

TALLER DE SCRATCH



... MEET · SHARE · LEARN ...

Learn how to program with this simple Scratch game and develop your skills in an educational and didactic way with us.

What are you waiting for?





Do you think learning how to program is difficult?

We think that after this activity we propose, programming will be much easier for you and besides it will help your training in an entertaining way while doing these activities..

Go ahead and like the Scratch slogan says: *imagine, program, share!*

1. I INTRODUCTION

Scratch is a Project developed by *Lifelong Kindergarten Group*, led by Mitch Resnik who belongs to the MIT Media Lab. It is an open source and it is free.

The program is thought to help young people to learn and program while using creative thinking, systematic reasoning and work group, which are necessary activities for the life in the 21st century.

The first step is to open the Scratch 2 program that it is already installed in your computer. You can find all the information about the program as well as its functions and options in the Reference Guide in the following link:

(<http://museo.inf.upv.es/post/guiaref.pdf>).

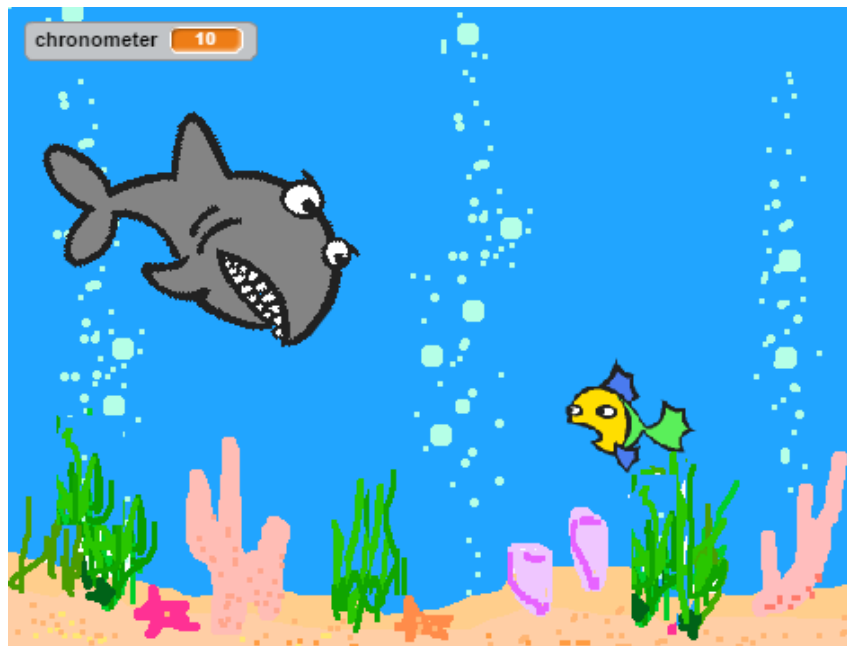
Do not hesitate to **ask any question you may have!**

1. CATCH ME IF YOU CAN

In this game we are in control of one fish that must run away from a shark. The shark has no other thing in its life than to chase the poor fish so he can eat it. The game will finish when the fish is devoured by the shark or when the time in the game is over (at the start it will be only 10 seconds).

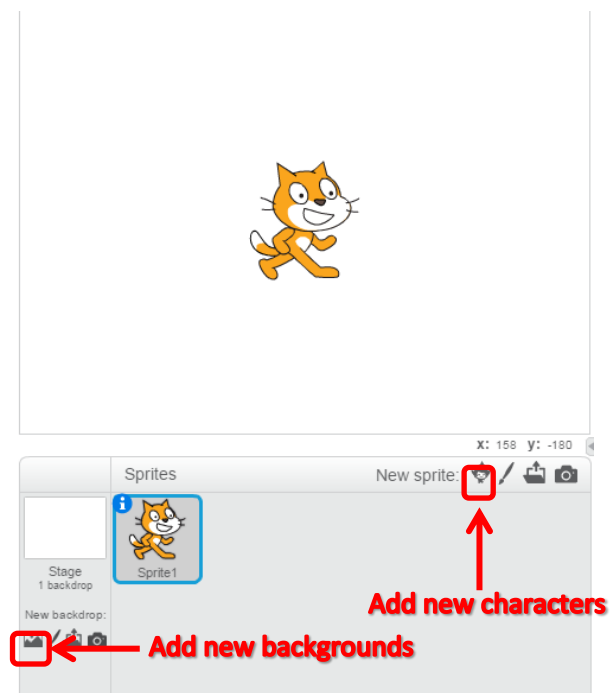
CONTROLS

We will control our fish using the direction keys so he can move on the screen.



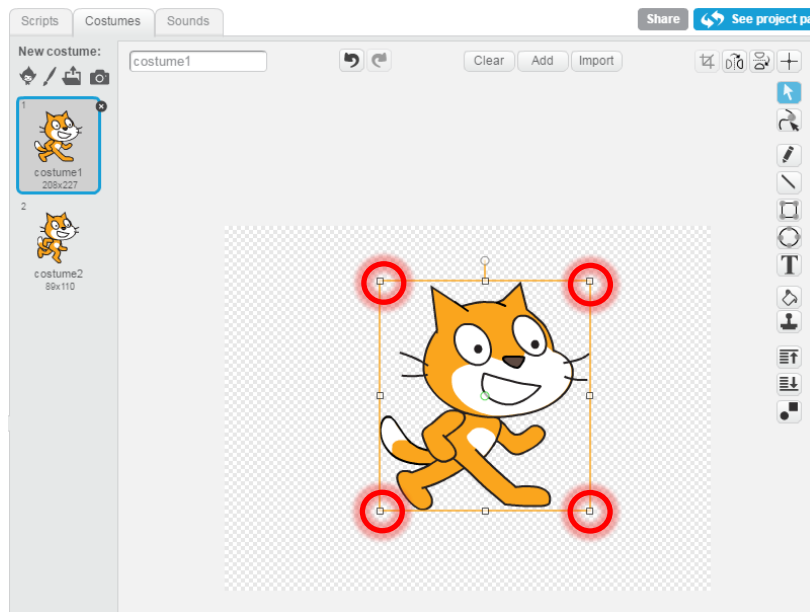
WHAT NOW?


First things first. On one hand, we have to control the sea background and on the other hand, control the characters who participate in the game (sprites or objects). To access the object gallery or backgrounds we have to use the menu. It is highlighted in red in the image.

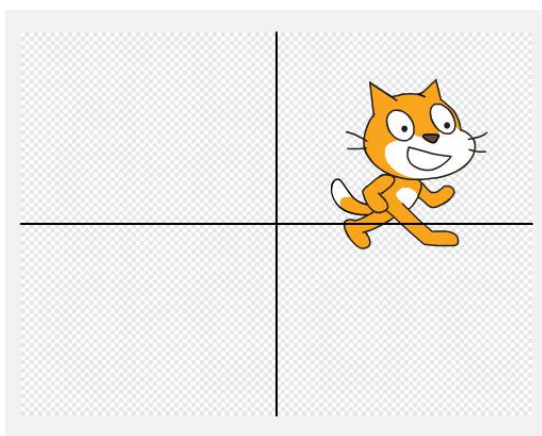


REMODEL YOUR CHARACTER

If you want to make your character bigger or smaller, we can modify it. You have to go to **Costumes** tab and select **sprite** and now drag from one of the corners to modify the image as you want. It is highlighted in red in the image.



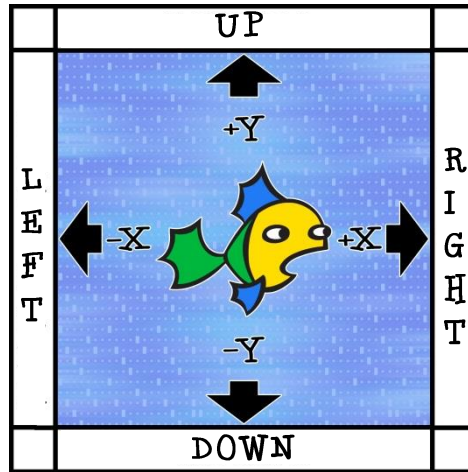
Once the image is modified, we have to center the image. For that we have to click on **fix sprite's center** (). Next, we have to look for the center of the image and click with the left button.



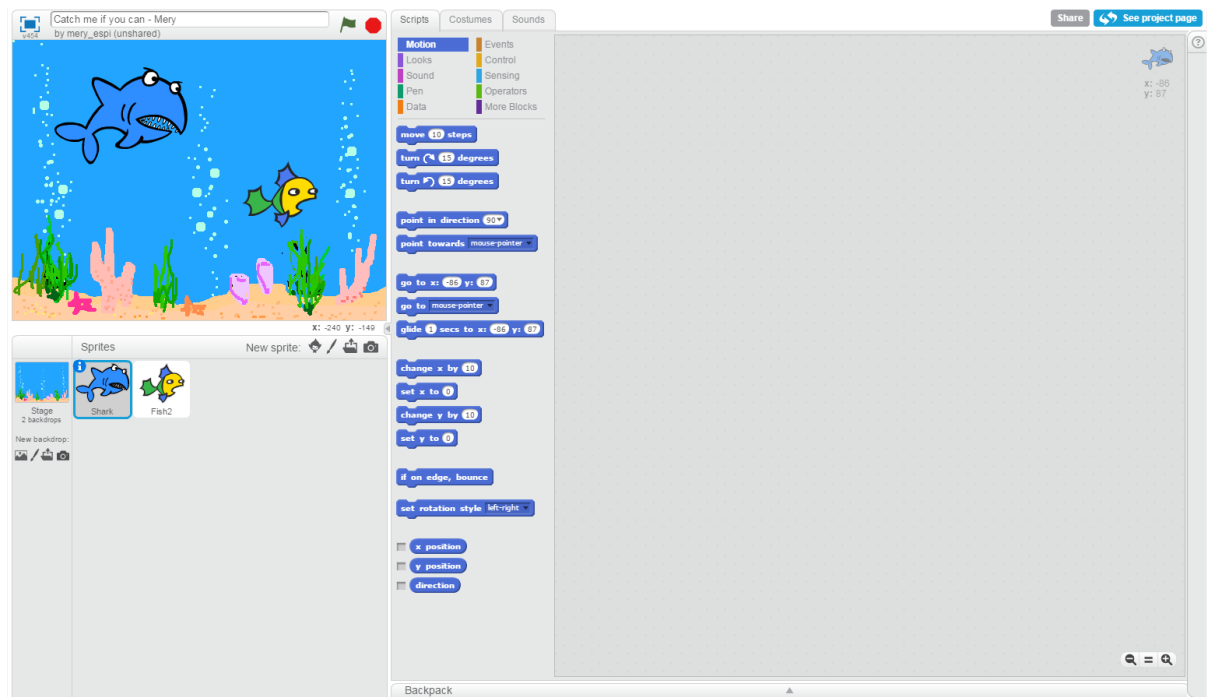
Once the image is centered, if you have another costume, you will have to remodel and center the images. When you finish editing the size, you can personalize the characters changing their colour or adding some compliments. But we will do that later.

THE FISH

Let's start programming. First we will focus on the fish. We have to make it move according to the direction keys. For that, a little reminder:



Now, the movement of the fish is easy to make. First, we will double click on the fish to have access to it. It will appear a screen like this:



As you can see in the image, the movements appear inside of introduction events. If we click on the unfolded menu, we can select **up arrow** and drag it to the grey area on the right.

Next, we explain the steps to create the movement up with the **up arrow**.

```

when up arrow key pressed
change y by 5
  
```

To suit these two blocks, the first one will check if the arrow up has been pressed while the second one (that you can find in **Motion**) will change the Y value for 5.



Are you capable of programing the rest of the movements? Try it.

THE SHARK

We will help you with the shark but it has a trick:

```

when flag clicked
go to x: -163 y: 106
forever
point towards Fish
move 1 steps
if then
stop all
  
```

As you can see, **IF [] THEN** has a missing part.

Which is the requirement for the shark to end the game?

What does it have to happen for you to lose the game?



Which instruction should you include in **IF [] THEN**? Why?

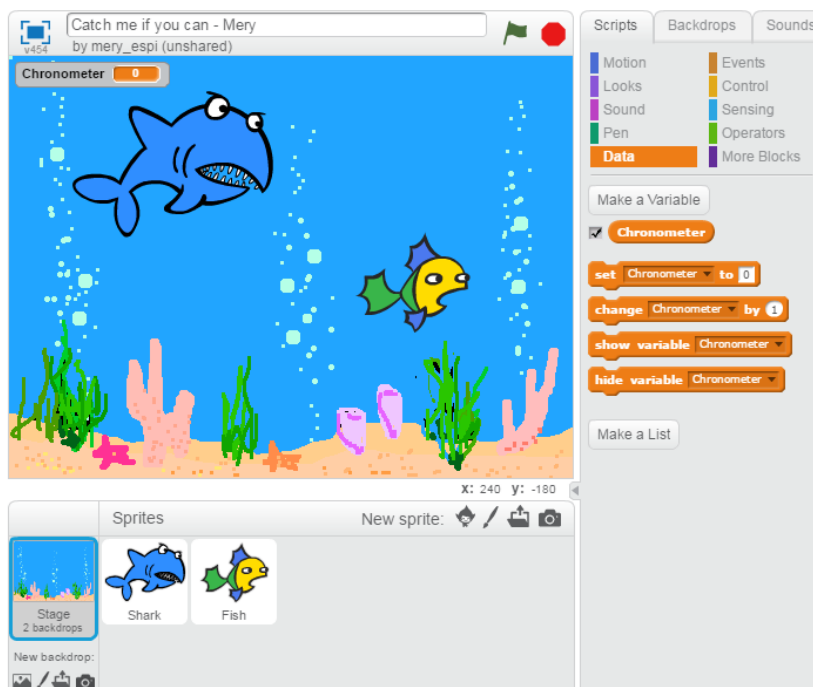
The instruction `go to x: -163 y: 106` what does it do? Try deleting it and run the program to see what happens.

What happens when you get rid of the `point towards Fish` instruction? What do you think this works?

Try to increase the number within the `move 1 steps` instruction. What happens to the shark?

THE CHRONOMETER

Finally, we will set a countdown so when it reaches 0, the game will finish. We will use the background to program it. When we are in its programming screen, we will create a new variable and we will name it Chronometer. To create it, we will go to **Data** and we will click on **Make a variable**. If it's all good, new instructions will appear as it is shown in the image:



This is the code we have to include to create the chronometer:

```
when clicked
  set Chronometer to 10
  forever
    if Chronometer > 0 then
      wait 1 secs
      change Chronometer by -1
    else
      stop all
```

ACTIVITIES :



Which instructions do you have to modify so instead of 10 seconds we have 30 seconds in the chronometer?

For what does IF [] THEN work in this case? Try to delete it and add two instructions within FOREVER. What happens?

Why do you think the instruction `wait 1 secs` is included? What does it do in the program? Try to delete it to see what happens.

Try to put a positive number within the instruction `change Chronometer by -1` . What does it change? For what does this instruction work?

3. MORE ACTIVITIES

Congratulations! You know now how to work with Scratch! We will propose a few more activities so you don't get bored. This time with no help, but you can still asking.

Let's do this!



The program is silent. What instruction and where should you add it so every time the shark gets the fish you can hear a "pop"?

What should you do so the shark could open and close its mouth every time it moves? (Search in the shark Costumes and Looks)

¿ Will you be able to create a Backdrop of the background to create the effect of bubbles moving? How?