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| **Topic/Duration** | Intro to User Input + Conditionals / 80 mins |
| **Priority Standards** | **Georgia Music Technology Standards:**   1. [**MSMTC6.CR.1**](https://case.georgiastandards.org/f3b94c72-9c0d-11e8-b85c-3b1a3079ae6e/0b28edda-fc39-11ea-a8d1-0242ac150004/2040) Generate musical ideas for various purposes and contexts.   **Georgia Computer Science Standards**   1. [**MS-CS-FCP-4**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/a56a2551-e482-4550-8b01-44846f673663/568) Design, develop, debug and implement computer programs. 2. [**MS-CS-FCP-4.7**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/0cf95f5e-31ed-434f-8da2-99175a5d1af5/575) Create a program that accepts user and/or sensor input and stores the result in a variable. 3. [**MS-CS-FCP-4.9**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/41f747b7-b9d8-4b2e-be1c-e2e6adef781e/577) Develop a program that makes a decision based on data or user input. |
| **Supporting Standards** | Georgia Music Technology Standards:   1. **[MSMTC6.CR.1](https://case.georgiastandards.org/f3b94c72-9c0d-11e8-b85c-3b1a3079ae6e/0b28edda-fc39-11ea-a8d1-0242ac150004/2040)** Generate musical ideas for various purposes and contexts.   Georgia Computer Science Standards   1. [**MS-CS-FCP-4.1**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/ac4b16a7-8293-41d0-b699-3bcc99695fd0/569) Develop a working vocabulary of programming including flowcharting and/or storyboarding, coding, debugging, user interfaces, usability, variables, lists, loops, conditionals, programming language, and events. 2. [**MS-CS-FCP-4.8**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/82d5d495-4977-4fb6-af1a-3f74fba6e5bf/576) Create a computer program that implements a loop. 3. [**MS-CS-FCP-6.4**](https://case.georgiastandards.org/00fcf0e2-b9c3-11e7-a4ad-47f36833e889/c0f931f5-bdea-4646-be47-2f4cde17e4e5/589) Develop a program for creative expression or to satisfy personal curiosity which may have visual, audible, and/or tactile results. |
| **Student Facing Goals** | Students will be able to...   * write a script that generates a song to fit a given mood based on user input. |
| **Essential Question & Enduring Understanding** | **What are the applications of user input and choice in coding and music?**  *In programming, many modern applications require reacting to user input. Earsketch allows user input to be creatively applied toward tailoring song creation/listening experiences to the listener.* |
| **Evidence of Learning** | **Formative**: Students will create their own sounds in Soundtrap for use in a skeleton script provided to them. |
| **Materials** | Soundtrap  Earsketch  Example/skeleton scripts |
| **Vocabulary** | * **User Input:** Any information that is processed by our code that is provided by the user upon execution. * **Conditionals:** Evaluates a boolean expression in order to execute a particular section of code. * **Boolean:** An expression that is evaluated to either TRUE or FALSE. |

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| **Resources** | |
| [Teacher example script](https://earsketch.gatech.edu/earsketch2/?sharing=iNJ-TAtI7wvRfA3bHpcGZQ)  [Template script for students](https://earsketch.gatech.edu/earsketch2/?sharing=vJz2SbGe3us7J31yCyvc6g) |  |

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| **Teacher Preparation** |
| 1. Review and familiarize yourself with the Earsketch example and template scripts, add extra comments if needed to help explain the concept to students |

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| Lesson Implementation |

Lesson

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| **Engage / Explore: Making Connections Time: 5 Minutes Slides: *4-5*** | |
| **Section Goal:** Students will learn about why user input is important in coding as well as potential uses in EarSketch. | |
| **Student Activities**   * Participate in class discussion and answer the essential question in their own words. | **Teacher Activities**   * Define vocabulary terms for students. * Explain why user input is important in coding. Encourage students to identify applications or software they use that requests user input? * Explain how using conditionals gives you more control over your code. |
| **Coding Connections: N/A** | |

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| **Explain: Understanding Time: 20 Minutes Slides: *6-7*** | |
| **Section Goal:** Students will learn about readInput() and conditionals. | |
| **Student Activities**   * Understand how to store user input in variables. * Learn the syntax for conditional statements and how to properly set up boolean expressions. * Understand when it is appropriate to use additional elif() statements in their code. | **Teacher Activities**   * Introduce students to if-else and if-elif-else statements (Slides 6 and 7). * Demonstrate a [sample EarSketch program](https://earsketch.gatech.edu/earsketch2/?sharing=iNJ-TAtI7wvRfA3bHpcGZQ) that uses conditionals and user input to generate different songs. |
| **Coding Connections: reading user input and using conditionals based on that input** | |

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| **Elaborate: Apply your Skills Time: 40 Minutes Slide: *8*** | |
| **Section Goal:** Students will demonstrate an understanding of conditional statements and user input by creating a 16 measure song in EarSketch that requests user input. | |
| **Student Activities**   * Create an EarSketch script that generates a 16 measure song utilizing fitMedia() and makeBeat(). * Using readInput() and conditionals, students will prompt users to provide a tempo for the song and change the tempo of the script accordingly. | **Teacher Activities**   * Share the [template script](https://earsketch.gatech.edu/earsketch2/?sharing=vJz2SbGe3us7J31yCyvc6g) with students. * Instruct students to generate a 16 measure song utilizing fitMedia() and makeBeat(). Students should use readInput() and conditionals to prompt users to provide a tempo for the song. * Assist with any debugging issues that may arise during student work period. |
| **Coding Connections: reading user input and using conditionals based on that input, implementing loops** | |

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| **Evaluate:** Assessment / Wrapping Up  **Time: 15 Minutes Slide: *9*** | |
| **Section Goal:** Students will evaluate and share their scripts. | |
| **Student Activities**   * Share completed scripts with the teacher. * In pairs, students will run each other’s scripts 3-4 times, inputting different tempos each time. * Provide feedback to each other regarding how changes in tempo affect how the song feels. | **Teacher Activities**   * If time permits, play student examples for the rest of the class. |
| **Coding Connections: N/A** | |