

Teacher\Department		Content area	2: The Digital Audio Workstation (DAW)
Guided Learning Hours (GLH)	24 GLH	Lessons	24 x 1 hour lesson
Teaching content			
<p>2. The digital audio workstation (DAW):</p> <p>2.1 The digital audio workstation:</p> <p> 2.1.1 Hardware components.</p> <p> 2.1.2 Software functions.</p> <p>2.2 Using DAW software functions:</p> <p> 2.2.1 Creating audio using a DAW.</p> <p> 2.2.2 Health and safety.</p>			
Opportunities to embed English and maths			
<p>Writing: spelling and grammar: All lessons. Discussion (All lessons). Oracy (All lessons). Maths: Lessons Lesson 9-11, 15, 16, 18-20.</p>			
Opportunities to embed equality and diversity			
<p>The following opportunities should be provided in all lessons: Create an enabling environment which is inclusive for all. Encourage peer support in paired and group activities. Provide opportunities for learners to relate the learning to their own experiences. Allow learners the opportunity to explore their own identity, beliefs and unconscious bias.</p>			

Opportunities to embed Prevent duty and British values

The following opportunities should be provided in all lessons:

Democracy – having the opportunity to be heard and voice freedom of speech – (use paired and whole class discussions).

Rule of law – taking responsibility for their behaviour – (learners should follow the class rules at all times and represent their school when outside of school).

Rule of law – fulfil legal obligations by being aware of and adhering to legislation.

Individual liberty – freedom of choice – (all learners have the right not to join in with an activity, but should always be encouraged to embrace the full learning experience).

Individual liberty – become as independent as possible – (all lessons should encourage learners to try and support each other and themselves without over-reliance on the teacher and they should be encouraged to have try everything and if they do not succeed, to try again).

Mutual respect and tolerance – understanding the importance of empathy – (learners should be encouraged to help others and to think about their actions and the impact they can have on others).

Mutual respect and tolerance – learning about different beliefs and values – (learners should be encouraged to share their personal experiences and beliefs so that others can see different points of view).

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
1	<p><u>Starter Activity: 5 minutes</u> Ask learners: “What different pieces of music making software can you name?” Possible learner responses: Ableton, Cubase, Logic, Garageband, Soundtrap, Bandlab, Fruity Loops.</p> <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • State the different types of DAW software available. • Describe the differences between these types. • Create a list of useful keyboard shortcuts for your DAW. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Recall keyboard shortcuts from memory. <p><u>Activity 1: DAW Types - 12 minutes:</u></p> <ol style="list-style-type: none"> 1. Find two examples of cloud based DAWs. Find two examples of desktop application based DAWs. 2. Create a table for the following: What are the advantages and disadvantages of using cloud based? What are the advantages and disadvantages of using application based DAWs? <p>You may wish to get a learner to scribe. Answers are provided across 2 slides:</p>	DAW, internet access.	Direct questioning.	2.1

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	<p>They should use your DAW to test out using these shortcuts as they make their shortcut sheet.</p> <p>Activity 3: Loops - 15 minutes: Learners should create a 16 bar piece of music only using loops from their DAWs Loop Library. They can have up to 4 different tracks and 6 different loops. They should aim to use as many of the keyboard shortcuts as possible when completing this task. Encourage learners to use the shortcut sheet created in the previous activity to help.</p> <p>Progress Check: Name the following keyboard shortcuts:</p> <ol style="list-style-type: none"> 1. Paste: Control/Command V. 2. Copy: Control/Command C. 3. Undo: Control/Command Z. 4. Save: Control/Command S. 5. Cut at play head: (DAW specific). 6. Repeat: (DAW specific). 7. Secondary Tool: (DAW specific). 8. Play/Stop: (DAW specific). <p>Lesson recap: Can you now:</p> <ul style="list-style-type: none"> ● State the different types of DAW software available; ● Describe the differences between these types; ● Create a list of useful keyboard shortcuts for your DAW; 		<p>Learners marking score in logbook. Self-assessment.</p>	

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	<ul style="list-style-type: none"> • Recall keyboard shortcuts from memory. <p>Home study: Learners should use two free online DAW. They could use:</p> <ul style="list-style-type: none"> • Bandlab. • Audiotool. • Soundation. • Soundtrap. • Amped Studio. <p>They must compare the features of two of free online DAWs.</p> <ul style="list-style-type: none"> • What do they have in common? • Are there any features that are exclusive to one type? • Do they prefer one type? If so, give at least one reason why. <p>End of lesson.</p>			
2	<p>Starter Activity: 5 minutes Pose these questions to the learners:</p> <ol style="list-style-type: none"> 1. What does hardware mean? 2. Look at your DAW workspace in your classroom, how many different pieces of hardware can you identify? <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • List the hardware associated with a computer. • Describe the purpose of each piece of hardware. • List the hardware in your computer workstation. 	Computer	Class discussion.	2.1.1

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	<p>You may also be able to:</p> <ul style="list-style-type: none"> • Evaluate the pros and cons of storage devices. • Explain the impact of resonant frequencies when using speakers. <p>Activity 1: DAW Hardware - 5 minutes</p> <p>On the next slide there will a diagram of common DAW hardware components. The learners have a copy of this diagram in their workbooks. It is their task to label as many hardware components as they can.</p> <div style="text-align: center;"> </div> <p>Feedback: Get learners to identify the equipment, and then show them using the workspace in the room.</p>		<p>Learners correctly identifying hardware.</p>	

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	<p><u>Subject Content: Hardware Components of a DAW</u> In this lesson the learners will focus on computers and computer peripherals. Show learners the slides containing key terminology and computer components (operating system, Random Access Memory (RAM), hard drives, processor, display monitor). Reflective question: Which is not a piece of hardware? Answer: Operating system. Key term: Peripherals: Any external piece of hardware that is used with the computer.</p> <p><u>Activity 2: Computer Hardware - 5 minutes</u> Using their computer's about me information, learners need to find out what the specifications are for:</p> <ul style="list-style-type: none"> • Operating system. • Random access memory (RAM). • Hard drives. • Processor. • Display monitor. <p>Tip for learners: Mac users: Apple Logo > About This Mac. PC users: My Computer > Properties.</p> <p><u>Subject Content:</u> Show learners the slides about CPU (Central Processing Unit). Reflective question: Why is it important to have a powerful processor capable of running multiple tasks at once when using a DAW? Possible learner responses:</p>		<p>Learners sharing hardware information.</p>	

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	<ul style="list-style-type: none"> ● Lots of tracks – lots of processes at once. ● Otherwise the DAW will crash. <p>Subject Content: Show learners the slide giving examples of DAW tasks. This is a conservative example of what a computer could need to process natively at any given time</p> <p>Question: What could happen if a computer had a low specification CPU?</p> <p>Possible learner responses:</p> <ul style="list-style-type: none"> ● Constantly crash. ● Not able to run updates. ● Cannot run big projects. <p>Key terms: Native Processing: Any processing that is performed in the CPU and not on external hardware. HDD: Hard Disc drive. SSD: Solid State Drive.</p> <p>Reflective question: What type of data needs to be stored and read when using a DAW?</p> <p>Possible learner responses:</p> <ul style="list-style-type: none"> ● Audio. ● Position. ● Effects. ● Automation. ● Volumes. ● Processing. 			

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	<p>Show following slides about HDDs, SSDs, HDD and SSD, RAM, Display, Operating system and computer peripherals.</p> <p>Reflective question: Why is it recommended that you do not run the latest version of an OS when running a DAW?</p> <p>Possible learner responses:</p> <ul style="list-style-type: none"> • More stable computer. • There will be bugs. • Stops DAW from crashing. • More reliable. <p>Reflective question: Which of these is not a piece of hardware:</p> <ul style="list-style-type: none"> • External storage. • Data input devices. • Audio output. • Portable devices. <p>Activity 3: Computer Peripherals - 12 minutes</p> <p>Task one: In pairs, learners should discuss the following questions:</p> <ol style="list-style-type: none"> 1. What different ways can you store data externally? 2. What data input devices are required when using a DAW? 3. What different ways can you output audio from a computer? 4. How can portable devices be integrated in a DAW setup? <p>Task two: In their workbook, they need to write down their answers.</p> <p>Stretch and challenge: Can you think of any pros and cons of the different ways of storing data externally?</p>		<p>Learner discussion. Teacher circulating. Feedback on board and learners sharing ideas.</p>	

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	<p>Feedback: follows on next slides: External storage (USB, SSD, Cloud storage, data input), data input (keyboard and mouse, trackpad, touchscreen), audio output (headphones, speakers, computer).</p> <p>Activity 4: Resonant Frequencies - 5 minutes Learners will now play a sine wave using a tone generator out of the classroom speakers. It is their task to walk around the room until they find the spot where the sine wave is the loudest.</p> <p>Stretch and challenge: Why might this cause problems when creating music using a DAW?</p> <p>Feedback: If you are in a spot where the frequencies resonant you will find it hard to create a good mix.</p> <p>Progress Check:</p> <ol style="list-style-type: none"> Which two of the following are examples of peripheral hardware? a) Touchscreen b) Headphones Explain one negative of using speakers in an untreated room. Build up of resonant frequencies (1) could make low end seem louder (1) Explain why an SSD is the preferred hard drive when using a DAW. Faster read and write speeds/able to load and record faster (1). Give one advantage and disadvantage of using cloud storage when using a DAW. A: Automatic back up/unlimited storage (1) D: Requires internet connection/cannot run projects directly/long upload times (1). 		Learners self-assessment and writing score in workbook.	

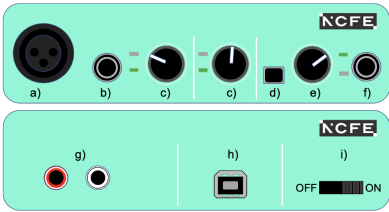
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	<p>Lesson Recap: Can you now?</p> <ul style="list-style-type: none"> • List the hardware associated with a computer; • Describe the purpose of each piece of hardware; • List the hardware in your computer workstation; • Evaluate the pros and cons of storage devices; • Explain the impact of resonant frequencies when using speakers. <p>Home study: What are the minimum and optimal computer specifications to run a DAW? Learners should cover:</p> <ul style="list-style-type: none"> • Operating system. • Random access memory (RAM). • Hard drives. • Processor. • Display monitor. <p>Resources: Youtube: Audio Univesity - Computer Specs For Music Production In 2022 RAM, Storage, & CPU.</p> <p>End of lesson.</p>			

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3	<p><u>Starter Activity: 8 minutes</u> Ask learners to complete the gap fill activity. Answers: SSD stands for: Solid State Drive. CPU stands for: Central Processing Unit. RAM stands for: Random Access Memory. The four different categories of computer peripherals are: 1. External storage. 2. Data input devices. 3. Audio output. 4. Portable devices.</p> <p>Stretch and challenge: How many examples of peripheral hardware can you remember for each category?</p> <p>Revious lesson: On the following slide, recap knowledge from previous lesson: External stages, data input, audio output and portable devices.</p> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • List the different components of an audio interface. • Explain the function of each component. • Label an audio interface. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply your understanding to set up an audio interface to record a microphone. 	<p>Computers Audio interface USB B cable XLR cable Dynamic microphone Headphones</p>	<p>Learners recalling information previously learnt.</p>	<p>2.1.1 2.2.1</p>

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	<p><u>Activity 1: Audio Interface 5 minutes</u> On the next slide there will be a video explaining the different components on an audio interface. Using the table in their workbook, learners should make a list of the different components mentioned. Play learners the video. You may wish for them to watch it first without taking notes, then again whilst they take notes.</p> <p>Feedback:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="background-color: #e0f2f1;">Components:</th> </tr> </thead> <tbody> <tr><td style="background-color: #e0f2f1;">XLR Input</td></tr> <tr><td style="background-color: #e0f2f1;">+48v Phantom Power</td></tr> <tr><td style="background-color: #e0f2f1;">¼" Jack Input</td></tr> <tr><td style="background-color: #e0f2f1;">Gain Control</td></tr> <tr><td style="background-color: #e0f2f1;">Direct Monitoring</td></tr> <tr><td style="background-color: #e0f2f1;">¼" Headphone Output</td></tr> <tr><td style="background-color: #e0f2f1;">RCA Speaker Output</td></tr> <tr><td style="background-color: #e0f2f1;">USB B Connection</td></tr> </tbody> </table> <p><u>Activity 2: Audio interface components - 10 minutes</u> Ask learners: What is the function of each of these components on the audio interface? Answers should be written in their workbooks.</p> <p>Feedback:</p>	Components:	XLR Input	+48v Phantom Power	¼" Jack Input	Gain Control	Direct Monitoring	¼" Headphone Output	RCA Speaker Output	USB B Connection		Learners understanding of audio interface and applying to scenarios.	
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	<p>Subject Content: Show the learners the slide about gain control. When setting the gain level for recording you should set the gain as high as you can without the signal distorting. When recording to a computer, if we distort the signal this is a destructive process. You do not want to digitally distort when recording. Distortion can be added later using plugins if required. You should leave headroom to allow the performer to get louder.</p> <p>Activity 4: Labelling an audio interface - 8 minutes Using the audio interface in their workbook, learners should label all the of components that they have learnt about today:</p> <ul style="list-style-type: none"> ● XLR Input. ● USB B Connection. ● +48v Phantom Power. ● 1/4" Jack Input. ● Gain Control. ● 1/4" Output. ● Output volume control. ● RCA Output. ● Direct Monitoring. <p>Feedback:</p>		<p>Application of practical knowledge in theoretical scenario.</p>	

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	<p>5. If your signal from your microphone in your DAW was too quiet what control would you need to change? Input Gain. /5</p> <p>Lesson Recap: Can you now?</p> <ul style="list-style-type: none"> • List the different components of an audio interface; • Explain the function of each component; • Label an audio interface; • Apply your understanding to set up an audio interface to record a microphone. <p>Home study: In their workbook, learners:</p> <ol style="list-style-type: none"> 1. Create a guide on setting the Gain level when recording. 2. Compare the similarities and differences between a cheap interface and an expensive interface. Do they think the cost is worth the differences? <p>YouTube Resources:</p> <ol style="list-style-type: none"> 1. Podcastage - How To Set Your Microphone's Gain / Level for Beginners (FAQ Series). 2. Audio University - Cheap vs Expensive Audio Interfaces Focusrite Scarlett vs Universal Audio Apollo. <p>End of lesson.</p>			
4	<p>Starter Activity: 5 minutes Encourage learners to think back to their previous lesson, and match up the component with the correct letter:</p> <ul style="list-style-type: none"> • XLR Input. 	<p>Computer Electric guitar ¼" Jack cable Audio interface</p>	<p>Recalling information from previous lesson.</p>	<p>2.1.1 2.2.1</p>

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	<ul style="list-style-type: none"> • Gain Control. • RCA Output. • Direct Monitoring. • Output Volume Control. • ¼" Output. • ¼" Jack Input. • USB B Connection. • +48v Phantom Power. <p>Answers:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Components:</th> </tr> </thead> <tbody> <tr><td>a)</td><td>XLR Input</td></tr> <tr><td>b)</td><td>¼" Jack Input</td></tr> <tr><td>c)</td><td>Gain Control</td></tr> <tr><td>d)</td><td>Direct Monitoring</td></tr> <tr><td>e)</td><td>Output Volume Control</td></tr> <tr><td>f)</td><td>¼" Output</td></tr> <tr><td>g)</td><td>RCA Output</td></tr> <tr><td>h)</td><td>USB B Connection</td></tr> <tr><td>i)</td><td>+48v Phantom Power</td></tr> </tbody> </table> <div style="text-align: center; margin-top: 20px;"> </div> <p>What will you learn: You must be able to: <ul style="list-style-type: none"> • List the different types of connections on an audio interface. • Explain the difference between balanced and unbalanced connections. You may also be able to:</p>		Components:	a)	XLR Input	b)	¼" Jack Input	c)	Gain Control	d)	Direct Monitoring	e)	Output Volume Control	f)	¼" Output	g)	RCA Output	h)	USB B Connection	i)	+48v Phantom Power	USB B Cable DAW Headphones		
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i)	+48v Phantom Power																							

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	<ul style="list-style-type: none"> • Apply your understanding to record a instrument. • Apply plugin processing to simulate an amplifier. • <p>Main Subject Content: Audio Interfaces Connctions Tell learners on next slides about audio interface connections,</p> <p>Question: What is the difference between a mono and a stereo connection? Answer: Mono connection: carries one channel of audio; Stereo connection: carries two channels of audio.</p> <p>Question: Can you give an example of an audio interface connection for mono and stereo? Answer: Mono connections: XLR input or ¼" Jack input for instruments; Stereo connections: ¼" Jack output for headphones, ¼" Jack input.</p> <p>Then continue about jack cables, XLR cables, balanced and unbalanced connections, direct line inputs, and direct input (DI).</p> <p>Question: What do you think are the benefits of using DI rather than a microphone to record an instrument?</p> <p>Activity 1: Direct Input - 10 minutes In small groups, learners will set up to record an electric guitar using the DI method.</p> <p>Reflective question: what equipment will you need? Answer:</p> <ul style="list-style-type: none"> • Electric guitar. 		<p>Learners applying knowledge of cables to practical scenario. Recalling</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> • ¼" Jack cable. • Audio interface. • USB B Cable. • DAW. • Headphones. <p>Student tip: Make sure the the ¼" Jack input is set to instrument level.</p> <p>Activity 2: Amplifier Simulator - 10 minutes Using thier DAW, learners will use an Amplifier Simulator plugin to simulate that the guitar was recorded through a real amplifier. They must:</p> <ul style="list-style-type: none"> • Create a clean tone. • Create a distorted tone. <p>Demonstrate this to the learners using your DAW.</p> <p>Activity 3: Amplifier - 10 minutes In small groups, get learners to set up to record an electric guitar using the an amplifier method.</p> <p>Reflective question: What equipment will you need to complete this task? Answer:</p> <ul style="list-style-type: none"> • Electric guitar. • ¼" Jack cable. • Audio interface. • USB B Cable. • DAW. • Headphones. 		<p>knowledge from previous lessons. Successful recording.</p> <p>Applying knowledge to alternative scenario. Successful recording.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> • Amplifier. • Microphone. • Microphone Stand. <p>Progress Check:</p> <ol style="list-style-type: none"> 1. You want to record the output from a mobile phone. Which connection and cable type would be the most suitable? Stereo 1/8" (mini) Jack. 2. What does DI stand for? Direct Input 3. You have been asked to record an electric bass guitar. What equipment would you need? Audio interface, 1/4" Jack cable, Headphones, USB B cable. 4. At which level would you need to record a hardware drum machine? <ol style="list-style-type: none"> a) Instrument Level. b) Line Level. <p>Lesson Recap: Can you now?</p> <ul style="list-style-type: none"> • List the different types of connections on an audio interface; • Explain the difference between balanced and unbalanced connections; • Apply your understanding to record a instrument; • Apply plugin processing to simulate an amplifier. <p>Home study: Reiterate to learners that this lesson they recorded a guitar using the Direct Input method. In their workbook, they should:</p> <ol style="list-style-type: none"> 1. Create a diagram that explains how to set up this method. 2. Explain the advantages of using this method to record guitar. 		Learners self-assessment and writing score in workbook.	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Resources: YouTube: Master Your Mix - Advantages of Recording With A DI Box. Fender.com - You Should Consider Using a DI Box.</p> <p>End of lesson.</p>			
5	<p>Starter Activity: Ask learners to look at the image and answer the following questions:</p> <ol style="list-style-type: none"> 1. What components can you recognise from an audio interface? 2. What is this piece of equipment called? 3. When would you use this? <p>Answer: Mixing Desk</p> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • Identify the different components of a mixing desk. • Label the different components of a mixing desk. 	<p>Mixing desk XLR cables Headphones Speakers Microphone Jack Cable Electric guitar/bass/keyboard</p>	<p>Correct labelling of mixer. Teacher cirulation. 1-1 and group discussion.</p>	2.1.1

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> • Describe the different functions of a desk. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply your understanding set up a mixing desk. <p><u>Main Subject Content: Mixing desks</u> Take learners through the slides showing diagrams and explaining how the mixing desk works. Move on to focus on EQ and Pan.</p> <p>Then demonstrate setting up a mixing desk.</p> <p><u>Activity 1: Mixing Desks– 20 minutes</u> Split the class into two groups: Group 1: Using the equipment provided, this group should set up and pack down the mixing desk. Equipment:</p> <ul style="list-style-type: none"> • Mixing desk. • XLR cables. • Headphones. • Speakers. • Microphone. • Jack Cable. • Electric guitar/bass/keyboard. <p>Group 2: This group should:</p> <ol style="list-style-type: none"> 1. Using the image provided in the workbook, label the different components of our mixing desk. 2. Explain, the purpose of each of the controls. <p><u>Progress check:</u></p>		<p>Practical application of knowledge learnt.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ol style="list-style-type: none"> 1. Give one reason why you would use an Aux Send on a mixing desk. To create a monitor mix for a musician. 2. Give one advantage of using a mixing desk when recording. Built in EQ, has more channels and routing options. 3. Give one disadvantage of using a mixing desk when recording. Can be more complicated to use than an interface. 4. If you saw +48v on a mixer, what would it do? Turn on phantom power. 5. If you wanted to make a microphone louder what control would you need to adjust? Gain. <p><u>Lesson recap:</u> Can you now</p> <ul style="list-style-type: none"> • Identify the different components of a mixing desk; • Label the different components of a mixing desk; • Describe the different functions of a desk; • Apply your understanding set up a mixing desk. <p><u>Home study:</u> Tell learners that in the next lesson, they will look at different mixer types. These will include analogue and digital mixers. They should answer this question in their workbook: What are the fundamental differences between these mixers?</p> <p><u>Watch this video to help you:</u> YouTube: Sweetwater - Digital Mixer vs Analog Mixer – What's the Difference? Live Sound Lesson.</p> <p>End of lesson.</p>		Learners self-assessment and writing score in workbook.	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
6	<p><u>Starter Activity: 6 minutes</u> Learners need to label the mixing desk on the next slide using the list here:</p> <ul style="list-style-type: none"> ● L-R XLR Outputs. ● High EQ. ● Master L-R Faders. ● Solo & Mute. ● Channel Strip Inputs XLR. ● Pan. ● Aux 1 Output. ● Volume Fader. ● Mic Gain. ● Channel Strip Inputs ¼" Jack. ● Mic/Line. ● Aux Send. ● Low EQ. ● Headphone Output. ● High EQ. ● Mid EQ. <p>Answer:</p>	MIDI keyboard, DAW, Computer	Recalling information learnt.	2.1.1 2.1.2

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Mixing Desk</p> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • Describe the difference between analogue, digital and hybrid desks. • Compare the advantages and disadvantages of each type of desk. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Demonstrate how a control surface works using your MIDI keyboard. <p>Main Subject Content: Mixing desks Take learners through the slides showing information about analogue, digital and hybrid mixing desks, and then onto explaining control surfaces. Then demonstrate using a MIDI keyboard as a control surface. If you have access to a control surface then use that as well.</p> <p>Key term:</p>			

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Control surface: An external piece of hardware that uses MIDI protocol to control a DAW.</p> <p>Activity 1: Control surfaces - 12 minutes Ask learners to:</p> <ol style="list-style-type: none"> 1. Describe the difference between analogue, digital and hybrid desks. 2. Use a table to compare the advantages and disadvantages of each type of desk. <p>Activity 2: Control surfaces - 10 minutes Explain that, because control surfaces use MIDI protocol, it is possible to set up the assignable dials on your MIDI keyboard to control any parameter and act as a control surface. On a channel in their DAW, learners should then set the assignable dials on their MIDI keyboard to control:</p> <ul style="list-style-type: none"> • Pan. • Volume. <p>Progress Check:</p> <ol style="list-style-type: none"> 1. What protocol do control surfaces use? MIDI. 2. When would you use an aux send on a mixing desk? To create a monitor mix for a performer. 3. Give one benefit of using a digital mixing desk. Save pre-sets/ built in effects / use as an interface. 4. Give one benefit of using a hybrid mixing desk. Can be used as a control surface/ 5. Give one benefit of using an analogue mixing desk. Analogue distortion. 		Learners self-assessment and	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> • Describe the difference between analogue, digital and hybrid desks; • Compare the advantages and disadvantages of each type of desk; • Demonstrate how a control surface works using your MIDI keyboard. <p><u>Home Study</u> Remind learners that so far, they have looked at a range of different types of hardware. Then in their workbook they should:</p> <ol style="list-style-type: none"> 1. Define hardware.. 2. Make a list of any hardware associated with a DAW. <p>Resources:</p> <ul style="list-style-type: none"> • musicindustryhowto.com • YouTube: Andrew Huang - What Music Gear Do You Actually Need? <p>End of Lesson.</p>		writing score in workbook.	
7	<p><u>Starter Activity: 5 minutes</u> Challenge learners to answer the following:</p> <ol style="list-style-type: none"> 1. What does DAW stand for? 2. What is a hazard? 3. What is a risk? <p>Stretch & challenge: Can you identify any potential hazards when producing and creating music? Possible learner responses:</p> <ul style="list-style-type: none"> • Exposure to noise. 	PPT, Workbook.	Think, pair & share. Whole class discussion.	2.2.2

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> • Computer display. • Workstation desk. • Trip hazards. • Electrical. <p>Key terms; DAW: Digital Audio Workstation. Hazard: Something that can cause harm. Risk: The chance, high or low, that any hazard will actually cause somebody harm</p> <p><u>What will you learn:</u> You must be able to: <ul style="list-style-type: none"> • Identify the main hazards associated with using a DAW. • Explain the risks associated with potential hazards. You may also be able to: <ul style="list-style-type: none"> • Determine the level of risk associated with a hazard. • Provide solutions to minimise the potential risk. </p> <p><u>Activity 1: Identification of hazards - 5 minutes</u> Ask learners to look at the image on screen. How many potential hazards can they identify? They should write these down in their workbook. Possible responses: Potential hazards include: <ul style="list-style-type: none"> • Exposure to noise. • Computer display. • Workstation desk. • Trip hazards: cables and wires. • Electrical equipment. </p>		Learners identifying potential hazards.	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Discuss these with the learners and give one example of a potential related risk.</p> <p>Activity 2: potential risks - 8 minutes Ask learners to create a list of potential risks associated with each of these hazards.</p> <p>Feedback: This comes through the main subject content of the lesson. Use questioning to get learners to explain what they think the potential risks are, then use the slides to support and develop understanding.</p> <p>Subject content: Talk through the slides explaining the hazard of exposure to noise.</p> <p>Reflective question: The risk of hearing loss is increased when using headphones. Why?</p> <p>Possible learner responses:</p> <ul style="list-style-type: none"> ● Closer to ears. ● Often louder. ● More sound pressure directly into the ear. <p>Reflective question: What do you think our ears do to protect themselves for long periods of time?</p> <p>Possible learner responses:</p> <ul style="list-style-type: none"> ● Close up. ● Send pain signals to brain. 		<p>Learners providing potential risks for hazards.</p> <p>Individual/whole class discussion.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Key term: Proximity: Distance from a sound source.</p> <p>Subject content Then talk through the slides outlining other hazards: Workstation desk, Cables & Wires, Electrical equipment.</p> <p>Activity 3: Solutions – 10 minutes Ask learners to create a list of possible ways of reducing the risk of these hazards causing harm. Solutions are also known as control measures. Their ideas should be practical and simple to introduce where possible.</p> <p>Stretch and challenge: Can learners determine the level of risk associated with each hazard? Low: 1; High: 5.</p> <p>Subject content: The following slides then cover solutions to exposure to noise, computer display, workstation desk, cables and wires, electrical equipment.</p> <p>Key terms: Ergonomic: Designed for comfort in the working environment. P.A.T/E.E.T: Portable appliance testing/electrical equipment testing is a process that checks for electrical defaults that could cause the equipment to malfunction.</p> <p>Progress check:</p> <ol style="list-style-type: none"> Which one of the following are potential risks associated with display screens? c. Eye strain. 		<p>Direct questioning.</p> <p>Learners self assessing and writing mark in workbook.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>2. Explain why it is not recommended that you listen to music above 80dB for an extended period? It can cause temporary and permanent hearing damage.</p> <p>3. Other than display screens, identify one hazard and associated risk associated with using a DAW. Hazard: Cables, risk: tripping up/falling over.</p> <p>4. How can you reduce the risk of electrical equipment malfunctioning? Regular P.A.T/E.E.T testing.</p> <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> ● Identify the main hazards associated with using a DAW; ● Explain the risks associated with potential hazards; ● Determine the level of risk associated with a hazard; ● Provide solutions to minimise the potential risk. <p>Home study: Find the image of a messy/ unsafe studio for learners to study. One possible resource is: www.currentsound.com/lessons/how-to-make-a-home-recording-studio 3rd Mistake – Messy Home Studios. In their workbooks, learners should create a list of the potential hazards and risks that they can see in the image. Then state how they would minimise these risks for this DAW set up.</p> <p>End of Lesson</p>			

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content												
8	<p>Previous lesson: Recap keywords (hazard, risk and DAW) with learners ready for the starter.</p> <p>Starter Activity: 5 minutes Encourage learners to back to thier previous lesson on health and safety and the DAWand then to in the blanks in the table.</p> <p>Answers:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 50%;">Hazard</th> <th style="width: 50%;">Risk</th> </tr> </thead> <tbody> <tr> <td>Exposure to noise</td> <td>Hearing damage – short & long term</td> </tr> <tr> <td>Computer display</td> <td>Eye strain – short & long term</td> </tr> <tr> <td>Workstation desk</td> <td>Back strain – short & long term</td> </tr> <tr> <td>Tripping: cables and wires</td> <td>Breaks & sprains</td> </tr> <tr> <td>Electrical equipment</td> <td>Electrocution/Fire</td> </tr> </tbody> </table> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • Explain what a risk assessment is. • Describe the steps required in a risk assessment. • Explain how to report accidents. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Develop your own risk assessment for your workstation. 	Hazard	Risk	Exposure to noise	Hearing damage – short & long term	Computer display	Eye strain – short & long term	Workstation desk	Back strain – short & long term	Tripping: cables and wires	Breaks & sprains	Electrical equipment	Electrocution/Fire	<p>Powerpoint Workbook Computer</p>	<p>Learners work in workbook. Direct questioning of learners.</p>	<p>2.2.2</p>
Hazard	Risk															
Exposure to noise	Hearing damage – short & long term															
Computer display	Eye strain – short & long term															
Workstation desk	Back strain – short & long term															
Tripping: cables and wires	Breaks & sprains															
Electrical equipment	Electrocution/Fire															



Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p><u>Main Subject Content: Risk Assessments</u></p> <p><u>Activity 1: Risk Assessments - 5 minutes</u> With the person next to them, learners should discuss:</p> <ol style="list-style-type: none"> 1. What they think a risk assessment is. 2. What they think is required for a risk assessment. 3. Why it is necessary to carry out a risk assessment. <p>Feedback:</p> <ol style="list-style-type: none"> 1. Risk Assessment: The process of evaluating the potential risks that may be involved in a future activity. 2. There are 5 steps within a risk assessment: <ol style="list-style-type: none"> 1. Identify the hazards. 2. Decide who could be harmed and how. 3. Evaluate the risks and decide on your control measures (solutions). 4. Make a written record of your findings. 5. Review the risk assessment. 3. Accept reasonable responses. <p><u>Activity 2: Risk Assessment - 15 minutes</u> Tell learners that they must create a risk assessment for their workspace and DAW in their classroom. Using the template in their workbook, their risk assessment must:</p> <ul style="list-style-type: none"> • Identify the potential hazards. • Decide on who could be harmed and how. • Evaluate the risks and decide on your control measures (solutions) to prevent the risks. 		<p>Teacher circulating during class discussion.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Stretch and Challenge: Review someone else's risk assessment.</p> <p>Subject content: Talk through the slide about the reporting of accidents, why they are recorded and how.</p> <p>Activity 3: Reporting of accidents - 8 minutes Learner can now create a template for reporting accidents in their classroom. The accident report form must include space for:</p> <ul style="list-style-type: none"> • Name of person filling out form. • Name of injured person. • Description of injury. • How the injury happened. • Time of accident. • Action points required to reduce risk of accident happening again. • Signature and date. <p>Activity 4: Explaining DAW Safety - 12 minutes Tell learners to imagine that they have a new student starting in the class who has not used a DAW before. It is their task to write them a welcome email or letter explaining the hazards and potential risks involved with using a DAW, as well as suggested control measures (solutions). Their email or letter should be as concise as possible.</p> <p>Progress Check:</p> <ol style="list-style-type: none"> 1. What is the purpose of a risk assessment? To evaluate future risks. 		<p>Learners completion of risk assessment using template.</p> <p>Learners peer assessing someone else's risk assessment.</p> <p>Learners sharing their</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>2. What are the 5 steps in a risk assessment? 1. Identify the hazards 2. Decide who could be harmed and how? 3. Evaluate the risks and decide on your control measures (solutions) 4. Make a written record of your findings 5. Review the risk assessment.</p> <p>3. Is electrocution/fire a risk or a hazard? Risk.</p> <p>4. True or false: only accidents that really hurt should be reported. False.</p> <p>5. How could you minimise the risk of hearing damage when using a DAW? Listening at lower volumes/ taking listening breaks.</p> <p>Lesson Recap: Can you now?</p> <ul style="list-style-type: none"> ● Explain what a risk assessment is; ● Describe the steps required in a risk assessment; ● Explain how to report accidents; ● Develop your own risk assessment for your workstation. <p>Home study: Reading home study: tell learners that in their next lesson they will be looking at MIDI. Using the resources suggested, they should read about MIDI with a focus on Quantise and how it is used. In their workbook they should write the date that they completed the reading.</p> <p>Resources: Audiomentor.com - MIDI Quantization Explained. Midi.org - 5 MIDI Quantization Tips.</p> <p>End of lesson.</p>		<p>letters with their peers. Teacher circulation.</p> <p>Learners self assessing and writing mark in workbook.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
9	<p><u>Starter activity: 5 minutes</u> Guide learners to answer the questions:</p> <ol style="list-style-type: none"> 1. What does MIDI stand for? Musical Instrument Digital Interface. 2. What are the benefits of using MIDI? Small file size, universal protocol, can play/record any instrument, editing. 3. What different types of MIDI devices can you think of? Keyboard, guitar, percussion, wind and control surfaces. <p><u>What will you learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Name the different types of MIDI controllers. • Describe the advantages and disadvantages of using MIDI. • Explain how a MIDI interface works. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Compose your own short piece of music using MIDI. <p><u>Main subject content: MIDI</u> Talk learners through the slides demonstrating MIDI interfacee, 5 pin DIN, MIDI interface connections, THRU, USB, MIDI sequencing USB, velocity, live input and live input latency. Reflective question: What does velocity control? Answer: Volume and tone.</p> <p>Reflective question: Identify one potential problem with recording in live using a MIDI keyboard. Answer: Because the computer has to process input and output information, there will always be a small time delay. This is called latency.</p>	DAW, computer, headphones, MIDI keyboard.	Direct questioning from home study.	2.1.2

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Key term: Velocity: How hard the key is struck when a note is played.</p> <p><u>MIDI: Live Input</u> Demonstrate to learners using a MIDI keyboard. Then talk them through the slides about MIDI quantise.</p> <p><u>MIDI: Piano Roll: Live input</u> Demonstrate to learners using piano roll. Then talk through the slides about MIDI step/piano roll input.</p> <p>Reflective question: Identify one advantage and disadvantage with recording in using step/piano roll input. Answers: Advantages: You can accurately input note the different pitches and note lengths; Your performance will be perfectly in time as it will be snapped to the grid. Disadvantages: Using this method can be far more time consuming; It is much harder to make it sound realistic as the velocities have to be controlled manually.</p> <p><u>Activity 1: MIDI composition - 20 minutes</u> Using the following MIDI input methods, direct learners to:</p> <ul style="list-style-type: none"> • Live input using MIDI keyboard. • Piano roll input using your pencil tool. <p>They should create a short, 8 – 16 bar, piece of music that only uses MIDI. Their work must:</p> <ul style="list-style-type: none"> • Use the chords: C, F, Am & G and the scale of C Major. • Use at least two different software instruments 		<p>Application of knowledge. Ability to create a musical idea.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> Use both Live and pencil tool input Use rhythmic quantise to fix timing errors <p>Chords:</p> <ul style="list-style-type: none"> C Major: C, E, G F Major: F, A, C A minor: A, C, E G Major: G, B, D  <p>Scale:</p> <ul style="list-style-type: none"> C, D, E, F, G, A, B, C  <p>Activity 2: MIDI questions - 5 minutes Direct learners to complete the following tasks:</p> <ol style="list-style-type: none"> Make a list of the: <ol style="list-style-type: none"> Advantages of using MIDI. Disadvantages of using MIDI. Find out how the following types of MIDI controllers work and when you would use them: <ol style="list-style-type: none"> Guitar. Percussion. Wind. Control surfaces. <p>Progress check:</p>		Learners self-assessment and writing score in workbook.	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ol style="list-style-type: none"> 1. What does MIDI stand for? Musical Instrument Digital Interface. 2. Explain how a MIDI interface works. 5Pin DIN cables – IN/OUT via USB cable to computer. 3. Give one disadvantage of using live input when recording MIDI. Timing errors/having to be able to play keyboard. 4. Give one advantage of using piano roll/pencil input when recording MIDI. No timing errors/ do not have to be able to play keyboard. 5. Explain what rhythmic quantise does. Snaps notes to nearest set note value. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> • Name the different types of MIDI controllers; • Describe the advantages and disadvantages of using MIDI; • Explain how a MIDI interface works; • Compose your own short piece of music using MIDI. <p><u>Home study:</u> Using an online sequencer (eg: beepbox.co), learners should create a short composition that:</p> <ul style="list-style-type: none"> • Uses at least four instruments. • Has at least 2 different patterns for each instrument. <p>They then need to upload their sequencer link of their composition to the designated space you provide for them.</p> <p>Resources: YouTube: Zita Music – A Simple Guide to Getting Started with Beepbox. Online sequencer: Beepbox.co.</p>			

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	End of lesson.			
10	<p><u>Starter activity: 5 mins</u> Encourage learners to answer as many questions from the grid as they can (questions are numbered in workbooks).</p> <ul style="list-style-type: none"> • Other than MIDI keyboard, name one type of MIDI controller. Wind, Guitar, Percussion, Control Surface. • What does MIDI stand for? Musical Instrument Digital Interface. • Give one benefit of using live input when recording MIDI. Captures realistic/human performance. • Give one advantage of using MIDI. Change edit the performance after recording. • Explain what rhythmic quantise does. Snaps notes to the nearest set note value. • Give one disadvantage of using MIDI. Can sound unrealistic if not programmed correctly. <p><u>What will you learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Create a new project in your DAW. • Create audio and MIDI tracks. • Import audio and MIDI files. • Name the minimum required bit depth and sample rate for digital recording. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Create your own bassline to match a project using your MIDI Keyboard. • Explain the reasons for different buffer rate settings. <p><u>Configuring a DAW: teacher demonstration</u></p>	DAW, computer, MIDI keyboard, headphones.	Random direct questioning.	2.1.1 2.1.2


Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Demonstrate to the learners how to configure a DAW, before they try it themselves.</p> <p>Activity 1: Configuring a DAW - 10 minutes Learners should then complete the following steps in their DAW:</p> <ol style="list-style-type: none"> 1. Create a new empty project. 2. Set the tempo to 120BPM. 3. Set the time signature to 4/4. 4. Create 1 mono audio track. 5. Create 1 stereo audio track. 6. Create 2 MIDI software instrument tracks. 7. Save your project as Configuring a DAW_Surname_Initial. <p>Subject content: Talk through the slides about sample rate, bit depth, CD quality.</p> <p>Key terms: Sample rate: The number of times an audio signal waveform is measured per second and is measured in kHz. Bit depth: The resolution at which each sample is taken.</p> <p>Importing Files: Teacher Demonstration Demonstrate to the learners how to import files before they try it themselves.</p> <p>Activity 2: Importing files – 10 minutes Learner should complete the following steps in their DAW:</p> <ol style="list-style-type: none"> 1. Import the file Guitar.wav to the mono audio track so that the file aligns with the start of bar 1. 		<p>Learners following steps and recalling information from demonstration.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>2. Import the file Drums.wav to the stereo audio track so that the file aligns with the start of bar 1.</p> <p>3. Import the file Electric Piano.mid to one of the MIDI software instrument tracks so that the file aligns with the start of bar 1.</p> <p>4. Choose an appropriate electric piano software instrument preset for the MIDI track.</p> <p>Subject content: Talk through the slides about buffer size.</p> <p>Key term: Buffer size: The amount of time allowed for your computer to process the audio of your audio interface.</p> <p>Recording a Bassline: teacher Demonstration Demonstrate how to record a bassline before the learners attempt it themselves.</p> <p>Activity 3: Bassline - 12 minutes Guide learners through the following tasks:</p> <ol style="list-style-type: none"> 1. Choose an appropriate bass instrument pre-set for your second software instrument track. The root notes of the Electric Piano Chords are: <ul style="list-style-type: none"> • A2. • F2. • A2. • F2. • E2. 2. Record in live using your MIDI Keyboard a bassline using these notes. 		<p>Learners following steps and recalling information from demonstration.</p> <p>Applying knowledge of MIDI from previous lesson.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p><u>Exporting to MP3: teacher Demonstration</u> Demonstrate how to export to MP3 before the learners try it themselves.</p> <p><u>Activity 4: Exporting to MP3 - 5 minutes</u> Using the bounce/export function in their DAW, learners should:</p> <ul style="list-style-type: none"> • Export their completed project to an MP3 file. • Save the file as: Export_1_Surname_Initial. <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. Write down the steps required to export your project to an MP3 in your DAW. DAW specific answer. 2. Write down the steps required to create audio and software instrument tracks in your DAW. DAW specific answer. 3. Write down the steps required to change a software instrument pre-set in your DAW. DAW specific answer. 4. Explain why you would want to set your buffer size a low as possible when recording? To avoid latency delay, to allow the computer to allocate more processing power to processing audio signals. 5. What are the minimum sample rate and bit depth required for digital recording? 44.1kHz and 16 bit. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> • Create a new project in your DAW; • Create audio and MIDI tracks; • Import audio and MIDI files; • Name the minimum required bit depth and sample rate for digital recording; • Create your own bassline to match a project using your MIDI Keyboard; 		<p>Learners following steps and recalling information from demonstration.</p> <p>Learners self-assessment and writing score in workbook.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<ul style="list-style-type: none"> ● Explain the reasons for different buffer rate settings. <p>Home Study: Learners should watch a video about sample rate when recording (eg: YouTube: Present Day Production: What SAMPLE RATE Should You Record At? Why HIGHER Can Be WORSE!) They should then write one paragraph that explains what sample rate is recommended that you record at. they should write this in their workbooks. They will share these at the start of next lesson.</p> <p>End of lesson.</p>			
11	<p>Home study recap: Remind learners that their home study last lesson was to write one paragraph that explains what sample rate is recommended that you record at. Then, learners should take turns to share their findings with the person next to them.</p> <p>Starter activity: 5 minutes Guide learners to discuss the following questions with the person next to them:</p> <ol style="list-style-type: none"> 1. What does sample rate mean? Number of times an audio signal waveform is measured per second (kHz). 2. What does bit depth mean? Resolution at which each sample is taken. 3. What are the minimum required bit depth and sample rate for digital recording? 16bit 44.1kHz. 4. Explain the reasons for having different buffer rate settings when: <ol style="list-style-type: none"> a) Recording – Lowest buffer = less latency (delay). b) Mixing – Highest setting = more processing power. 	computer, DAW, headphones.	Peer discussion teacher circulation.	2.1 2.2 2.1.2

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>5. What is the difference between a MIDI and audio track? MIDI sends data to play back audio from computer.</p> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • Edit the pitch and rhythm of a MIDI file. • Manipulate MIDI using cut, copy and paste. • Understand how controller data is stored in a MIDI file. • Know how to use quantise and velocity editing. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Use quantisation and velocity to successfully humanise a MIDI performance. <p>Activity 1: Project Set up - 6 minutes Guide learners to complete the following steps in their DAW:</p> <ol style="list-style-type: none"> 1. Create a new empty project. 2. Set the tempo to 110BPM. 3. Set the time signature to 4/4. 4. Create 1 MIDI Software instrument track. 5. Import the file Drums.mid to this track so it is aligned with the start of bar 1. 6. Save your project as MIDI Editing_Surname_Initial. <p>Subject content: Cover the slide that explains humanisation.</p> <p>Quantise & Velocity Editing to Humanise: teacher Demonstration: Demonstrate how to carry out quantise and velocity editing before learners attempt this themselves.</p>		<p>Ability to set up project without direct demonstration. Recall information following steps.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Activity 2: Humanise - 10 minutes Direct learners to use position and velocity editing to humanise the drum performance. They can either:</p> <ul style="list-style-type: none"> • Manually shift notes ahead or behind the grid and adjust velocity • Or, use MIDI transform tools to automatically set ranges for position and velocity for each part of the drum kit. <p>Editing Pitch & Rhythm: teacher demonstration Demonstrate how to carry out edit pitch and rhythm before learners attempt this themselves.</p> <p>Activity 3: Editing tools (part 1) - 10 minutes Guide learners to follow these steps:</p> <ol style="list-style-type: none"> 1. Import the file Bass.mid to a new MIDI software instrument track. 2. Choose a picked electric bass pre-set sound. This is a one bar pattern, with four notes of G2. The file contains timing errors. 3. Use quantise editing to make this play 4 $\frac{1}{4}$ notes (crotchets). 4. Use editing tools to repeat this one bar pattern so that it lasts for 4 bars. 5. Join these regions together. <p>Activity 3: Editing tools (part 2) - 10 minutes Facilitate learners to continue the process by doing the following:</p> <ol style="list-style-type: none"> 3. This image shows the rhythm for each bar: 		<p>Successful humanisation of MIDI.</p> <p>Ability to use editing tools.</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>4. Each bar must follow the rhythm above but be on the note of: Bar 1: G1, Bar 2: A1, Bar 3: F1, Bar 4: C2.</p> <p>7. Repeat this 4 bar pattern so that it lasts for 8 bars in total.</p> <p>Stretch and challenge: Use velocity editing to humanise the MIDI for the bass.</p> <p>Subject content: Cover the slide which talks about MIDI controller data.</p> <p>Controller Data: Pitch Bend: teacher demonstration Demonstrate pitch bend to the learners before they try it themselves.</p> <p>Activity 4: Controller Data - 5 minutes Guide learners to carry out the tasks:</p> <ol style="list-style-type: none"> 1. Create a new empty MIDI software instrument track. 2. Change this to a synth lead pre-set. 3. Record in a held note that fits with the rest of the music and lasts for 4 bars. 4. Whilst recording, move the pitch bend wheel to record in this data to the MIDI file. <p>Subject content: Explain swing.</p> <p>Key term: Swung rhythm: 1/8th notes are played like triplets. Giving a galloping feel to the music.</p> <p>Quantise: Swing: teacher demonstration</p>		<p>Ability to apply rhythm to scenario, Use of MIDI editing tools</p>	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Demonstrate the use of swing to learners before they try it themselves.</p> <p>Activity 5: Swing - 5 minutes Facilitate learners to complete the following:</p> <ol style="list-style-type: none"> 1. Use 1/16th note swung quantise on the drums. 2. Change the amount of swing to be able to hear the effect on the rhythm. <p>Progress check:</p> <ol style="list-style-type: none"> 1. How do you save a project in your DAW? File Save. Command S/Control S. 2. Describe one way that you can humanise a MIDI file. Using MIDI Transform, changing the position/velocity of MIDI notes. 3. Pitch bend is an example of what type of data? Controller Data. 4. What does velocity control? How hard a note is played. 5. What is rhythmic quantise? Snaps notes to nearest set note value. <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> • Edit the pitch and rhythm of a MIDI file; • Manipulate MIDI using cut, copy and paste; • Understand how controller data is stored in a MIDI file; • Know how to use quantise and velocity editing; • Use quantisation and velocity to successfully humanise a MIDI performance. <p>Home study: In the next lesson we will be looking at time stretch. To prepare, direct learners to watch a video about time stretch (eg: YouTube:</p>		Learners self-assessment and writing score in workbook.	

Lesson	Learning activities Implementation	Resources Support	Assessment method Impact	Mapping Teaching content
	<p>Music Production Tutorials - with Danny J Lewis: Classic Time stretch - The Science Explained). They must then summarise in one sentence how time stretch works in a DAW. This should be written in their workbook workbook.</p> <p>End of lesson.</p>			

12	<p><u>Starter activity: 5 minutes</u> Encourage learners to answer as many of the questions in the grid as they can:</p> <ul style="list-style-type: none"> • What is the minimum required sample rate and bit depth for a digital recording? 44.1kHz; 16 bit. • What are the keyboard commands for copy and paste? Control/Command C; Control/Command V, • The smallest note value in a MIDI file is a semi-quaver. What note value would you need to set the quantise value? 1/16 Note. • Pitch bend is an example of what type of data? Controller Data. • What two parameters would you need to adjust to humanise a performance? Position, Velocity. • What does MIDI stand for? Music Instrument Digital Interface. <p><u>What will you learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Set up a DAW project. • Use keyboard commands for copy and paste. • Use time stretch, pitch shift, reverse, loop and trimming. • Create a synthesiser patch and a sampler instrument. • Know how to export a project to MP3. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Recognise synthesiser settings by ear. <p><u>Activity 1: Project set up- 6 minutes</u> Learners should complete the following steps in their DAW:</p> <ol style="list-style-type: none"> 1. Create a new empty project with the correct sample rate and bit depth. 2. Set the tempo to 130BPM. 3. Set the time signature to 4/4. 4. Create 3 Stereo audio tracks. 5. Import the file Drums.wav to this track so it is aligned with the start of bar 1. 6. Save your project as DAW Skills_Surname_Initial. 	DAW, Headphones, MIDI keyboard.	Direct questioning.	2.1 2.2 2.1.2
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<p><u>Subject content:</u> Share information about time stretch and pitch shift.</p> <p><u>Time Stretch: teacher demonstration:</u> Demonstrate time stretch before the learners attempt it themselves.</p> <p><u>Activity 2: Time Stretching - 8 minutes</u> Guide learners through the following stages:</p> <ol style="list-style-type: none"> 1. Use traditional time stretch to make the drums play at double speed. This should also affect the pitch of the drums. 2. Duplicate this using your keyboard commands for copy and paste so that it lasts for a total of 8 bars. 3. Use pitch shifting to pitch the drums down -2 semitones. <p><u>Subject content:</u> Talk through the reverse and then trimming slides, using the samples.</p> <p><u>Reversing and Trimming Audio: teacher demonstration:</u> Demonstrate reversing and trimming audio before the learners try this themselves.</p> <p><u>Activity 3: Reverse and Trim - 10 minutes</u> Guide learners to:</p> <ol style="list-style-type: none"> 1. Import the file crash.wav one of the empty audio tracks. 2. Reverse this audio file to create a riser that starts at bar 3 and ends at the end of bar 4. 3. Import the audio file Shaker.wav to one of the empty audio tracks. 4. Use the trimming tool to turn this into a 4 bar region. 5. Use looping to extend this for 8 bars. <p><u>Subject content:</u> Talk over the synthesiser slides, using the samples.</p>		<p>Successful set up of project using correct settings.</p> <p>Successful use of time stretching to manipulate audio file.</p> <p>Ability to use editing to reverse an audio file.</p>	
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<p>Reflective question: What do you think the settings are for this synthesiser patch?</p> <p>Answers:</p> <ol style="list-style-type: none"> 1. Waveform: Square. 2. Pitch: Low Octave. 3. Filtering: Low Pass Filter with a low cutoff and medium resonance. 4. ADSR: Very fast attack. <p><u>Creating a Synthesiser Patch: teacher demonstration</u> Demonstrate the creation of a synthesiser patch to the learners.</p> <p><u>Activity 4: Synthesiser patch - 10 minutes</u> Guide learners to:</p> <ol style="list-style-type: none"> 1. Create a new empty MIDI software instrument track. 2. Choose a synthesiser software instrument. 3. Import the file Synth Bass.mid to this track so that it aligns with the start of bar 1. 4. Create a synthesiser that matches the example: <ul style="list-style-type: none"> ● Osc 1: Square Wave. ● LPF cutoff at about 30%. ● Resonance at about 60%. ● Attack: Fast. <p><u>Creating a Sampler Instrument: teacher demonstration</u> Demonstrate how to create a sampler instrument before the learners try it themselves.</p> <p><u>Activity 5: Sampler Instrument - 12 minutes</u> Guide learners to:</p> <ol style="list-style-type: none"> 1. Create a new empty MIDI software instrument track. 2. Choose an empty sampler software instrument. 3. Import the file Vocal E2.wav to this sampler. 		<p>Ability to recreate the synthesiser patch using ear and following steps.</p> <p>Ability to create a sampler instruments. Prior links to content area 1.</p>	
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<p>4. Pitch map the sample to the sampler. 5. Use the MIDI file from the Synth Bass track. 6. Put this MIDI file up one octave.</p> <p><u>Exporting to an MP3: teacher demonstration</u> Demonstrate how to import an MP3.</p> <p><u>Activity 6: Exporting to MP3</u> Get learners to export their project to an MP3 and upload to the class hand in folder.</p> <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. Explain how to do the following in your DAW: <ol style="list-style-type: none"> a) Time stretch. DAW specific answers. b) Reverse. DAW specific answers. c) Loop. DAW specific answers. d) Pitch Shift. DAW specific answers. 2. Explain how to export to MP3 in your DAW. DAW specific answers. 3. Explain how to create a sampler instrument using an audio file in your DAW. DAW specific answers. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> ● Set up a DAW project; ● Use keyboard commands for copy and paste; ● Use time stretch, pitch shift, reverse, loop and trimming; ● Create a synthesiser patch and sampler instrument; ● Know how to export a project to MP3; ● Recognise synthesiser settings by ear. <p><u>Home study:</u> Instruct learners to find out the definition of the following terms:</p>		<p>Successful export.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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	<ol style="list-style-type: none"> 1. Automation. 2. Read Automation. 3. Write Automation. 4. Touch Automation. 5. Latch Automation. <p>Resources: Izotope.com – What is Mix Automation. YouTube: Cubase - What is Automation and How to Use It. Support.apple.com - Logic Pro User Guide.</p> <p>End of lesson.</p>			
13	<p><u>Starter activity: 5 mins</u> Get learners to listen to the extract. Ask them to describe what happens to:</p> <ul style="list-style-type: none"> • The Drums: Decrease in volume. • The Bass: Has a LPF applied the gradually lowers. <p><u>What will you learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Use automation for volume and pan. • Use instrument automation for a synthesiser. • Use plugin automation for an EQ. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply your understanding of automation to automate a plugin to design a creative effect. <p><u>Today's lesson:</u> Show the slide that introduces today's lesson, informing learners that they will be using the project from the previous lesson.</p>	DAW, MIDI keyboard, Headphones	Think, pair, share.	<p>2.1 2.2 2.1.2</p>

<p>Key term: Automation:Controlling a parameter value in a DAW automatically. For example, volume of a track.</p> <p><u>Volume & Pan Automation: teacher demonstration</u> Demonstate volume and pan automation for the learners.</p> <p><u>Activity 1: Volume and Pan - 5 minutes</u> Guide learners to complete the following steps in their DAW:</p> <ul style="list-style-type: none"> ● Shaker Panning: Bar 1 hard left gradually pan to be hard right by the end of bar 8. ● Shaker Volume: Gradually increase the volume from -30dB at bar 1 to -15 dB at bar 4. <p><u>Instrument Parameter Automation: teacher demonstration</u> Demonstrate parameter automation to learners before they attempt it themselves.</p> <p><u>Activity 2: Instrument automation - 8 minutes</u> Guide learners to complete the following steps in their DAW on the Synth Bass: Automate the cutoff of the LPF so that:</p> <ul style="list-style-type: none"> ● It is at 10% at the start of bar 1. ● It gradually rises to 40% by the start of bar 5. ● It gradually falls down to 30% by the end of bar 8. <p><u>Plugin Parameter Automation: teacher demonstration</u> Demonstrate plugin parameter automation to learners before they attempt it themselves.</p> <p><u>Activity 3: Plugin Automation – 10 minutes</u> Guide learners to complete the following steps in their DAW on an EQ on the Stereo Output:</p> <ol style="list-style-type: none"> 1. Create a HPF at 400Hz. 		<p>Successful use of panning/volume automation.</p> <p>Successful use of parameter automation.</p> <p>successful use of plugin automation.</p>	
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<p>2. Automate the bypass of the plugin so that it is on for bars 1-4 only.</p> <p>3. Create a LPF starting at 20kHz from bar 1.</p> <p>4. Automate the cutoff to reach 3kHz by the end of bar 2.</p> <p>5. Automate the cutoff back up to 20kHz by the end of bar 4.</p> <p><u>Creative Effects: Automation: teacher demonstration</u> Demonstrate creative effects automation to learners before they attempt it themselves.</p> <p><u>Activity 4: Creative Automation – 10 minutes</u> Using at least one plugin control the value of at least one parameter on an instrument, learners could:</p> <ul style="list-style-type: none"> ● Change the length of a reverb. ● Change the level of distortion. ● Change the delay time (note value). ● Change the level of delay feedback. ● Change the cutoff frequency of a filter. <p>Stretch and challenge: Learners could automate another parameter in the plugin.</p> <p><u>Exporting to an MP3: teacher demonstration</u> Demonstrate how to export to an MP3.</p> <p><u>Activity 5: Export to MP3 – 5 minutes</u> Get learners to export their project to an MP3 and upload to the class hand in folder.</p> <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. Describe how you would automate the following in your DAW: <ol style="list-style-type: none"> a) Volume. DAW specific answer. b) Pan. DAW specific answer. c) Filter on a synthesiser. DAW specific answer. 						<p>Ability to apply knowledge to a different scenario.</p> <p>Successful use of automation to create a creative effect.</p> <p>Successful export to MP3.</p> <p>Learners self-assessment and</p>
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	<p>d) Wet % on a reverb. DAW specific answer.</p> <p>2. Give one advantage of using automation. To make creative effects/keeps mix interesting/development.</p> <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> ● Use automation for volume and pan; ● Use instrument automation for a synthesiser; ● Use plugin automation for an EQ; ● Apply your understanding of automation to automate a plugin to design a creative effect. <p>Home study: Inform learners that in the next lesson you will be looking at modulation effects. To prepare, they should use the resources below find at least one example of songs that use one of following effects: chorus, flanger and phaser. They should write your examples in the workbook.</p> <p>Resources: YouTube: Let's Play All - Top 10 Chorus Riffs. Mentalfloss.com – 7 Songs That Show Off Flangers & Phasers.</p> <p>End of lesson.</p>		writing score in workbook.	
14	<p>Starter activity: 5 minutes Play effects for learners and ask them to identify from the list which effect relates to which sample. Answer:</p>	DAW, headphones.	Think, pair, share.	2.1 2.2 2.1.2

Instrument	Effect
	Chorus
	Delay
	<u>Flanger</u>
	Phaser
	Reverb

Stretch and challenge: Ask which two of these are time-based effects.

Answer: Delay and reverb.

Stretch and challenge: Ask what type of reverb is used.

Answer: spring.

What you will learn:

You must be able to:

- **Understand** the difference between time-based and modulation effects.
- **Use** reverb, delay, chorus, flanger and phaser in your DAW.
- **List** the main parameters of each of these effects.

You may also be able to:

- **Recognise** different effects through listening.

Subject content: reverb

Talk learners through reverb, hardware reverb, and example fo a digital reverb plugin, pre-delay, reflectivity, size, time, and dry/wet.

Direct questioning.

	<p>Key terms: Reverb: Places a sound in a different space. Decay: The time it takes for a sound to reach silence. Digital reverb: A reverb generated artificially, through algorithms.</p> <p>Reverb: teacher demonstration Demonstrate how to add reverb before the learners attempt it themselves.</p> <p>Activity 1: Reverb - 8 minutes In their DAW, learners should use the provided audio files to add a room reverb to the drums. It should have a:</p> <ul style="list-style-type: none"> a) 20ms pre-delay. b) 1.5 second length. c) Low Cut – 200Hz. d) High Cut – 10kHz. e) Dry 100%. f) Wet 30%. <p>Subject content Remind learners that last lesson they looked at tape delay and this time will look at digital delay. Highlight the difference between these. Guide them through the slides that outline note value.</p> <p>Key terms: Tape delay: A delay generated by sending a signal through a tape machine. Digital delay: A delay generated artificially, through algorithms.</p> <p>Delay: teacher demonstration Show learners how to add delay.</p> <p>Activity 2: Delay - 8 minutes</p>		<p>Ability to use reverb plugin.</p> <p>Ability to use delay plugin.</p> <p>Ability to use chorus plugin.</p>	
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<p>Guide learners to use the provided audio files to add a delay to the electric guitar. It should have a:</p> <ul style="list-style-type: none"> a) 1/16 Note Delay Time. b) Feedback: 40%. c) Dry: 100%. d) Wet: 40%. e) Low Cut: 400Hz. f) High Cut: 5kHz. <p><u>Subject content: Modulation (chorus)</u> Introduce learners of the modulation effects of chorus, flanger and phaser. They will carry out practice of each.</p> <p>Key term: Modulate: To change or alter.</p> <p><u>Chorus: teacher demonstration</u> Demonstrate to learners how to add chorus.</p> <p><u>Activity 3: Chorus - 8 minutes</u> Using the provided audio files, learners should add chorus to the bass guitar. It should have a:</p> <ul style="list-style-type: none"> a) Rate: 300Hz. b) Intensity: 15%. c) Mix: 100%. <p><u>Subject content: Modulation (flanger)</u> Talk through the slides about flanger rate, intensity, feedback and mix.</p> <p><u>Flanger: teacher demonstration</u> Demonstrate to learners how to add a flanger, before they try it themselves.</p> <p><u>Activity 4: Flanger - 8 minutes</u></p>		<p>Ability to use flanger plugin.</p> <p>Ability to use phaser plugin.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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<p>Using the provided audio files, learners need to add a flanger to the drums from bar 1-2. It should have a:</p> <ol style="list-style-type: none"> a) Rate: 360Hz. b) Intensity 14%. c) Feedback 50%. d) Mix 80%. <p><u>Subject content: Modulation (phaser)</u> Talk through the slides about phaser intensity, rate, feedback, stages, filter and mix.</p> <p><u>Phaser: teacher demonstration</u> Demonstrate to learners how to add a phaser, before they try it themselves.</p> <p><u>Activity 5: Phaser - 8 minutes</u> Using the provided audio files, learners should add a phaser to the drums from bars 11-12. It should have a:</p> <ul style="list-style-type: none"> • Rate: 1bar. • Intensity 100%. • Feedback 70%. • Mix 100%. <p><u>Progress check: True or false</u></p> <ol style="list-style-type: none"> 1. Reverb is a type of modulation effect. False. 2. Chorus creates a swooshing effect. False. 3. Delay time is measured in hertz. False. 4. Rate on a modulation effect is measured in hertz. True. 5. Delay and reverb are time-based effects. True. <p><u>Progress check: listening</u> The Cult: She Sells Sanctuary (1985)</p>		
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	<ol style="list-style-type: none"> 1. Identify the time-based effect on the lead guitar during the introduction. (1) Delay. 2. State one other effect added to the guitar. (1) Overdrive, Chorus, Flanger/phaser. 3. What effect has been added to the snare drum? (1) Reverb. 4. Does the lead vocal have a high or low wet mix % of delay? (1) Low %. <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> • Understand the difference between time-based and modulation effects; • Use reverb, delay, chorus, flanger and phaser in your DAW; • State the main parameters of each of these effects; • Recognise different effects through listening. <p>Home study: Other than the examples looked at today, learners should find one song example for each type of effect used during today’s lesson. They are: reverb, delay, chorus, flanger and phaser.</p> <p>Resources: YouTube. Spotify.</p> <p>End of lesson.</p>			
15	<p>Starter activity: 5 minutes Play extracts for learners. Ask what process has been used to create the difference in sound. Answer: HPF EQ.</p> <p>What will you learn: You must be able to:</p>	DAW, Headphones.	Think, pair, share.	2.1 2.2 2.1.2

- **Define** EQ.
 - **State** what the different band types on an EQ are.
 - **Use** different EQ band types to shape the tone of instruments in a mix.
- You may also be able to:
- **Recognise** different filters through listening.
 - **Explain** the difference between parametric and graphic EQ.

Subject content: Equalisation

Talk through slides on equalisation (parametric EQ, band shapes, HPF 100Hz, LPF 10kHz, low shelf boost 100Hz + 5dB, low shelf cut 100hz-5dB, high shelf boost 10kHz +5dB, high shelf cut 10kHz – 5dB, notch boost 500Hz + 5dB wide Q, notch cut 500Hz- 5dB wide Q, notch boost 500Hz +15dB narrow Q, notch cut 500Hz -15dB narrow Q.

Key term:

Parametric EQ: An EQ that lets you change the frequency, shape (Q) and volume of band.

Reflective question: Can you think of any advantages or disadvantages of using a parametric EQ? **Answer:**

Advantages	Disadvantages
Full control over frequency of bands	This could offer too much choice which could lead to unmusical tone shaping.
Full control over shape of bands (Q)	
You know what the type of filters are	
Provides a visual reference	Visual reference can cause you to mix with your eyes and not your ears.

Parametric EQ: teacher demonstration

Demonstrate the application of parametric EQ to audio files before learners attempt this themselves.

Ability to use EQ and apply specific settings with accuracy.

Ability to apply knowledge learnt about different EQ bands and complete the task.

Ability to correctly identify differences and similarities.

<p><u>Activity 1: Using parametric EQ - 12 minutes</u> Guide learners to use the provided audio files yo:</p> <ol style="list-style-type: none"> 1. Apply a HPF at 250Hz on the Electric Guitars. 2. Apply a Notch boost +6dB 80Hz with a medium Q to the Drums. 3. Apply a Notch cut -3dB 400Hz with a medium Q to the Drums. 4. Apply a High Shelf +3dB 12kHz to the Drums. 5. Apply a LPF at 1.5kHz to the Bass. 6. Apply a Low Shelf boost + 3dB at 150Hz to the Bass. <p><u>Subject content: Using EQ</u> Talk EQ and the reasons for using.</p> <p>Reflective question: There are 4 main reasons for using an EQ. What do you think they are? Answer:</p> <ol style="list-style-type: none"> 1. To remove (cut) unwanted frequencies. 2. To increase (boost) wanted frequencies. 3. To change the tonal balance of sound. 4. For a creative effect. <p><u>Activity 2: EQ task - 10 minutes</u> Tell learners to listen to the audio file labelled voice over. They should then use EQ in their DAW to:</p> <ol style="list-style-type: none"> 1. Remove the low rumble heard in the recording. 2. Add brightness to increase the clarity of the voice. <p>Stretch and challenge: Some learners can then try to use only two bands to achieve the sound.</p> <p><u>Subject content: Equalisation (graphic)</u> Talk through graphic equalisation slides.</p>		<p>Class discussion sharing of ideas. Whole class feedback.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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Reflective question: Can you think of any advantages or disadvantages of using a graphic EQ?

Answer:

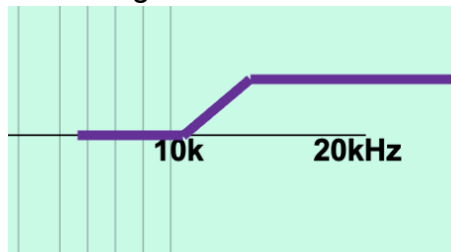
Advantages	Disadvantages
Set bands are most common required frequencies.	Set frequency bands may not always be what you want to change.
Faster workflow as there is less choice.	You do not necessarily know what the shape of the band is.
Easier to use.	Can only turn up or down – less control.

Activity 3: Parametric vs graphic - 10 minutes

In **one** paragraph, learners should explain the **differences** and **similarities** between these two EQ types.

Progress check:

1. What filter type has been applied to this audio file? **LPF.**
2. What filter type has been applied to this audio file? **HPF.**
3. You have been given an audio file that has low rumble. How do you remove this using EQ? **HPF 100Hz.**
4. Draw a High Shelf.



5. What two things are measured on an EQ graph? **Frequency (Hz) and Level (dB).**

Lesson recap:

Can you now?

- **Define EQ;**

	<ul style="list-style-type: none"> ● State what the different band types on an EQ are; ● Use different EQ band types to shape the tone of instruments in a mix; ● Recognise different filters through listening ; ● Explain the difference between parametric and graphic EQ. <p>Home study: Inform learners that the next lesson will look at filter effects. To prepare, learners should:</p> <ol style="list-style-type: none"> 1. Find out how a Wah pedal works. 2. Find one song example that uses a Wah pedal. <p>Resources: Andertones.com – Guitar Wah Pedal Guide. YouTube.</p> <p>End of lesson.</p>									
16	<p>Starter activity: 5 minutes Challenge learners to answer the tasks/ questions in each part of the grid.</p> <table border="1" data-bbox="264 1010 1021 1289"> <tr> <td data-bbox="264 1010 517 1150">Define EQ.</td> <td data-bbox="517 1010 770 1150">How would you remove low rumble from a recording?</td> <td data-bbox="770 1010 1021 1150">What is the difference between graphic and parametric EQ?</td> </tr> <tr> <td data-bbox="264 1150 517 1289">Give one advantage of using MIDI.</td> <td data-bbox="517 1150 770 1289">What are the two filter types found on an EQ?</td> <td data-bbox="770 1150 1021 1289">Give one disadvantage of using MIDI.</td> </tr> </table> <p>Answers:</p>	Define EQ .	How would you remove low rumble from a recording?	What is the difference between graphic and parametric EQ?	Give one advantage of using MIDI.	What are the two filter types found on an EQ?	Give one disadvantage of using MIDI.	DAW, Headphones.	Learners answer individually, Direct questioning.	2.1 2.2 2.1.2
Define EQ .	How would you remove low rumble from a recording?	What is the difference between graphic and parametric EQ?								
Give one advantage of using MIDI.	What are the two filter types found on an EQ?	Give one disadvantage of using MIDI.								

Turning up or down the level (dB) of specific frequencies (Hz).	Use a HPF to remove low end.	Graphic has set frequency bands, parametric has full control
Can change edit the performance after recording.	HPF & LPF.	Can sound unrealistic if not programmed correctly.

What will you learn:

You must be able to:

- **Describe** how filter effects work.
- **Use** EQ to create HPF and LPF effects.
- **Apply** filter effects using a Wah Wah Plugin.

You may also be able to:

- **Recreate** a Wah Wah effect using EQ.
- **Recreate** filter sweeps through listening.

Subject content: Filter effects

Talk through the slides explaining filter effects, focusing on wah wah.

Key term:

Filter effects: Use of HPF or LPFs to create a change in frequency content of a sound.

Reflective question: All three of these songs use a Wah Pedal. Identify where you can hear the use of the Wah Pedal in each example.

Answer: Open responses.

Reflective question: How would you describe the sound of a Wah pedal?

Answer: Open responses.

Applying knowledge of automation previously learnt.

Ability to use Wah plugin.
 S&C: ability to use LPF on EQ. successful automation of

	<p>Reflective question: What filter type do you think is used to create the Wah Wah effect?</p> <p>Answer: A Wah effect is created using a LPF with a high resonance boost.</p> <p><u>Wah Pedal: teacher demonstration</u> Demonstration application of the wah pedal.</p> <p><u>Activity 1: Wah pedal - 10 minutes</u> Play sound provided. Then learners should use the audio file, Funk Guitar, to match this sound as closely as they can using a Wah Pedal Plugin. They will need to automate the position of the Wah Pedal plugin.</p> <p>Stretch and challenge: Learners can now use only a LPF on an EQ to create the same sound.</p> <p><u>Subject content: Filtering effects using EQ</u> Talk through the slides explaining the use of EQ.</p> <p><u>Activity 2: Filter sweeps - 10 minutes</u> Play learners the sound provided. They should then use the audio file, EDM Filter 115BPM, to match this as closely as possible using an EQ Plugin, the filtering heard in the example. They will need to:</p> <ul style="list-style-type: none"> • Automate the cutoff of the HPF & LPF on the EQ. • Automate the bypass on the EQ. <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. What filter does a Wah pedal use? LPF. 2. What happens when a Wah pedal is moved? Cutoff frequency is changed. 3. How would you recreate a Wah pedal effect using only an EQ? LPF with high resonance. 		<p>plugin parameters.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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	<p>4. Describe one way you could use an EQ during a transition. LPF/HPF to remove frequencies then gradually increase or decrease before the drop.</p> <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> • Describe how filter effects work; • Use EQ to create HPF and LPF effects; • Apply filter effects using a Wah Wah Plugin; • Recreate a Wah Wah effect using EQ; • Recreate filter sweeps through listening. <p>Home study: Inform learners that in the next lesson they will be using distortion. For home study, they should create a timeline of the development of distortion from c.1930 to present day in their workbook. They should cover the major developments. They should <u>not</u> include every year</p> <p>Resources: YouTube:</p> <ul style="list-style-type: none"> • JHS Pedals - History Of Guitar Distortion. • Polyphonic - A Brief History of Electric Guitar Distortion. <p>End of lesson.</p>			
17	<p>Starter activity: 5 minutes Ask learners what the provided files have in common and what is different about them. Answer: All have distortion but have a different amount/type.</p> <p>What will you learn: You must be able to:</p> <ul style="list-style-type: none"> • Define distortion. 	DAW, heapdphones.	Think, pair, share. Whole class dicussion.	2.1 2.2 2.1.2

<ul style="list-style-type: none"> • List the different types of distortion. • Apply distortion in two different ways. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Create suitable distortion settings. <p><u>Subject content: Distortion and overdrive</u> Talk learners through the distortion slides and overdrive slides.</p> <p>Key term: Distortion: When an audio signal is amplified by turning up the gain.</p> <p>Reflective question: How would you describe the sound of distortion? Answer: Open responses.</p> <p><u>Overdrive: teacher demonstration</u> Show learners how to apply overdrive, before they then attempt this themselves.</p> <p><u>Activity 1: Overdriven Guitars - 8 minutes</u> Play the the audio file. Learners should then try to match it as closely as possible on the file Electric Guitar, using an overdrive plugin. They will need to adjust:</p> <ul style="list-style-type: none"> • Tone. • Drive. • Level. <p>Response:</p> <ul style="list-style-type: none"> • Tone: LPF 2300Hz. • Drive: +15dB. • Level: - 14dB. <p><u>Subject content: Amplifier modelling/simulation</u> Talk learners through the amplifier modelling/simulation slides.</p> <p><u>Activity 2: Amp sims - 10 minutes</u></p>				<p>Ability to use overdrive plugin to match the tone heard in example.</p>
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<p>Using the amp simulator that comes with their DAW and the supplied audio files, learners should:</p> <ol style="list-style-type: none"> 1. Create a slightly overdriven tone for Electric Guitar 1. 2. Create a heavily distorted tone for Electric Guitar 2. <p>Progress check:</p> <ol style="list-style-type: none"> 1. Give one benefit of using an amp sim to create distortion. All in one plugin, simulates real amplifiers. 2. Give one negative of using an amp sim to create distortion. Not as flexible as a separate overdrive plugin. 3. What does the tone control on an overdrive pedal do? LPF to remove high frequencies from distorted tone. 4. Other than electric guitars, name one other instrument you could apply distortion to. Any instrument. There are no rules. <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> • Define distortion; • List the different types of distortion; • Apply distortion in two different ways; • Create suitable distortion settings. <p>Home study: There are other distortion types available such as:</p> <ul style="list-style-type: none"> • Distortion. • Bitcrusher. • Fuzz. • Analogue Distortion (sometimes known as saturation). <p>Learners should find out what these distortion types do and should write a short sentence in their workbook for each.</p> <p>Resources: Musicradar.com – 9 types of distortion and how they're used.</p>		<p>Ability to create different types of tones using an amp sim.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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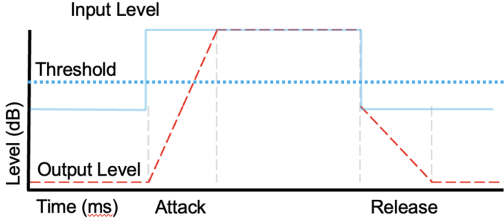
	<p>Stretch and challenge: Find a song example for each type.</p> <p>End of lesson.</p>			
18	<p><u>Starter Activity: 5 minutes</u> Play sound clip, and ask learners what the problem with the lead vocal in this mix. Answers:</p> <ul style="list-style-type: none"> • The first half of the vocal is quieter than the second. • Some words/phrases are sung louder. • Some words/phrases get lost in the mix or are too quiet. <p>This problem can be solved by using a process called compression. After explaining the answers, play the before and after clips provided.</p> <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Define dynamic processing and compression. • List the controls found on a compressor. • Explain why you would need to use compression. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply suitable compression settings for different instruments. <p><u>Subject content: dynamic processing and compression</u> Talk learners through the slides about dynamic processing, dynamic compression, threshold, ratio.</p> <p>Key terms: Dynamic Processing: Any process that is affected by, and controls, the level of volume. Balanced Mix: When every part can be heard throughout a mix at an appropriate level. Dynamic Compression: Reduces the volume (dB) of an audio signal.</p>	PPT, workbook, DAW, Headphones.	Think, pair, share. Whole class discussion.	2.1 2.2 2.1.2

<p>Dynamic Range: Difference in volume between the loudest and quietest part of an audio signal.</p> <p>Activity 1: Compression graph - 8 minutes Compression can be displayed using a graph. Ask learners to label the graph using the following labels:</p> <ul style="list-style-type: none"> • Threshold. • Input Signal. • Output Level (dB). • 1:1, 2:1, 4:1, 10:1 & ∞:1. • Input Level (dB). <p>Answer:</p> <ol style="list-style-type: none"> a) Output level (dB). b) Input level (dB). c) Threshold. d) 1:1. e) 2:1. f) 4:1. g) 10:1. h) ∞:1. <p>Subject content: Talk learners through attack, release and make-up gain.</p> <p>Vocal Compression: teacher demonstration Demonstrate vocal compression to the learners.</p> <p>Activity 2: Vocal Compression - 10 minutes Using the supplied audio files: Rhythm Section and Lead Vocal, learners should use compression on the Lead Vocal to even out the dynamic range, so that all phrases can be heard clearly in the mix. They must use:</p> <ul style="list-style-type: none"> • Threshold. 			<p>Ability to apply new information to practical situation. Successful use of compression</p>
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	<ul style="list-style-type: none"> • Ratio. • Attack. • Release. • Make-up Gain. <p>Example: Settings on compressor:</p> <ul style="list-style-type: none"> • Threshold: -28dB. • Ratio: 4:1. • Attack: 15ms. • Release: 20ms. • Make-up Gain: 7dB. <p>Subject content: Extreme compression Talk learners through the extreme compression slide..</p> <p>Activity 3: Extreme Compression - 12 minutes Using the supplied audio files, Drums and Room mic, learners should:</p> <ol style="list-style-type: none"> 1. Add a compressor to the Room Mic track with the following settings: <ul style="list-style-type: none"> • Threshold: -35dB. • Ratio: 12:1. • Attack: 5ms. • Release: 5ms. • Make-up Gain: 8dB. 2. Balance the levels between the two tracks. 3. How has this changed the sound of the drums? <p>Progress check:</p> <ol style="list-style-type: none"> 1. True or False: a compressor makes signals louder. False 2. What does the ratio control on a compressor? Controls the amount that the compressor will turn down the incoming signal. 3. True or False: You should always use a fast attack on a compressor. False. 		<p>in line with demonstration.</p> <p>Successful use of compression in line with demonstration.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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	<p>4. Why would you need to use make-up gain on a compressor? If the compressor has made the overall signal too quiet. To compensate for gain reduction.</p> <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> • Define dynamic processing and compression; • List the controls found on a compressor; • Explain why you would need to use compression; • Apply suitable compression settings for different instruments. <p>Home study: Learners should use research to find out how the following hardware compressors work and why they are still used today:</p> <ul style="list-style-type: none"> • Universal Audio 1176. • Teletronix LA-2A. <p>Resources: Uaudio.com. YouTube: Musician’s Friend – History of the 1176.</p> <p>End of lesson.</p>			
19	<p>Starter Activity: 5 minutes Challenge learners to match the keyword to the definition: Answers:</p> <ul style="list-style-type: none"> • Threshold: The level (dB) at which the compressor will start to turn down the input signal. • Ratio: How much the compressor will turn down the incoming signal. • Attack: How quickly the compressor will begin to turn down the incoming signal. • Release: How quickly the compressor will stop compressing once the signal goes back down below the threshold. 	DAW, Headphones.	Individual work. Direct questioning.	2.1 2.2 2.1.2

<ul style="list-style-type: none"> • Make-up Gain: How much the compressed signal is turned up by. <p>Stretch and challenge: How much would a 20dB input signal be turned down by at a ratio of 4:1?</p> <p>Answers:</p> <ul style="list-style-type: none"> • $20\text{dB} \div 4 = 5\text{dB}$ • Resulting output = 5dB. • Turned down by: 15dB. <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Define noise gate. • List the controls found on a noise gate. • Explain why you would need to use a noise gate. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply suitable noise gate settings to remove bleed. • Apply compression to even out the dynamic range. <p><u>Subject content:</u> Talk learners through the slides recapping the previous lesson, and then covering noise gate, reduction, threshold, attack, release, and bleed/spill.</p> <p>Key terms: Dynamic Processing: Any process that is affected by, and controls, the level of volume. Dynamic Compression: Reduces the volume (dB) of an audio signal. Noise gate: Turns down the volume of a signal that falls below a set threshold. Bleed/spill: Refers to any unwanted sound captured by a microphone when recording. For example: kick drum sound in the snare drum microphone.</p> <p>Reflective question (noise gate): Which parameter is not found on a compressor?</p>		<p>Learner demonstrating on whiteboard/fli pchart.</p> <p>Ability to apply new information learnt to therotical scenario.</p>
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	<p><u>Noise gate: Removing bleed: teacher demonstration:</u> Demonstrate the removal of bleed.</p> <p><u>Subject content: Snare gate</u> Show learners the the examples with gate and with no gate. Reflective question: What problem has the noise gate caused? Reflective question: What setting on our noise gate would we need to adjust to resolve this issue?</p> <p><u>Noise gate: Using reduction: teacher demonstration</u> Demonstrate the use of reduction to the learners.</p> <p><u>Activity 1: Noise Gate Graph - 10 minutes</u> Challenge learners to label the following parameters on the noise gate graph.</p> <ul style="list-style-type: none"> • Attack. • Input Level. • Level (dB). • Threshold. • Time (ms). • Release. • Output Level. <p>Answer:</p> 		<p>Ability to apply new information to practical scenario. Successful removal of bleed from drums.</p> <p>Recall of exporting to MP3.</p> <p>Recal of use of compression.</p> <p>Learners self-assessm</p>	
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	<p>Activity 2: Kick and Snare Gate - 15 minutes</p> <ol style="list-style-type: none"> Using the supplied audio files, Kick, Snare and Drums, learners should use a noise gate on the Kick and Snare to remove the bleed. They must use: <ul style="list-style-type: none"> Threshold. Reduction. Attack. Release. Learners should then export their project to an MP3 and upload to the class hand in folder. <p>Stretch and challenge: Some learners could use compression to even out the dynamic range of the Kick and Snare.</p> <p>Noise gate: kick and snare gate: teacher demonstration Demonstrate the use of kick and snare gate to learners.</p> <p>Progress check:</p> <ol style="list-style-type: none"> What is the purpose of a noise gate? Remove unwanted sound. What happens when a signal goes above the threshold on a noise gate? It is heard. Explain the function of the reduction control on a noise gate. The amount (dB) that the signal is turned down when the gate is closed. Give one reason why you might not want to noise gate a snare drum. Ghost notes could be removed, decay of drum is lost. <p>Lesson recap: Can you now?</p> <ul style="list-style-type: none"> Define noise gate; List the controls found on a noise gate; Explain why you would need to use a noise gate; Apply suitable noise gate settings to remove bleed; 		ent and writing score in workbook.
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	<ul style="list-style-type: none"> ● Apply compression to even out the dynamic range. <p>Home study: In the next lesson learners will look at limiting. To prepare, they should:</p> <ol style="list-style-type: none"> 1. find out what happens when you compress at a ratio of 20:1. 2. Find out what the loudness wars was and why it was a problem for modern music. <p>Resources: Iconcollective.edu – Audio Compressor Ratio Explained. Dynamicrangeday.co.uk.</p> <p>End of lesson.</p>			
20	<p>Starter Activity: 5 minutes Challenge learners to answer as many of the questions in the grid as they can:</p> <ul style="list-style-type: none"> ● What is the minimum required sample rate and bit depth for a digital recording? 44.1kHz, 16 bit. ● Define reduction parameter found on a noise gate. The amount that the noise gate will turn down the incoming signal once it falls below the threshold. ● Give one risk associated with using a DAW. Hearing Damage, Back Strain., Eye Strain, Sprains & Breaks, Electrocution. ● Which processor would you use to reduce the dynamic range of an audio signal? Compressor. ● What two parameters would you need to adjust to humanise a performance? Position, velocity. ● What are the keyboard commands for copy and paste? Control/Command C, Command/Control V. 	DAW, Headphones.	Direct quesitoning.	2.1 2.2 2.1.2

What you will learn:

You must be able to:

- **Define** limiter.
- **List** the controls found on a limiter.
- **Explain** why you would need to use a limiter.

You may also be able to:

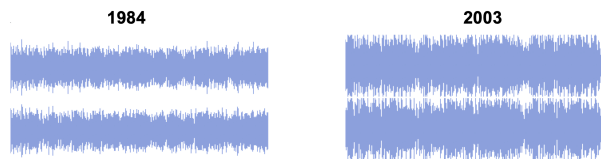
- **Apply** limiting to a full mix.

Subject content: limiting

Talk learners through the following slides about limiters, what they are and why to use them, then the gain, release and output level controls. Then show learners the images of waveforms, comparing original to remastered version of **Red Hot Chili Peppers: True Men Don't Kill Coyotes**. Get learners to study the waveforms and listen to the two versions.

Reflective question: Listen to these two versions. How has extreme limiting changed the original?

Answers:



Original:

- Quieter
- More dynamic range
- Clearer

Extreme limiting:

- Much louder
- Less dynamic range
- Unclear/muddy
- Distorting/digital clipping

Limiting: teacher demonstration

Demonstrate limiting to learners before they try it themselves in the following activity.

Activity 1: Limiting - 15 minutes

It could be useful here to demonstrate this live using audio files and over compressing using a limiter.

Think, pair, share. Whole class discussion.

Teacher explanation.

	<p>You will have sent learners a final mix for release. However, it is far too quiet and not ready to release. Learners should use limiting to increase the overall volume without distorting. They must use:</p> <ul style="list-style-type: none"> • Gain. • Release. • Output Level. <p>Limiter Settings:</p> <ul style="list-style-type: none"> • Gain: +14-16dB. • Release: 200-300ms. • Output Level: -0.3 to -1.0dB. <p><u>Activity 2: Limiting - 8 minutes</u> Ask learners to:</p> <ol style="list-style-type: none"> 1. Define what a Limiter does. 2. Explain why you would need to use a Limiter. 3. List the controls on a Limiter. <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. True or false: Limiting is an extreme form of compression. True. 2. If you used a compressor with a ratio of 20:1 what would happen? Limiting. 3. What is the purpose of the output control on a limiter? To stop signal going above a set dB. 4. Why do we use limiters before releasing a song? To reduce dynamic range and increase perceived loudness. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> • Define limiter; • List the controls found on a limiter; • Explain why you would need to use a limiter; 		<p>Ability to apply new information learnt to produce a mastered file.</p>	
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	<ul style="list-style-type: none"> • Apply limiting to a full mix. <p>Home study: Learners should consider what the difference is between compressed and uncompressed audio files. They should then find one example of each file format.</p> <p>Resources: Whathifi.com - MP3, AAC, WAV, FLAC: all the audio file formats explained.</p> <p>End of lesson.</p>		Learners self-assessment and writing score in workbook.	
21	<p>Starter Activity: 5 minutes Ask learners what the following are examples of:</p> <ul style="list-style-type: none"> • MP3. • WAV. • AIFF. • WMA. <p>Stretch and challenge: Can you place these files into two categories? What would they be? Cat 1: MP3, WMA; Cat 2: WAV, AIFF.</p> <p>Stretch and challenge: What is the difference between the two categories? Cat 1: MP3, WMA (compressed); Cat 2: WAV, AIFF (uncompressed).</p> <p>What you will learn: You must be able to:</p> <ul style="list-style-type: none"> • Export project and individual parts to stereo audio. • State the suitable bit depth and sample rate to export to. • Explain the difference between compressed and uncompressed audio formats. • Describe the benefits and negatives of using each file format. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Explain how compressed formats work. 	PPT, workbook, DAW, headphones.	Think, pair share.	2.1 2.2 2.1.2

<p><u>Subject content: Compressed and uncompressed</u> Talk learners through the slides outlining compressed and uncompressed, WAV and exporting WAV to AIFF. Then remind them of the previous lesson work on MP3.</p> <p>Reflective question: Why is MP3 a popular format to use? Then cover the content about what MP3s are, benefits and negatives, MP3 vs WAV.</p> <p><u>Exporting: teacher demonstration</u> Show learners how to export before they then try it themselves in the following activity.</p> <p><u>Activity 1: Exporting - 10 minutes</u> Get learners to create a new project at 95bpm, 4/4 with 4 stereo audio tracks. They should Import the supplied audio: Piano, Bass, Hats and Drums. They should export the following:</p> <ol style="list-style-type: none"> 1. The entire project to an uncompressed format 16bit, 44.1kHz. 2. The entire project to an MP3 160kbps. 3. The Drums are Hats track to an uncompressed format 16bit, 44.1kHz. <p><u>Activity 2: Comparing MP3 vs WAV - 10 minutes</u> Learners should:</p> <ol style="list-style-type: none"> 1. Import the WAV and MP3 export from Activity 1 to a new empty project in their DAW. They should make sure that each file is: <ul style="list-style-type: none"> • On a separate track. • At exactly the same volume. • Has the exact same starting position. 2. On one of the tracks learners should then invert the polarity (show them how to do this now). <p>What they should now hear is the information that has been removed from their MP3.</p>		<p>Ability to export to different file formats.</p> <p>Using knowledge gained from activity 1 and 2 to explain the difference between the files.</p>	
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<p><u>Activity 3: Comparing Formats - 10 minutes</u> Learners need to:</p> <ol style="list-style-type: none"> 1. Explain the difference between compressed and uncompressed file formats using examples. 2. Describe the benefits and negatives of using each type of file format. 3. Write down a step by step instruction of how to export to a compressed file format and to an uncompressed file format in their DAW. <p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. Which of the following file formats will be the highest quality? <ol style="list-style-type: none"> a) 256kbps MP3. b) 8 bit 44.1kHz WAV. c) 320kbps MP3. d) 12 bit 44.1kHz WAV. <p><u>True or false:</u></p> <ol style="list-style-type: none"> 1. MP3 is an example of an uncompressed file format. False. 2. When working with professional audio you should always use compressed file formats to save space on your hard drive. False. 3. WAV is the only uncompressed file format available. False. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> ● Export project and individual parts to stereo audio; ● State the suitable bit depth and sample rate to export to; ● Describe the benefits and negatives of using each file format; ● Explain the difference between compressed and uncompressed audio formats; ● Explain how compressed formats work. <p><u>Home study:</u> 'You can barely tell the difference between WAV and MP3, so producers should just use MP3 at 192kbps for everything.'</p>		Learners self-assessment and writing score in workbook.	
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	<p>Learners should write one paragraph discussing the above quote in their workbook. They should use the information they have learned today to either agree or disagree with the statement.</p> <p>End of lesson.</p>			
22	<p><u>Starter Activity: 5 minutes</u> Ask learners to define a loop. A loop is a premade piece of music that has been created using audio or MIDI. Ask how can loops be used in a DAW? Loops are be selected from a library and dragged onto your timeline. They can be edited using plugins or editing tools Ask whether there are any advantages or disadvantages of using loops. Can help give ideas/start a project, but can be unoriginal as available to everyone</p> <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Select appropriate loops that fit together. • Use editing tools to arrange loops to create a piece of music. • Export your loop project to a suitable audio format. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Apply effects to manipulate loops. • Use MIDI editing to manipulate loops. <p><u>Subject content: Loops</u> Talk through the slides outlining loops (audio and MIDI), and loop packs.</p> <p><u>Using Loops: teacher demonstration</u> Demonstrate the use of loops for learners.</p> <p><u>Activity 1: Drum Audio Loops - 8 minutes</u></p>	DAW, headphones, MIDI keyboard.	Direct questioning.	<p>2.1 2.1.1 2.1.2 2.2 2.2.1</p>

<p>Guide learners to carry out the following tasks:</p> <ol style="list-style-type: none">1. Choose a genre/style in their loop library that they want to use.2. Choose two different drum pattern audio loops within their chosen style.3. Arrange these patterns to create 16 bars of music. <p>They can use:</p> <ul style="list-style-type: none">• Looping.• Trimming.• Reversing.• Time stretching. <p>Activity 2: MIDI Loops - 8 minutes</p> <p>Guide learners to:</p> <ol style="list-style-type: none">1. Filter their search by MIDI loops only.2. Filter by either: Piano, Synthesiser or Guitar.3. Find two loops that play chords that are in the same key.4. Arrange these MIDI loops to fit with your 16 bars of drums. <p>Stretch and challenge: Some learners can use MIDI editing (velocity, quantise) to alter the MIDI patterns.</p> <p>Activity 3: Other loops 8 minutes</p> <p>Learners should now:</p> <ol style="list-style-type: none">1. Find a maximum of two other loops that they can use to develop their 16 bars of music.2. Add these to their project. <p>Activity 4: Development - 20 minutes</p> <p>Learners can now use two creative effects in their loop project. They could use:</p> <ul style="list-style-type: none">• Filter Sweeps.• Reverb.• Distortion.• Modulation effects.		Ability to compose using loops. Application of prior knowledge learnt.	
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<ul style="list-style-type: none"> Automated plugin effects. <p><u>Activity 5: Exporting - 3 minutes</u> Learns must now:</p> <ol style="list-style-type: none"> Save their project to their designated folder as: Surname_Initial_Loop Project. Export their project to an 320kbps MP3 named: Surname_Initial_Loop Project. <p><u>Progress check:</u> Challenge learners to imagine that they are starting a new original music project. They should state four advantages of using loops when starting a new project in their daw.</p> <p><u>Possible responses include:</u></p> <ul style="list-style-type: none"> Saves time. Can build a structure. Gives ideas for rhythms or chords. Something to write over the top of. Professional recordings. Instruments that you cannot play. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> Select appropriate loops that fit together; Use editing tools to arrange loops to create a piece of music; Export your loop project to a suitable audio format; Apply effects to manipulate loops; Use MIDI editing to manipulate loops. <p><u>Home study:</u> Learners need to spend 20 minutes using their DAW outside of lesson time. They can either:</p>		<p>knowledge learnt.</p> <p>Learners self-assessment and writing score in workbook.</p>	
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	<ul style="list-style-type: none"> Continue working on their loop project. Create another idea using loops or MIDI. <p>End of lesson.</p>			
23	<p><u>Starter Activity: 5 minutes</u> Ask learners to think about what they need to consider when starting a new project in their DAW</p> <p>Answers:</p> <ul style="list-style-type: none"> Sample rate. Bit depth. BPM (Tempo). Key. Time signature. Genre. Instrumentation. Track types. Length. Influences. Effects that you will use. <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> Create a plan for your composition. Configure a DAW project. Create ideas using loops, audio and MIDI. <p>You may also be able to:</p> <ul style="list-style-type: none"> Develop your ideas using software instruments, editing tools and plugins. <p><u>Activity 1: Composition Plan - 20 minutes</u> Guide learners to:</p> <ol style="list-style-type: none"> Choose two references tracks that they will base your composition on: 	DAW, headphones, MIDI keyboard.	Learner scribe on whiteboard/fli pchart.	<p>2.1 2.1.1 2.1.2 2.2 2.2.1</p>

	<ul style="list-style-type: none"> • Time signature, BPM, Key signature, Chord progression and Instruments used. <p>2. Plan for their 1-2 minute composition:</p> <ul style="list-style-type: none"> • What is will their Time signature, BPM, Key signature, Chord progression be? • At least 4 instruments (one of which must be audio). • At least two ways that they will use creative effects. • At least two ways that they will use automation. <p><u>Activity 2: Configuring DAW - 8 minutes</u> In their DAW, learners must configure:</p> <ul style="list-style-type: none"> • Creating a new project. • Audio bit depth. • Sample rate. • Audio output (headphones). • Setting tempo. • Time signature. • Saving their project to the correct folder designated by you. <p><u>Activity 3: Selecting instruments - 10 minutes</u> Now guide learners, In their configured project, to:</p> <ul style="list-style-type: none"> • Create the number of tracks that they require. • Select appropriate software instrument/sampler pre-set sounds as a starting point. • Either use loops, audio or MIDI to generate ideas for their composition. <p><u>Activity 4: Development 15 minutes</u> Encourage learners to develop their initial ideas using one or more of following:</p> <ul style="list-style-type: none"> • Editing synthesiser or sampler patches • Editing tools (reversing, time stretch, looping, cutting, sampling) • Automation of plugins, instruments, volume or pan • Effects plugins (distortion, reverb, delay, modulation or filtering effects). 		<p>successful and detailed plan covering all areas.</p> <p>Ability to apply knowledge learnt throughout content area.</p> <p>Ability to apply knowledge learnt</p>	
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	<p><u>Progress check:</u></p> <ol style="list-style-type: none"> 1. What sample rate and bit depth should have set your project to? 44.1kHz 16 Bit. 2. How do you reverse audio in your DAW? DAW specific. 3. What does BPM stand for? Beats Per Minute. 4. How did you set the audio output for your DAW? DAW specific. 5. What does RAM stand for? Random Access Memory. <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> • Create a plan for your composition; • Configure a DAW project; • Create ideas using loops, audio and MIDI; • Develop your ideas using software instruments, editing tools and plugins. <p><u>Home study:</u> Learners should spend 20 minutes working on their original composition that they started during today’s lesson. They ought to write down in their workbook what they have achieved or changed during this time. They should then export to an MP3 with a screenshot of their progress.</p> <p>End of lesson.</p>		<p>throughout content area.</p> <p>Learners self-assessment and writing score in workbook.</p>	
24	<p><u>Starter Activity: 5 minutes</u> Challenge learners to answer as many of the questions in the grid as they can:</p> <ul style="list-style-type: none"> • Give 4 things that you would need to consider when starting a new project in your DAW. Sample rate, Bit depth, BPM (Tempo), Key, Time signature, Instrumentation, Genre, Track types, Length, Effects, Influences. 	DAW, headphones, MIDI keyboard.	Think, pair, share.	2.1 2.1.1 2.1.2 2.2 2.2.1

	<ul style="list-style-type: none"> • Give one example of a creative effect. Automating EQ filter frequency. • Give one reason why you should plan before starting a new project. To gain ideas; to give a structure to sessions. • Give one advantage of using MIDI. Change edit the performance after recording. • Explain how you reverse an audio file. DAW specific answer. • Give one advantage of using loops. Saves time/Gives ideas for rhythms or chords/ Professional recordings. <p><u>What you will learn:</u> You must be able to:</p> <ul style="list-style-type: none"> • Develop your musical ideas using editing tools. • Use EQ, dynamic processing and effects plugins. • Create one to two minutes of original music. • Export your project to an MP3. <p>You may also be able to:</p> <ul style="list-style-type: none"> • Use advanced automation of effects. <p><u>Activity 1: Original Project - 30 minutes</u> Using all of the skills learned during this content area, learners must now complete their one to two minute original project. They must:</p> <ul style="list-style-type: none"> • Develop their musical ideas using editing tools. • Use EQ, dynamic processing and effects plugins. <p>They may also:</p> <ul style="list-style-type: none"> • Use advanced automation of effects. <p><u>Activity 2: Exporting to MP3 - 3 minutes</u></p>			
			<p>Ability to develop project using advanced tools and processing.</p>	

<p>2. Give one hazard associated with using a DAW. Exposure to noise/Computer display/Workstation desk/Tripping: cables and wires/Electrical equipment.</p> <p>3. What are the two filter types found on an EQ? HPF/LPF.</p> <p>4. What is the difference between dynamic and file format compression? Dynamic turns down the volume of a signal, while file format removes information to reduce file size.</p> <p><u>Lesson recap:</u> Can you now?</p> <ul style="list-style-type: none"> ● Develop your musical ideas using editing tools; ● Use EQ, dynamic processing and effects plugins; ● Create one to two minutes of original music; ● Export your project to an MP3; ● Use advanced automation of effects. <p><u>Home study:</u> Encourage learners to spend 20 minutes implementing at least one the ways that they suggested you would improve their project if they had more time. They need to then export their project to an MP3 and take a screenshot of the project window. Following this, they should write a short paragraph explaining what they have learned throughout this project in their workbook.</p> <p>End of lesson.</p>			
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