

# Bird Song Sound Mapping



**Grade Level: 5<sup>th</sup> to 8<sup>th</sup> Grade**

## Notes for parents and teachers:

This lesson requires the ability to access an online field guide using the internet. If you have a smart phone, you can download the free Audubon app. It is a very user-friendly app to find birds, identify birds, and listen to bird songs. It is recommended but not required. Throughout the lesson there are links corresponding to the task. You can print off these sheets as well for students to draw on.

Parts of this lesson require using a computer and going outside. Parental supervision is advised during the use of computers or time exploring outside.

Allow a total of 60-90 minutes for the entirety of the activities.

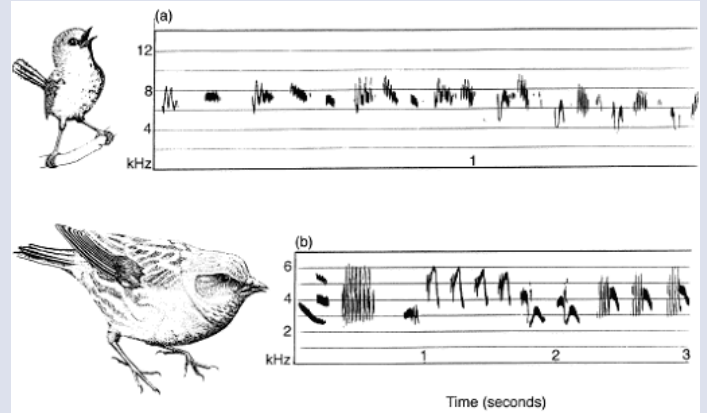
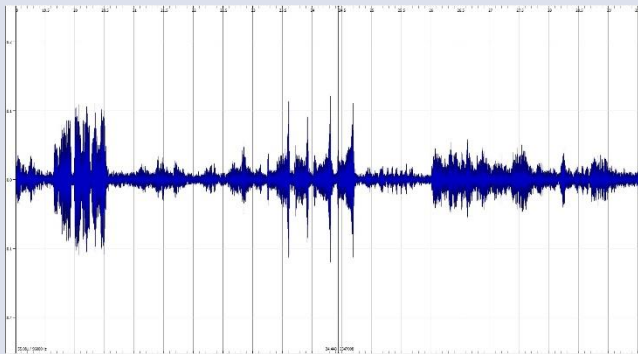
Materials needed for this lesson:

- Pencil
- Printed sheets or scrap paper for drawings
- A computer with internet access – or smart phone
- Base link for online Audubon bird guide for extra exploring:
  - <https://www.audubon.org/bird-guide>



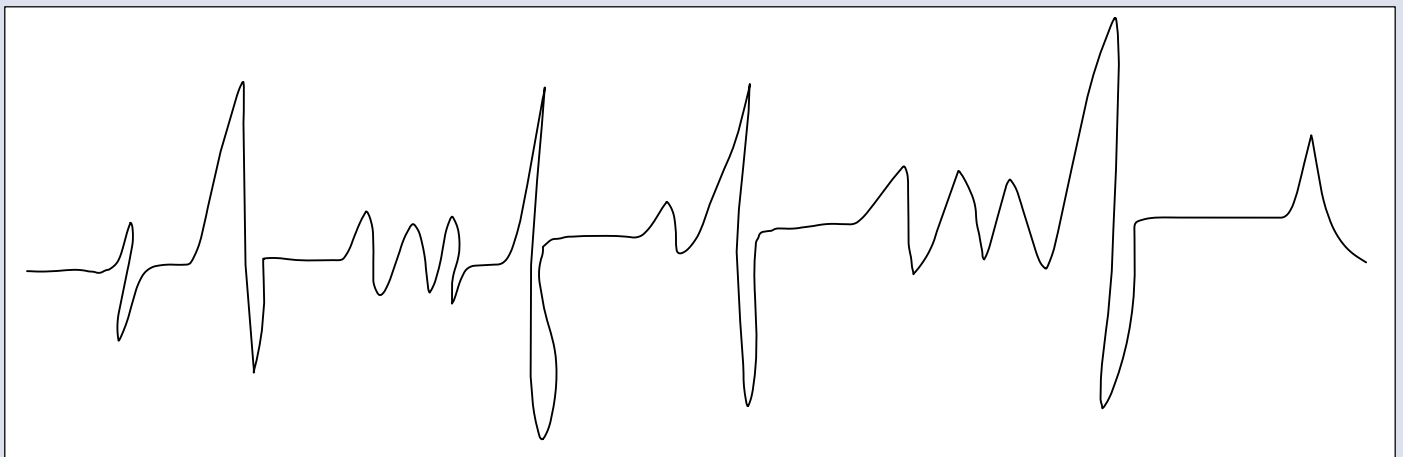
# Bird Song Sound Mapping

Birds have many different songs depending on the species, time of year, and what they are trying to say to their fellow bird friends. These sounds can be mapped into something called a **spectrogram**. Examples of a spectrogram are shown below:



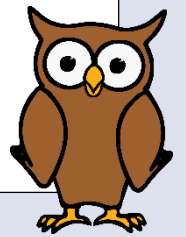
Below is an example of a spectrogram I drew of the song of a bird called a 'Says Phoebe'. Here is a link to the online Audubon field guide for that bird: <https://www.audubon.org/field-guide/bird/says-phoebe> You can find the call I drew in the bottom right corner under 'Songs and Calls'. I drew the first song titled the dawn song.

As you listen to the song, use your finger to trace my drawing to the tune.

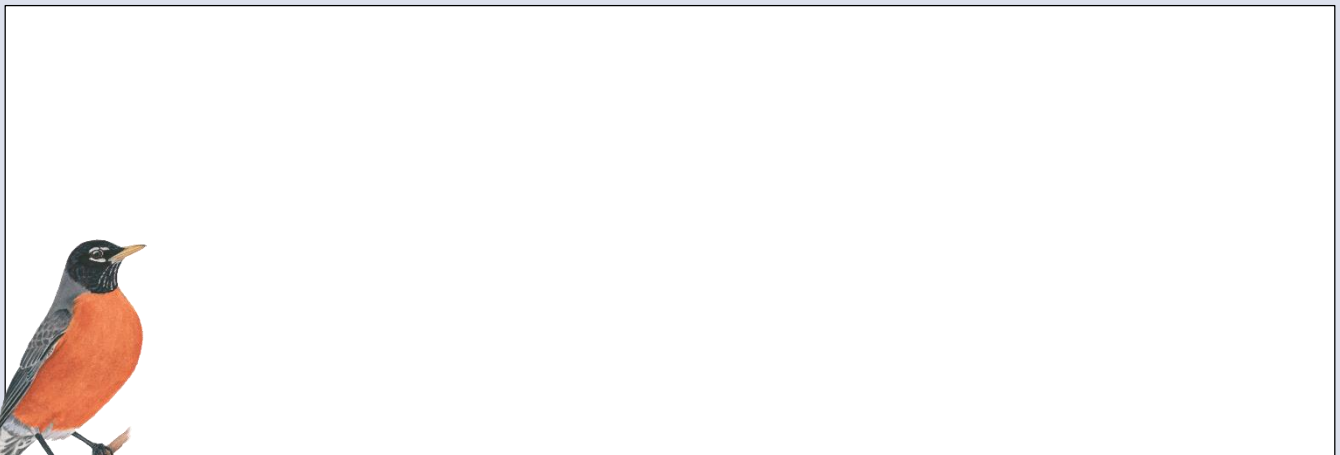


Birds usually sing in a pattern that we can hear being repeated. Think about how an owl sounds. They usually sing in a pattern that is obvious to our ears. They make a call that sounds like they're saying "who?" Now, think about if you were to draw what an owl sounds like on a spectrogram like the ones shown above. How would you draw this pattern? If you would like to hear a great-horned owl call to draw from, here is a link to the online Audubon field guide for that bird: <https://www.audubon.org/field-guide/bird/great-horned-owl> The songs and calls are in the bottom right corner of the first page.

Give it a try in the space below:



Want to try another one? Here is a link to a common bird we can find almost anywhere, the American Robin: <https://www.audubon.org/field-guide/bird/american-robin> Play the first song. This one is a bit harder than an owl call. You can use your finger in the air to try to go along with the song before actually drawing it. Listen to it a few times before drawing.





Now that you've given bird song mapping a first go, it's time to go outside and listen for birds in your area.

It could be in your backyard, a local park, or anywhere outside you have access to!

Below are some spaces to draw some bird songs you hear. If you don't know the species that is okay. If you would like to take notes of color, size and song, you can try to find out what species it is using the online field guide!



Now that you have mapped some bird songs, lets see how their songs have inspired the music humans make! There are examples everywhere in old classical music.

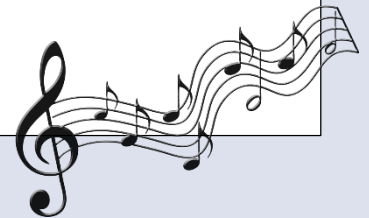
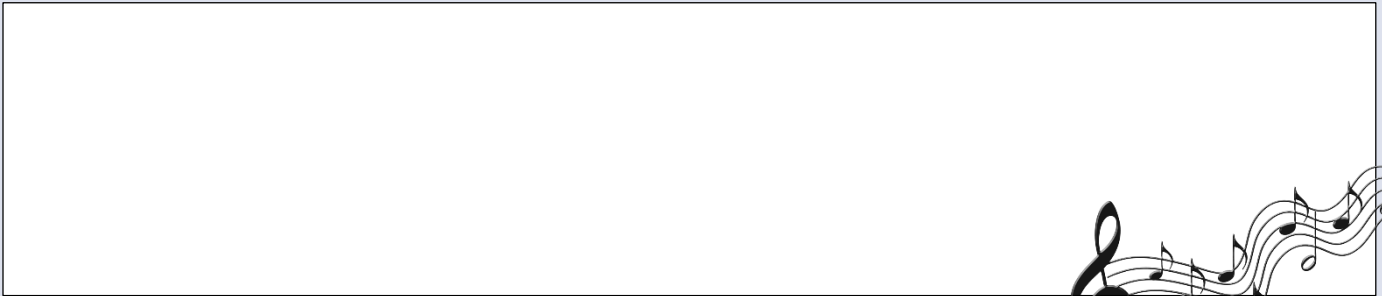


One of these is in The Cuckoo and the Nightingale that was written in 1692. Listen below to the song of the nightingale and the concerto 'The Cuckoo and the Nightingale' and see if you can hear the similarities.

Nightingale Bird Song: <https://www.youtube.com/watch?v=XdlIbNrki5o>

Listen 7 seconds in: Cuckoo and Nightingale: <https://www.youtube.com/watch?v=E8WEZdTW6fw>

Now that you have heard how people have been inspired by birdsong, use the space below to do a spectrogram of this violin song: <https://www.youtube.com/watch?v=OclrkwrZlIw>



**Reflection Questions:**

How do sounds seem different to you after drawing them?

Do you think you will be more aware of birdsongs after these exercises? If yes, in what ways?

How are some birdsongs different? What do you notice about different birds voices?

Where else in the world do you see how birdsong has influenced us as humans?