

# Coding for Good 1: Coding Basics

Complete the five steps to earn your Coding for Good 1 Badge.

1. **Learn about functions through song lyrics:** In computer programming, a named section of a program that performs a specific task is called a function. These functions provide instructions to the computer to let it know what action it needs to complete. Functions can be used in song lyrics to help the artist know which order the verses should be sung and where there is a repetition (for example: a chorus).

Take a moment to find your favorite song and see if you can breakdown the song into functions. Are there any repetitions? How are those noted in the lyrics?

2. **Learn about loops through song patterns:** Loops are used to repeat a song section in order to create a specific pattern. Often, songwriters and producers will use loop technology to help them better visualize and hear how the song they have written will come to life. It also allows artists to perform their hit songs live without a band as they are able to incorporate all sorts of sounds and instrumentals into their performances.

Listen to the song featured below and see if you can recognize any particular patterns or repeated sounds. Why do you think those sounds were repeated? Do they add or take away from the meaning of the song?

[https://www.youtube.com/watch?v=Zq8hiZPqj\\_U](https://www.youtube.com/watch?v=Zq8hiZPqj_U)

3. **Write an algorithm duet:** Algorithms tell your computer exactly what steps to take to solve a problem or to reach a goal. This can also be applied to songwriting in the form of a duet. Take a look at the lyrics

below for a single artist song. What do you notice about the structure of these lyrics? Now take a look at the lyrics below for a duet song. What differences do you notice? How is the algorithm different when the lyrics are meant to be split between two people?

Single Artist [Lyrics](#)

Duet Artists [Lyrics](#)

Challenge yourself to write an algorithm for a popular duet song. How can you break down the algorithm into individual functions (i.e. chorus, repetition, and change in tone)?

4. **Code a performance routine:** Much like a computer programmer, a songwriter uses a “code” to create new music. When a songwriter begins to write the lyrics for their new song, they are essentially creating instructions for how the song will be sung, which verses will be repeated, and if there is the need for multiple artists to perform the song. Songwriters often will also include information about specific instrumentals they want as a background for the lyrics or instruments that would help to bring the song to life.

I want you to try your hand at coding a performance routine. Be sure that your routine has clear steps for completion and that your lyrics note the presence of a chorus or even an instrumental section.

5. **Share your coded routine with others:** We would love to hear the incredible performances that you have created. Please share your songwriting talents and maybe even your vocal performances with us by tagging GSCWM on social media!