

Multiple Choice Trivia Guide

Sample: https://makecode.com/_MYagPFY1FTT8

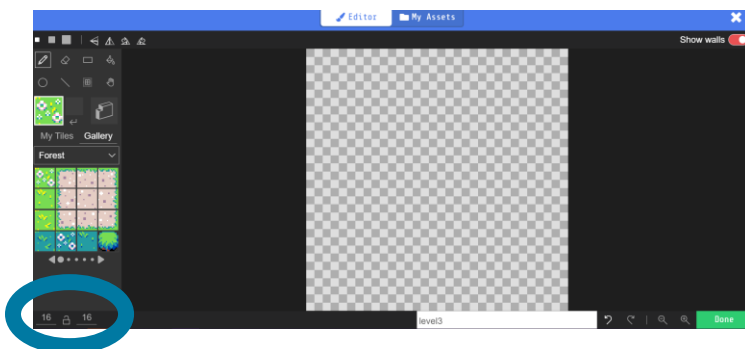
Starting Your Game

Today you're going to create a trivia game. In this style of game, your character will overlap with non-player characters (NPCs) and answer multiple choice trivia.

Create a new project. To make your trivia game you are first going to make a tilemap. Go to **Scene** and select **set tilemap to []**.

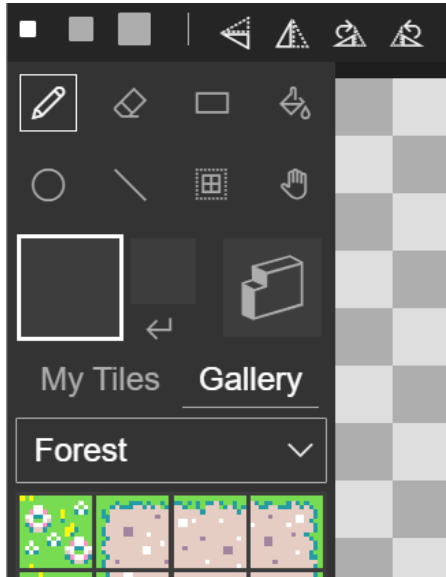


Click on the grey square to edit the tilemap. Notice the bottom-left corner of the screen where it says **16 and 16**. These are the xy dimensions of your tilemap.



The **first number is for your X axis (width) and second number is for your Y axis (height)**. For this game you will be leaving it as 16x16.

NOTE: The main screen of MakeCode operates using pixels for its dimensions. Tilemaps use tiles to measure the dimensions. The game screen is about 8.5 tiles tall.



Now you can begin to design your tilemap.

Controls for design are on the lefthand side of the screen. Near the top there are three different sized squares that control the brush size, as well as controls to flip or rotate the entire design. Below these options are your drawing tools. Hover over the tools to see what they do (**paint, erase, rectangle, fill, circle, line, marquee, canvas pan**).

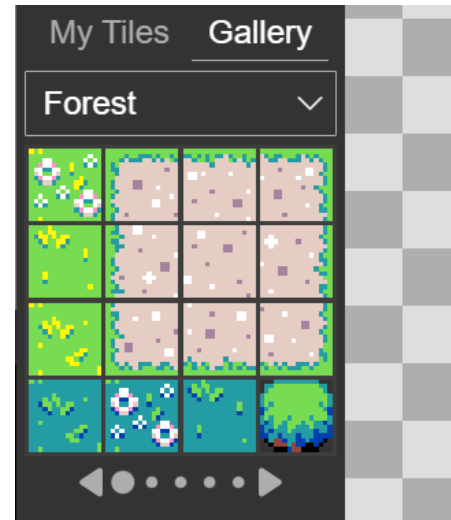
NOTE: Marquee allows you to select your drawing by clicking and dragging the square around the design. You can then move the design on the canvas or “resize” it. Canvas pan allows you to click on the screen and move it around – this is very useful for intricate designs.

Beneath the tools you will find **two tile boxes** and a **brick button**. The two tile boxes are your selected tile. The bigger one can be controlled by the left click on your mouse, the smaller with the right click on your mouse. You will explore the brick button later in this guide.

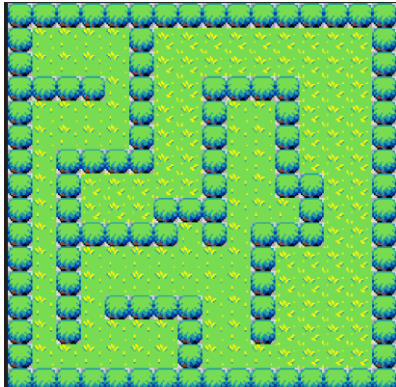
Explore the **galleries** by clicking on the word “forest” to get a drop-down menu of options. The arrows under the pre-made tiles allow you to view multiple pages within each category.

“Undo” and “redo” are on the lower righthand side and can also be controlled using keyboard shortcuts **CTRL+Z (undo)** and **CTRL+Y (redo)**.

Select a tile and start designing! We recommend using a specific type of tile to be your floor/ground tile and using another unique tile to make a border and an easier maze. Each turn on the maze will be where a question is.



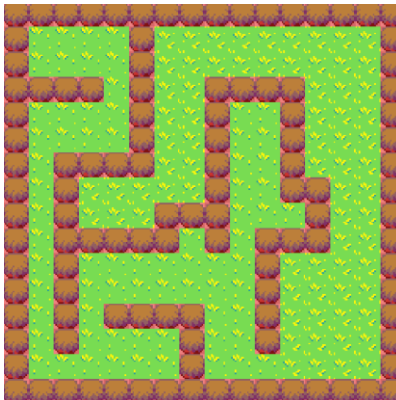
Here is an example of a completed map.



Don't close the tilemap editor just yet!

You now need to make your tiles "solid," a.k.a make them **walls** that your character sprite cannot pass through. Make sure you have selected the paint tool and then click on the brick in the side panel. Clicking the brick will turn it red to indicate that it has been selected. **Selecting tiles on your map when the brick tool is selected will turn the tiles into walls that your character can't pass through.**

***TIP:** These walls can either be walls to block the character's path, or platforms to jump on!*

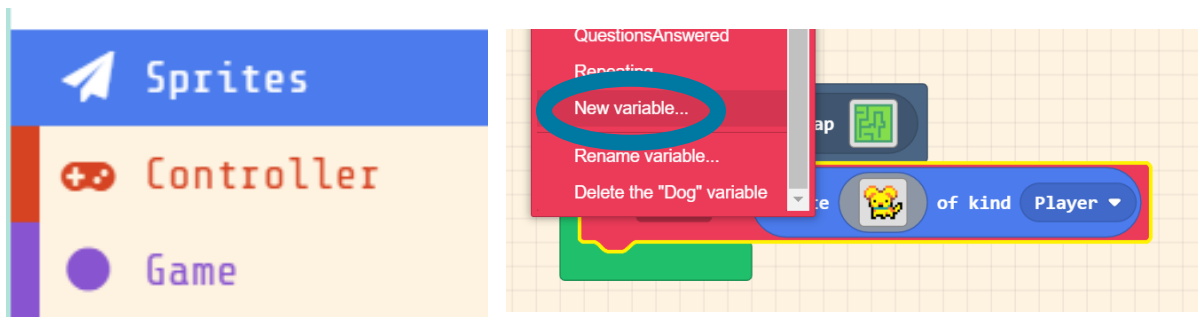


If you make a mistake, keep the brick block selected (red), and click the erase tool. Then you can erase any wall without erasing the normal tile underneath.

NOTE: Walls will now have a red tinge to them. This will not show in the game.

Create a Sprite

Time to create a sprite. In the **Sprite** menu grab a **set mySprite to sprite () of kind player** and place it below the tilemap inside of your **on start** event block. The first thing you should always do when creating a character is **give the variable a name**. Click on the word **mySprite** and select **new variable**. Then, click on the grey square **select or design an image** for your sprite. There are a lot of options to choose from in the gallery, or you can use the art tools on the left-hand side (these work similarly to the tilemap editor).

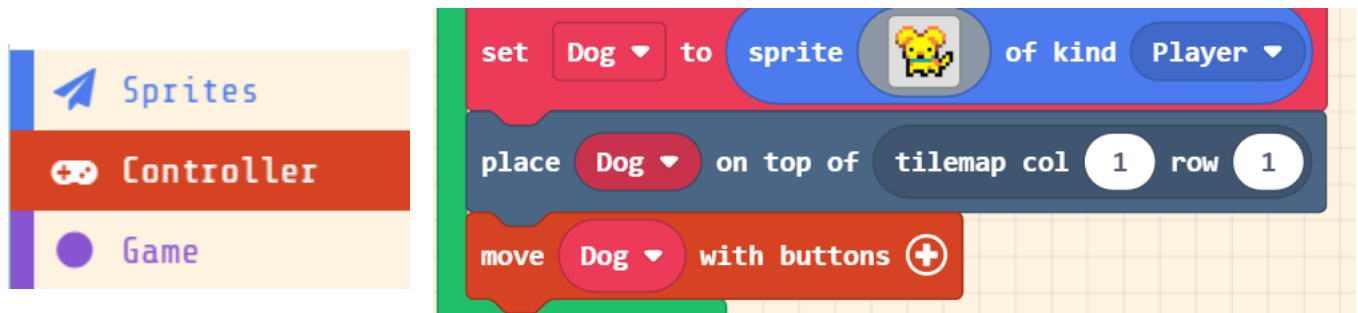


To place the sprite at a specific location on your tilemap go into the scene menu and select **place mySprite on top of tilemap col (0) row (0)**. Place this below the sprite creation block.

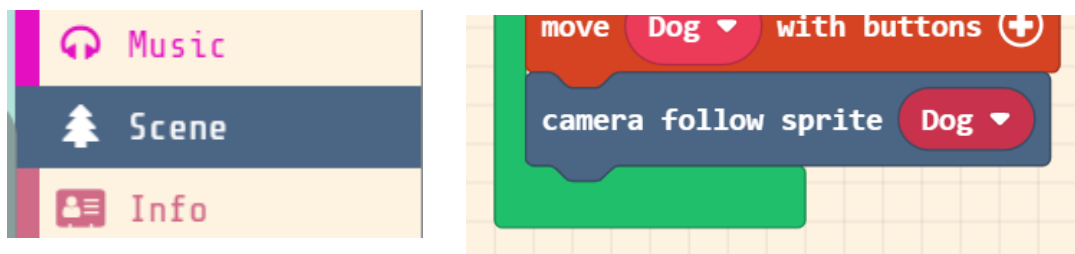


To find the coordinates for your sprite's location go into your tilemap and **place the cursor over the position you want** your player to start at. Do not move your mouse! Now look at the bottom left corner (next to the dimensions from earlier!) to see the coordinates of that location and insert these into the **place mySprite on top of tilemap col (0) row (0) block**.

To make the character sprite move, go into the **Controller** menu, and select **move mySprite with buttons**. Change the sprite name to match and then click on the plus button at the end of the block to open up **vx (100) vy (100)**. You can change these numbers to adjust the speed at which your sprite travels. 100 is the maximum speed, and negative speed will make your sprite go in the OPPOSITE direction from what your arrow keys say.



You will notice that your sprite can now disappear off the screen! To fix this problem go into the **scene** menu and select **camera follow mySprite** and place it under the move block.



TIP: You will notice that you keep adding blocks at the bottom of the big green on start event block. This is important because the code runs sequentially and if you tell the code how to move the character sprite **BEFORE** creating the character sprite it would get confused and not work properly.

Create your NPCs

Now it is time to create some NPCs to interact with. Repeat these steps the number of times equal to the number of questions you want. In the **Sprite** menu grab a **set mySprite to sprite () of kind player** and place it at the bottom of the **on-start** block. Name the variable "Question #" and the kind "Q#". This will help you keep track of your questions.



To place the sprite at a specific location on your tilemap go into the scene menu and select **place mySprite on top of tilemap col (0) row (0)**. Place this below the sprite creation block and set the NPC sprites location.



ALSO create one sprite that will be the end goal for your game and place it at the end of your maze.

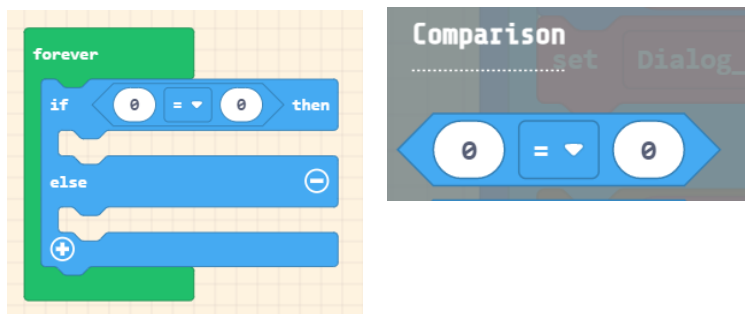


Asking a Question

Repeat this section for each question sprite you've created.

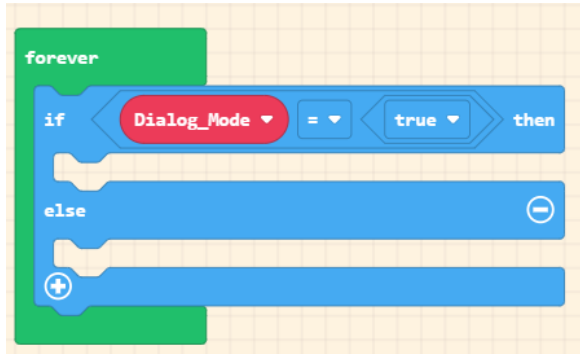
Now you will make an event occur when the player sprite overlaps the question sprite. When the other sprite is asking the question, the player shouldn't be able to move their character around and potentially cause an error. Setting some **conditions** around movement can solve this problem.

From the green **Loops** menu, select a **Forever Loop**. Inside, place an **If True Then Else** block from the **Logic** menu. Go back to the Logic menu and grab a comparison block; **(0) = (0)**. Replace the word **true** with the comparison block.



Next, make a **variable** to put inside the logic block. From the red **Variables** menu, click inside the orange box at the top of the menu that says "**Make a Variable...**" When the dialogue box pops up, enter the name "**Dialog_Mode.**" Once you select OK, you will notice a few new blocks will pop up in the menu.

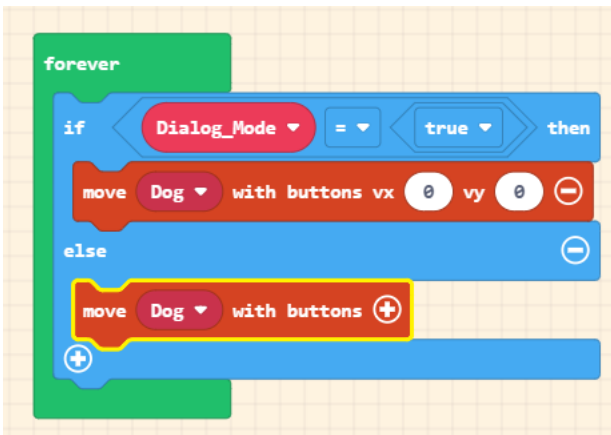
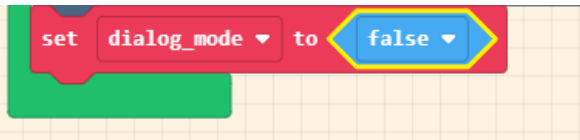
From the **Variables** menu, grab the **(dialog_mode)** round block. Place it inside the **(0) = (0)** block to replace the first 0. Then, from the **Logic** menu, find a block that says **<true>** and replace the second 0. (Yes, you can put the pointy-ended true block inside the round 0 block, even though it doesn't look like it should fit!)



At this point, you will get an error. Don't worry!

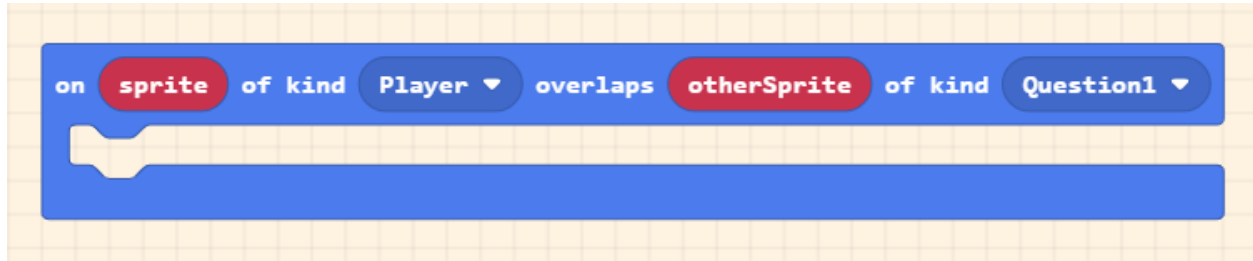
We just need to set our new dialogue mode variable equal to true in the **On Start** block. This step, where we give our variable an initial value, is called **initializing** our variable.

Grab a **set [dialog_mode] to 0** block from the **Variables** menu. Then, drag a **<false>** block from the **Logic** menu and replace the 0 with the **<false>** block. Then, place the whole thing at the end of your **On Start** block.

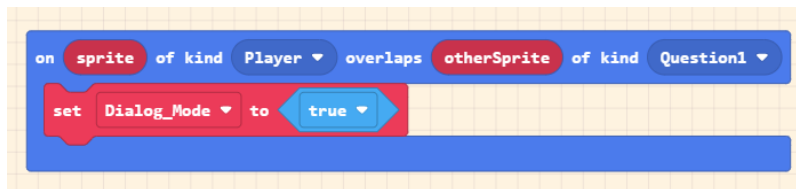


Now, let's add the statements to control movement. From the **Controller** menu, grab two **Move MySprite with buttons** blocks. Place one inside the **IF** portion of the logic block. Press the **+ button** to extend the block. Change both velocities to 0. Place the second one in the **ELSE** portion of the logic block. Make sure both **MySprites** are changed to your **player character's name**.

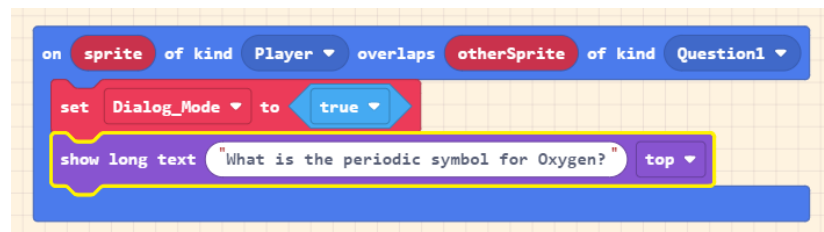
Next, we'll create the event to tell the game what happens when you overlap the question sprite. Go into **Sprites** and find **on sprite of kind Player overlaps otherSprite of kind Player**. Change the kind of the second sprite by clicking on the second dropdown menu Player and select Q# (the kind we made in the last section!).



Since this is where the player should not be able to move, it's time to turn on the dialogue mode variable. From the **Variables** menu, select the first block, **Set Dialog_mode to (true)**. Place it into the overlap block.



From **Game** pull a **show long text () bottom**. In the box, type your first question and adjust the location as desired.



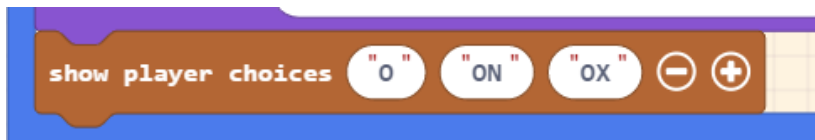
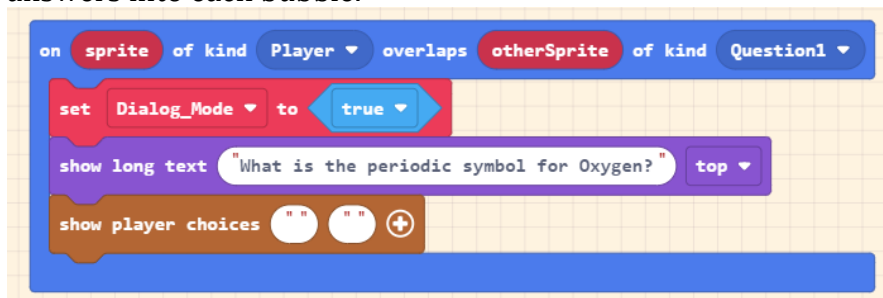


Next, we are going to add our multiple choice options. Click on **Extensions** to bring up the extensions list. From this list select the extension named "**arcade-storytelling**".

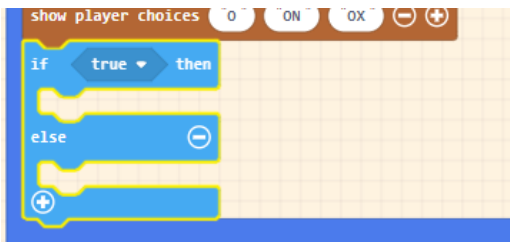
Extensions allow you to bring in new blocks of code that do a variety of things. This extension allows you to add more text and dialogue.



Now that you have installed the extension you have access to all sorts of new blocks. From **Story** select **show player choices** () and place it underneath **Show Long Text**. Click on the plus button for the number of answers you want the player to select from. Type the answers into each bubble.



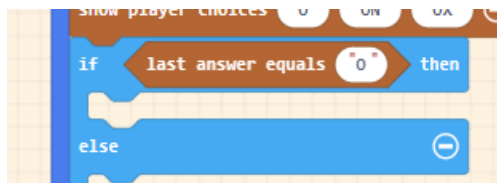
To evaluate the answer, we need to add a logic block. From the **Logic** menu, select **If (True) Then Else block**.



Make a statement containing the conditions for getting the answer correct, as well as a statement for getting the answer incorrect.

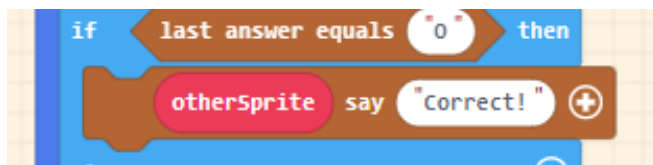
First, put in the statements for the correct answer. From the **Story** menu, find the **Last Answer Equals ()** block and replace the **True** with it. Highlight and then

copy the correct answer from your options in the **Show Player Choices** block and then paste it into the **Last Answer Equals ()**.



TIP: It is recommended that you copy and paste your correct answer into this box. If you make a mistake typing, your code will not work!

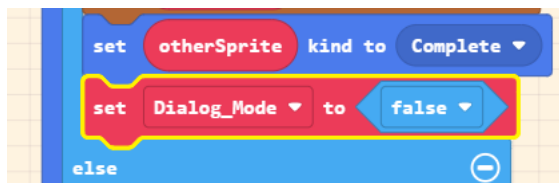
Now, create the things you would like to have happen once a question has answered correctly. Place these blocks in the **"IF" section of the logic statement block**. From the **Story** menu, find the **Sprite say ()**. Place it underneath the **Last Answer Equals** block. Add your dialogue, then on the top line of the **Event overlap block**, click on the **Othersprite** bubble and drag it to replace the **Sprite** in the **Sprite say** block.



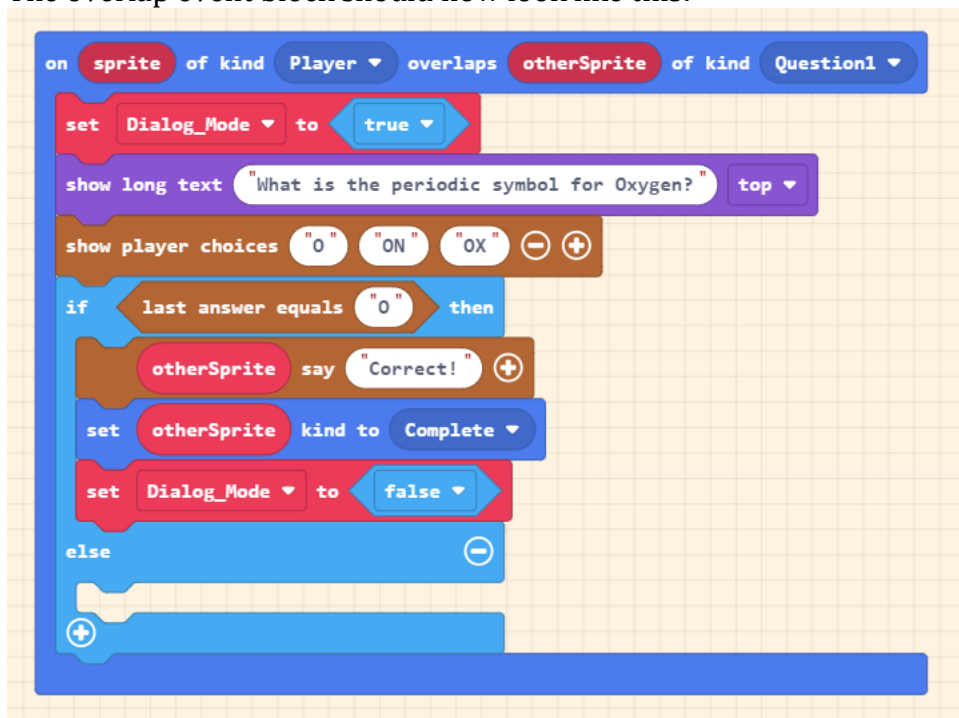
Last, make sure the question sprite does not keep asking the same question over and over again. To do this, from the **Sprite** menu, find the **Set MySprite to kind (player)** block (NOTE: Read carefully. This is DIFFERENT from the 'set my sprite to sprite of kind player' block). Place it underneath the dialogue block (see below). Make a **new kind** for the sprite by clicking on the **Player** dropdown menu and selecting **Add A New Kind** at the bottom. Change your kind to **Complete**. Drag the **Othersprite** bubble from the top of the overlap block and replace the **"MySprite"** with it. This makes it so that only the sprite you overlap will take these actions.

Finally, turn dialogue mode off so that they player can move the character again after answering the question. From the **Variables** menu, find the **Set (dialog_mode) to ()** block.

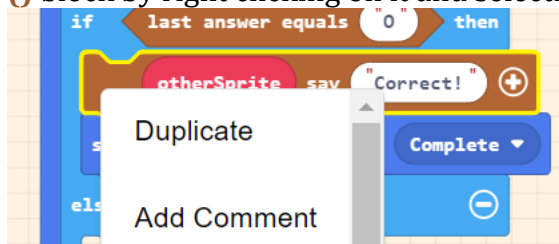
Place it underneath the **set otherSprite kind to Complete**. From the **Logic** menu, find a **<false>** block and replace the 0 with **<false>**.



The overlap event block should now look like this:



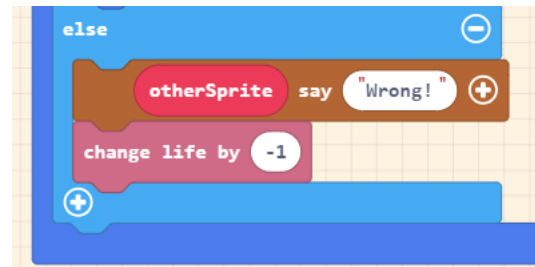
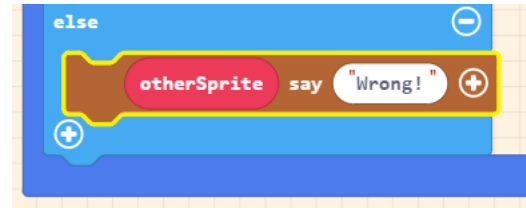
Next, let's tell the game what to do if an answer is incorrect. Duplicate the **Othersprite Say** block by right clicking on it and selecting duplicate from the menu.



In the **ELSE** section of the logic block, drag our newly created block. Change the text to “Wrong!”

From the **Info** menu, find a **Change Life by (-1)** block and place it underneath.

***TIP:** You can right click on the overlap block and duplicate the entire thing! Make sure to change the kind on the overlap block to the next question number, and update your question in the dialogue boxes.*

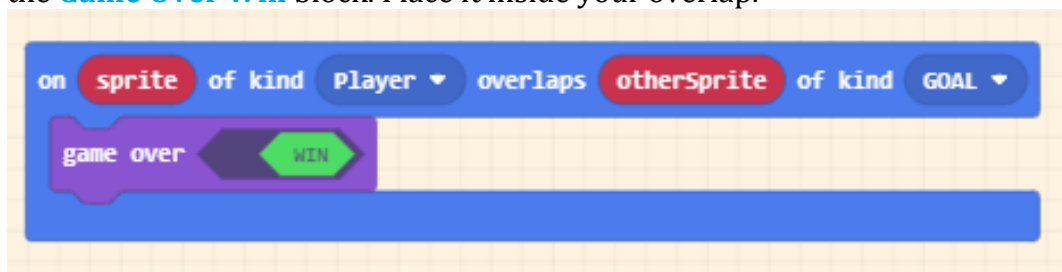


Creating the Win Condition

The last step of this game is to create the win condition! Remember, you made that last sprite as a goal for the player to reach.



From the **Sprites** menu, grab one last **On Sprite of Kind Player Overlaps Sprite of Kind Player** event block. Change the second “player” to kind **GOAL**. From the **Game** menu, find the **Game Over Win** block. Place it inside your overlap.



That's it! Congratulations! You have made your trivia game!