

How to Digitize Vinyl Records

Use this guide to digitize audio from vinyl records to WAV or MP3 files.

MP3 files are smaller and easier to store, share, and play. If you need the highest possible sound quality for archiving, you can save your audio as a WAV file. WAV preserves the highest sound quality, but the files are much larger and take up more storage space. If you have storage space, you can make both an archival copy (WAV) and a shareable copy (MP3).



Figure 1: Vinyl record.

Equipment You Will Use:

- Memory Lab computer
- Audio-Technica LP120XUSB Record Player (Turntable)
- Headphones

Software You Will Use:

- Audacity

Time Required:

- The runtime of the original audio recording, plus 3-5 minutes to adjust settings and manage the digital files.
- **Allow 15 minutes at the end of your appointment to transfer the digital files to your external storage device or upload to the cloud.**

Step 1: Prepare the Computer

Prepare the Memory Lab Computer and a Temporary Storage Folder

1. Ensure the Memory Lab computer is on. If not, press the circular power button on the tower (see Figure 2).



Figure 2: Power button.

2. Connect headphones to a jack on the Memory Lab computer (see Figure 3).

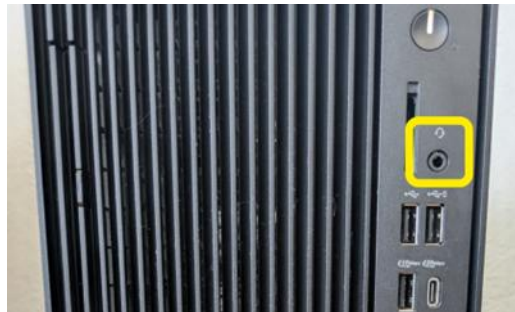


Figure 3: Headphone jack.

3. Create a new folder on the desktop to store your files while you are working. *Saving to the computer while digitizing is faster than saving directly to external storage. At the end of your session, you will transfer your files to your own storage.*

Steps to create a new folder:

- On the desktop, right-click on an empty spot on the screen.
- In the menu that appears, move your mouse over **New**.
- Click **Folder**. A new folder appears on the desktop with its name highlighted.
- *Recommended:* Type a custom name to replace **New Folder**, and then press **Enter** to save it.

Step 2: Prepare the Equipment and Software

Prepare the Audio-Technica Record Player and Place the Vinyl Record

1. Lift the dust cover lid on the record player.



Figure 4: Dust cover lid is open on the record player.

2. Turn on the record player using the knob labeled **Power** at the front left (see Figure 5). Only the top dial on the knob will turn, accessible from the left. Power lights will illuminate.



Figure 5: Turn the top dial in the power knob clockwise.

3. Adjust the speed settings (**33 / 45 / 78**) near the power button to match the vinyl record. Other settings (**Tempo, Quartz**) should not need adjustment. *To set 78, push the 33 and 45 buttons simultaneously.*

Note: Most 12-inch albums will play at 33; 7-inch at 45; and old 10-inch or 12-inch records from before 1950 will play at 78.

4. Check that your vinyl record is clean and free of dust.
5. Place the record on the turntable so the vinyl record's center hole fits over the center spindle (see Figure 6).



Figure 6: The vinyl record must sit flat on the turntable.

6. Make sure the record lies flat on the turntable. Gently push down if necessary.

7. Prepare the tonearm by sliding the plastic cap off the needle/stylus (see Figure 7).

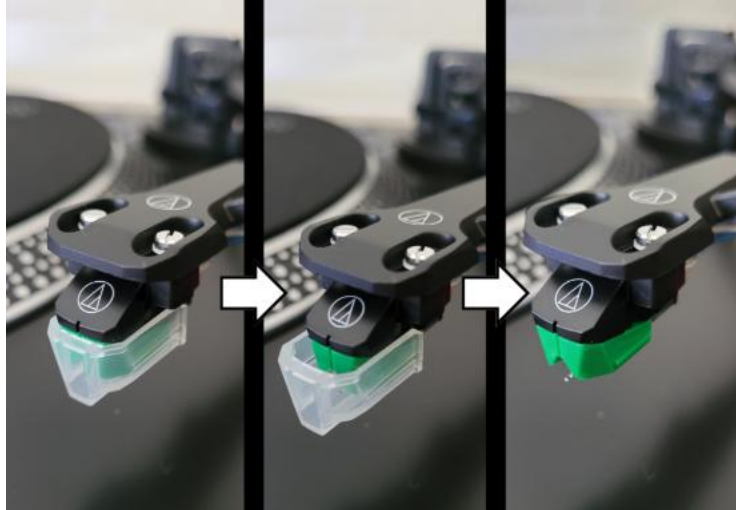


Figure 7: Slide the cap off the needle/stylus.

8. Use the small handle on the tonearm (shown in the red box in Figure 8) to **gently** and manually position the tonearm over (not touching) the vinyl. *The recording begins at the outer edge. Each track usually appears as a concentric ring of grooves, with slightly smoother spaces between tracks that help separate them visually.*

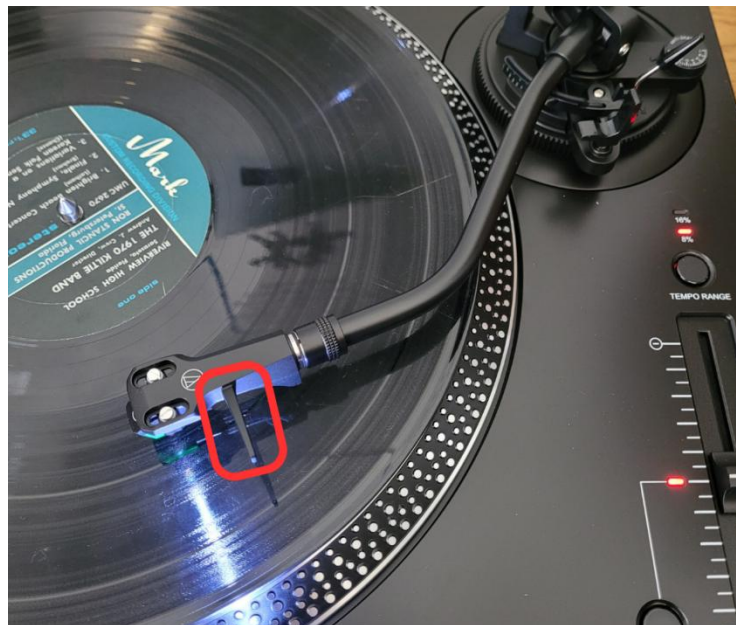


Figure 8: Use the handle to gently position the tonearm.
The tonearm is shown here about halfway through the tracks on this record.

9. Locate the counterbalance lever at the back right of the turntable (see Figure 9). The lever is near the base of the tonearm.



Figure 9: The counterbalance lever.

10. **Gently** move the lever forward (see Figure 10) to lower the tonearm so the needle/stylus touches the vinyl record.

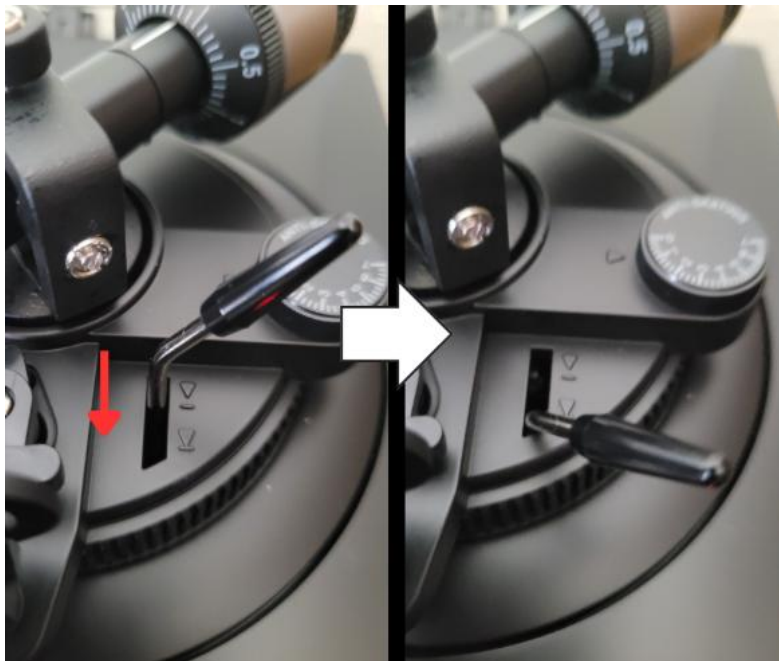


Figure 10: Move the counterbalance lever forward.

Prepare the Audacity Software

1. On the desktop of the Memory Lab computer, double-click the **Audacity** icon.

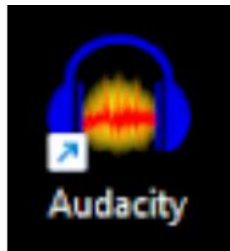


Figure 11: Software icon.

2. When the Audacity window opens, click on **Audio Setup** (see Figure 12).

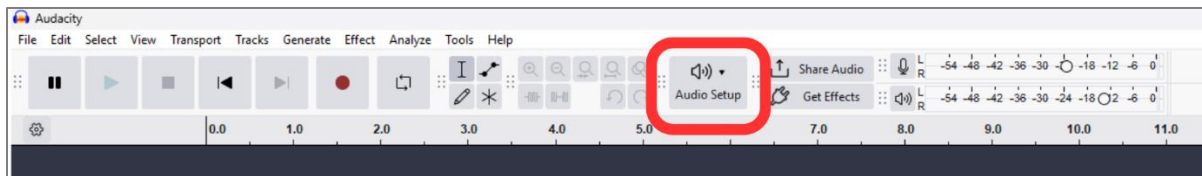


Figure 12: Recording Device setting.

- a. Under **Recording Device**, choose **Line (USB AUDIO CODEC)**.

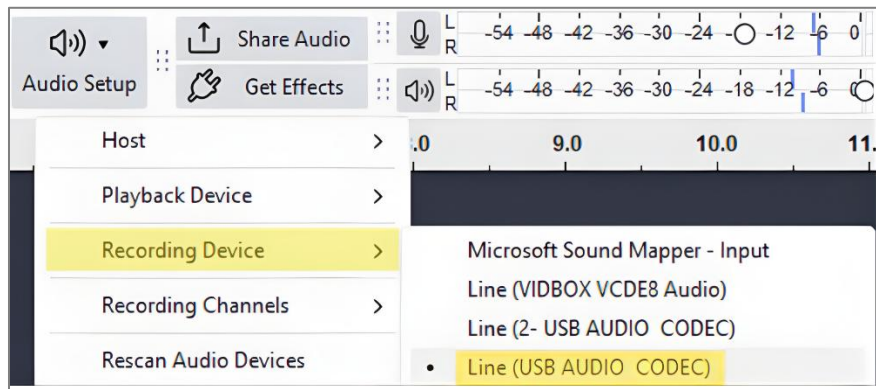


Figure 13: Recording Device setting.

- b. Under **Playback Device**, choose **Headphones**.

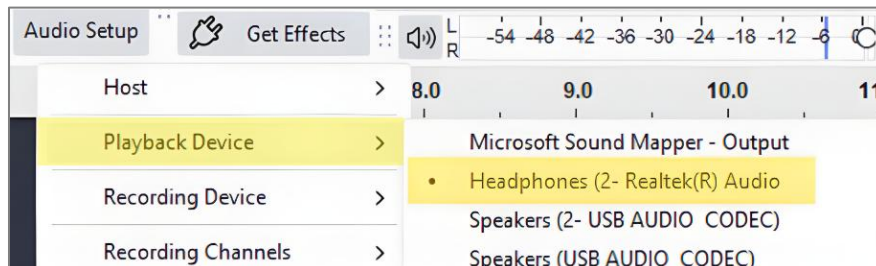


Figure 14: Playback Device setting.

- Look at the top right of the window for two sound meters: one for **recording volume** (beside a microphone icon) and one for **playback volume** (beside a speaker icon). Figure 15 shows the recording volume meter.

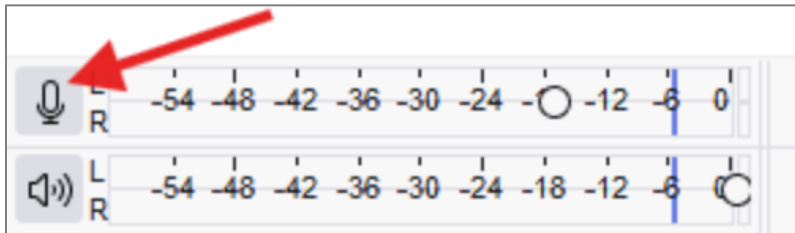


Figure 15: The recording volume meter is on top, with a microphone icon.

- To test the sound, press the square **Start/Stop** button on the record player (on the front left, below the power knob).
- Click on the **microphone icon (recording volume)**, then click **Enable Silent Monitoring**. Using the headphones, you should hear audio playing, and green lines indicating sound will appear (see Figures 16-17).

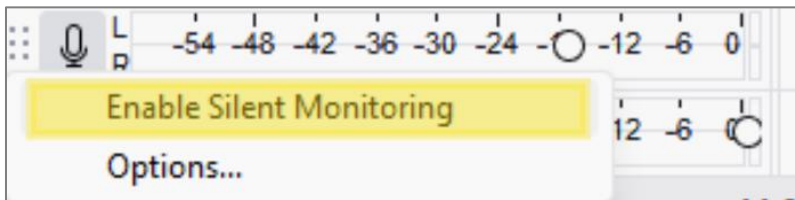


Figure 16: Click **Enable Silent Monitoring**.

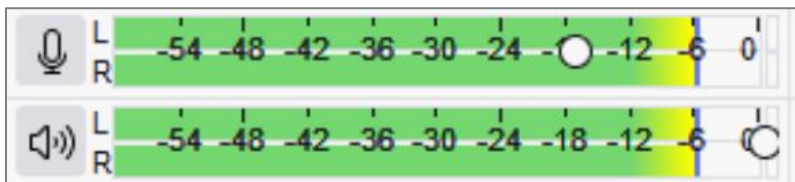


Figure 17: Green lines indicate the audio is playing.

If you see green lines in the two sound meters but hear nothing through the headphones, use the **Troubleshooting** guide on the next page.

TROUBLESHOOTING

If you see green lines in the two sound meters but hear nothing through the headphones, check the following:

- Headphones are selected as the **playback device** and are plugged into the computer.
- **Line (USB AUDIO CODEC)** is selected as the recording device.
- The computer volume is up at least halfway and not muted. **Volume control** is in the bottom right of the screen (see Figure 18).



Figure 18: Look for the computer's **volume control**.

If you continue to not hear sound:

- In the **Edit** menu, select **Preferences**.
- Under **Recording**, make sure the checkbox for **Audible Input Monitoring** is checked (see Figure 19).
- Click **OK** and restart monitoring.

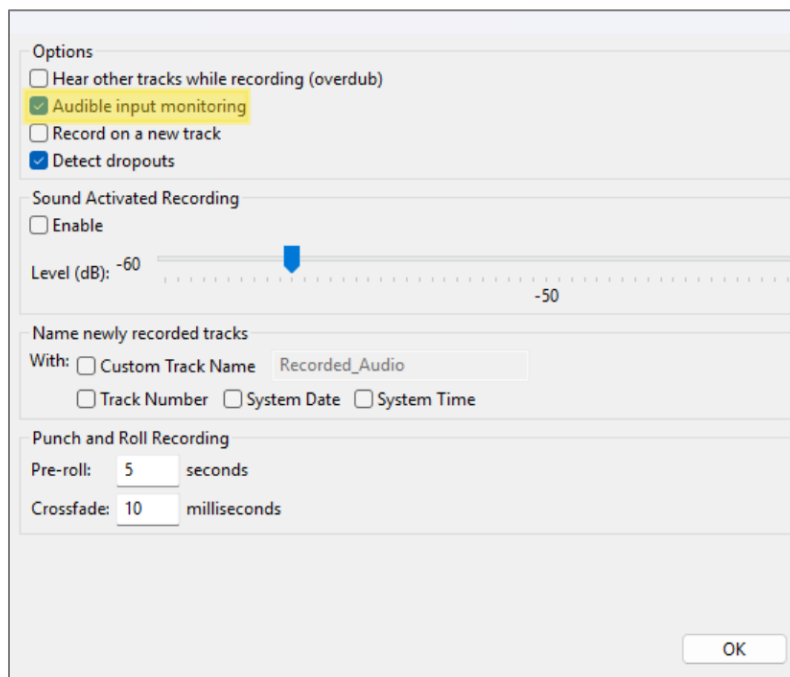


Figure 19: Check **Audible Input Monitoring**.

6. Listen to your audio to determine whether further adjustments are necessary:

If the audio is too soft, look in the **recording volume** meter (microphone icon) for a white dot. **Move the dot to the right to increase the volume** (see Figure 20) but avoid setting the recording volume too high. *If the green lines turn yellow or orange frequently, the recording volume is too high and the audio captured may have distortions.*

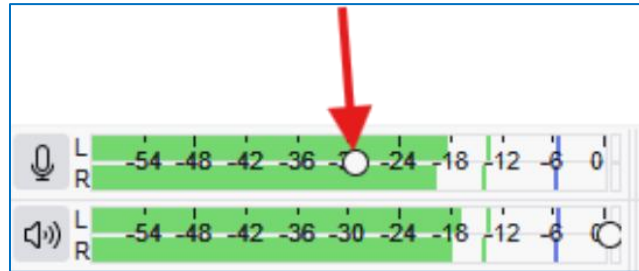


Figure 20: Slide white dot on the **recording volume** meter.

7. Once you have completed adjustments, press the **Start/Stop** button on the record player and reset the tonearm to the desired track:
 - c. Use the counterbalance level to raise the tonearm.
 - d. Use the tonearm handle to reposition the tonearm over the beginning of the track.
 - e. Use the counterbalance level to lower the tonearm.

Step 3: Record and Export the Audio

1. In Audacity, click the red **Record** button (see Figure 21). Immediately after, press **Start/Stop** on the record player. This will begin the capture of your audio.

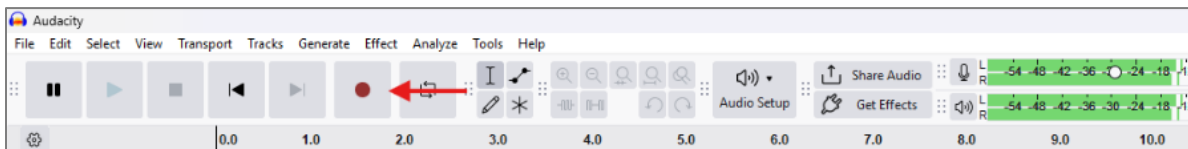


Figure 21: The red record button in Audacity.

Audio capture occurs in real time, so the recording process takes as long as the original audio runtime. **Do not use the Memory Lab Computer for other tasks during the recording.** Avoid bumping the table or causing vibrations which will affect playback and recording.

2. When your audio has finished, press the **Start/Stop** button on the record player and then click the **Stop** button in the Audacity window (see Figure 22).

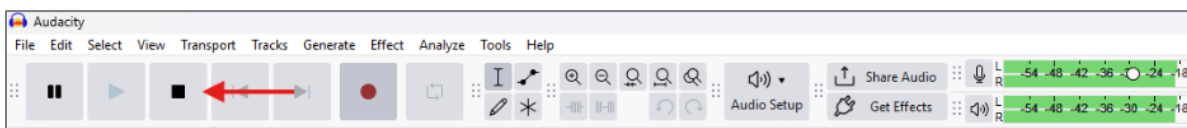


Figure 22: The black stop button in Audacity.

3. To save your file, navigate to the menu bar and select **File** and then **Export Audio** (see Figure 23).

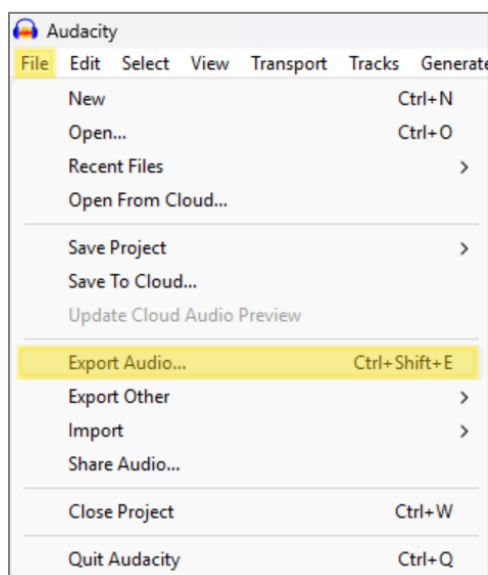


Figure 23: Select **Export Audio**.

4. Follow these steps in the **Export Audio** window (see Figure 24):

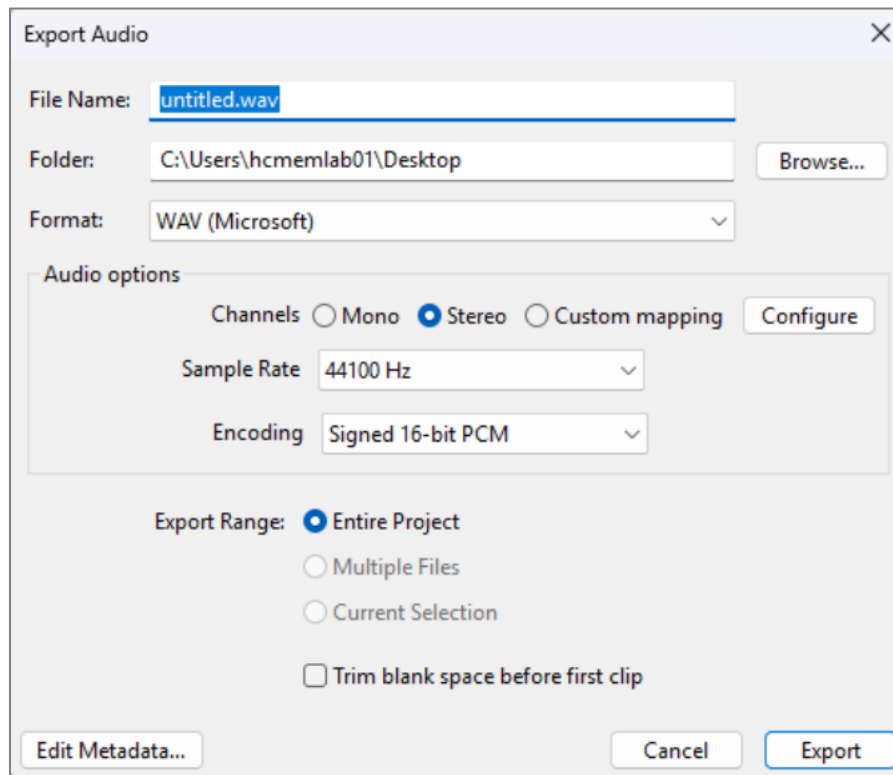


Figure 24: *Export Audio options.*

- a. **File Name:** Enter a name for your file.
- b. **Folder:** Click **Browse** to locate and select your save folder on the desktop, then click **Save**.
- c. **Format:**
 - Choose **WAV** for archival-quality purposes: a large file that preserves all the original audio details.
 - Choose **MP3** for listening and sharing: a smaller file with minor loss of quality.
 - Export both formats if needed and storage allows: first as WAV, then a second time as MP3.
- d. **Audio options:** Leave at default values.

- e. **Optional:** Use **Edit Metadata** (lower left) to embed details in your file, such as the person(s) speaking or original recording date (see Figure 25). Click **Ok** when finished.

Tag	Value
Artist Name	Marcy Deming
Track Title	Oral History Interview (3/16/1994)
Album Title	
Track Number	
Year	1994
Genre	
Comments	Interviewer: Mike Raiford

Figure 25: Input Metadata details.

5. Click **Export** in the bottom right of the **Export Audio** window to save your file.
6. Close Audacity after your recording has finished exporting. When asked if you want to **Save project before closing**, you can click **No**; your recording has already been exported. This function is for users stitching together several recordings before saving to a file.
7. Power down and reset the record player as follows:
 - a. Return the tonearm to its original position, using the counterbalance level when raising and lowering it.
 - b. Slide the plastic cap back over the tonearm needle/stylus.
 - c. Remove the vinyl record from the turntable.
 - d. Turn the **Power** dial counterclockwise.
 - e. Close the dust cover lid gently.

Step 4: Transfer Files and Complete Memory Lab Session

Transfer your new digitized files from the desktop folder to your own storage using one of the options below. **Large files or multiple files may take up to 15 minutes to transfer.**

OPTION A: Use an external storage device (e.g. a hard drive or thumb drive):

1. Connect your external device to a USB port on the Memory Lab computer.
2. Double-click your folder on the desktop to open it.
3. Select all files by pressing **Ctrl + A** (or by clicking and dragging over them).
4. If **File Explorer** isn't already open, click the yellow folder on the taskbar.
5. Click **This PC**, then locate and select your external storage device.
6. Drag the files from the desktop folder to your external storage device. A file transfer progress bar will show the status of the transfer; see Figure 26.
7. Once complete, the files should appear in the external storage device.
8. After all files have transferred, right-click on your desktop folder and select **Delete**.

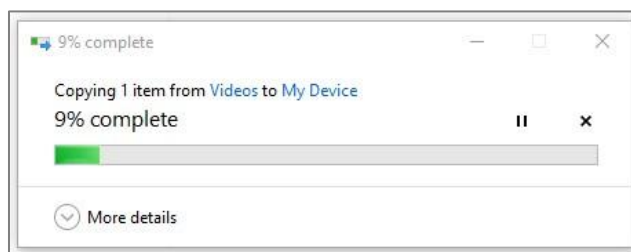


Figure 26: File transfer progress bar.

OPTION B: Upload to a cloud storage service (e.g. Dropbox or Google Drive)

1. Use a browser on the Memory Lab computer to access the internet.
2. Log in to your web-based email or cloud storage service to upload your documents.
3. After all files have uploaded, right-click on your desktop folder and select **Delete**.

Before You Leave:

- **Confirm your files are saved to your personal storage.**
Files are deleted daily from the Memory Lab computer!
- **Collect your original media from the Memory Lab equipment.**