to be processed by the DAW for recording and playback.

MIDI interface – the hardware designed to allow for input and output of MIDI to and from the sequencing software. MIDI information is increasingly sent from controllers via USB. However, it would be useful for learners to be aware that many MIDI devices continue to use MIDI sockets and may require an interface to communicate with the hardware and software.

Monitoring – the act of listening back to the audio that is being played, while recording, editing and mixing. This will be linked to hardware such as headphones and speakers. Listening back refers to both the engineer and artists at the recording stage (for example, setting up live room headphone mixes and control room speakers). Monitoring also refers to the use of tools such as solo and mute when mixing. Additionally, the use of reference material can be used as part of the monitoring process.

Modulation – the use of software and/or hardware to change the original sound or signal over time. Common types of modulation effect are to include the use of chorus, flanging and phasing.

Multitrack recorder – a multitrack recorder is used to make audio recordings. It is expected that in most instances the multitrack recorder will be in the form of a software package and be used in combination with audio interface hardware such as a DAW. As part of 1.2, learners will be exposed to analogue multitrack recorders but will not be expected to use them.

Overdubbing – undertaking the recording of tracks sequentially to build a multitrack recording (for example, recording a vocalist upon a pre-recorded multitrack).

Phantom power – the process of giving direct current (DC) to a microphone that requires electrical current. This is most common for condenser microphones that do not have power, and often is 48V.

Placement (microphones) – the placement of microphones in relation to recording sound sources in order to achieve the desired result (for example, close placement, ambient, stereo pair).

Plug-ins – these are components of sequencing software that provide a specific function. Plug-ins should focus on 3 types of processing:

- EQ or equalisation – used to modify the frequency content of audio:
  - this is to include filters (for example, low pass and high pass), boost (gain), cut (attenuation) and selecting frequencies
- effects – used to process audio signals:
  - examples may include time-based effects (reverb, delay), modulation effects (such as chorus, flanging), filter effects (such as wah-wah) and distortion (such as, amp simulation, overdrive)
- dynamics processing – used to control the dynamic range of audio signals:
  - examples may include compression (such as compressors, limiters) and expansion (such as noise gates, expanders)

Pre-amps – learners should be aware of the function of the pre-amp in the recording chain in relation to setting gain. It is expected that in most cases the pre-amp will form part of the audio interface hardware used by learners.

Rendering – the conversion of source material, such as audio and video, being processed to produce a final product, such as an audio-visual (MP4, MOV).

Risk – the possible result of a hazard. Slips, trips and falls are the most common risks that are identified. Tripping and being injured, could be a risk of untidy or trailing cables.

Sampler – a hardware or software device that processes recorded sounds, allowing the user to play back, edit or manipulate the sound that has been sampled. These samples can then be mapped within the DAW for playback and recording.

Software functions – software refers to music sequencing software. The software must be capable of recording and editing both MIDI and audio to allow learners to produce musical projects. The functions refer to all that the software is capable of doing in relation to the recording, editing, mixing and exporting of audio.

Software instruments – these are ‘virtual’ instruments which are often supplied as part of the sequencing software and also widely available from other sources.

Sound creation (methods):

- physical props – recording of physical props (objects) available to record Foley and create material for manipulation
- environmental sounds – recording of background sounds for use as ambience or to create material for effects libraries
- sound synthesis – using basic synthesis techniques (for example, subtractive synthesis using filtering and envelope shaping) to create sounds for musical and non-musical use
- digital sample manipulation – using basic sampling techniques (for example, trimming, mapping and looping) to create sounds for musical and non-musical use
- effects libraries – these may include commercially available libraries, libraries created by the teacher or libraries available within the DAW

Sound creation (types):

- Foley – sounds used to match action in visual media (for example, the sound of footsteps synchronised to a character walking onscreen)
- ambience – sound present to give a sense of location (for example, non-diegetic background in a desert might include animal noises, wind sounds, and so on)
    - ambience may also include effects used to give a sense of space (for example, reverb and EQ used to replicate the size of a room, or frequency attenuation over distance)
- dialogue – diegetic spoken word (for example, the words spoken by a character on screen)
- voice-overs – non-diegetic spoken word (for example, the commentary of a narrator off screen)
- underscore – music used to set mood or place
- special/spot effects – usually diegetic sounds which are generated to enhance particular moments: these may include musical and non-musical sounds

Stereo field – positioning individual tracks in the stereo field statically and dynamically through automation or track settings.

Stereo mix – producing a stereo mix in an appropriate format (for example, WAV, AIF, MP3) using DAW software.

Track types:

- software instrument tracks (onto which MIDI data is recorded and played back within the sequencing software by a software instrument)
- MIDI tracks (that allow MIDI data to be routed out from the sequencing software and sent to other hosted software or to external MIDI devices such as hardware synthesisers)
- audio tracks (onto which audio is recorded or imported audio files are sequenced)

Synoptic connections

Synoptic assessment requires learners to combine elements of their learning and show accumulated knowledge and understanding across the qualification content. It enables learners to evidence their capability to integrate and apply knowledge, understanding and skills gained with breadth and depth in context.

It is therefore essential when planning for teaching and throughout delivery that the interdependencies and links build across the content of the qualification and are highlighted and reinforced.

The qualification comprises 5 content areas. All content areas are mandatory and must be taught.

The teaching content does not have to be delivered in a linear way; the content areas are interdependent in knowledge, skills and concepts.

Teachers may take a synoptic approach across the qualification. This will enable learners to be able to apply theories and concepts from across the qualification specification in context to skills-based situations. Through combining content and developing holistic connections, learners will be able to demonstrate and evidence their full knowledge and understanding of the subject area and the music technology industry.

Learners will have the opportunity to identify relevant study skills and reflect upon their preferred learning style throughout the qualification.

NCFE assessment strategy

Knowledge LOs:

- assessors will need to be both occupationally knowledgeable and qualified to make assessment decisions
- internal quality assurers will need to be both occupationally knowledgeable and qualified to make quality assurance decisions

Competence/skills LOs:

- assessors will need to be both occupationally competent and qualified to make assessment decisions
- internal quality assurers will need to be both occupationally knowledgeable and qualified to make quality assurance decisions

Section 3: additional information

School accountability measures (performance points)

This technical award has been developed to meet the criteria set by the Department for Education (DfE) to be included in the key stage 4 performance tables. Each grade has been assigned a points value. Please check the Register of Regulated Qualifications website (www.register.ofqual.gov.uk) for further information.

Discounting

If a learner is taking a GCSE and a technical award in the same year with the same discount code, such as GCSE Physical Education and the NCFE Level 1/2 Technical Award in Health and Fitness (603/7007/5), the first entry will count. For more information about discounting and discount codes, please refer to the Performance Tables Guide on the NCFE website.

Discount codes for technical awards can be found on the NCFE website. We advise centres to refer to the discounting and early entry guidance document provided by the DfE. For more information on discounting, please contact the DfE directly.

Qualification dates

Regulated qualifications have operational end dates and certification end dates.

We review qualifications regularly, working with sector representatives, vocational experts and stakeholders to make any changes necessary to meet sector needs and to reflect recent developments.

If a decision is made to withdraw a qualification, we will set an operational end date and provide reasonable notice to our centres. We will also take all reasonable steps to protect the interest of learners.

An operational end date will only show on the Ofqual Register of Regulated Qualifications (www.register.ofqual.gov.uk) if a decision has been made to withdraw a qualification. After this date we can no longer accept learner registrations. However, certification is allowed until the certification end date so that learners have time to complete any programmes of study. The certification end date will only show on the Ofqual Register once an operational end date has been set. After this date we can no longer process certification claims.

Where a qualification has an external assessment, this can only be taken up to the last assessment date set by us. No external assessments will be permitted after this date so learners will need to be entered in sufficient time.

Support materials

The following support materials are available to assist with the delivery of this qualification and are available on the NCFE website:

- resource packs containing:
  - schemes of work
  - PowerPoint presentations
  - learner workbooks
- qualification factsheet

Other support materials

The resources and materials used in the delivery of this qualification must be age-appropriate and due consideration should be given to the wellbeing and safeguarding of learners in line with your centre's safeguarding policy when developing or selecting delivery materials.

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