Lesson: Create a Wakanda Game using MakeCode Arcade

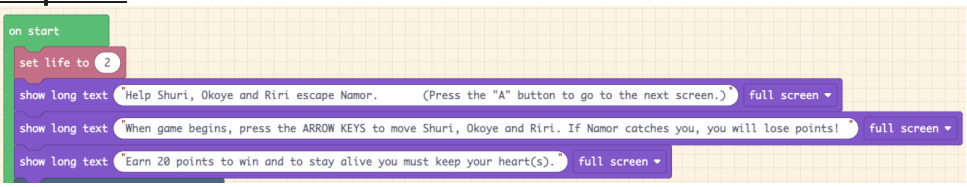
FACILITATOR FACING	
Learning Objective:	★ SWBAT create a Wakanda Game using MakeCode Arcade.
Standards:	

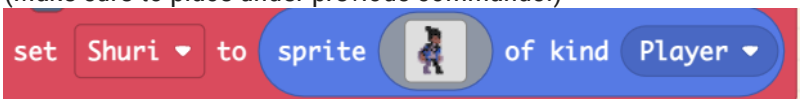
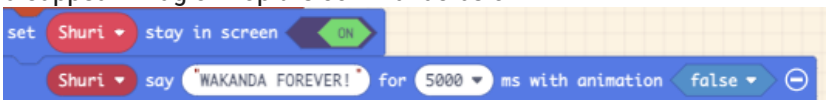
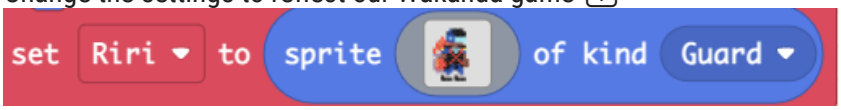
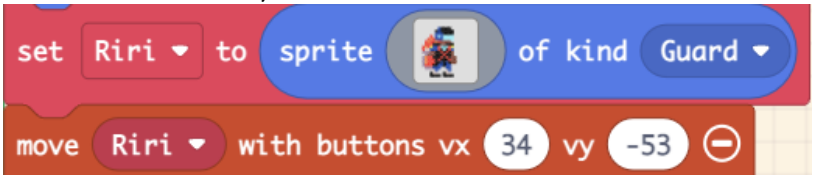
Grades 2-3	CT.8	Identify steps within a task that should only be carried out under certain precise conditions.
Grades 4-6	CT.8	Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem.
Grades 7-8	CT.8	Develop or remix a program that effectively combines one or more control structures for creative expression or to solve a problem.
Grades 9-12	CT.8	Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.

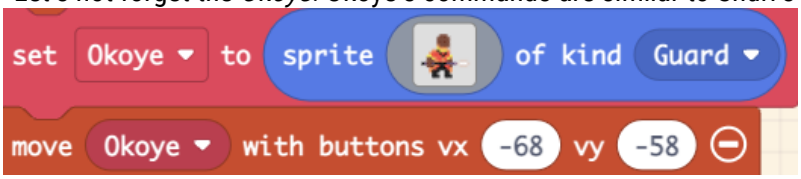
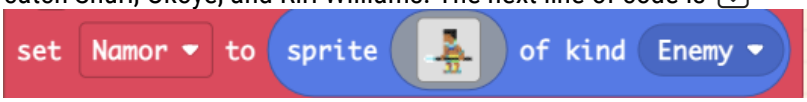
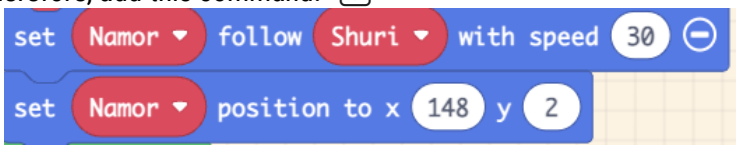
Prerequisites:	● Students must know the basics of using a computer. ● Students must know how to read. ● Students must have completed the [BEGINNER]---Intro to Game Development lesson.

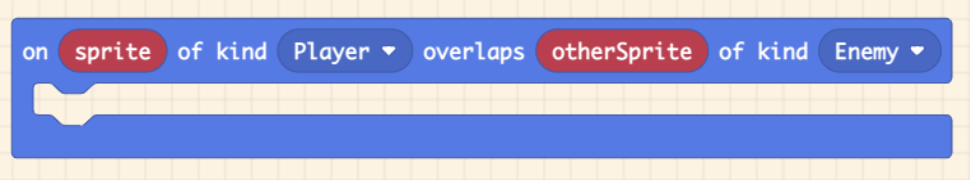
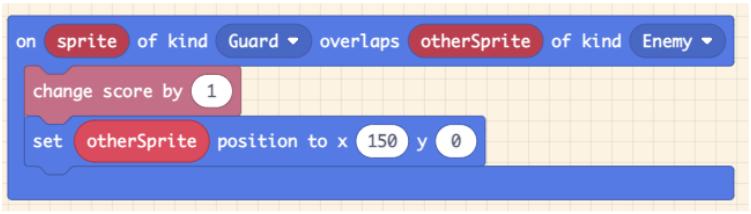
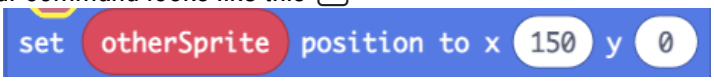
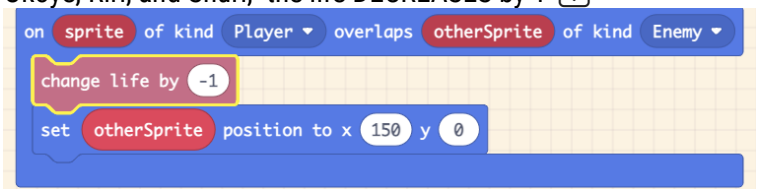
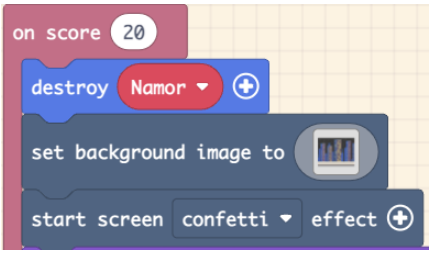
FACILITATOR MUST HAVES:	
BEFORE Class Starts… [OPEN]	LESSON: ● MakeCode Arcade EXIT TICKET: ● Worksheet

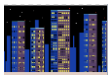
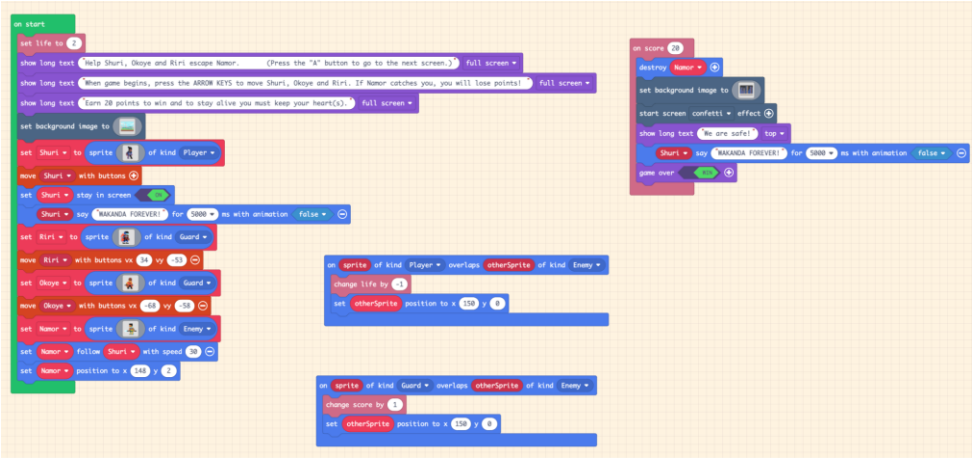
LESSON PLAN

TIME		
0 - 5 min.	**ANNOUNCEMENTS**	5 min: Facilitator reminds students of • Mindfulness • Classroom Expectations • Class Overview
5 - 10 min.	**INTRO**	5 min: *Facilitator will say:* • "Welcome back; in the last lesson, we dived into MakeCode's exceptional games. Today, we will create our very own Wakanda-themed game in MakeCode Arcade. We will do so by completing it in sections. **Today's Challenge:** Help Shuri, Okoye, and Riri Williams (Ironheart) escape Namor. Design a game on MakeCode Arcade, creating sprites for Shuri, Okoye, Ironheart, and Namor.
10 - 20 min.	**PART 1**	10 min: *Facilitator will say:* Opening Screens • " In today's game development lesson, we will create an opening, a point system, and set conditions for our sprites. Let's start with the Block Toolbox Area. The Block Toolbox Area is color-coded by the function of the commands. We will start by creating the beginning of the game. Think about this section as the opening scenes of a movie. In addition, we will also set the condition of 2; which means that the player has two lives in the game." • "Just so you know, the purple commands are the texts that will appear on the opening screens. Make sure to select the same commands below and write the text that you see inside the white box." Response: 

		Sprites • "Now, we need to add a Sprite/Character into our background. Specifically, our Sprite is Shuri. Go to the blue section with the paper airplane, drag and drop the command that says ⬇ (Make sure to place under previous commands.)  • "Edit the part of the sprite to Shuri by clicking on  (gray box) then,  (My Assets) and select Shuri  ."
20 - 55 min.	**PART 1**	**35 min:** *Facilitator will say:* • "Excellent! Let's make Shuri move. Select the Controller and the following command ⬇. Rename the *mySprite* to Shuri."  • "Let's have Shuri say 'Wakanda Forever' and write the correct milliseconds. Furthermore, we need to have Shuri stay on screen; otherwise, she will disappear. Drag & Drop the commands below."  • "Next, we will add other Sprites to interact with our initial Sprite, Shuri. Change the settings to reflect our Wakanda game ⬇"  • Rename the Sprite to Riri, and after *kind,* it must say, *Guard,* as shown below. Included below, add the movement commands. 

		• "In the same command, for the Sprite  , make sure to select the *Riri* Sprite in the Assets section." • "Let's not forget the *Okoye*! Okoye's commands are similar to Shuri's"  • "In the same command, for the Sprite  , make sure to select the *Okoye* Sprite in the Assets section." • "As part of our storyline, we must add Namor since he is also trying to catch Shuri, Okoye, and Riri Williams. The next line of code is ⬇"  • "In the same command, for the Sprite  , make sure to select the *Namor* Sprite in the Assets section." • "Now, we must have Namor move WITHOUT the same buttons we used for Shuri. We are also making Namor follow Shuri with a specific speed; therefore, add this command. ⬇" 
55 - 65 min.	**CHECK FOR UNDERSTANDING**	**WHAT ARE WE DOING?** 10 min: *Facilitator will say:* • "Before we continue, let's have a quick discussion. ➔ Why do you think we have to be **specific** in our commands? ➔ How can we use the **skills** from Game Development **in the classroom**? ➔ How are we using **Math** in the programming so far?

65 - 100 min.	**PART 2**	**35 min:** *Facilitator will say:* ● "Go to the Sprites section and select. As you see below, I edited the *Player* and *kind* sections. Alter yours, so it reflects mine ⬇"  ● "Add commands so, every time *Guard* catches *Enemy,* the score INCREASES by 1 ⬇"  ● "As previously mentioned, now we add more Math into our program. If you look closely, it states the "position to x and y". Yes, the command is talking about the same connection that you see in Math Class with the coordinate plane. Inside the "0" section, we are adding two separate commands. Now, your command looks like this ⬇"  ● "This is similar to our previous section instead, every time *Enemy* catches Okoye, Riri, and Shuri, the life DECREASES by 1 ⬇"  ● "The time has come for our last part, we are adding a condition. When the score is 20 and Namor is destroyed, the background image changes to the city, and the screen does the confetti effect.  ● "In the same command, for the Background Image, make sure to select the

		City Asset  in the Assets section." ● "Additionally, include the commands below. These commands have Shuri speak when the score is 20."  ● "We are done! Your code should look like this." 
100 - 115 min.	**EXIT TICKET**	15 min: *Facilitator will say:* ● "Congratulations on completing your FIRST Wakanda Edition MakeCode Game! Before we officially end our session, make sure to complete this Exit Ticket."