Using Garageband

1. Decide which instruments you are going to be using for your song. This will help you determine what you need to plug into the computer and M-Track. The Media Labs will include:

   • USB keyboard/USB microphone
   • Yamaha Electronic Drum Kit
   • M-Audio M-Track Digital Audio Workstation
   • Microphone Stand
   • Microphone POP filter (if necessary)
   • Cables

2. Determine which cables you will need to use. The microphone and keyboard come with USB cables that plug directly into the computer. The drum kit needs to be powered, so make sure you plug it in. The drums also require a ¼ inch instrument cable to plug into the M-Track. Note that the drum kit can also be plugged directly into the computer via USB; this allows GarageBand to determine the sound of the drums.

   For any other instruments brought into the Media Lab, how the instrument is connected with depend on the type of instrument connection. For electric guitar or bass, you will use an instrument cable which will plug into the M-Track. Most microphones will use an XLR cable which will also be plugged into the M-Track.

3. Plug the M-Track into the computer via USB. Click "System Preferences" on the dock on the iMac and select "Sound". Select the M-Track for sound input. If you want to control the sound output through the M-Track, select the M-Track as the output. If you want the sound to be controlled by the iMac, leave the output as the default setting (e.g. speakers). Close System Preferences.

   Note: If the customer is using the Media Lab USB microphone, the input in System Preferences needs to be changed to M1 USB Microphone. This means that you will not be able to simultaneously use M-Track and USB microphone for recording. They must be used separately. If going from one device to another, make sure to change the input/output to the correct device in the iMac's System Preferences.

4. Connect instruments to the M-Track. Drums, electric guitar, and bass will plug in via instrument cable to one of the two channels on the M-Track; standard microphones with XLR connections will also plug into the M-Track. The M-Track will support two simultaneous channels for recording.

   Note: there are two types of standard microphones: dynamic and condenser. Condenser microphones require phantom power; dynamic microphones do not. If phantom power is required, the microphone must be plugged into channel twp on the M-Track. The +48V switch must also be turned on. For dynamic microphones, either channel can be used and the +48V switch must be turned off. You must know which type of microphone is being used as microphones can be damaged if the phantom power switch is in the wrong position.

5. If a device is connected to the M-Track via instrument cable, make sure the input selector on the M-Track is switched to "Instrument". It must be Input 2. If the device is connected via XLR cable, make sure the input on the M-Track is switched to "Line". This is important for channel volume/gain.

6. Plug headphones or speakers into the headphone jack on the M-Track. This will require the stereo jack to ¼ inch adapter in order for the cables to fit. Speakers can be unplugged from the back of the iMac; headphones will also be provided. This will allow for the monitoring of the recording and the instruments. Ensure that the headphone volume on the M-Track is at an acceptable level.

7. The monitor mix knob on the M-Track has two positions: Direct and USB. If the knob is turned to the "Direct" position, you will only hear live instruments (what's being played through the M-Track). If the knob is turned to the "USB" position,

you will only hear what's being played from the computer. Leaving the knob in between the two positions will allow for a balanced mix of both instruments through the M-Track and sound from the computer.

8. Adjust the gain on each channel to an acceptable level. The gain is the recording level of each instrument being recorded on each channel.There is a decibel meter in the middle of the M-Track which displays the volume of the instruments being recorded.

    You want to ensure that the volume is not being "clipped". Clipping means the audio is too loud and the recording is being distorted. The decibel meter goes from green to yellow to red; any light in the red means clipping is present. Try to get the volume just below the red into the yellow on the decibel meter.

9. Open GarageBand on the iMac and create a new project. Leave "Empty Project" as the default. Save the project to an external storage device. Click the "Create" button. Once you have selected a project, you will be asked what you device you are using for recording: Software Instrument, Audio, and Drummer. If you are recording using the M-Track you will select "Record Using a Microphone or Line Input" or "Record Guitar or Bass Guitar using GarageBand as an Amp".

    You will also need to choose the Channel for your recording. Under details select your input to match whatever input you are currently using. You can also select your sound input and output. If you want to hear output through the M-Track you can select it here.

    The GarageBand window is separated into different components: the library and track presets are on the left, the tracks are to the right of those, and the timeline/recording area is on the right. The playback controls (which include options to change tempo, key signature and beats per minute) are on the top of the screen. The click track can also be found here. The top right of the window has options to open up your loop library or access

sound effects. The track options are available for both the current track and master track. The master track allows you to change settings for all tracks together (e.g. tempo, key, effects).

10. To add more instruments, you need to add more tracks. You can do this by going to "Track" in the Menu Bar and selecting "New Track", or by clicking the "plus" sign at the top of the track window.

    When adding a new track, you need to select between software and real instruments. "Software" instruments are any instruments plugged into the computer directly via USB (e.g. the keyboard). "Real" instruments are any instruments plugged into the M-Track (e.g. drums, electric guitar, and standard XLR microphone). For a software instrument, select "Software Instrument" and click "Create". For a real instrument, select "Real Instrument" and then click "Instrument Setup" underneath. Click "Create". A new track will appear underneath the current track in GarageBand.

    You will have one more channel available to use on the M-Track at this point; other instruments which use USB can be plugged into the computer and selected as "Software Instruments" when adding tracks.

11. Single or multi-track recording is available in GarageBand. Select "Track" in the Menu Bar, then select "Track Header". Click "Show Record Enable Button". A record button will appear in the track header for each track. Clicking on it will arm the track for recording. If using single track recording, make sure that the track is highlighted and press the recording button at the top of the screen in the playback control panel.

    A "click track" (metronome) is turned on by default and the button to control this option is found to the right of the digital display at the top of the screen (when turned on, icon is purple). This will help you keep time while recording your song and the timing for the click track is matched to the tempo of the song (the click track is not audible on the actual recording).

Once all tracks are armed, press the record button at the top of the screen in the playback control panel. This will record all tracks simultaneously.

12. Once the recording is finished, press the stop button in the playback control panel. A visual representation of the recording appears in the timeline window in the middle of the screen. Beside each track you have added you will find simplified controls for that specific track. In addition to arming and de-arming the track, tracks can also be muted or soloed for recording and playback purposes. You can also adjust the volume and pan of each particular track.

If you are recording on top of other tracks, make sure that the tracks which aren't being recorded are not armed; if they are armed you will write over anything you have previously recorded in that track.

To edit tracks, double click on the visualization in the timeline window for that particular track. This will open the track editor at the bottom of the screen. To add controls to a track, select the "Smart Controls" button above the library. Track EQs can also be adjusted in this panel, and if the track is a software instrument different instruments can be chosen to effect the sound of that track (e.g. change from grand piano to strings). To fade out of the song, go to "Mix" and select "Fade Out".

13. Once the song is finished, go to "File" and select "Save" to save your project. This will save a project file, allowing you to complete the song at a later date. This file can only be opened with GarageBand. If you want to create an MP3 of your song, go to "Share" and click "Export song to disk". Select "Export" and name your song. Select the customer's external storage to save the song to that device.