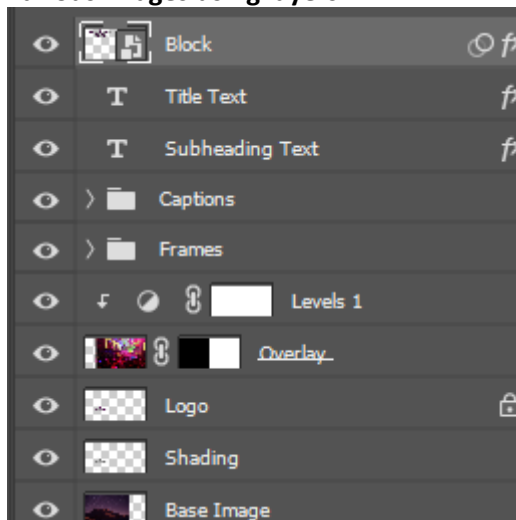


Adobe Audition 2021

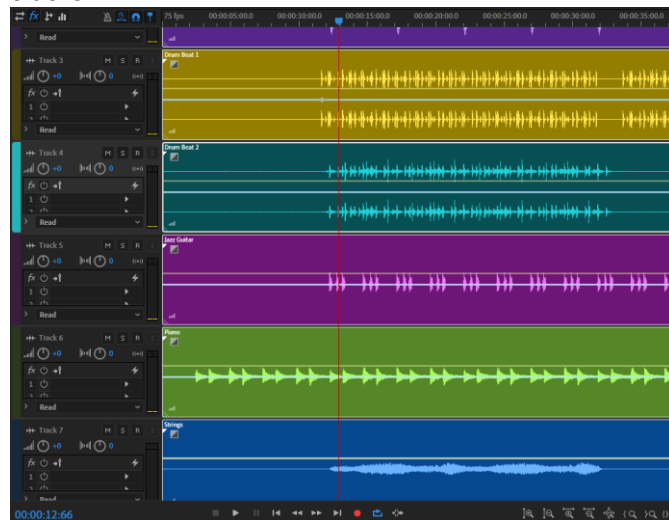
5 – Multitrack

So far, we have been editing sounds individually. In many cases it might be necessary to combine different sounds to make something new. This is done using Multitrack editing where each different sound, or track, can be edited and combined to create a new audio composition. Tracks in Audition are very similar to Layers in an image editing application like Adobe Photoshop.

In Adobe Photoshop you can combine various images using layers

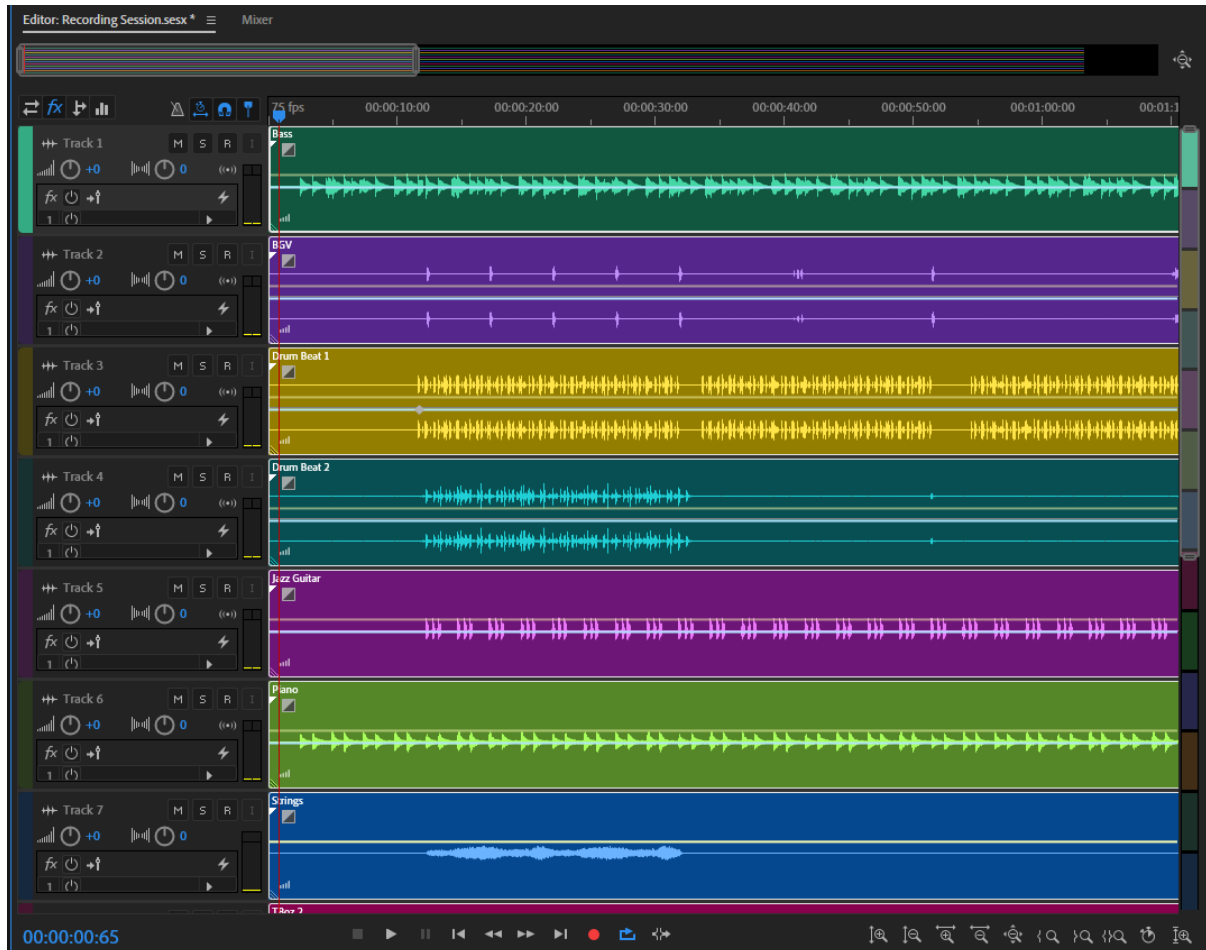


In Audition you can combine various sounds using tracks.



Multitrack editing is common in working with sound. For example in a recording studio, a song is often not recorded in a single recording. Instead a song is often recorded with each part in a different recording or track. I.e. Separate tracks for drums, guitar and piano. Separate tracks for each singer. This allows a studio engineer to adjust each different part separately so that the best results can be achieved. For instance if one singer wasn't quite loud enough, their volume can be boosted to match other singers in the final song. Additionally, various effects can be applied to individual parts (such as making a certain singer's voice sound like it comes more from the left speaker than the other singers).

The example below shows a single song with each of its parts recorded on different tracks just as it would in a recording studio. Notice how each track shows a waveform similar to what you see when you edit a track individually. Each track can be changed in a variety of ways without affecting the other tracks. For example, if you wanted to take a verse that a vocalist sang at the end of the recording and put it at the beginning of the song instead, you could easily re-arrange things until you're happy with the result.



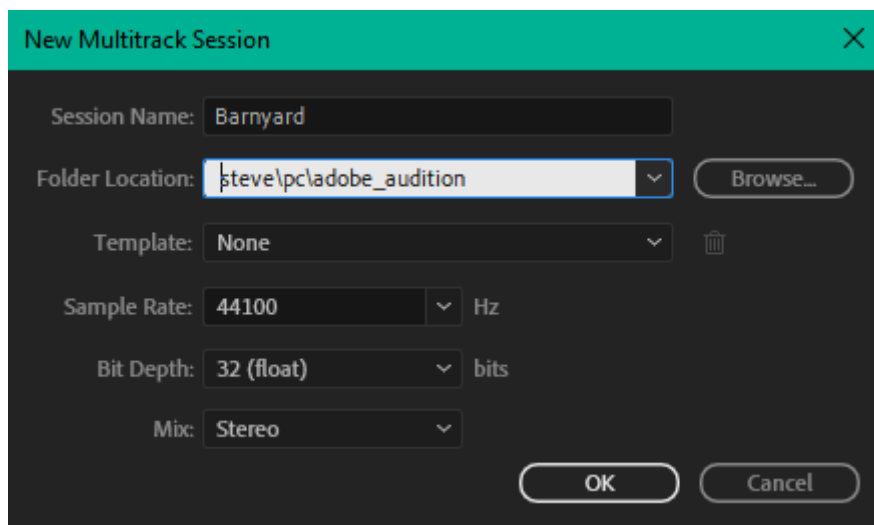
Exercise 1. Creating a New Multitrack Session

When we want to combine or record different sounds as different tracks we create a Multitrack Session. A session file allows you to save your arrangement of sound files while you are editing.

1. Firstly, ensure nothing is currently open by selecting the **File** menu and then **Close all**.
2. From the **File** menu select **New** and **Multitrack Session** or press **Ctrl N**.

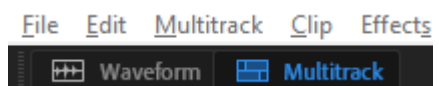
When you create a session, Audition will create and save a file. So, the session settings need to include a file name and location.

3. Enter settings for your session as shown below. Make sure you select a suitable folder location to save your session file in.



A new Multitrack session with empty tracks will be created.

Tip Beneath your menus are 2 buttons for switching between single waveform view and Multitrack view. If you don't already have a Multitrack session open, then clicking the Multitrack button will open the New Multitrack Session options for you.



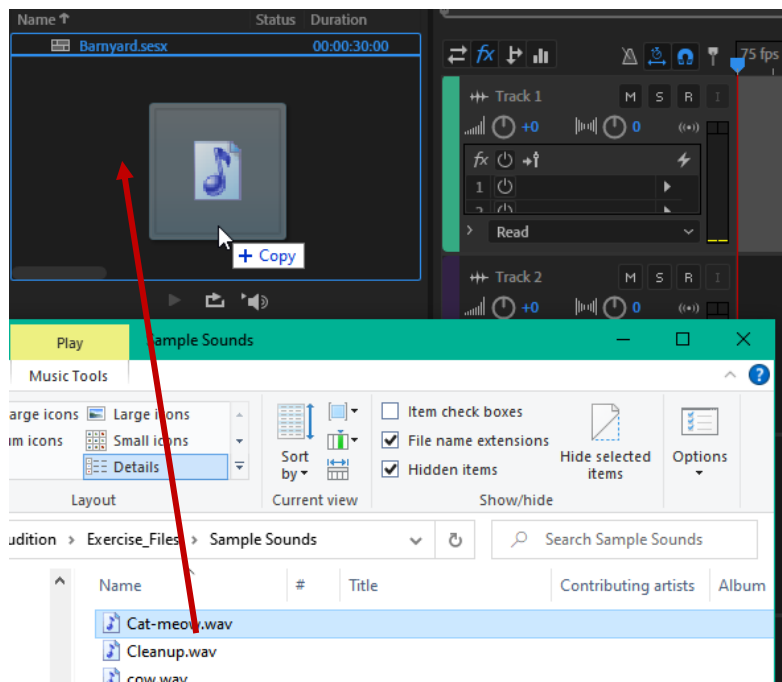
We'll start by practicing with our animal sounds. Later on, we'll work on something a bit more practical.

You can open files in Multitrack view in a variety of ways.

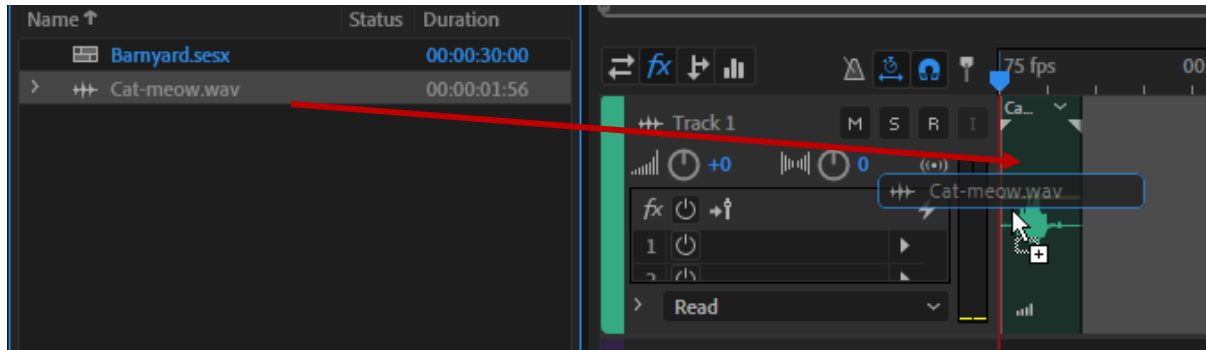
4. Open your **Windows File Explorer** (**Win E**) and navigate to the folder where your sample files are saved.

Name	Type
Cat-meow.wav	WAV Audio File
Cleanup.wav	WAV Audio File
cow.wav	WAV Audio File
Horse-neigh.wav	WAV Audio File
Rooster_crowing.wav	WAV Audio File
sheep.wav	WAV Audio File

5. Drag the **Cat-meow** file on to the **Files** panel in Audition to open it ready for editing. It will appear in the file list along with your session file (you can select more than one file while holding the **Ctrl** key and then drag them together if needed).



6. Now drag the file from the files panel on to one of the empty tracks in Audition. You will now see the waveform for that file in that track.



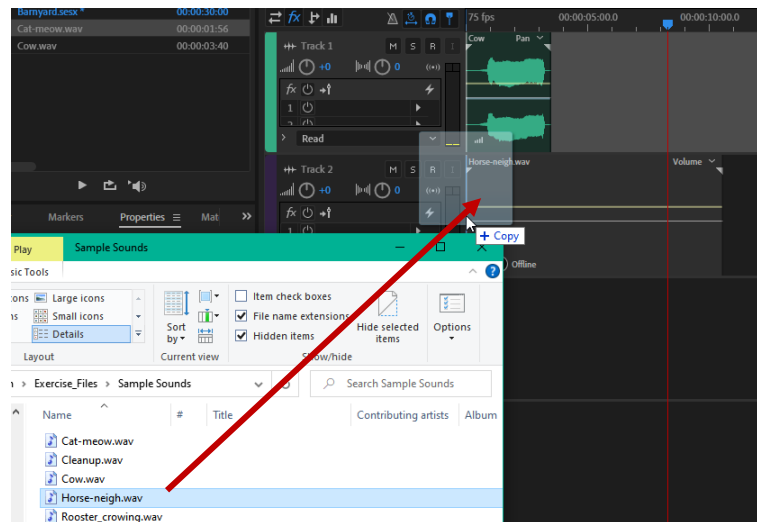
If you want to add a file straight in to Multitrack view you don't need to open the file first.

7. From the **Multitrack** menu select **Insert Files**.
8. Browse for the location where your sample files have been saved.
9. Select the file named **Cow** and click **Open** (you can select more than one file from here if needed).

The Cow file will now be in your Files list and will also be added to your Multitrack view. If your cat sound was placed on your first track then the Cow sound might have been placed over the top of it. Don't worry. It's still there. We'll look at moving sounds in a moment.



10. Open your **Windows File Explorer** if it is not still open.

11. Drag the **Horse-neigh** file on to the next empty track in Multitrack view.



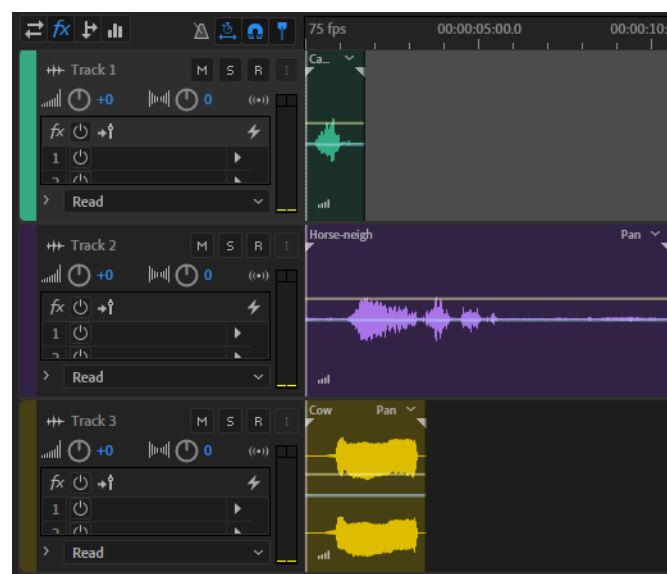
Notice that the sound files in each track are shown in a different colour. You can customise those colours by **right clicking** the colour bar to the left of the track.



You might be used to moving things by dragging them. However, if you have the **Time Selection** icon active , dragging on a waveform within a track will select part of the track. If you want to move a sound while in time selection mode, you can drag using the **right mouse button** without having to use the move tool. 

12. Drag the **Cow** sound using your **Right mouse** button to move it sideways. If it was covering your Cat sound you should now be able to see it.

13. Move the Cow sound so that each of the three sounds is on its own track.



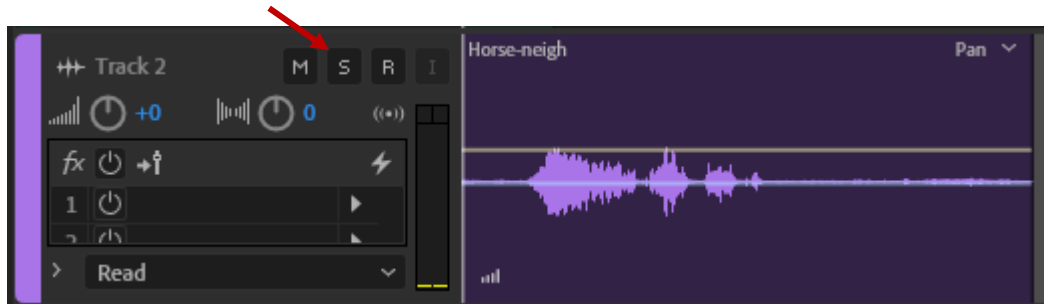
14. Use any of the methods already shown to add the **Rooster_crowing** sound and the **Sheep** sound so that each is on its own track.

If Audition warns you that any sounds you are adding have different settings to your session click **OK**.

Exercise 2. Editing a Track in Multitrack

You should now have 5 tracks that have sounds on them. If you're brave enough to click the play button or press Spacebar now, you'll hear all 5 animals at once. We're going to do a little more than just thrown the sounds on top of each other though. We'll start by editing a single track.


1. Click the small **S** button next to the track that has the Horse-neigh sound on it.

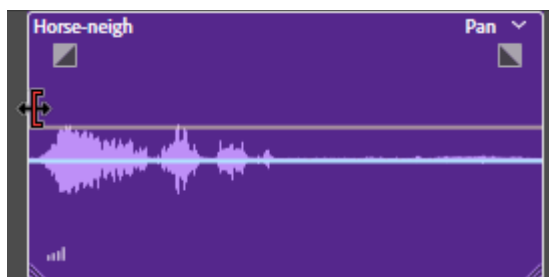


This will put the track in **Solo** mode so that when you play the session you will only hear this track and not the others. The opposite is the **M** button which will **Mute** (silence) this track.

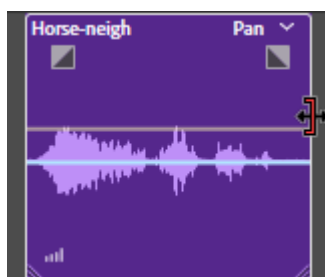
2. Click **play** or press **Spacebar** to hear this track on its own (it might help to press the **Home** key or click the at the start of the track to put the **play head** at the beginning first).

There is quite a gap in this sound before the horse starts neighing and even more after the horse finishes. We can easily adjust the start and end of the sound clip to trim it. This is an example of **non-destructive editing**. This means that it will affect how it sounds in the session file but will not alter the actual Horse-neigh sound file.

3. Move your mouse to the start of the sound clip until your mouse pointer changes in to a  shape.
4. Click and drag to the side until the edge of the clip stops right before the horse begins.



5. Drag the end of the clip so that it ends shortly after the horse finishes neighing.



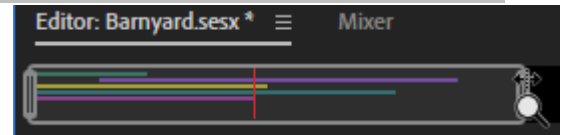
You can split a sound clip into different clips in Multitrack view. This will allow you to re-arrange how that sound plays in this Multitrack session but will not alter the original sound file. You can split a clip

in a couple of ways. The resulting clips can be re-arranged on a track or even moved to different tracks.

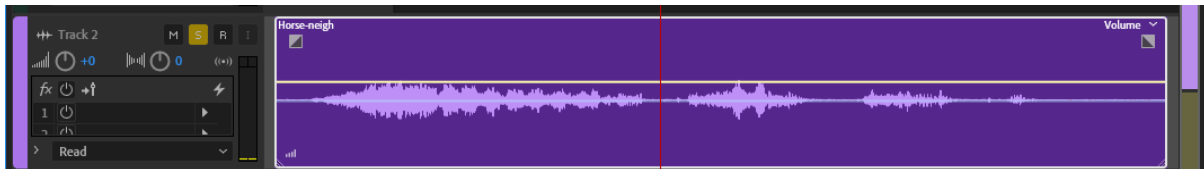
This clip contains 3 main “neigh” sounds so we’ll split it so that each one is a separate clip. First we’ll zoom in on the clip so we can see the separate sounds a little better.

6. Move your mouse over the clip and hold down **Ctrl** while you roll your mouse wheel up or down to zoom in or out (rolling the mouse by itself will scroll down the list of tracks). This will zoom in with your mouse position becoming the centre of the view.

Tip You can press the **+** and **-** keys as an alternate way to zoom in and out with the **play head** becoming the centre of the view. Just like in Waveform view you can also use the **Zoom Navigator** across the top of the Multitrack view.




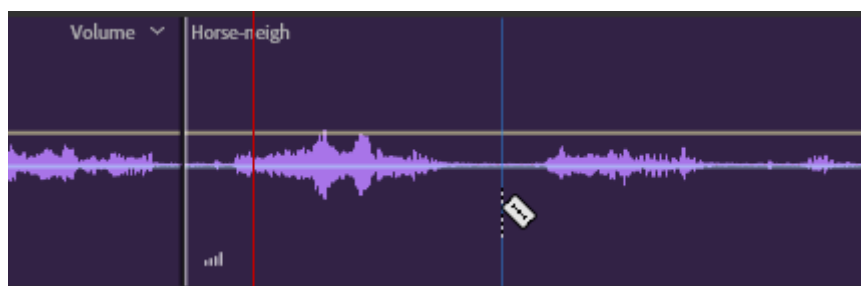
7. Practice zooming in and out on the track and then zoom so that the Horse-neigh sound clip fits neatly in your view.
8. Make sure your **Time Selection** tool is active by clicking the **I** icon or pressing the letter **T**.
9. Click inside the sound clip between the first neigh sound and the second neigh sound.



10. Go to the **Clip** menu (or right click on the sound clip) and select **Split (Ctrl K)** to split the clip at that position.

You can also split clips by using the **Razor** tool. If you have used **Adobe Premier** for video editing you might have used the Razor tool before.

11. Activate the **Razor** tool by clicking the icon  or by pressing **R** key.
12. With the razor tool active, click between the second and third neigh sound to split the clip at that point.



13. Press **T** to return to **Time Selection** mode.

Your clip should now be split in to three segments.

14. Zoom out slightly so that you have a bit of room on either side of the clip.
15. Using your right mouse button, drag the middle clip so that it is at the start of the track.
16. Move the first clip so that it starts right after that. You might notice that Audition helps you snap the clip on to the edge of the other clip.
17. Lastly right-drag the third clip so that it starts right after the other two.

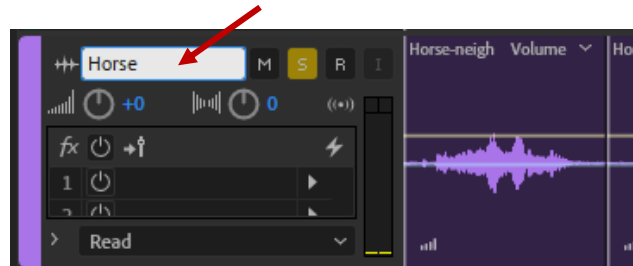
You can re-arrange these 3 clips into any order that you like in this session while the original audio clip will remain unchanged.

Exercise 3. Volume Adjustments and Fades

Multitrack view gives some simple ways to control the volume for your sound clips.

First, we'll look at some ways to control a clip's volume. The first way is to adjust the volume for the track a clip is on.

1. To the left of the track with the Horse-neigh sound is a section with various controls for the track. One of these is the track name. Click the Track name to edit it.



2. Type **Horse** as a new track name and press **Enter** to complete the edit.
3. Give the other tracks suitable names.

Below the Track name is the track volume. You can edit the track volume in a few ways.

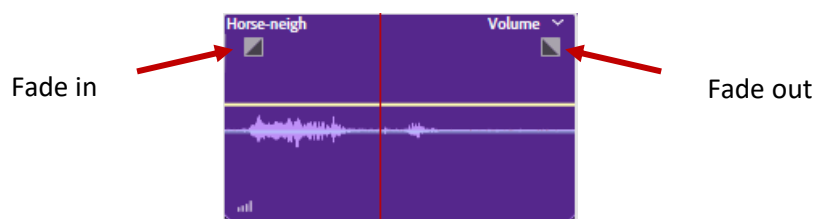


- Click on the volume number and type a positive number to increase the volume or a negative number to decrease the volume.
- Move your mouse over the number and drag left or right to change the number.
- Move your mouse over the volume dial itself and drag your mouse to turn the dial just as you would turn a regular volume control dial.

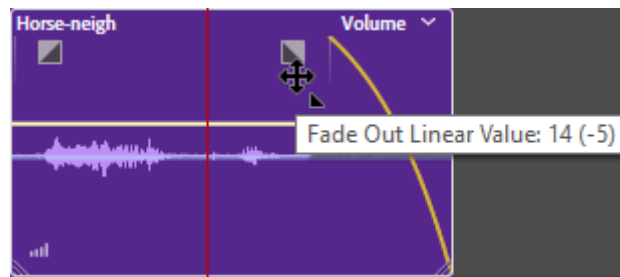
In many cases however, you don't want to change the volume of the entire track. You just want to change the volume at certain parts of the track. One way you can do this is through fading.

4. Click on your last horse sound clip to select it.

While the clip is selected you will see a small, shaded box at the beginning and end of the clip. You can drag the one at the start of the clip to adjust the fade-in for the clip while the one at the end of the track adjusts the fade-out for the track. In this case we want to adjust the fade out so that instead of the sound cutting off at the end of the clip, it will fade smoothly to silence.

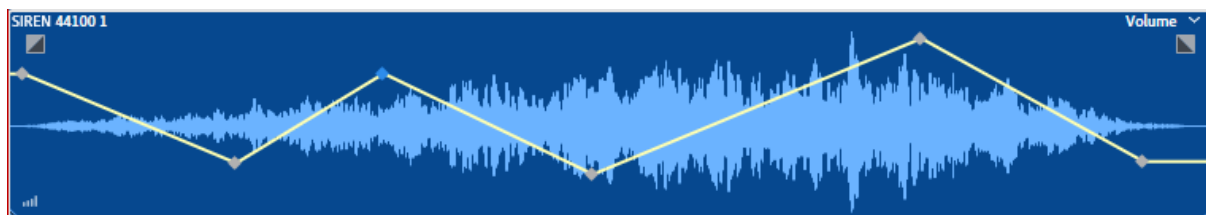


5. Move your mouse over the fade out marker and drag away from the end of the clip to create a fade out.



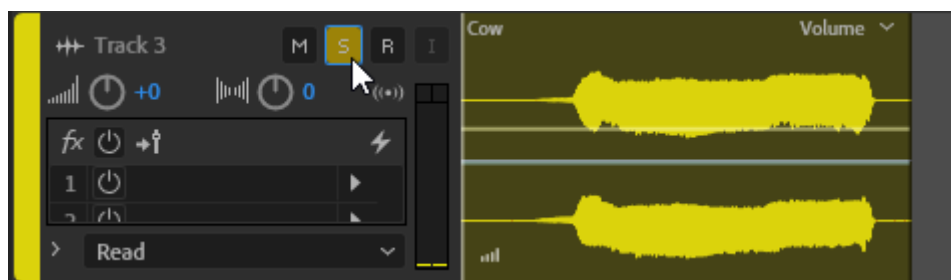
Exercise 4. Volume Envelopes

If you want your volume changes to be more complex than a simple fade in or out you can use a **volume envelope**. An envelope tells Audition to turn the volume up or down as a track plays. Take a look at the example below. The light coloured line is the volume envelope which sets the volume levels for the clip. When the envelope is at higher points, the volume is louder. When the envelope is lower, the volume for this clip is quieter.



We'll use a volume envelope to adjust the volume for one of our sounds.

1. Turn off solo mode for the **Horse** track and turn on solo mode for the **Cow** track so that we will only be hearing that one.

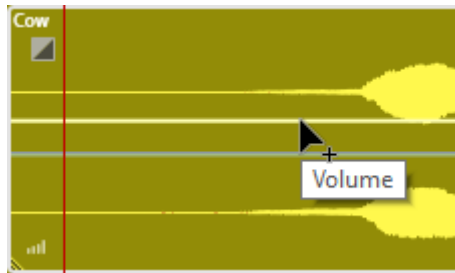


2. Zoom in so that you have a good view of this clip and play it to hear what it sounds like.

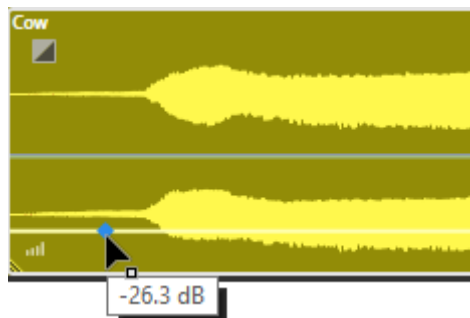
What if we were driving a car past the cow while it was mooing. It might be less loud as we're approaching, louder when we're right next to it and quieter again as we get further away. We'll add a volume envelope to support our imagination.

Our clip already has a volume envelope. Since we haven't made any changes to it yet it is completely flat meaning the volume level will be constant across the whole clip. It normally looks like a light-coloured line just above the middle of the clip.

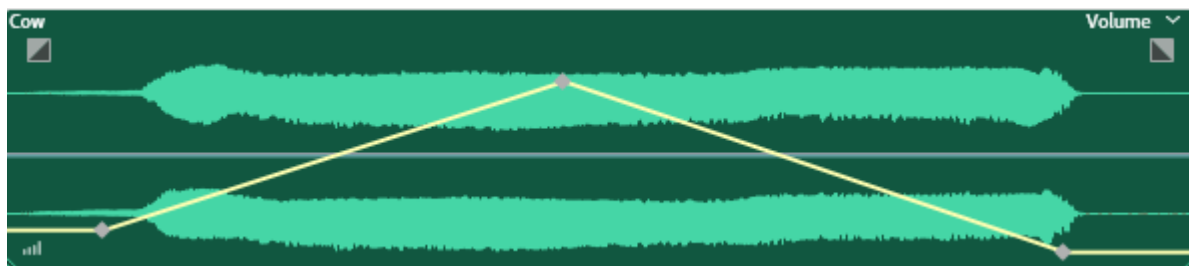
3. Move your mouse over the volume envelope your mouse pointer will change to a black arrow.
4. Position your mouse near the part of the clip where the cow's moo starts (if you wanted you could trim the clip before that point as shown earlier).



5. Click to add a marker on the volume envelope.
6. Drag that marker downward to make the volume quieter at that part of the sound clip.



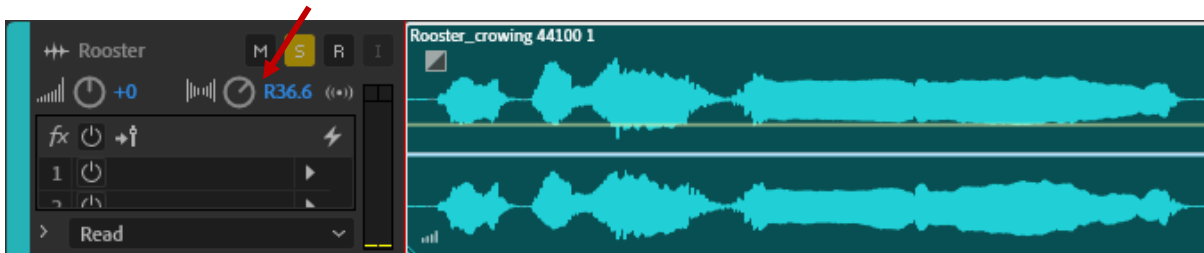
7. Add another marker near the middle of the envelope and drag it upward to make the volume louder at that point.
8. Add a final marker near the end of the clip and move it downward so that it sounds quieter toward the end.
9. The resulting envelope should look like the example below. Play to hear how it sounds. It might be a little harder to see the volume envelope on a channel that is a lighter colour but remember you can change the colour of channels if you wish.



Exercise 5. Panning

Panning controls the balance between different audio channels. For example, with stereo sound, panning controls how much of the sound comes from the left speaker and how much comes from the right speaker. Like volume, panning can be controlled for a whole channel or it can be set across a clip using an envelope.

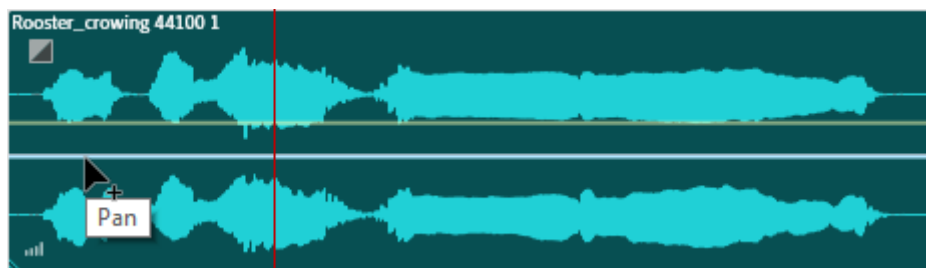
1. Turn off solo mode for the **Cow** channel and turn on solo mode for the **Rooster** channel so that we are only hearing that one.
2. Trim the excess silence from the start of the rooster sound clip as shown earlier and move it to the start of the track.
3. Locate the Stereo Balance setting for the track.



4. Try changing the balance to the left and the right. If you have stereo headphones or speakers, play the track to hear how it sounds with the different options.
5. Set the number back to 0 when done so that it is evenly balance between left and right (you can type the number 0 in the box just like you can with volume settings).

Just like volume we can also use an envelope to make the stereo balance change while the sound is playing. Imagine if this rooster was flying past us while it was crowing. That might make the sound go from left to right. Let's see if we can do that with our rooster track.

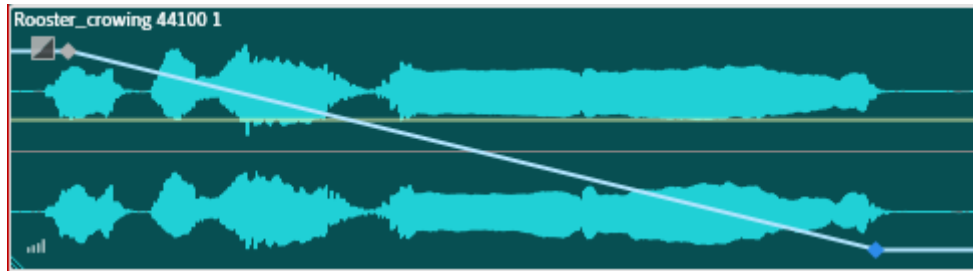
6. Find the **Pan** envelope line. It will look similar to your volume envelope but the colours will be different. Also, if you hover your mouse over it, Audition will give a tip to let you know which one you've found. It will usually be right in the middle unless it's been changed while the volume envelope will usually start a little way above the middle.



You edit a Pan envelope in the same way you edit a volume envelope.

7. Add a point on the envelope near the start of the clip that is higher up. That will make the sound come more from the left at that point.
8. Add another point near the end that is further to the bottom. That will make the sound come more from the right at that point.

9. Play to see how it sounds. It should sound like it is to the left at the start, moving across to the right as the sound plays. Drive by rooster!



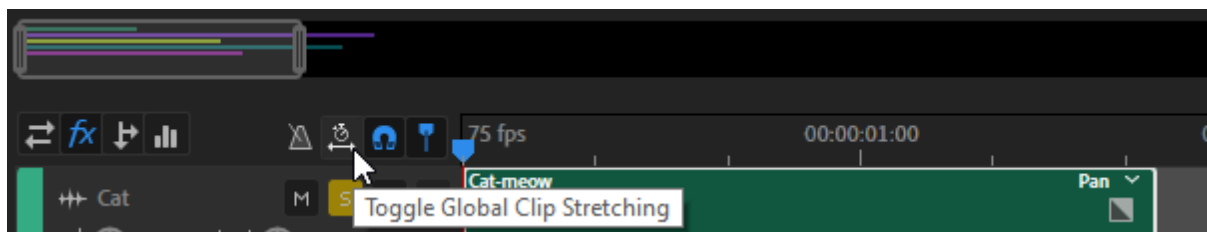
Exercise 6. Pitch and Stretch

In a previous section we were adjusting time and pitch in waveform view. The same can be done in Multitrack view. The difference is that like other things we have done in Multitrack view, time and pitch changes we make here will affect how the sound plays in the session. But they will not modify the sound file that we are using. It is another example of non-destructive editing.

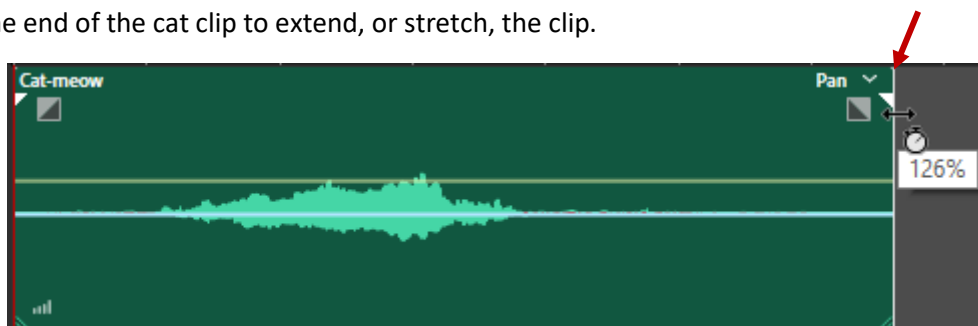
1. Turn off solo mode for the Rooster channel and turn on solo mode for the **Cat** channel so that the cat is the only sound you will hear.

Time stretching a clip on Multitrack view can be as simple as dragging the edge of the clip. But first we need to enable the option that makes this possible.

2. Locate the **Toggle Global Clip Stretching** button  at the top of the Multitrack view and click on it to enable it.

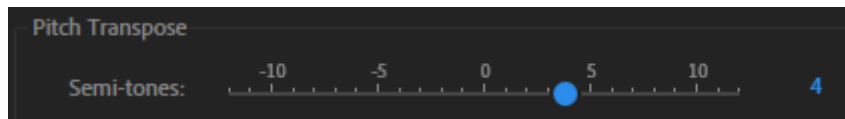


3. You will now see a small triangle on each end of your sound clips. Drag the Stretch time marker at the end of the cat clip to extend, or stretch, the clip.



The longer you stretch it, the more slowly the sound will play. The shorter you make it, the more quickly the sound will play. Try different lengths and play to see how it sounds.

4. From the **Effects** menu select **Time and Pitch** and then **Pitch Shifter**.
5. Adjust the Semi-tones setting to make the sound higher and lower. You can play to see how it sounds while the Pitch Shifter options are still open. Again this is non destructive editing.




6. Close the **Pitch Shifter** options window when you have finished adjusting the pitch.

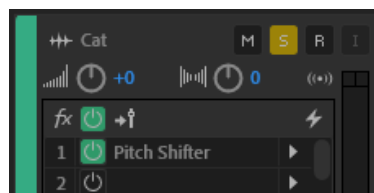
Exercise 7. Special Effects

As we have just seen, pitch effects can be applied to a channel.

1. Make sure the **Fx** button is selected at the top of the Multitrack view.

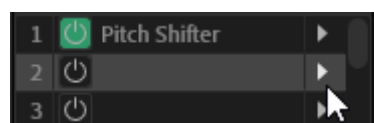


The Pitch shifter effect that we have applied will be displayed in the list of effects for this channel. The small *power* button  next to the effect enables and disables it.



Multiple effects can be applied to a channel when needed. We'll add another one to the Cat channel but this time we'll add it a different way.

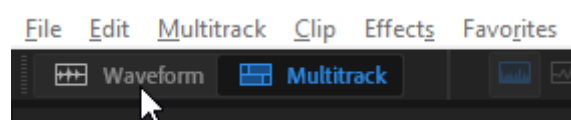
2. The first effect space is already used. Click the small triangle button next to the second effect space. This will open a menu of effects.



3. From the menu select **Modulation** and then **Chorus**. Let's make a cat choir.
4. Try some of the **Presets** at the top and modify some of the individual options. You can play the session while these options are still open to hear the effect of your changes.

Each of these changes we have made in Multitrack view only effect Multitrack view. To demonstrate that, we can check one of the sounds in waveform view.

5. Select the cat-meow sound clip and click the Waveform button beneath the main menu. You can also double-click on a clip to see that clip in waveform view.




Now that we are in waveform view, play the sound and you will notice that it doesn't have any of the changes that we have made as they are only in Multitrack view. The original file is still the same unless we modify it in waveform view. Click the Multitrack button to return to Multitrack view.

Tip You can also press **F12** to switch between **Waveform** view and **Multitrack** view.

6. Save the changes to your Session file (**Ctrl S**).

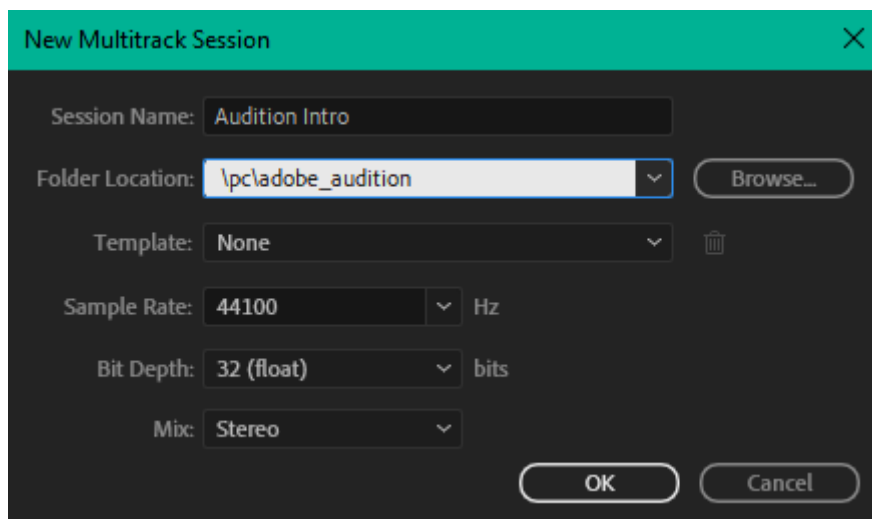
Before moving on, you might want to practice the following with this multitrack session.

- Change which channels are playing by using the **Mute** and **Solo** options. 
- **Move clips** on channels to change how they line up with clips on other channels.
- Adjust **volume envelopes** on different clips to adjust how they overlaps with sounds on other channels.

Exercise 8. Putting it all Together

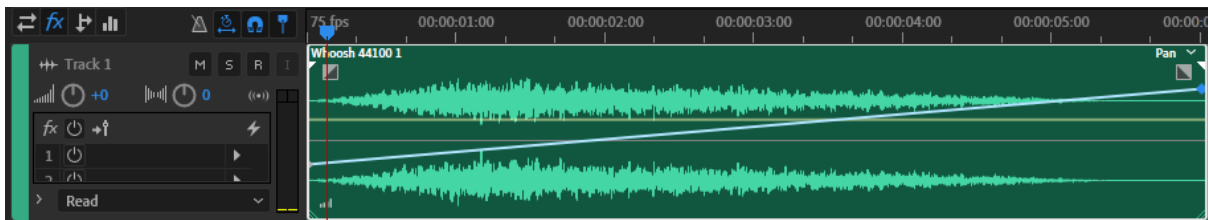
After playing around with animal sounds, we're going to put all of that in to practice with something a little more practical. Remember to play the session as you make changes to hear how the changes sound.

1. From the **File** menu select **Close All** to close the **Barnyard** multitrack session and its associated files.
2. Create a new **Multitrack Session (Ctrl N)**. Use settings like the following, remembering to ensure that you have selected a suitable **Folder Location** to save it in.

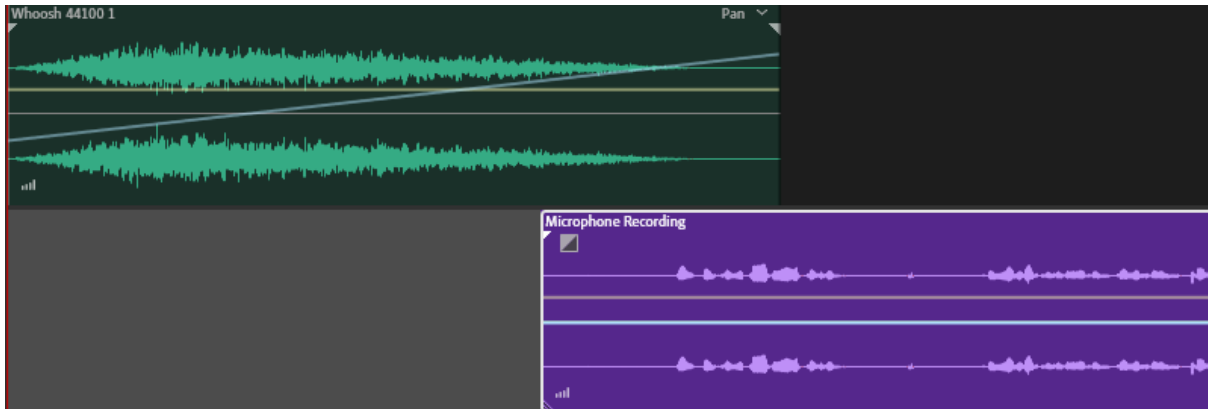


3. From the sample files add the **Whoosh**¹ sound in to the first track.
4. **Zoom** out so that you can see the whole clip.
5. Modify the **Pan Envelope** so that it starts slightly on one side and finishes slightly on the other side.

¹ From freesound.org



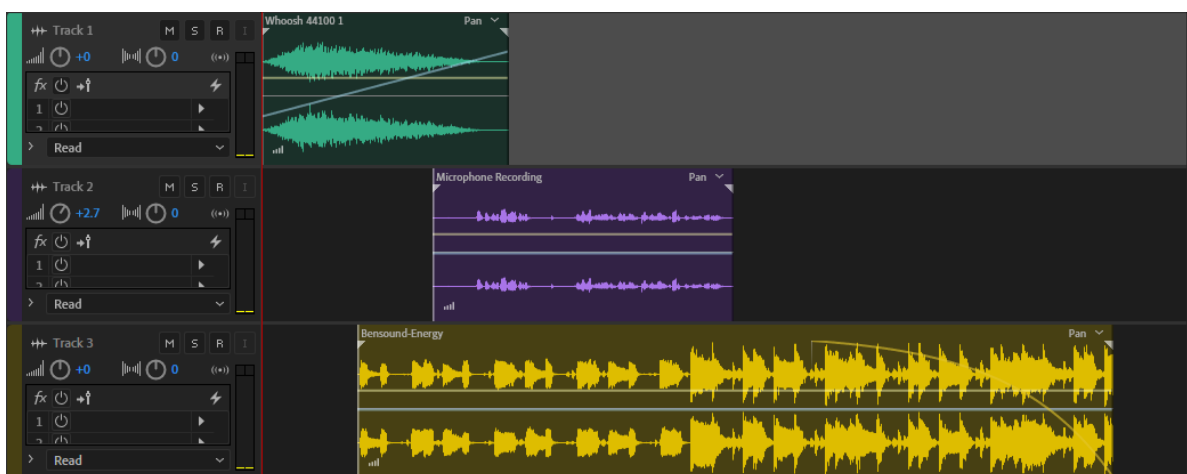
6. Add your **Microphone Recording** file from the previous section (Or if you don't have your own recording then use the **Cleanup** file). Arrange it so that it starts a little before the Whoosh sound finishes.



7. Add the **Bensound-Energy**² file to the third track.
8. Arrange it so that it starts playing after the Whoosh starts playing, but before the voice recording starts playing.
9. Trim the music clip so that it ends a short time after the talking finishes.

Note There are a couple of ways you could trim this music clip. You could drag the end of the clip to shorten it. But since it's much longer than your other clips you might need to do a lot of zooming or sideways scrolling. Alternatively, you could simply split the clip at the desired spot. Then select and delete the excess section of the clip.

10. Add a **fade out** on the end of the music clip.
11. Adjust the volume of each channel if needed so that no channel is too loud or quiet compared to the other channels.



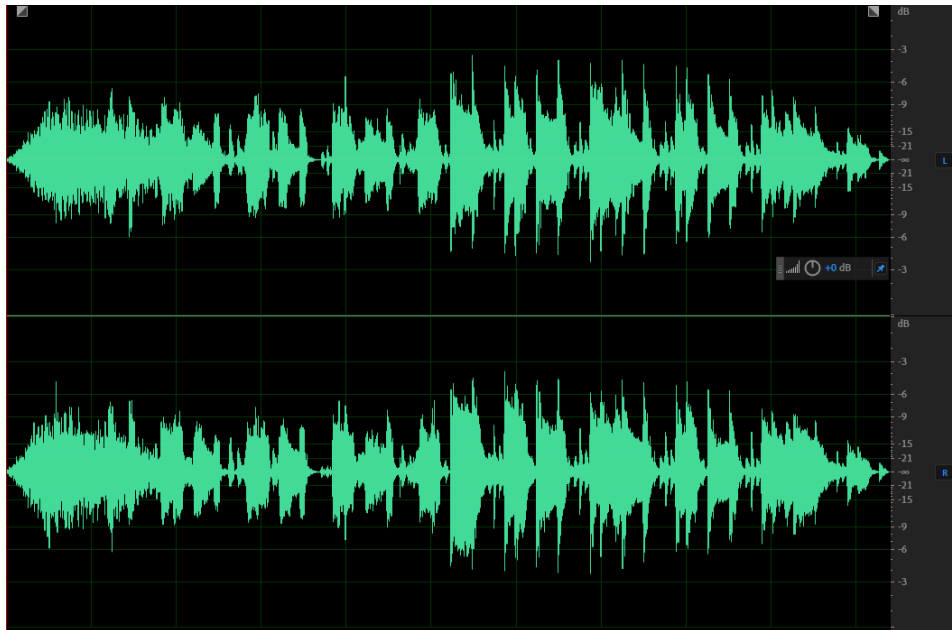
² From [bensound.com](http://www.bensound.com)

Exercise 9. Mixdown

Once you have combined channels in a suitable way you will likely need to save the result as a single file. This can be done by creating a Mixdown. That means taking all of your multitrack editing and combining it into a single waveform which can then be saved as a single file.

1. From the **Multitrack** menu select **Mixdown Session to New File** and then select **Entire Session**.

All of your editing work will now be combined into a single waveform.



2. Play the new waveform to ensure it sounds as intended.

Note If any of your channels were muted in the multitrack view then they will not be heard in the resulting mixdown either.

We can now save the new file.

Lossless vs Lossy file formats

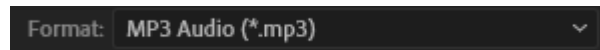
When saving media such as images and sound, you have a choice between lossless and lossy formats. **Lossless** format means that when you save the file, there is no loss in quality. Examples of lossless formats are the **BMP** format for images or the **WAV** format for sounds.

Lossy format means that when you save the file, some data is reduced in order to reduce file size. This results in some loss of quality. Examples of lossy formats include the **JPEG** format for images or the **MP3** format for sounds. Both are common formats that have a relatively file size and work on a wide variety of devices, but are lower quality than the lossless formats.

When saving sound it is often necessary to use a lossy format like MP3 so that your sound can be played on a device (such as a mobile phone) that might not be able to play lossless formats like WAV. In some cases you also might need a smaller file size such as if the sound is intended to be played over the internet.

Usually, it is best to work with lossless formats where possible and save a final copy in a lossless format also. Then if needed you can save in a lossy format once you have finished. Since we have already demonstrated previously how to save a sound file in a WAV format, this time we will save in the common lossy MP3 format.

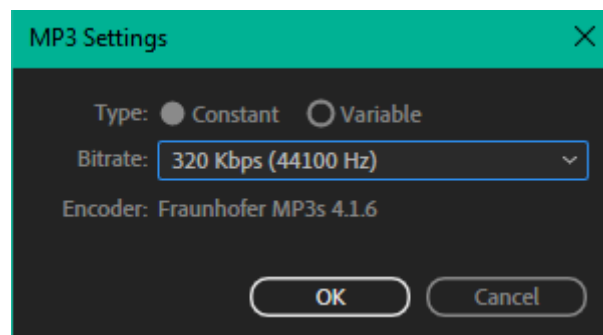
3. From the **File** menu select **Save As (Ctrl Shift S)**.
4. Change the **Format** to **MP3 Audio**.



5. Click the **Change** button next to **Format Settings**. These settings allow you to adjust the quality levels of the saved file.

The bitrate determines the quality of the MP3 file. A higher bitrate means a larger file but better quality. In this case we'll set it to the maximum amount. This will create a high quality file that will still be a much smaller file size than a lossless format like WAV.

6. Set the **Bitrate** to **320 kbps**.



7. Click **OK** to close the MP3 settings.
8. Enter **Audition Intro** for the **File Name** and select a suitable **Location** to save the file in.
9. Click **OK** to complete saving the file.
10. Press **F12** to switch back to the Multitrack view.
11. Press **Ctrl S** to save the Multitrack session.

Tip Before saving your file you might want to add **Metadata** to the file. This means information about the file such as title and date recorded. You can add metadata in waveform view by selecting **Metadata** from the **Window** menu or pressing **Ctrl P**. You can then fill in the information you need to be stored with the sound file.

