FORTNITE

FUNCTIONS IN FORTNITE:

CREATING A TOWER ESCAPE TRIVIA GAME

TEACHER GUIDE

OBJECTIVE

After completing the lesson, you should be able to:

- Demonstrate an understanding of functions as a Computer Science concept
- Apply the understanding of functions in the context of a game
- Create a puzzle in a game environment that incorporates the use of functions

BACKGROUND CONTEXT

INTRODUCTION TO FUNCTIONS

FUNCTION: A function is a unit of code that is often defined by its role within a greater code structure. Specifically, a function contains a unit of code that works on various inputs, many of which are variables, and produces concrete results involving changes to variable values or actual operations based on the inputs.

From: Techopedia.com

Or, more simply put:

FUNCTION: A piece of code that you can easily call over and over again.

From: code.org

For example, the activity in this lesson will have students set up a number of functions that will be used to run a trivia game show in Fortnite Creative. Essentially, each function (represented by the Sequencer) will run a series of commands (using devices) in the game.

In terms of pseudocode, it could look like this:

```
Function 1, askQuestion: starting the round/asking the player a question
Function 2, startTimer: the countdown timer

myFunction(askQuestion)
        Do the following
        Reset answer buttons
        Play sound
        Choose random number for trivia question
        Present the Question
        myFunction(startTimer)
                Start countdown timer
                If countdown gets to 0 Then
                        Time is up
                        Play sound
                        Show message (“Sorry, you did not answer in time”)
                        Activate next question
        EndFunction
EndFunction
```

```
Function 3, correctAnswer

myFunction(correctAnswer)
       Do the following
              Play happy sound
              Show message (“Correct! Great job!!”)
              Add point to score
              Activate next question
EndFunction

Function 4, wrongAnswer

myFunction(wrongAnswer)
       Do the following
              Play bad sound
              Show message (“Sorry, Try again!”)
              Activate next question
EndFunction
```

In this example, when the `askQuestion` function is initiated, a number of things will happen:

1. Reset answer buttons.
2. Play a sound to indicate the upcoming question.
3. Choose a random number to determine which trivia question to ask.
4. Present the question to the player.

Then we introduce another function, `startTimer`, which initiates the following actions:

1. Start countdown timer.
2. Play a sound if the timer reaches 0 to conclude the opportunity to answer this question.

Two additional functions, `correctAnswer` and `wrongAnswer`, will initiate the following actions:

1. Play a sound.
2. Adjust score, if appropriate.
3. Display a message.
4. Activate the next question.

Here’s a video that explains functions:

CS Principles: Defining and Calling Functions: https://youtu.be/yPWQfa4CHbw

Functions can be used in any coding language and environments like Fortnite Creative. In Fortnite, we will use the Sequencer and place our events/actions within the Sequencer so that when it is activated, it will execute the actions inside it.

PROJECT OVERVIEW

TEACHER NOTES

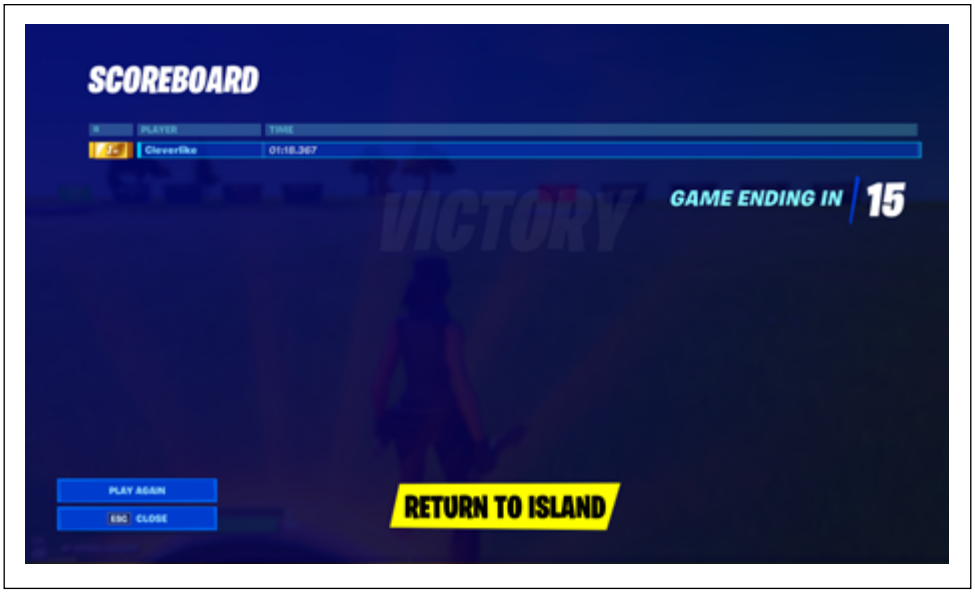
The end result will be a tower with a number of quiz questions and buttons that trigger the functions (represented by Sequencers in Fortnite Creative), based on correct and incorrect answers. Each floor will present the player with a question and matching input buttons. Answering the question correctly will trigger the function that plays a sound, produces a visual effect, and breaks the floor so the player drops to the next level.

We will be creating a timed trivia game in Fortnite Creative. The player will spawn at the top of the tower and will have to escape as quickly as possible by answering trivia questions correctly. Hurry, but be careful not to make a mistake! Wrong answers will cost you more time.

Each floor will present the player with a question and matching input buttons. Answering the question correctly will trigger the function that will play a sound, produce a visual effect, and break the floor so the player drops to the next level.

Break through all of the floors and collect the coin at the bottom to stop the clock.

When the coin is collected, the game will end and the player will see their time. Who will be the smartest and the fastest in a game that you created?



Jump in and build your trivia tower. Learn new skills, including the concept of functions and how they are used in computer programming.

LET'S GET STARTED!

GETTING STARTED

If you need a review on creating your island, refer to the Getting Started Guide.
In this project, you can select your own preference for the island.

	We are selecting a Shoreline Island so the player feels rewarded when they escape.
	Once you select your Island, give it a name.

STEP 1: FIRST FLOOR

TEACHER NOTES:

In this step, students begin to build the tower using the primitive (standard) materials in Fortnite (wood, bricks, or steel). In Creative mode, creators have unlimited resources, and can easily build walls, ramps, and other structures without going into the inventory to find materials.

Important: When using these materials, they must be anchored to the ground, meaning you need a piece of the structure on the ground on top of which you can build on top. However, if you build up and then break the bottom of the structure, the entire structure will be destroyed. Many people learn this the hard way.

Our tower is going to have three floors with different trivia questions. We are going to start by creating the first floor and repeating that process to quickly build the other floors.

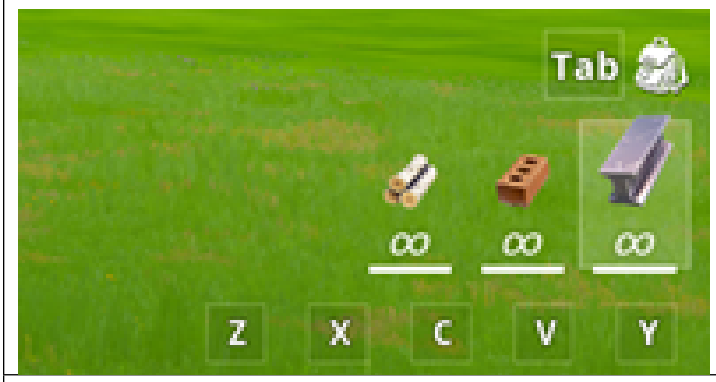
REPETITION IN COMPUTER PROGRAMMING

Computers are fast and can handle repetitive tasks quickly. One common structure for accomplishing repetitive tasks is known as a loop. (Check out the Hour of Code lesson, Create a Music Machine in Fortnite Creative, for more information on loops.)

Another way to handle repetitive tasks is to group them together in a function. Whenever you need a specific set of tasks, you can simply run the function instead of repeating the same commands throughout your computer programs.

SUPPLIES NEEDED

There are three standard materials available for in-game building in Fortnite. This image shows a section of wall made from each material: wood, brick, and metal. Choose the material that you want for your tower. We used brick.

	You can access the different building elements by pressing the key/button mapped to that element.
	When placing building material, you will see the mapping for MATERIAL appear next to your building element. Pressing this will cycle through the different building materials. (In this example, the right mouse button will cycle through the materials.)

BUILDING THE FRAME FOR YOUR FIRST FLOOR

	Build the frame for a floor matching the build in the image. You may use the material of your choice. **Important Details** Your structure should be four walls high. There should be a floor in the middle. It should only be one floor in length and width. Complete three sides only, to easily access the inside.

When you complete your structure, proceed to the next step.
Beware!

	When creating structures with building materials, they must be anchored to the ground. We recommend that you create an anchor composed of multiple pieces that are in contact with the ground. There is only one wall holding this tower. If that wall is broken, the entire tower above it will be destroyed. There is no Undo button to return it to its prior state.

	This image shows the tower crumbling when the pieces contacting the ground are removed.

STEP 2: FIRST QUESTION

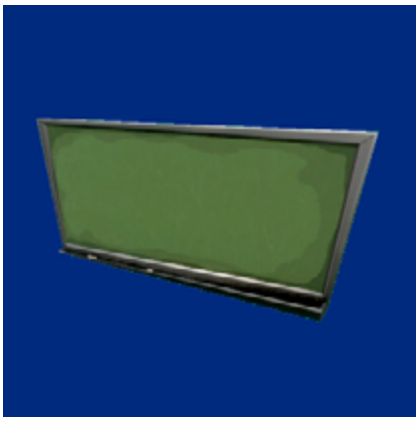
TEACHER NOTES:

In this step, students set up the general structure required to create questions for the player. This will involve Billboards for text and Buttons as input devices for the answers. The Student Guide provides step-by-step directions, with some important notes related to placing devices and ensuring that drops are set to Off so the device does not fall to the ground when you try to place it. It also explains the importance of Grid Snap, which allows the creator to place the items with greater precision. It will definitely be important for students to take their time in following these directions, as failure to do so can certainly result in frustration. Once they get the hang of these settings, they will find building and placing of items to be more intuitive.

Do you know the theme of your trivia questions? You do not need to know right now, but you will want to figure that for later. In this step, you are going to add the essential elements needed to show the question and get the player's answer.

DEVICES NEEDED

Go to the **Devices** tab and gather the following items for your inventory.

	
Billboard	**Button**
	Use the **Equip** button when selecting each device.
	You will see the Devices appear in your **Quick Bar**. You can use your **Phone** tool to place items from the Quick Bar onto your Island.

PLACING DEVICES

Before we jump into placing the devices, change some settings that will make the process easier for you.

When holding the Phone, press the key/button for the Billboard in your Quick Bar. In our case, we press **1**. Notice the options on the left side of the screen. Make sure you have some helpful options set.

Set **Drops** to **Off**.
This will make items stay where you place them instead of dropping to the ground.

Set **Grid Snap** to **32**.
This will lock your movements along a grid to make alignment easier.

Set **Collision** to **Everything**.
This will prevent you from accidentally placing devices inside walls.

Select **Options** and make sure **Building to Prop** is set to **Off**.

Rotating Devices

Depending on the direction in which you are building your game wall, you may have to rotate devices that you place. In the image, note that the black Billboard is backwards (we are seeing the back) and the bottom one is correct.

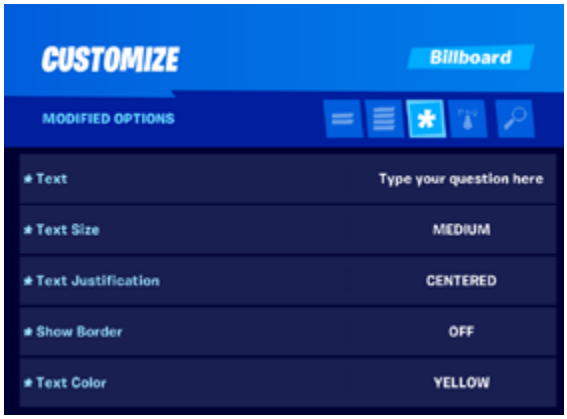
When placing devices, if your device is backwards, use the rotation commands shown on the left side of your window.

PLACING THE QUESTION

Select the **Billboard** device with your Phone. Make sure it is rotated correctly and place it on the wall.
Stand on the floor/platform so it can be placed slightly above eye level. (You need to leave space for the buttons and labels under the question.)

CUSTOMIZING THE QUESTION BILLBOARD

Once the billboard is placed on the wall, you can add the text and change its appearance. Get close to where you want to place your Billboard and notice the **Customize Billboard** overlay on the billboard. Press the key/button shown in the overlay to open the customization options for the Billboard. (Press **E**, by default.)



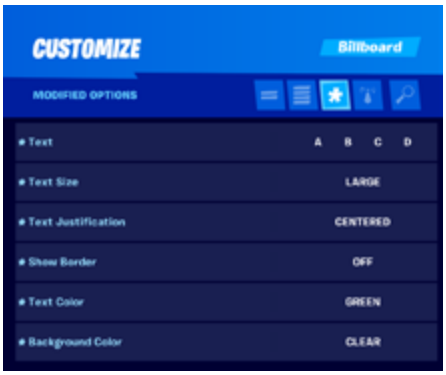
Set the customization options for your Billboard. Make sure the question is readable for the player.

We used the following settings. (All other settings are left at the default values.)

Our question is now in place, let's place the labels for the input buttons next.

PLACING THE BUTTON LABELS

Equip a new **Billboard** (or copy the one from above).

	Place the new Billboard directly below the question. Make sure not to block the question. Use the Cut and Paste features if you need to move the question Billboard.
	Customize the new Billboard to work as labels for the buttons that will be placed in the next step. In the **Text** field, put 10 spaces between each letter. Make the background invisible by setting **Show Border** to Off and **Background Color** to **Clear.**
	Space labels evenly under the question. Make sure there is room to add a button to each letter.

ADDING THE INPUT BUTTONS

Now that you have the question and the answer labels, add an input button to each letter.

	**Equip** your **Phone** and select the **Button** from your **Quick Bar**. Place the Button in alignment with the answer label.

	If you are having trouble aligning, check that **Grid Snap** is set to **32** and **Collision** set to **Everything**.
	Continue placing a button at each answer label.
	Make sure that: • You have completed your first question. • The billboard for the question is placed just above eye level. • You have placed labels for the buttons with even spacing. • Align the buttons with each letter.
	Your first floor should look similar to this.

STEP 3: WRONG ANSWER FUNCTION

SPECIAL TEACHER NOTE: TROUBLESHOOTING/DEBUGGING

As we go through the next few steps, it will be important to test the functionality often. Students will certainly run into some aspects of the game that do not work. It would not be uncommon to test one of the answers and have it trigger the incorrect response or have aspects that do not get triggered when you think they should. This is one of the "joys" of programming. Debugging code can be both frustrating when it does not work, and extremely rewarding when it does. This is a wonderful opportunity for students to learn perseverance and grit as they develop strategies to solve their problems. Embrace this opportunity for learning as it will extend far beyond this activity.

When the player guesses the wrong answer, you need to perform a series of actions:

- Turn off the input buttons.
- Enable a red beacon for visual feedback.
- Display text on the screen.
- Play a sound for audio feedback.
- Create a brief delay (the penalty for getting an incorrect answer).
- Turn off the red beacon.
- Enable the buttons to accept an answer.

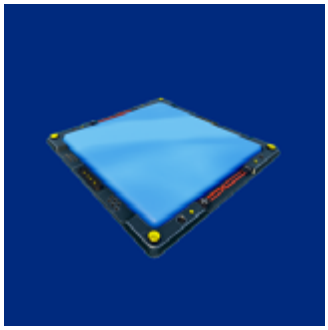
Programming these steps for each incorrect button would be an inefficient process that would be prone to error and difficult to maintain. In a tower with three trivia questions, there would be 9 incorrect answers total. When programming, it is important to create efficient processes and reduce the possibility of errors while making a system that is easy to modify as needs change.

We will be using a Sequencer device to simulate a function in computer programming. We put all the steps needed for a wrong answer in the function and simply point each wrong answer button to this function.

Here's a labeled image showing an example Wrong Answer function. Now, build it!

DEVICES NEEDED

Go into the **Inventory** and **Equip** the following **Devices**.

			
Sequencer	**Trigger**	**HUD Message Device**	**Speaker**
The Sequencer is the heart of our function. We will place actions inside our sequencer zone and it will remotely activate any wrong answer buttons.	The Trigger can be placed in the Sequencer and will be triggered by the activation pulse that travels through the zone of the Sequencer. When triggered, it can send a remote activation to another device.	A Heads-Up Display (HUD) Message Device controls the display of on-screen messages. We will use this to display the text, "Wrong," if the player selects the wrong answer.	A Speaker device can be customized to play any specific sound from a built-in library of sounds. The sound will play when the activation pulse hits the speaker located in the Sequencer zone.

CHANNEL COMMUNICATION

Most devices have the ability to send and receive signals on different channels. This is used to remotely activate devices or to turn devices on or off.

Since there is no coding interface in Fortnite Creative, we use up to 100 channels of communication to string commands together and create conditional actions. These logical structures have many similarities to coding, so you can work with a coding mindset while working in Fortnite Creative.

PLACING THE SEQUENCER

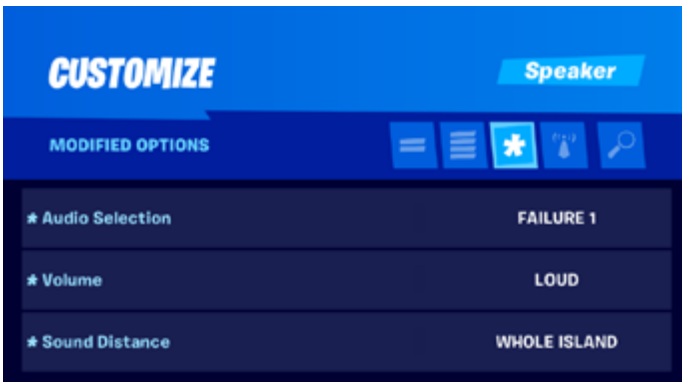
Since the Sequencer is in the Traps category, you will access it from the building interface.

	Start by placing a floor on the ground. Keep it within proximity of your tower, but space it at least 8 to 10 tiles away from any obstruction.

	Place the **Sequencer** on the floor piece that was built on the ground. Notice the Sequencer zone will default to the right of your player.
	Place floors throughout the Sequencer zone to make it easier to see and also make it easier to place devices inside the zone. The default size of the zone is 4 tiles. This is fine for our functions.

PLAYING SOUND WITH A SPEAKER

	Place the **Speaker** device toward the beginning of the Sequencer zone (the side closest to the blue pad).

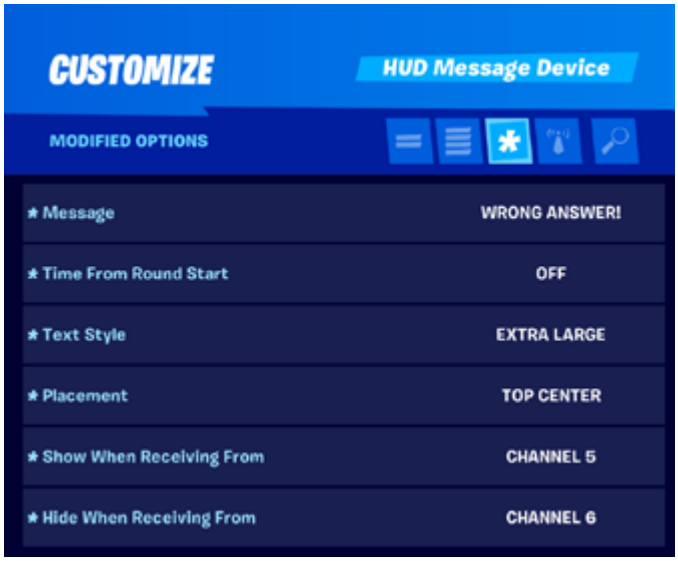
	Customize the Speaker to adjust the volume and the sound it plays when activated.
	Select the following customization options for this Speaker device.
	Step on the **Sequencer** pad to activate the zone pulse. When the pulse hits the Speaker, it should play the selected sound.

DISPLAY MESSAGE ON THE HUD

	To display on-screen messages to the player, we need a **HUD Message Device**. You will use this device to notify the player that they entered the wrong answer.

Place the HUD Message Device toward the beginning of the **Sequencer** zone.

NOTE: Unlike the **Speaker**, which is activated by the activation pulse in the Sequencer zone, for the HUD Message Device, you will use triggers in the zone that will activate the message on the player HUD.



Customize the HUD Message Device with the following settings.

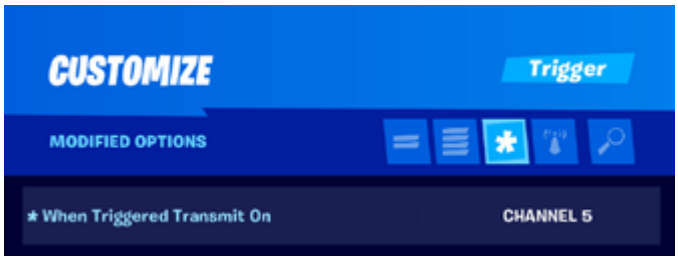
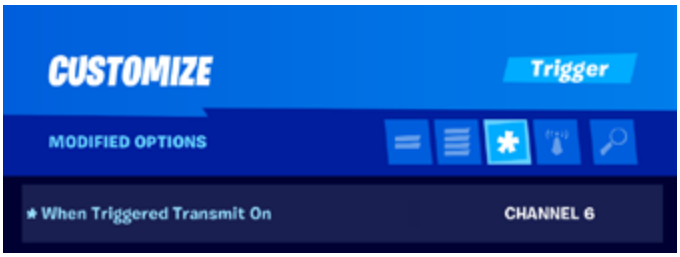
When receiving a signal from Channel 5, the device will display the text, "**WRONG ANSWER!**" It will hide the message when receiving from Channel 6.

Next, you will configure the Wrong Answer function to send a signal on **Channel 5** at the start of the function and send one to **Channel 6** at the end.

SET TRIGGERS AT BEGIN AND END OF FUNCTION

Place a **Trigger** at the very beginning of the **Sequencer** zone. Make sure it is inside the zone.

When the Wrong Answer function is called, this Trigger activates. It sends a signal that you will use to activate other devices, like showing the HUD message.

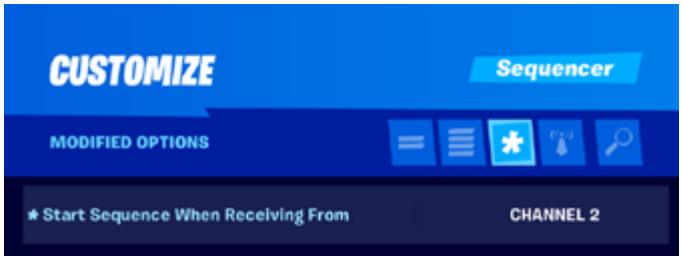
	Customize this Trigger to set **When Triggered Transmit On** to **Channel 5**. Channel 5 is the beginning of the Wrong Answer function.
	Place another Trigger at the end of the Wrong Answer Function.
	Customize this Trigger to set **When Triggered Transmit On** to **Channel 6**.

CALLING THE FUNCTION

In computer programming, you would give a function a name. When you reference that function by name, the command inside it would execute.

In Fortnite Creative, you cannot give the function a name, but you can set it to activate when it receives a signal on a certain Channel. We will set the Wrong Answer function to execute when a signal is sent on Channel 2.

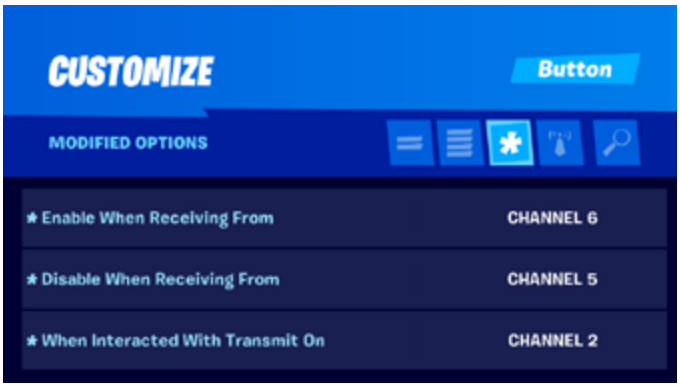
	Customize the Wrong Answer Sequencer.

	Set this **Sequencer** to run when receiving a signal from **Channel 2**. Now, set your buttons to transmit on Channel 2 for the wrong answers.

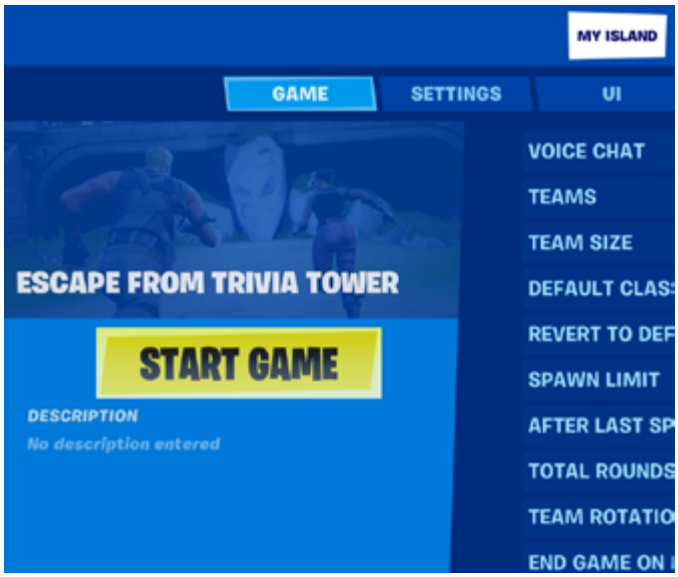
SETTING WRONG ANSWER INPUT BUTTONS

If you use a typical multiple choice trivia question, there is one correct answer and three incorrect answers.

Now that we have a Wrong Answer function, we can simply set the three incorrect buttons to execute this function.

	Now that we know Channel 2 is used for the Wrong Answer function, we can set the buttons for incorrect answers to send a signal on Channel 2.
	Remember when you decided that the player loses some time when choosing an incorrect answer? Remember when you set Channel 5 at the beginning of the Wrong Answer function and Channel 6 at the end? The button can now be set **Disable When Receiving From** to **Channel 5** and **Enable When Receiving From** to **Channel 6**. This will deactivate the input buttons for the duration of the function. Set **When Interacted With Transmit On** to **Channel 2**. This is what calls the Wrong Answer function.
	Apply these changes to all four buttons. Later, we'll change the correct answer button to call the Correct Answer function on a different channel.

TESTING OUR WRONG ANSWER FUNCTION

	To test your game, start it. From the **Inventory** screen, select the **My Island** tab and click **Start Game**.
	When spawning into the island, use your glider to land on your first question platform. If you miss, you can build ramps in-game or hit the **ESC** key and select **Respawn** to try again.
	Test each button, which should: • Disable the input buttons (red). • Display an on-screen message. • Play a sound. • Re-enable the input buttons (green).

TROUBLESHOOTING

If the buttons do not perform as intended, it is time for some troubleshooting. Do not let this process discourage you. The act of finding and fixing bugs is a big part of computer programming. Think about what you were expecting and what you observed when you tested it.

- Could it be the button? (Try all four.)
- Is the function getting started? (Are you hearing the sound?)
- Think about the Wrong Answer process as a series of steps. When do the steps stop working? Start from the beginning and move through the steps to the end.

Try to narrow the scope of the problem to a specific area and then double-check the settings in those areas. After making a small change, test again. Don't make too many changes between testing because you can fix one problem and cause another.

Congratulations, you created a function in Fortnite Creative! Soon you'll be able to increase the size of your Trivia Tower with little extra effort.

Since you are so good at creating functions, build one for the correct answer.

STEP 4: CORRECT ANSWER FUNCTION

TEACHERS NOTES:

This step is similar to the Wrong Answer function. It is important to note that, in the Wrong Answer function, the buttons were disabled then re-enabled to allow the player to try the question again if they got it wrong. With the Correct Answer function, the buttons do not disable when the correct answer triggers elements that will advance the player to the next question.

Now that you have successfully created the Wrong Answer function, create the Correct Answer function. This function is different because it will not disable the buttons. Instead, consider a plan to advance the player to the next question as part of the Correct Answer function. Here are the steps of the function:

- Trigger signal on Channel 7 at start. (This will activate HUD message and other possible actions.)
- Display "CORRECT ANSWER!" message on-screen
- Play a positive sound
- Trigger signal on Channel 8 at the end (Hide HUD message and other possible actions)

Use your experience from building the Wrong Answer function to assemble a nearly identical Correct Answer function.

Here is a summary of the steps.

TEST YOUR CORRECT ANSWER FUNCTION

Just as we did with the Wrong Answer function, test this new function and make sure it works before continuing.

	If you set Button A as the correct answer, it should run the Correct Answer function. Select **A**. Confirm that the Correct Answer function executes successfully.
	If you set Buttons B,C and D as the wrong answer, it should run the Wrong Answer function. Select **B**. Confirm that the Wrong Answer function executes successfully.

If your tests are not successful, make sure to troubleshoot before moving on. Another great idea for troubleshooting is asking a friend. The act of explaining your problem to a new person can often reveal the solution. If you don't have someone available to listen, try explaining to a rubber duck. I know, it sounds funny, but the concept still applies. [https://en.wikipedia.org/wiki/Rubber_duck_debugging]

STEP 5: BUILD THE TOWER WITH THREE QUESTIONS

TEACHERS NOTES:

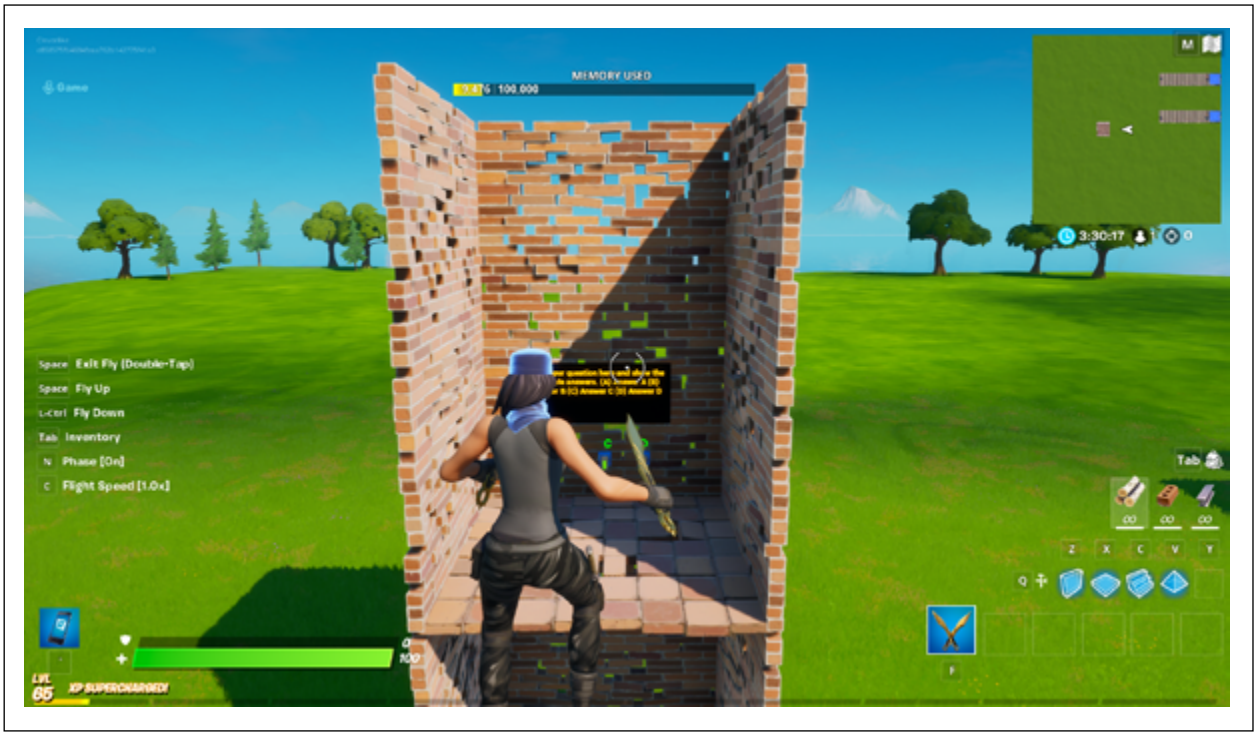
The hard part is done. Now it is a function (pun intended) of reaping the benefits of functions. Remember, functions are intended to leverage efficiency. In this project, the challenging part may be setting up the Correct Answer and Wrong Answer functions initially, but now that they are set up, students can move on to creating multiple questions and triggering the correct answer Sequencer and wrong answer Sequencer any time we need to activate them.

A quick note regarding game development and programming: Setting up the game mechanics often requires a good amount of thought, but once that part is in place, adding multiple levels to a game that incorporates those mechanics becomes easy. You are now at that point where adding as many questions as you like becomes seamless.

This step will also show students how to use some of the other shortcuts in Fortnite Creative to make building the tower and adding elements more efficient.

Once the questions are set, it is important to set each correct answer to transmit to the channel that corresponds with the Correct Answer function, and all incorrect answers to transmit to the channel that corresponds with the Wrong Answer function. In the example with our three questions and four answer choices for each, there are a total of twelve answers. The correct answer for each question will transmit to the correct answer Sequencer, and all incorrect answers will transmit to the wrong answer Sequencer. This demonstrates how the function can be called upon numerous times within a program.

Now, reap the benefits of your clever use of functions. Copy this completed floor to create a total of three floors with three unique trivia questions. This process only requires making simple changes to the question display and setting the correct answer button. It is time to build the tower.



Use the multiple selection capability of your Phone device to select all elements in the floor, then copy and paste them upwards.

Equip your **Phone** device. When you look at an object, it will be highlighted in blue.

While focusing on an object, press the key/button mapped to the **Select** command (**R**, by default).

Selected objects turn green. To deselect, simply press the **Select** key again on your object.

Select everything from the floor, in the middle of our build, up to the top.

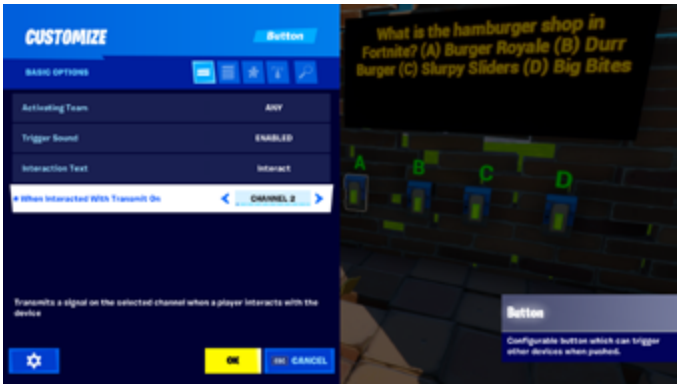
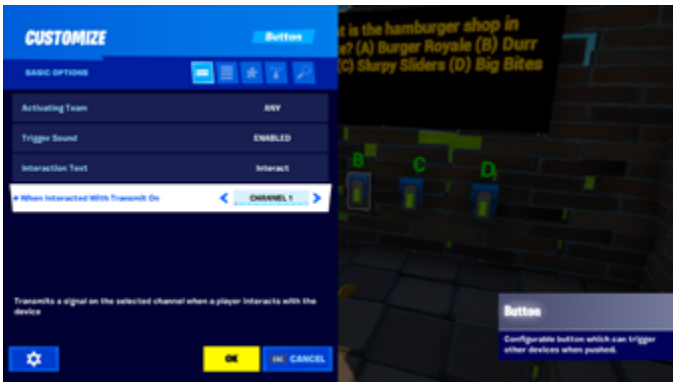
Once all elements are green, including the buttons and both billboards, select the key/button for **Copy** (the left mouse button, by default). This copies all the objects at once. Fly upwards to place two more floors.

When finished with the copy and paste process, you should have a tower with three separate questions.

SET YOUR TRIVIA QUESTIONS AND ANSWERS

It is time for you to get smart and create your trivia questions. The first question appears on the top floor and the player will progress downward with each correct answer.

Repeat these steps for each question.

	Customize the question billboard. Make sure to include your question and the labeled answer choices.
	Set the buttons for the incorrect answers to transmit on Channel 2. In this case, button A, C and D are incorrect answers. For each other these buttons, set **When Interacted With Transmit On to Channel 2**.
	Set the button for the correct answer to transmit on Channel 1. In this case, button B is the correct answer. For this button, set **When Interacted With Transmit On** to **Channel 1**.
	Repeat steps for each floor.

We will skip the test on this step and test after the next step is complete.

STEP 6: MOVE THROUGH THE TRIVIA TOWER

TEACHERS NOTES:

For this step, students use a special device, the Trick Tile, to accomplish the task of breaking the floor so the player falls through to the next level after correctly answering a question. The Trick Tile can receive a signal, and after it is activated, transmit a signal. Use that to accomplish the task of automating each Trick Tile based on the correct answers.

To make this happen, start by enabling the first Trick Tile at start and disabling all others at the start. When the first Trick Tile is activated, it will wake up the next one, and so on. Essentially, create a chain reaction where each tile breaks the floor when activated, then enables the next Trick Tile, which allows it to be activated when the next question is answered correctly. This activity makes students work more with triggers. It is a great activity in terms of troubleshooting as it will be easy to activate the wrong triggers and require students to go back and fix them to ensure that the pattern is followed so that they are activated in the correct order.

The goal of the game is to escape Trivia Tower as quickly as possible. The player starts on the top floor and falls to the next floor after each correct answer. At the ground level, the player will collect a coin to stop the clock and complete the game.

OUR CHALLENGE

To get the player to move to the next question, you need to selectively remove a floor after each correct answer. Since all our buttons for a correct answer are set to transmit on Channel 1, we need a way to address each floor separately.

We can accomplish this with a device called a Trick Tile and some clever customizations.

You can use some important customizations with the Trick Tile.

- It can be set on or off before the game starts.
- It can be turned on via a channel transmission.
- It can break the tile it is attached to when receiving a signal.
- After it breaks a tile, it can transmit a signal.

DEVICE NEEDED

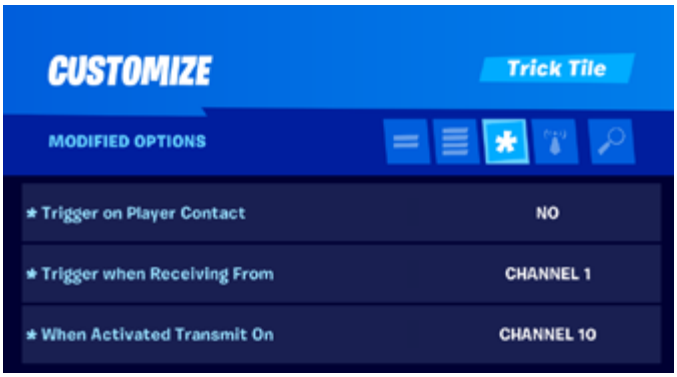
	**Trick Tile** This can be placed on your floors and customized to break with each correct answer to progress the player through the tower.

SET UP THE TRICK TILES

After you Equip the Trick Tiles from the Fortnite Creative inventory, place one on each floor.

The Trick Tile is highlighted in blue when it is in an acceptable position. Place a Trick Tile on each floor that has a question.

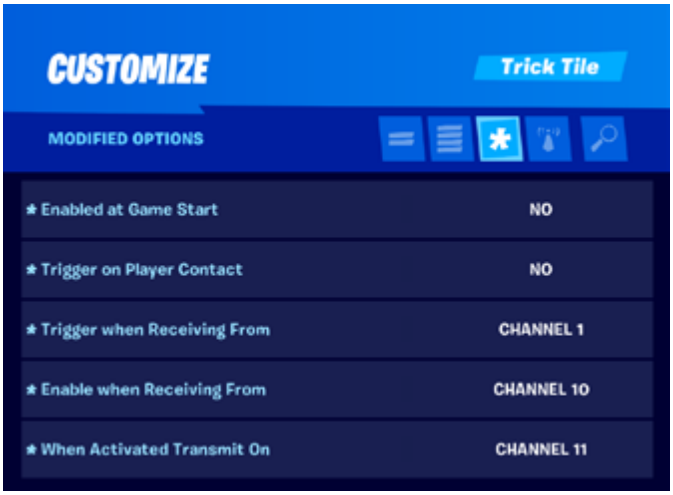
Next, customize each Trick Tile to function slightly differently to progress the player through the tower. Carefully customize each Trick Tile according to the table below.



Top Floor

When the Correct Answer, Channel 1, is selected, the floor will break.

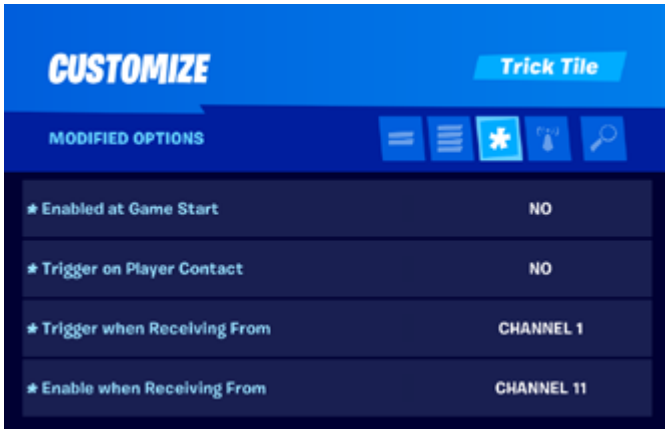
When the floor breaks, it will transmit a signal on Channel 10. We'll use this channel to wake up the next **Trick Tile**.



Middle Floor

At the start of this game, this Trick Tile is disabled (think of it as shut off or asleep.)

When the first floor Trick Tile breaks, it sends a signal on Channel 10. This Trick Tile will wake up when receiving that signal. When the player selects the correct answer, the signal on Channel 1 will break this floor.



Bottom Floor

At the start of the game, this Trick Tile is also disabled.

When the middle floor Trick Tile breaks, it will send a signal on Channel 11 which enables this final Trick Tile.

When the player selects the correct answer, the signal on Channel 1 will break the floor so the player can collect the coin and end the game.

TEST YOUR LOGIC

That last part was tricky. You should now have all of our game mechanics in place. Test them to see if you can work through each floor from top to bottom.

If everything is working properly, all three floors will be missing by the time you make it to the bottom of the tower.

If you didn't get it right on the first try, that's OK. Use your clever and confident troubleshooting skills to find out what is wrong. When you make a fix, make sure to test to see if the gameplay up to this point is working.

STEP 7: ENDING THE GAME AND SHOWING PLAYER TIME

TEACHERS NOTES:
In this step, we will place a coin at the bottom of the tower.

Wow! We're so close to completing our Trivia Tower and leveraging functions to save time!

COLLECTING THE COIN

We are going to use a gold coin to end the game.

SUPPLIES NEEDED

	**Collectibles Gallery** This is a gallery of objective items. We will use the coin and remove the other items.

Place the **Collectibles Gallery** in an open space on the ground.

Equip your **Phone**. Use the **Delete** key/button (**X**, by default) to remove all gallery items, except the coin.

Move the coin to the bottom of the tower.

Make sure there is a doorway at the bottom of the wall so the player gets the feeling of escaping the tower.

ADD PLAYER SPAWN AREA AT TOP OF TOWER

Since we want to start the player at the top of the tower, we'll need to place a Player Spawn at the top of the tower.

Let's build a simple extension at the top of the tower so the place can spawn and jump in to start the first trivia question.

DEVICE NEEDED

	**Player Spawn** Place at the top of the tower to ensure that is where the player begins the game. The only way to escape is to answer the trivia questions.

Place the Player Spawn devices at the top of the tower. In the image above, there are four devices, but only one is necessary.

After the Player Spawn devices are in place, it is time to seal the tower.

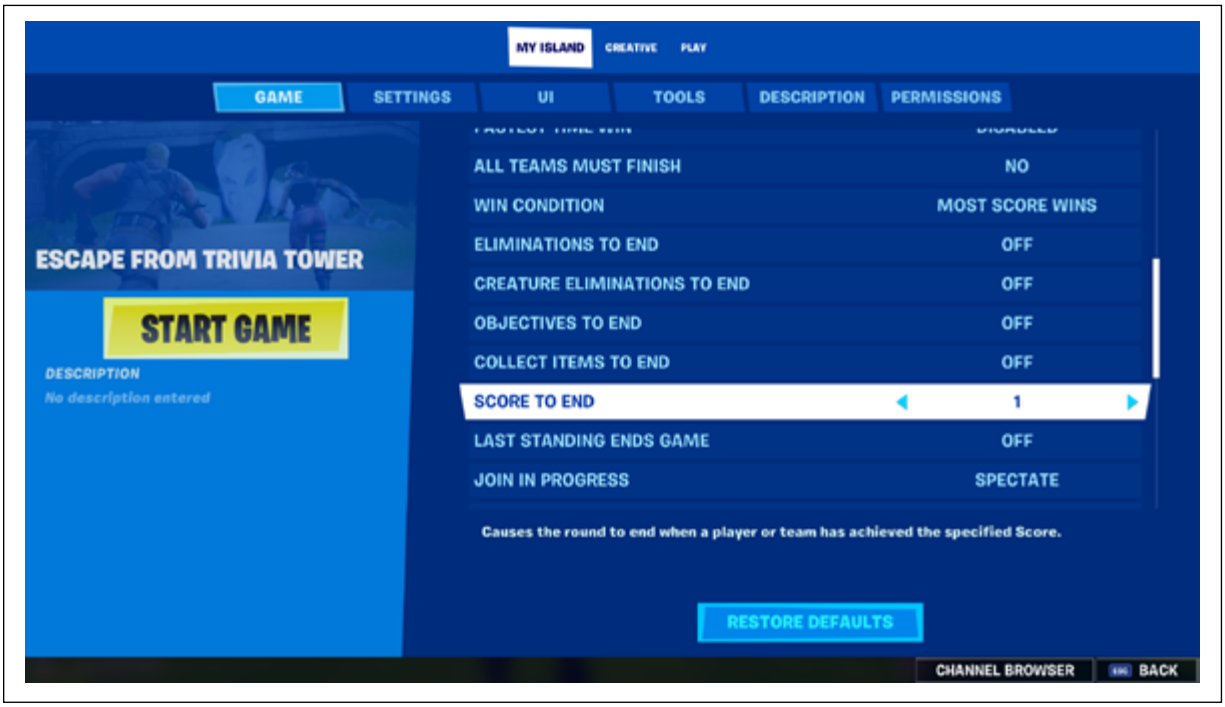
Our Trivia Tower is now complete. Just one more step!

DETECTING THE GAME END AND DISPLAYING TIME

The final step is to set your game settings to indicate that collecting a coin ends the game. When the game is over, you need to set the game to display the player's time. Once these final steps are done, the game is ready!

DETECTING THE GAME ENDING

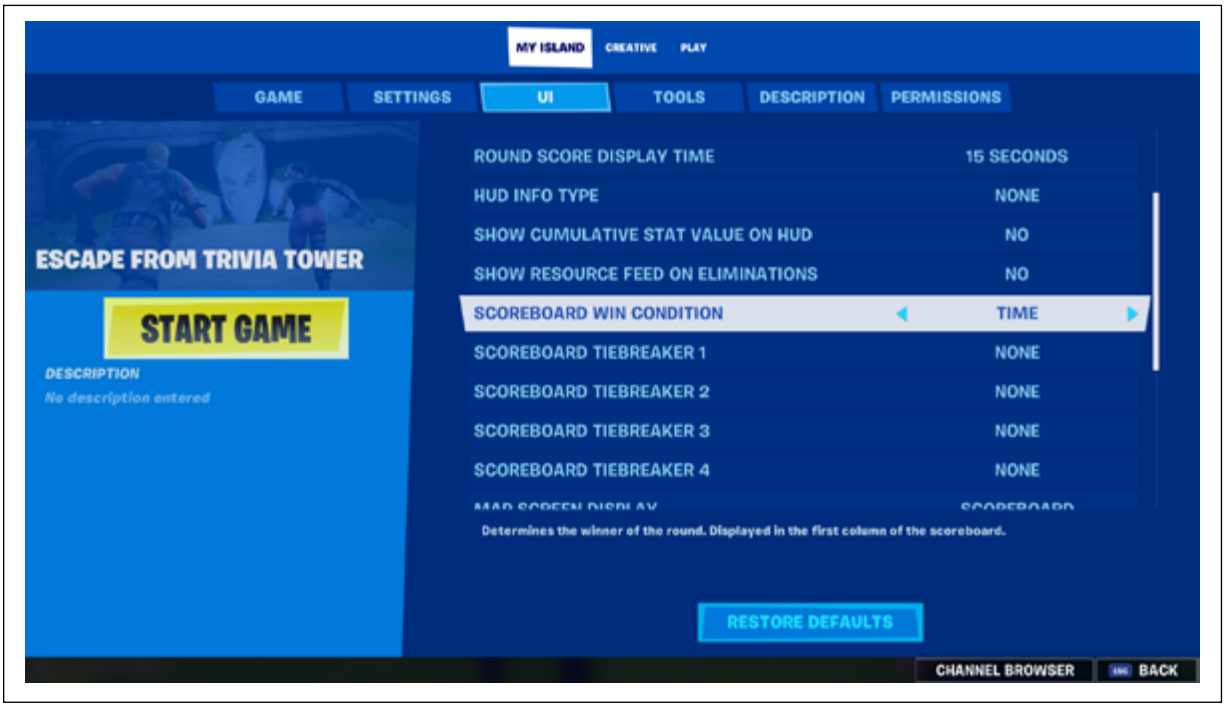
The coin that the player collects at the bottom of the tower adds one point to the player's score by default. Set the game rules to end the game when a player reaches one point.



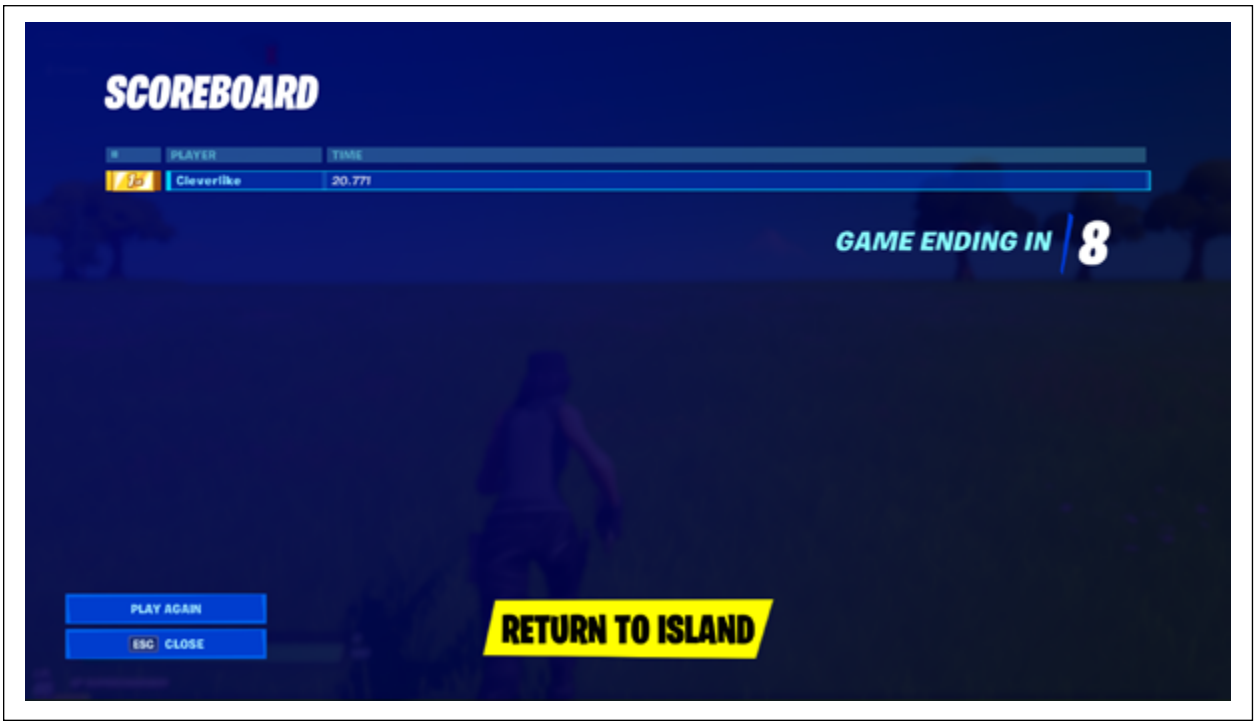
In the **Inventory** screen, click the **My Island** tab. On the My Island tab, select the **Game** tab. Navigate to the **Score to End** setting and set it to 1 so the game will end when the coin is collected.

DISPLAYING THE TIME

Since this is a timed challenge, you need to make sure the player time is displayed when the game is completed.



In the **Inventory** screen, click on the **My Island** tab. Select the UI tab on that screen. Set the **Scoreboard Win Condition** setting to **Time** so the player time appears on the scoreboard when the game ends.



That's it! Time to play your game!

Hit that **Start Game** button and give it a try! Challenge your friends to see who gets the fastest time.

EXTENSION ACTIVITIES

- If you would like to improve the aesthetics of the tower, you can use elements from **Prefabs** and **Galleries** to build a more elaborate tower.
- Add more than three levels to your tower.
- Try some different types of questions, like True or False.
- Add lights to show when answers are right and wrong.
- Add a new function that improves the game.
- Create a choice-based adventure game that advances the player based on their responses.

FORTNITE

FUNCTIONS IN FORTNITE:

CREATING A TOWER ESCAPE TRIVIA GAME

TEACHER GUIDE