Technology Ambassador Program

Teaching Programming Fundamentals with Candy Catch

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Georgia Gwinnett COLLEGE

Technology Ambassador Program

TAP@GGC

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TAP

- The Technology Ambassadors Program (TAP) was created at Georgia Gwinnett College located in Lawrenceville, GA.
- The TAP program addresses the need to increase the number of students who persist in an IT major or IT minor, particularly those underrepresented in computing.
- The TAP program at GGC strives to break the misconceptions of the IT field by providing fun workshops for students of all backgrounds. TAP students design engaging and fun outreach workshops to encourage interest in IT and STEM.

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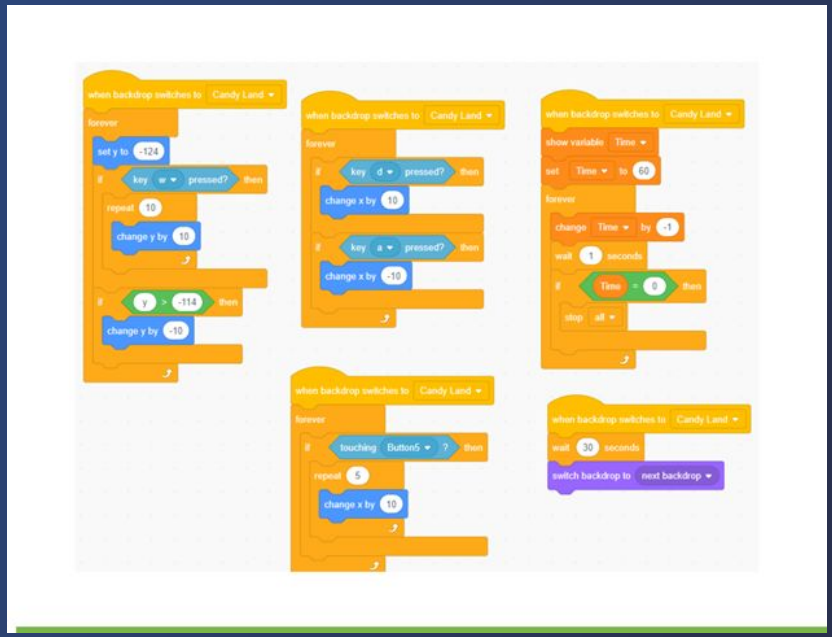
Project Description

- This projects introduces game development by teaching students how to build basic block coding and simple concepts such as loops and if-then statements.



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What is Scratch

- Scratch is a block-coding based software used to introduce basic coding concepts to beginners through interactive games.

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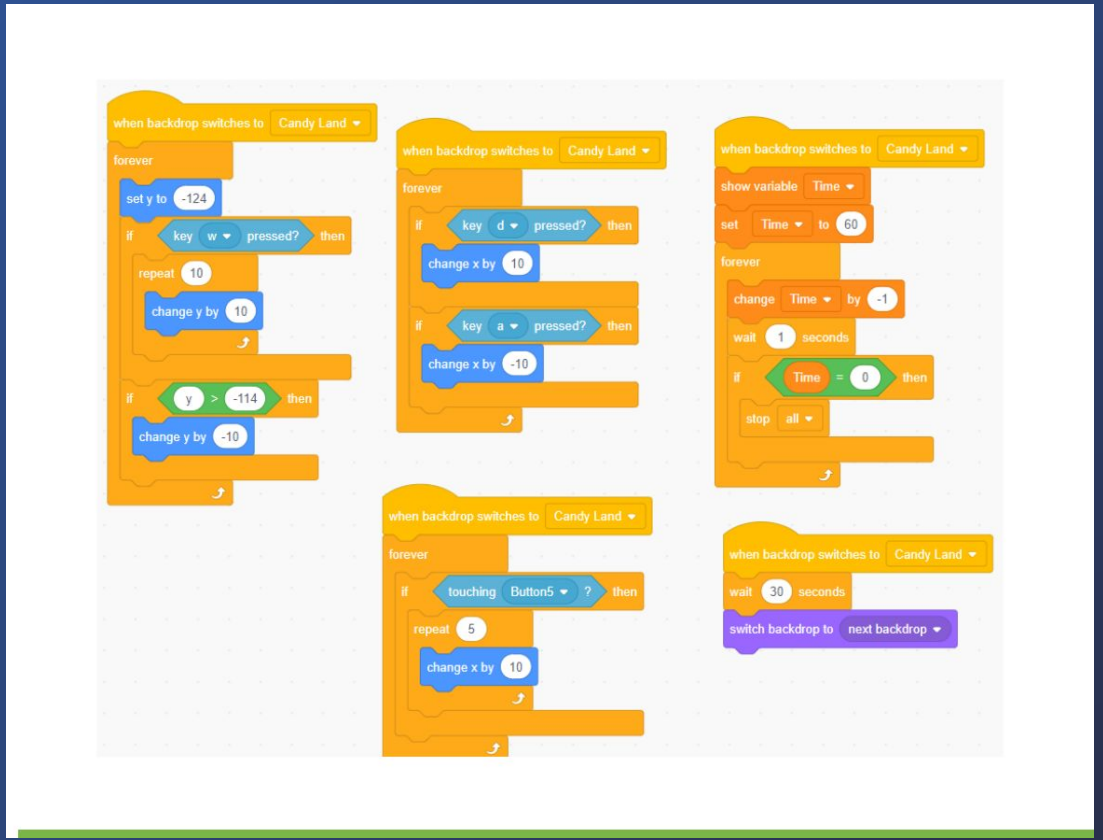
Block Coding

- Block Coding utilizes a drag-and-drop learning environment where programmers use blocks to construct basic programs.
- Concepts such as if/then statements and while loops are the basis for how these programs are developed.



Programming Concepts

- If-Then Statement: An if-then statement is a concept that specifies the execution of an action when a condition is true, or another action is done. Example: “If I wash my hands, then they will be clean.”
- While/Forever Loop: All the code in the loop will execute forever, as long as the program is running. A forever loop allows the candy in our game to constantly fall, rotate, and re spawn at the top of the screen. Example: “While the faucet is open, the water will keep running. Until I turn off the faucet”

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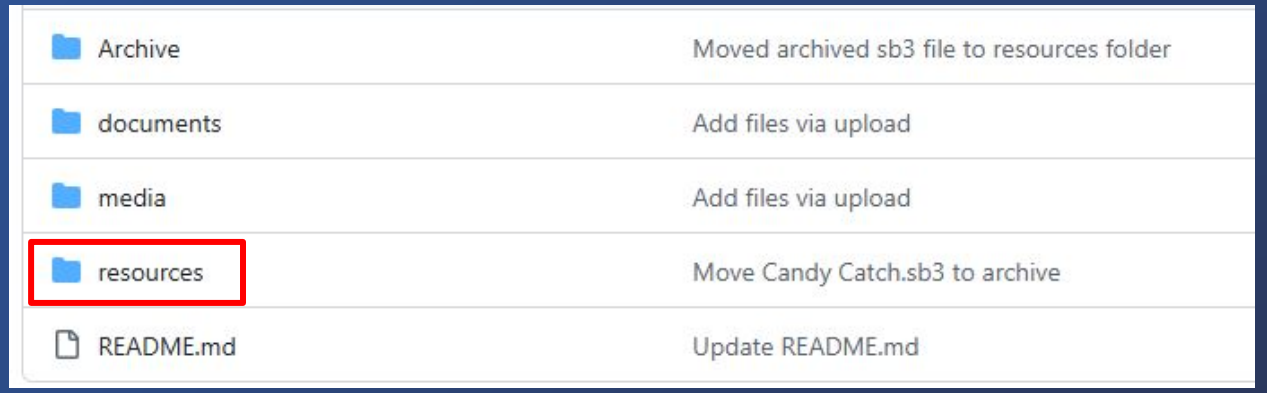
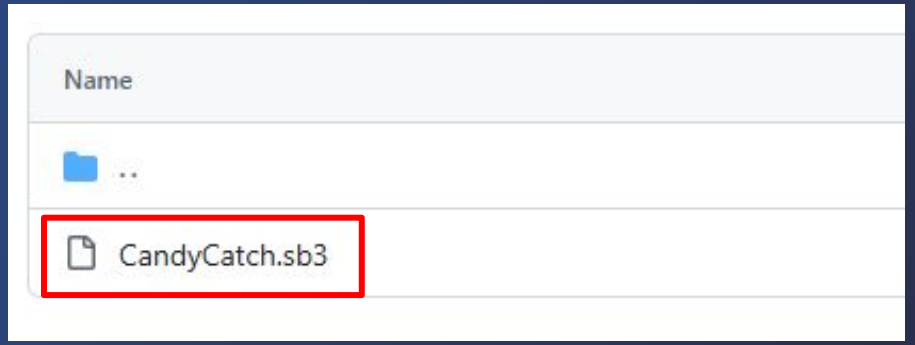
Before we begin…

- First thing, head to the Scratchathon repository.
- Once everyone is there, make sure to click on the **resources** folder.
- Once inside, download the **CandyCatch.sb3** file





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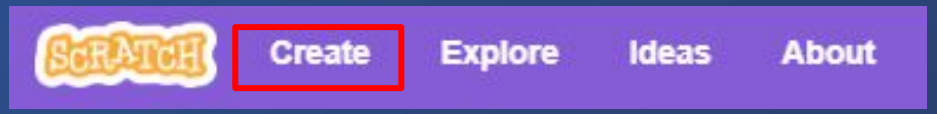
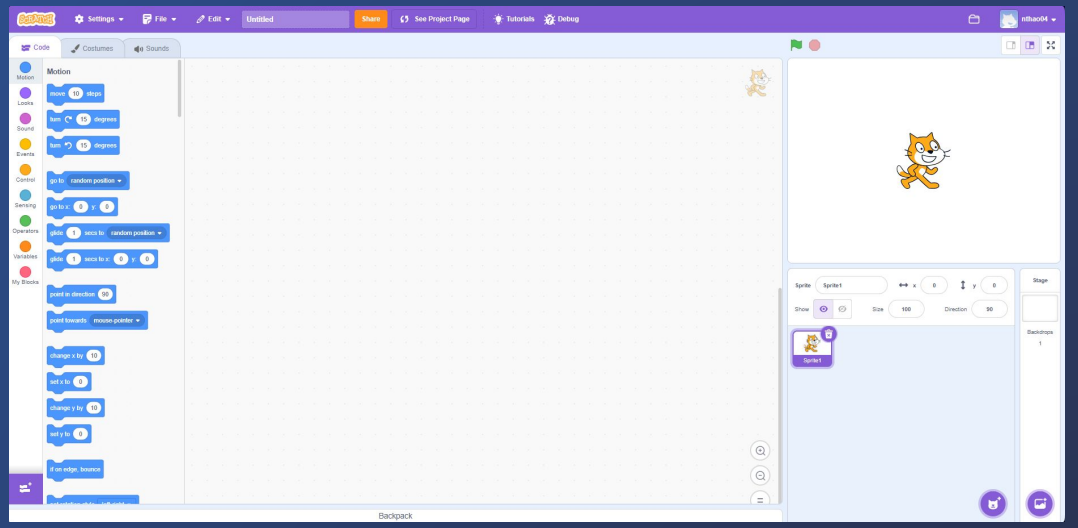
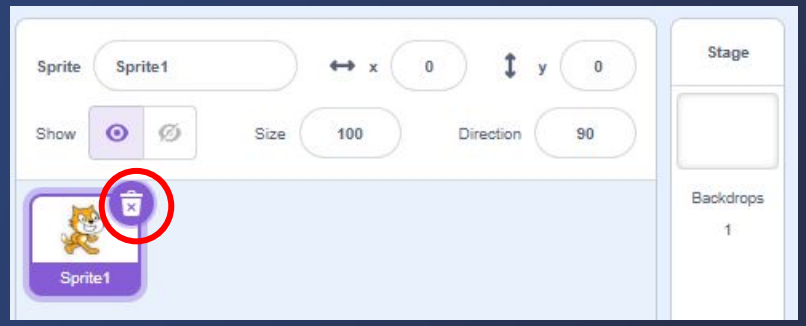
Preparing Scratch

- Head to Scratch.mit.edu and click on CREATE on the top left corner to create a new project.
- On the right side of your screen, delete the cat sprite.
- The project should now be completely empty and we can begin building the game.
- You may also load the **CandyCatch.sb3** file and experience what the game should look like before we start the coding.







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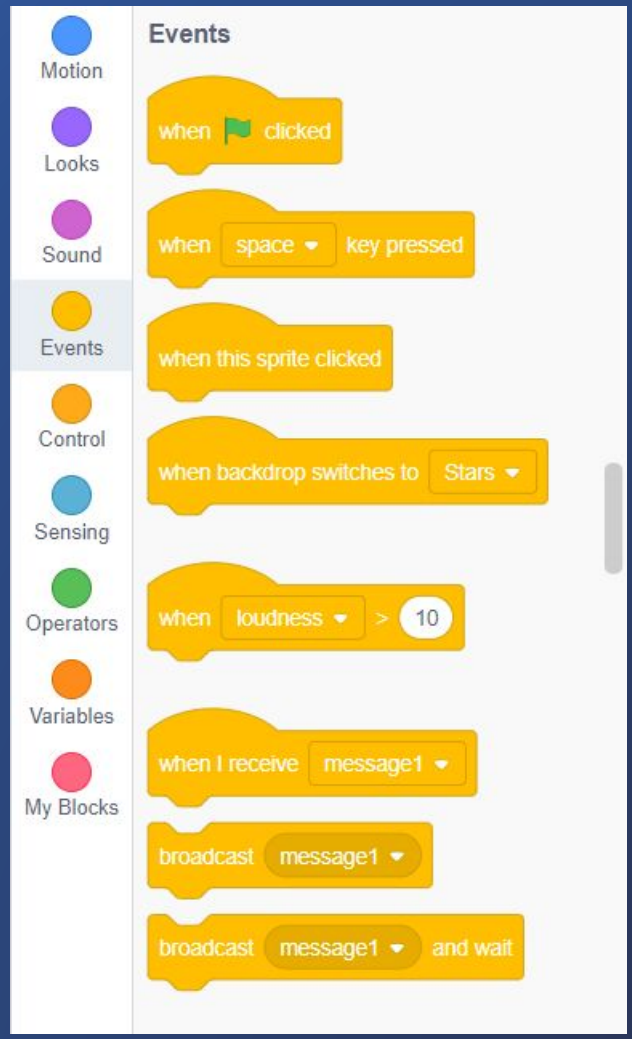
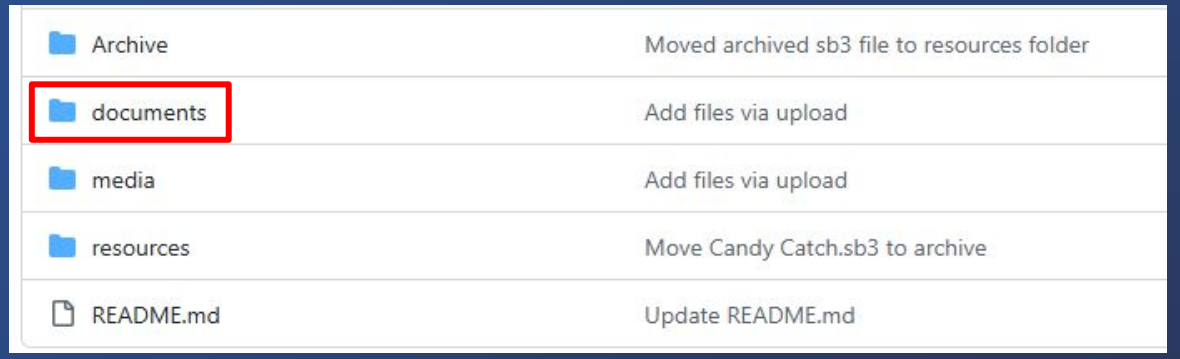
Making the game

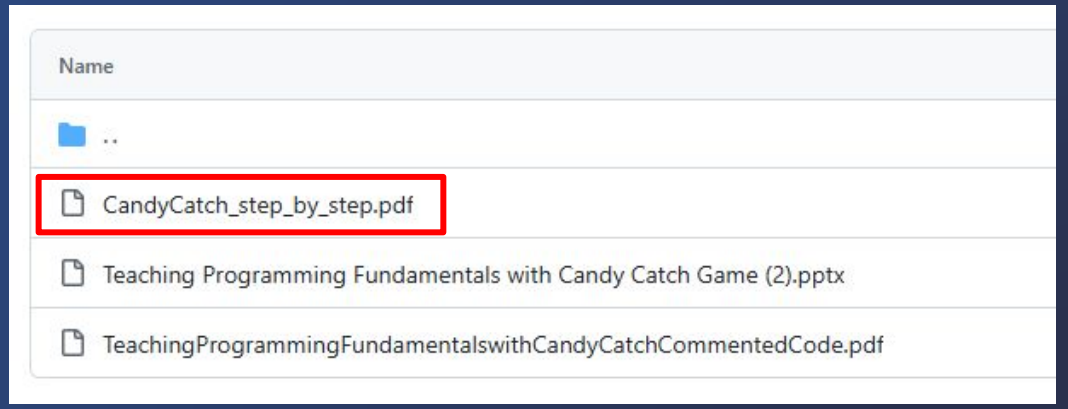
- Start with adding the event tab “When clicked”.
- This will allow the game you create to launch.
- Follow the rest of the code shown here or on the guide to create the rest of the code



Instructions

- Go back to the repository to download the step by step guide.
- Locate the documents folder and select it.
- From there download the **CandyCatch_step_by_step.pdf**
- Follow the steps to create your own Candy Catch Game.





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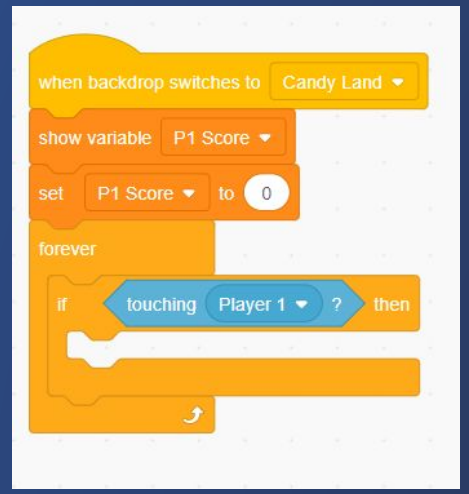
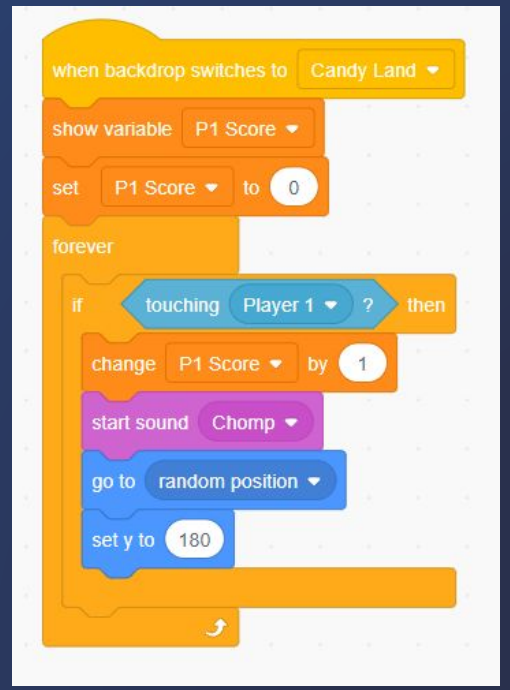
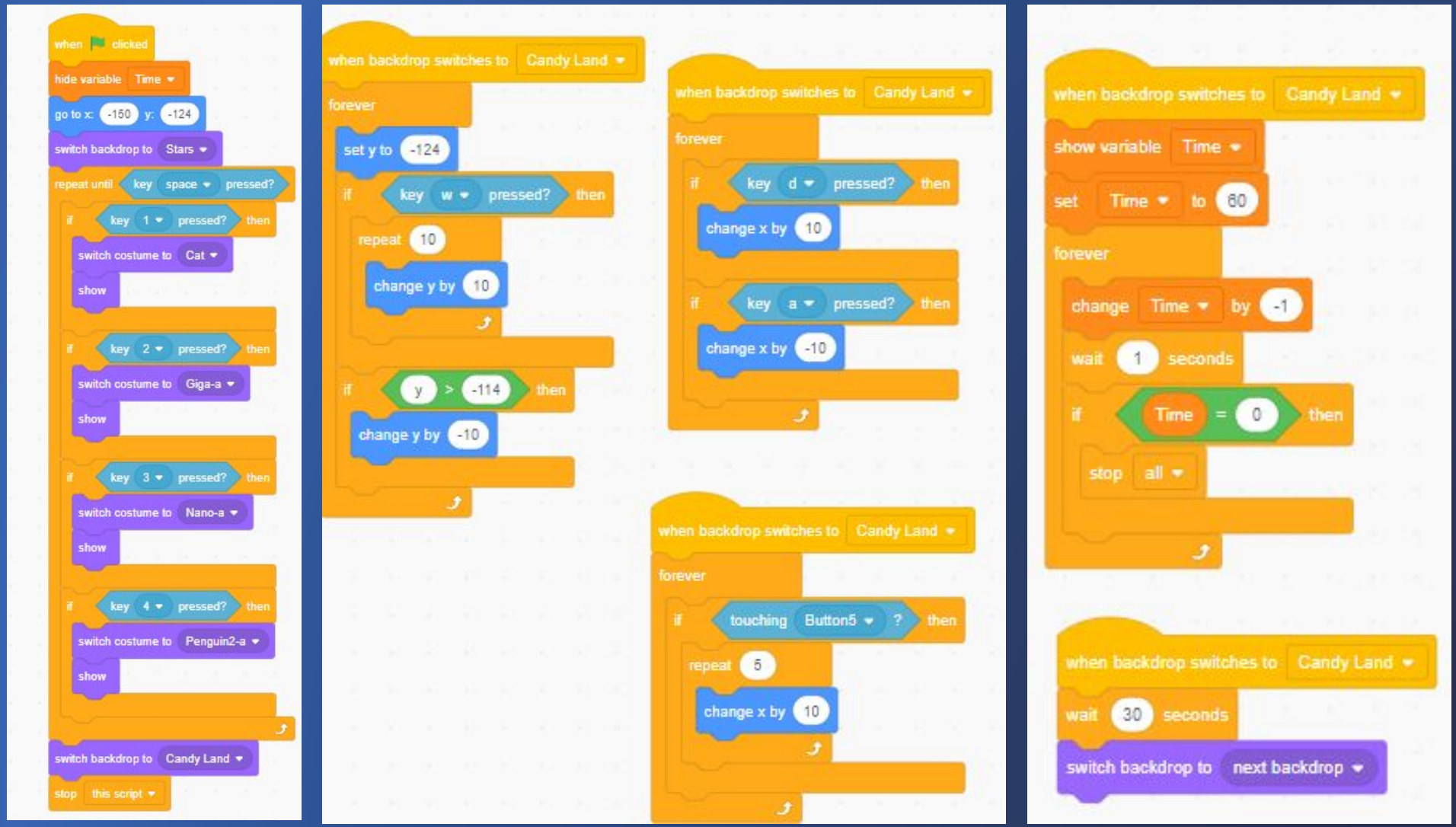
Instructions cont.

- While students are creating their game ask questions to help guide them.
- Example 1: How do you stop the game once the timer ends?
- Example 2: How do you add a point system when a character gains a fruit?





Solution


when clicked
hide variable Time
go to x: -150 y: -124
switch backdrop to Stars
repeat until key space pressed?
if key 1 pressed? then
switch costume to Cat
show
if key 2 pressed? then
switch costume to Giga-a
show
if key 3 pressed? then
switch costume to Nano-a
show
if key 4 pressed? then
switch costume to Penguin2-a
show
switch backdrop to Candy Land
stop this script
when backdrop switches to Candy Land
forever
set y to -124
if key w pressed? then
repeat 10
change y by 10
if y > -114 then
change y by -10
when backdrop switches to Candy Land
forever
if key d pressed? then
change x by 10
if key a pressed? then
change x by -10
when backdrop switches to Candy Land
forever
if touching Button5 ? then
repeat 5
change x by 10
when backdrop switches to Candy Land
show variable Time
set Time to 60
forever
change Time by -1
wait 1 seconds
if Time = 0 then
stop all
when backdrop switches to Candy Land
wait 30 seconds
switch backdrop to next backdrop

Time to Play!!!

- From here spend 5-10 minutes playing the game
- After that, play with the code:
  - Change timing/points
  - Add sprites/models
  - Change backgrounds
  - Create more difficult levels

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Thank You

Please try out our other projects!!!

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