



Mendell Primary School

Aspire Challenge Achieve

Medium Term Plan Design Computing



Year Group: 4	Term: Spring #2 2022	Teacher: Hannah Jones	Subject lead: Justin Cowley	Overview: Digital Recording: Identifying input and output devices required to work with sound digitally. Considering ownership of digital audio. Editing audio and saving audio files	Key End Points: By the end of this unit children will be able to: - Identify an input and output device required to work with sound digitally. - Explain copyright implications of duplicating the work of others. - Record, edit, open and save digital audio files					
Links to other learning:	Prior Learning: Y2 Digital photography	Future Learning: Y4 Animation Y6 Web design	High Quality Text:	Risk Assessment:	Misconceptions:	Teacher CPD: Teacher must be confident user of Audacity				
<u>Learning Intention</u>	<u>Lesson Outline</u> (Key Questions in colour)				<u>Resources</u>	<u>Vocabulary</u>	<u>Lowest 20% Adaptations</u>			
1	<p>Computing is the use of devices to create, store and manipulate data</p> <p>In this lesson we are going to learn to identify the input devices used to record sound and output devices needed to listen to it. The children will record their voices using a computer, and reflect on what makes a good audio recording. They will also consider ownership and copyright issues relating to recordings.</p> <p>Show the children the first slide on the Powerpoint. Tell them that all the devices can record sound and play it back. Can they name any of the devices or name any other devices that can record sound.</p> <p>Show the next slide and ask the children which input device they think is used to record sound onto a digital device. Explain that sound is recorded through an input device called a microphone and that these can take various forms. Now ask the children which output devices are used to listen to recordings. Point out the loudspeakers, headphones and headset (which has both a microphone and a speaker)</p> <p>Look at the next slide together and explain to the children that some digital devices (such as those pictured) have built-in microphones and speakers. Sometimes these can be located by identifying a pinhole in the casing (microphone) or a vent, grill or slot (speaker).</p> <p>Explain to the children that they are going to practise recording their voices. Ask the children to prepare two sentences each (about a current class topic) on their whiteboards. Tell the class that we will be using 'Audacity' which will allow them to record sound, edit their recordings and then play them. During this lesson they will just use record and play.</p> <p>Demonstrate to the class how to record, play and delete sound in Audacity. Working in pairs, ask the children to record each other speaking their sentences. Leave the next slide on the screen to remind the children how to complete this task. Allow approx. five minutes for the class to record their voices.</p>				Laptops Headphones	Audio Microphone Speaker Headphones Input devices Output device	Set of picture steps to create a sandwich which the children must put in correct order.			

		<p>Ask the children to play back their last audio recording and ask them ‘What makes a good voice recording?’ Show the next slide and ask them to write their answers on their whiteboards.</p> <p>Possible answers may include:</p> <ul style="list-style-type: none"> • Having a clear voice • Avoiding filler words (um, and, ah etc) • Not coughing or sneezing • One person speaking at a time • Not too near or far from the microphone • No background noise • Not playing or fiddling with the microphone or anything around it. <p>Share the children’s responses as a class.</p> <p>Play a popular music track (use YouTube) and discuss who owns the music. Explain that the artists who made the music own it, as it is their work. Show the next slide and ask the children to think, pair, share whether it is okay to copy someone else’s work, such as downloading audio from the internet. Ask them what could happen if they do.</p> <p>Possible answers could include:</p> <ul style="list-style-type: none"> • A fine • Imprisonment • A criminal record • Having the internet disconnected <p>Show the next slide and explain that there are many legal audio download and streaming services such as Spotify, Apple Music etc which they can use safely when they are of an appropriate age.</p> <p>Note: Most audio services allow users to download audio (that is, store audio on the device for when there is no internet connection) or stream audio (that is, retrieve it from someone else’s computer using the internet to play back immediately, rather than storing it on the device).</p> <p>Evidence for books – take photographs of children using Audacity.</p>			
2	<p>- I can explain that audio recordings can be edited.</p>	<p>Computing is the use of devices to create, store and manipulate data</p> <p>In this lesson we are going to record and re-record our voices to improve the recordings. We will edit the recordings, removing long pauses and mistakes. We will also listen to a range of podcasts and identify the features of a podcast.</p> <p>Show the first slide and recap with the children what makes a good voice recording. Talk through the ‘Do’ and ‘Avoid’ points on the slide.</p> <p>Explain to the children that they are going to record their voices and then review their recordings. If they want to, they can delete their recordings and try again. Once they are happy with a recording, another voice recording can be added using another track. Open Audacity and remind the children how to record, review and delete their recordings (use the next slide on PowerPoint).</p> <p>Tell the children that each recording can be added in its own track. Using different tracks can help later when editing the recordings. Show the class how to mute an existing track and then how to add another recording. Use the next slide as a rolling reminder for the children while they are working. Emphasis to the class the importance of ensuring the recording is of high quality. Their recordings should not be very long to ensure that quality is the focus and all children have time to record. In pairs, ask the class to record a short piece (a simple joke and punchline, a subject recently studied etc). Support children as required and ensure that all children get an opportunity to record their voice. Ensure time is spent with each group listening to their recordings and offering feedback as appropriate.</p>	Lesson Powerpoint Class set of ipads	Audio Sound	

		<p>Show the next slide and explain that Audacity displays their recorded sound as a waveform. Ask the children what they think the peaks and flat lines in the waveform show. Click to show the labels on the PowerPoint which indicates that peaks are the loudest part of the recording and flat lines are very quiet or silent parts. Explain that this helps you to identify where people are speaking, and where the recording is too loud or too quiet. Explain that the waveform should ideally be around +0.5 / -0.5 when recording voice.</p> <p>Tell the children that when we use a computer, audio recordings can be edited (changed). One way that audio can be edited is to delete sections. These may be quiet sections at the start or end of a recording, or errors during the recording. Tell learners that deleting audio using a computer program is similar to deleting things in other programs. To remove a section of audio, you select it using the waveform as a guide, listen to the selection to check it's the right section and then delete it using the menu or delete key on the keyboard. You should then listen to the recording again to ensure the change is correct. (if necessary the undo button can be used to reverse a deletion)</p> <p>Demonstrate the process of removing sections of audio from a recording. Use the next slide as a visual reminder for learners whilst they try out the process for themselves.</p> <p>Show the next slide. Tell the children that the recordings in different tracks can be moved about so they play in the desired order. Tracks can be played at the same time but in this lesson the recordings should play one after the other. Highlight the alignment tool so the class can see where it is. Model the process of moving an audio track left and right using the 'time-shift' tool. Use the next slide as a visual reminder for the children while they try this for themselves.</p> <p>In future weeks we are going to be producing our own podcast. A podcast is a digital audio recording that is made available over the internet and can be downloaded and played on a digital device. Show children images from a number of popular podcasts and ask them to share any podcasts they are aware of, such as those listened to by a parent or carer, or those they have advertised.</p> <p>Show the next slide and tell the children you will play them two short pieces of audio from a podcast. The children are to note down any types of sound they hear and any key information. Play the podcast from the link on the slide (www.vpr.org/programs/2019-03-01/how-is-but-why-made-what-is-sound)</p> <p>Play the podcast from 0:15 to 01:30 to allow the children to hear:</p> <ul style="list-style-type: none"> • Music • Different voices • Podcast title • Presenter names • Introduction <p>Play from 24:40 to 26:00 to hear</p> <ul style="list-style-type: none"> • Sound effects <p>The last section also mentions audio layers which we will learn about in the next lesson.</p>			
3	- I can arrange multiple sounds to create the effect I want.	<p>Computing is the use of devices to create, store and manipulate data</p> <p>In this lesson we are going to develop our podcast further by adding content such as sound effects and background music. The audio will be layered with our existing voice recordings and exported as an audio file.</p> <p>Show the first slide and tell the children that in this lesson, they will be opening their podcast project from the previous lesson so they can add to it.</p> <p>Show slide 2. Explain to the children that they will be adding sound effects and/or background music according to their plan. Highlight that it's important that any added sound should enhance their podcast and not distract listeners from their key message. Ask the class to review their podcast plans and reflect on suitability of the sounds they intend to add.</p> <p>Adding sounds</p> <p>Tell the class that their first task is to load their work which they saved as a project in the previous lesson. Demonstrate how to load a saved project in Audacity. Use slide 3 and talk through the screen recording.</p>	Lenovo pupil laptops Lesson Powerpoint	Audio Sound Load Import Save Export MP3	

		<p>Show slide 4. Tell the children that their next task is to import additional audio. Ask the class to think, pair, and share the steps you need to go through to import, edit, and align a piece of audio. Demonstrate the process in Audacity guided by children's comments.</p> <p>Use the screen recordings on slide 5 and 6 as visual reminders for learners as they work.</p> <p>Reviewing recordings Show slide 7. Explain to the children that they now need to listen to their recordings. As they listen, they need to specifically check whether their audio is aligned as it should be and that the volume of each track is correct. For example, if background music has been used, the voices need to be clearly heard over it.</p> <p>Show slide 8. Talk through the screen recording on the slide, reminding the children how to alter the volume of a track in Audacity. Leave the slide showing as a visible reminder whilst they work.</p> <p>Saving and Exporting Demonstrate how to save an Audacity project. Talk through the screen recording on Slide 10, highlight whether learners should use 'Save Project' or 'Save Project As...' Allow learners time to save their project.</p> <p>Show slide 12. Tell the children that their podcast now needs to be saved as an mp3 file because this type of file can be played on a range of digital devices. Explain that to do this in Audacity they need to export their project. Once they have exported their project from Audacity it becomes just one track and can then not be easily edited. Talk through the process of exporting from Audacity and then allow them time to do this.</p>			
4	<p>- I can discuss the features of a digital recording and can suggest improvements.</p>	<p>Computing is the use of devices to create, store and manipulate data In this lesson the children will evaluate their own podcasts and that of others. After looking at the evaluation, the children will decide if they can improve their podcast and make any changes they have chosen.</p> <p>Show the first slide and explain to the children that being able to listen carefully is an important skill. Ask them to listen very carefully to the recording you're going to play. As they listen, learners need to count how many times they hear the word "so". When the recording finishes, gather answers from the children. Show slide 2, which contains a transcript of the recording, and highlight that "so" is said twice.</p> <p>Tell the children that during the lesson they will listen to their podcast as well as podcasts by one or two other groups. Explain that they will be evaluating each podcast and it's important that they are active listeners.</p> <p>Evaluating podcasts Show slide 3. Tell the children that they should listen and evaluate their own recordings. As they listen, they should complete their evaluation sheet.</p> <p>After children have evaluated their own podcasts, show slide 4. Tell the children that they should leave their sheet by their computer and their podcast ready to play. Move the children around the room so they listen to one or two other podcasts. Remind them to complete the sheets as they go.</p> <p>Show slide 5. Tell the children to return to their work and review the suggested improvements left by others. Ask learners to note down how they think they can improve their podcast. Learners should specifically reflect on:</p> <ul style="list-style-type: none"> ● Their voice recordings ● Added sounds ● Edits, alignment, and volume of tracks ● Anything that should be removed <p>Exporting your recordings Show the next slide and tell learners that their finished podcast needs to be saved as an MP3 file. Ask the children to save their project so that any recent changes are kept. The children should then export their podcast as an MP3 file.</p>	Lesson Powerpoint	Export MP3 Audio Editing Evaluate Feedback	
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