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## SHARK ATTACK!

We are going to create a game where you are a shark trying to catch fish! If he eats a yellow fish he will score a point. If he eats a poisonous fish, he'll lose a life!



### STEP 1

1. Click on the **Stage** icon near the bottom of the screen.
2. Now choose the **Backgrounds** tab at the top of the screen, select '**choose backdrop from library**' and select underwater3
3. Select the **Scissors** tool at the top of the screen.
4. Hover over the Cat sprite with the Scissors tool and click on the cat to delete it.



5. Go to the '**Choose new sprite from library**' icon and select the Shark from the Animals folder.
6. Select the **Scripts** tab at top of the screen.



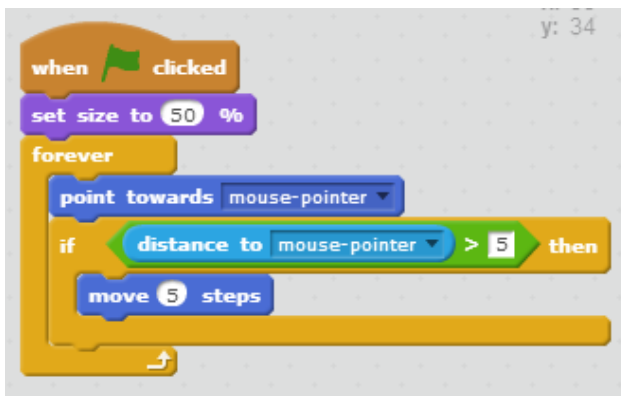
7. Choose the '**When green flag clicked**' block.
8. Add the '**set size to**' block from the **Looks** section, and set the size to 50%.
9. To make the shark move, we need to give the shark instructions, but we have to put these instructions into a '**forever**' block, so the shark will follow your instructions all the time. Select a '**forever**' block from the **Control** section.
10. Select the '**point towards**' block from the **Motion** section, and select '**mouse-pointer**' from the drop-down menu.
11. Next, add an '**if**' block from the **Control** section.
12. Drag a '**greater than**' block from the **Operators** section, and place it in the '**if**' block.

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13. Go to the **Sensing** section, and drag the '**distance to**' block and drop it into the left-hand side of the '**greater than**' block. From the drop-down menu in the '**distance to**' block, select '**mouse-pointer**'.
14. In the right-hand side of the '**greater than**' block, set the number to 5.
15. Inside the '**if**' block, drag and drop a '**move 10 steps**' block from the **Motion** section. Set the number of steps to 5. This will now make your shark follow your mouse but it will stop if it lands on your mouse.

Your code for Step 1 should look something like this.



## STEP 2

We now need to create some fish for the shark to catch!

1. Click on '**Select new sprite from library**' and select 'Fish2' from the Animals folder.
2. Let's name him Yellow Fish by clicking the blue 'i' above him in the Sprites window



3. Select the **Scripts** tab.
4. Select the '**when green flag clicked**' block from the **Events** block.
5. Add a '**set size to**' block from the **Looks** sections, and set the size to 20%.
6. Add a '**show**' block from the **Looks** section. This will make the fish appear on the screen whenever you start a new game.
7. Now we need to give the fish instructions, so drag a '**forever**' block from the **Control** section, and we will put all our instructions inside the '**forever**' block.

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8. Add the **'turn 15 degrees clockwise'** block from the **Motion** section.
9. We don't want the fish to turn 15 degrees, so let's add a **'pick random from 1 to 10'** block from the **Operators** section, and put that into the **'turn 15 degrees'** block. Set the values to -10 and 10. This will make our fish move at random angles and make it look like its swimming.
10. Add a **'move 10 steps'** block from the **Motion** section, and set the value to 3.
11. Now add an **'if on edge, bounce'** block from the **Motion** section. Your code for Step 2 should look something like this.



## STEP 3

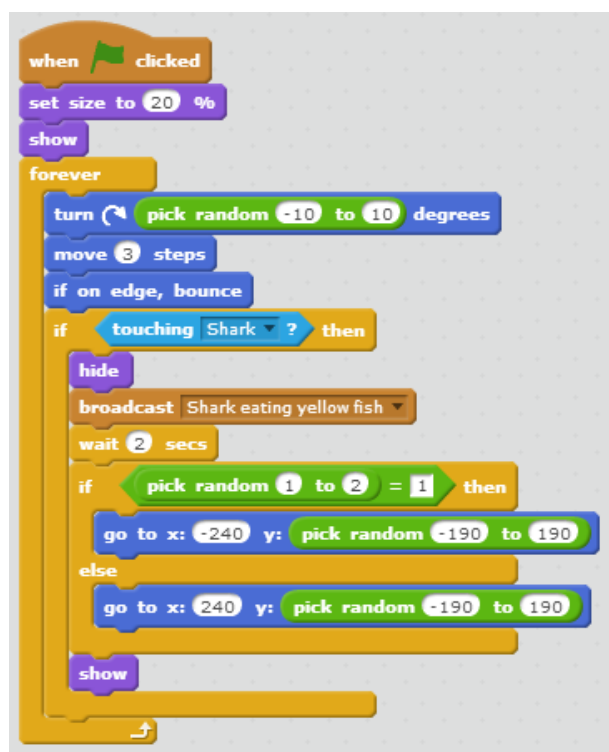
1. Now we need to make things happen if the shark and the fish come into contact with each other. First we need to create a variable in the **Data** section. In the **Script** for the fish, click on the **Data** section, and select **'Make a variable'**. Name this variable 'Score' and select the **'For all sprites'** option.
2. Add an **'if'** block from the **Control** section after the **'if on edge'** block. This is where we will put all our instructions for when the fish comes into contact with the shark.
3. Add a **'touching'** block from the **Sensing** section, and place it in the **'if'** block. Select **'Shark'** from the drop-down menu.
4. We also want the fish to disappear when it gets eaten, so add a **'hide'** block from the **Looks** section.
5. When the fish gets eaten, we want the script for the shark to know this, so to do this we add a **'broadcast'** block from the **Events** section. This will broadcast a message to the shark telling the shark to do stuff if it eats a fish. You can write whatever message you like in the broadcast block, e.g. "Shark is eating yellow fish".
6. When the fish gets eaten, we want the game to wait for a couple of seconds before a new fish appears on the screen, so add a **'wait'** block from the **Control** section, and set the value to 2 seconds.
7. Before we add a **'show'** block to make the fish appear again, we want the fish to appear at a different place every time. To do this, we add an **'if else'** block from the **Control** section, and place this in the **'if'** block.

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8. In the 'if else' block, add an 'equals to' block from the **Operators** section.
9. Now add a 'pick random 1 to 10' block from the **Operators** section, and drop it into the left-hand side of the 'equals to' block. Set the values in the 'pick random' block to 1 and 2. In the right-hand side of the 'equals to' block, set the value to 1. This will randomly pick either number 1 or number 2, and make the fish appear at a certain place depending on whether the number is 1 or 2.
10. Now, inside the 'if' part of the 'if else' block, add a 'go to x: 0 y: 0' block from the **Motion** section. Set the x value to -240. In the y value, drag in another 'pick random 1 to 10' block from the **Operators** section, and set those values to -190 and 190.
11. Inside the 'else' part of the 'if else' block, we will do the exact same thing again, except this time we will set the x value to 240 instead of -240. So repeat step 11, but change the value of x to 240. The 'if else' block is now complete.
12. The last thing we have to add is a 'show' block from the **Looks** section. Otherwise our fish won't appear again!

Your code for Step 3 should now look something like this



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## STEP 4

1. We are now going to create the poisonous fish! The poisonous fish is going to do almost everything the same way the yellow fish does, so instead of writing out all that code again for the poisonous fish, just right-click on the yellow fish icon near the bottom of the screen, and select '**duplicate**'. This will create a new yellow fish with all the same code as the first yellow fish.
2. Click on the icon for the new yellow fish you created. Now go back up to the top of the screen and rename the fish to 'Red fish' or whatever name you like!
3. Now click on the **Costumes** tab, and select **choose costume from library**. Select 'Fish3' from the Animals folder.
4. You will now see two costumes for the red fish. You can delete the first one because we don't need it!
5. Now select the **Scripts** tab. We are only going to make one small change to the script. In the '**broadcast**' block, select '**new**' from the drop-down menu, and type in a new message to broadcast whenever the shark eats a red fish, e.g. "shark is eating a red fish".
6. That's it for the red fish!

Now we will go back to the shark and add instructions for him to follow whenever he receives one of the two messages your fish broadcast to him!

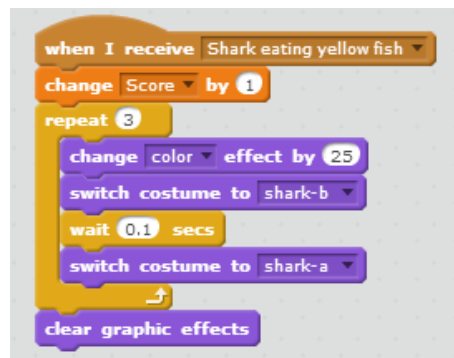
## STEP 5

1. Click on the shark icon near the bottom of the screen, and select the **Script** tab near the top of the screen.
2. For the shark to receive the broadcast message from the yellow fish, we have to add a '**when I receive**' block from the **Events** section, and select 'shark is eating yellow fish' from the drop-down menu.
3. We want the Score to increase by 1 when the shark eats a yellow fish, so add a '**change Score by 1**'.
4. We want the shark to change colour and start biting when he comes into contact with a yellow fish, so to do this, we will first add a '**change effect by**' block from the **Looks** section. Select '**colour**' from the drop-down menu, and set the value to 25.
5. Next, we want to make the shark start biting. Go back to the **Scripts** tab, and add a '**switch to costume**' block from the **Looks** section. Select 'shark-b' from the drop-down menu.
6. Now add a '**wait for**' block from the **Control** section, and set the value to 0.1.

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7. Add another **'switch to costume'** block from the **Looks** section, but this time select 'shark-a' from the drop-down-menu. This will make your shark quickly change colour.
8. We want the shark to bite a few times so we need to wrap all of these blocks in a **'repeat'** block from the **Control** section. Set the repeat value to 3. This will repeat the biting motion three times.
9. Outside of the **'repeat'** block, we need to add a **'clear graphic effects'** block from the **Looks** section. This will return the shark back to his original appearance once he's eaten a fish.

Your code for Step 5 should now look something like this.



Now we need to write instructions for the shark when he receives a broadcast message from the red fish!

## STEP 6

1. Add another **'when I receive'** block from the **Control** section, and select "shark is eating red fish" from the drop-down menu.
2. We want the shark to change colour when he eats a red fish too, so add a **'change colour effect by 25'** block.
3. Add a **'switch to costume'** block from the **Looks** section, and select 'shark-c' from the drop-down menu.
4. We also want the shark to lose a life every time he eats a red fish, so to do this, we must create a new variable in the **Data** section. Name this variable 'Life' and select the **'For all sprites'** option.
5. Add a **'change variable by'** block from the **Variables** section. Select 'Life' from the drop-down menu, and change the value to -1. This will make the shark lose 1 life every time he eats a red fish.
6. Next, we add a **'wait for'** block from the **Control** section, and set the value to 2 seconds.
7. Lastly, add a **'clear graphic effects'** block from the **Looks** menu to make the shark return to his original appearance.

Your code for Step 6 should look something like this

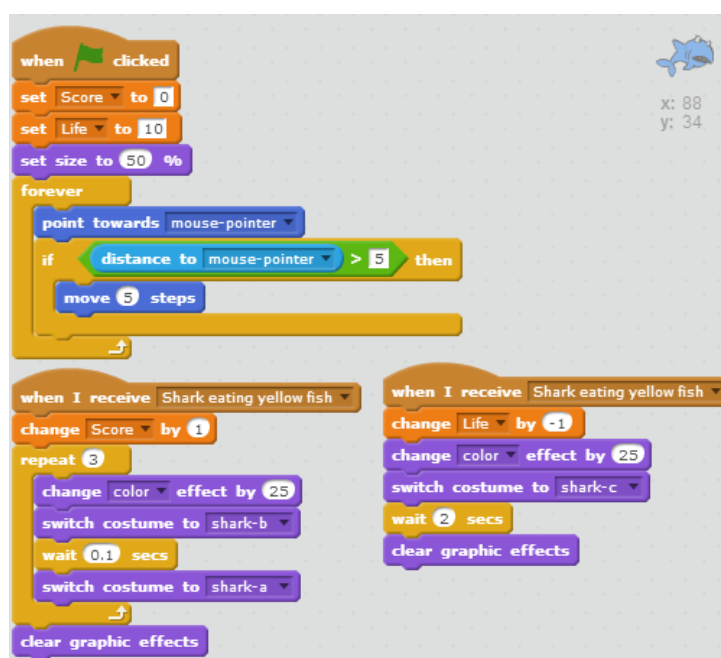
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## Step 7

Now we need to set the value of the 'Life' variable to be the same value at the start of every game. We also need to set the 'Score' value to zero at the start of every game.

1. In the **Script** for the shark, drag a '**set variable to**' block from the **Variables** section, and add it to the top of your code, just underneath the '**when green flag clicked**' block. Select 'Score' from the drop-down menu, and set the value to zero. This will make sure the score is set to zero at the start of every game.
2. Now underneath the '**set score to 0**' block, add another '**set variable to**' block. This time, select 'Life' from the drop-down menu, and set the value to 10, or whatever number of lives you think the shark should have! This will make sure the shark starts every game with the same amount of lives.
3. To add more yellow fish or more red fish, just right-click on the icon of the fish near the bottom of the screen and select **duplicate**. Your finished code for the shark should now look something like this



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## Step 8

We're nearly there! Now we just have to add in some text to let you know if you have won or lost the game!

1. Select the '**Paint new sprite**' icon near the bottom of the screen.
2. In the 'Paint Editor' window, select the '**T**' icon to type a message, e.g. "You Win!!"
3. Click on the black square at the corner of your text and drag the text to the middle of screen. Click OK. You have now created a new sprite with your message.
4. Select the **Scripts** tab for your message sprite. Add a '**when green flag clicked**' block.
5. Add a '**set size to**' block from the **Looks** section, and set the size of the text to whatever size you like.
6. Add a '**hide**' block from the **Looks** section. This will hide the text until you win the game.
7. Add a '**forever if**' block from the **Control** section.
8. Grab an '**equals to**' block from the **Operators** section and drop it into the '**forever if**' block.
9. Now go to the **Variables** section, select the 'Score' variable and place it into the left-hand side of the '**equals to**' block.
10. Whatever value you set the 'Score' variable equal to, that will be the score the player has to reach in order to win the game, e.g. Score = 20.
11. Inside the '**forever if**' block, add a '**show**' block from the **Looks** section.
12. Underneath the '**show**' block, add a '**stop all**' block from the **Control** section. Your game will now stop and show your message if the player reaches the necessary score.

## Step 9

Now we have to create another sprite that lets the player know if they have lost the game, e.g. "Game Over!!!" So all we have to do is to repeat the first eight steps in **Step 8** and just make a couple of small changes after that.

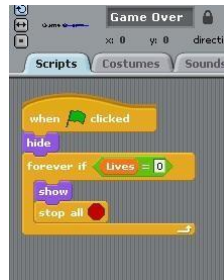
Repeat 1 to 8 above.

9. In your '**equals to**' block, add the 'Lives' variable and set it equal to zero.
10. Inside your '**forever if**' block, add a '**show**' block from the **Looks** section.
11. Add a '**stop all**' block from the **Control** section. Now when the shark's lives reach zero, the game will stop and the "Game Over!!!" message will appear!



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Your finished code should look something like this



**WELL DONE!!! YOU'RE NOW READY TO PLAY THE GAME!!**