

# Activity 1b: Linking audio to models (20 minutes)

**Link .mp3 and .wav audio files to a model.**

**(No computer needed for playback, only recording)**



**Locate the following on the activity area table...**



**mp3 player  
module**



**USB-SD card  
adapter**

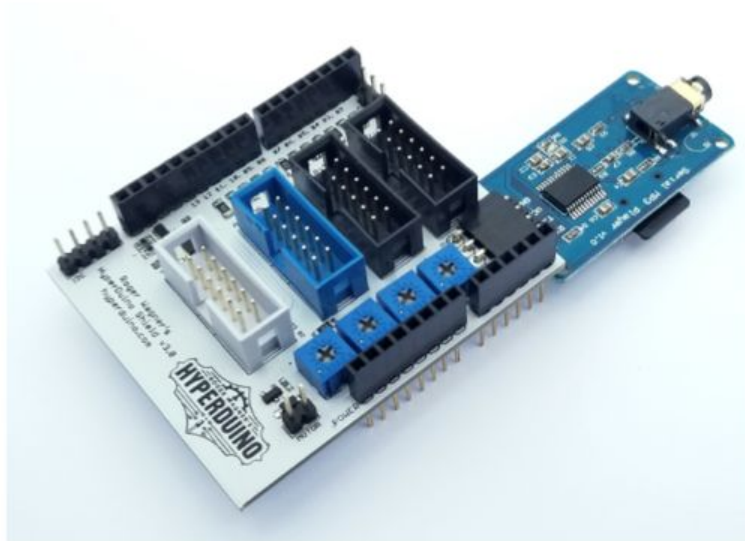
**Proceed to the next page of this Activity Guide and jump right in!**

Google Slides version of this pdf here: <http://bit.ly/2JLloUa>

# Connect mp3 Player to HyperDuino



- 1** **Disconnect** the battery from the HyperDuino.
- 2** Locate the mp3 player module and connect it to the 4-socket connector at the upper-right corner of the HyperDuino.



# Connect a Speaker & Try It Out!

1

Use a cable with a mini-stereo plug to connect a speaker to the audio connection of the mp3 player module. If you're using the "hamburger" speaker, give the top a small counter-clockwise twist to open it up for better sound. Turn the speaker on using the switch on the side of the speaker

**BEFORE** re-connecting the LED and touch cables, plug in the 9v battery to the HyperDuino. **Wait for the blinking to stop (about 5 seconds).** There will be an initial "welcome message" when the LEDs stop blinking.

Reconnect the ribbon cables for the LEDs and touch sensors, and you'll hear an audio confirmation. Then disconnect and reconnect the 9v battery.

When you touch the "Main vent" and other sensors, not only will the LEDs will light up, but it will play the audio of the student saying "main vent".



**Note:** The 4th touch sensor, "Touch here to start video" will play the complete audio narration.

# Multi-lingual Options!

1

Unplug the 9v battery, and then locate the touch sensor cable and put a touch sensor in position 13, **the socket attached to the brown wire on the outside edge of the touch cable.** (more information on wire numbers here: <http://bit.ly/2JZdmvu>)



Now, reconnect the 9v battery to the HyperDuino. **Wait for the blinking to stop (about 5 seconds).** There will be an initial "welcome message" when the LEDs stop blinking.

Now briefly touch sensor #13, and you'll hear "español" (Spanish), "íslensku" (Icelandic) and a small beep (for English) each time you touch it. After touching sensor 13, try out the touchpoints in your model for the main vent and others.

What's happening is that on the microSD card are 3 folders, each with the audio files in a different language. The HyperDuino changes the active folder each time you touch sensor 13! With this feature, your students can create multilingual projects. Or as another example, short and long audio explanations that are selected with sensor 13.

**If you'd like to learn how to record your own audio tracks, continue with the next page.**

If you'd prefer to do that another time, you can continue to Activity 2a, "Linking YouTube Drive Videos".

If you are out of time for today, restore your area by disconnecting the cables, touchpoints and battery, and returning them to the tray or box as you found them.

# How to Record Sounds to the SD Card

**1** The mp3 player module has a micro SDcard which holds the audio tracks. The tracks are in a folder "01", and are named "001startup.mp3", "002main vent.wav", "003secondary vent.wav", "004the crater.wav", and "005parts of a volcano.wav"



**2** Remove the SD card from the mp3 player module, and insert it into the USB adapter. Then plug that into the USB port of your computer.

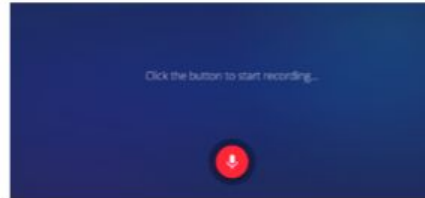


**3** To record audio on a Chromebook, use the online Voice Recorder with this link: <https://online-voice-recorder.com>

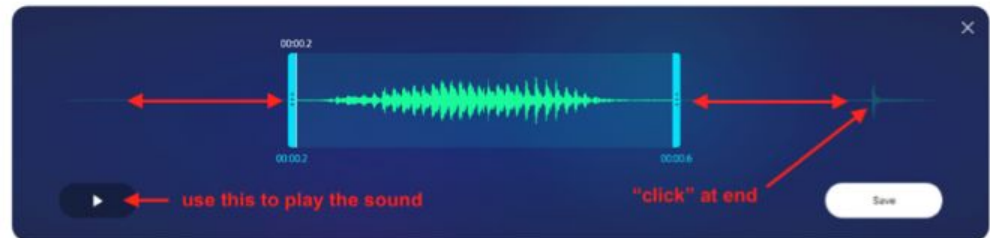
# How to Record Sounds to the SD Card



- 1 Click on Record to record some narration for your project.



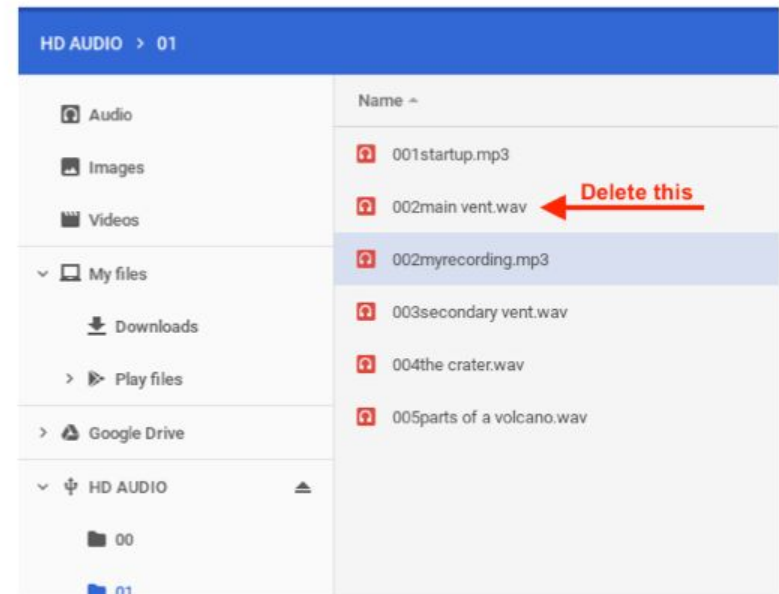
- 2 You can use the sliders to trim unwanted parts of the recording away.



- 3 Click the "Save" button to save the .mp3 file to your computer.

- 4 When the Google file window appears, navigate to the USB drive, and inside the folder "01" save your audio with a name that begins with "002", "003" etc. The number you choose will be the touch sensor that will play that sound. You can have anything you want after the "00n" part of the name.

Delete the other mp3 files that you are not using, and in particular, older files with the same file number.



# Try Out the New Sounds!



- 1** Eject the USB adapter from your computer. You may need to use the Files "app" on the Chromebook to see the drive and eject it. Remove the USB adapter from the USB port.
- 2** Carefully remove the micro SD Card from the USB adapter, and insert it into the mp3 player module.
- 3** Re-start the HyperDuino (unplug/plug the battery) and after the LEDs finish blinking, touch the sensors. You should now hear your own recorded sounds!
- 4** Note: The sound track with the name that begins with "001" is played at startup, and is not associated with any particular sensor.

If you don't want a track to play for a particular sensor, just omit that sound track number from the "01" director. For example, if you don't want a sound track for sensor #3, you would omit the file with the name "003something.mp3" (or "003something.wav")

[To learn how to link videos, go to the next activity, Activity 2: Linking Videos.](#)

If you don't have time for that, restore your area by disconnecting the cables, touchpoints and battery, and returning them to the tray as you found them.