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pytch_

Lesson 2

Starting the “Chase game”

Developed by:

pytch.team

<https://pytch.org/>

<https://pytch.scss.tcd.ie/>

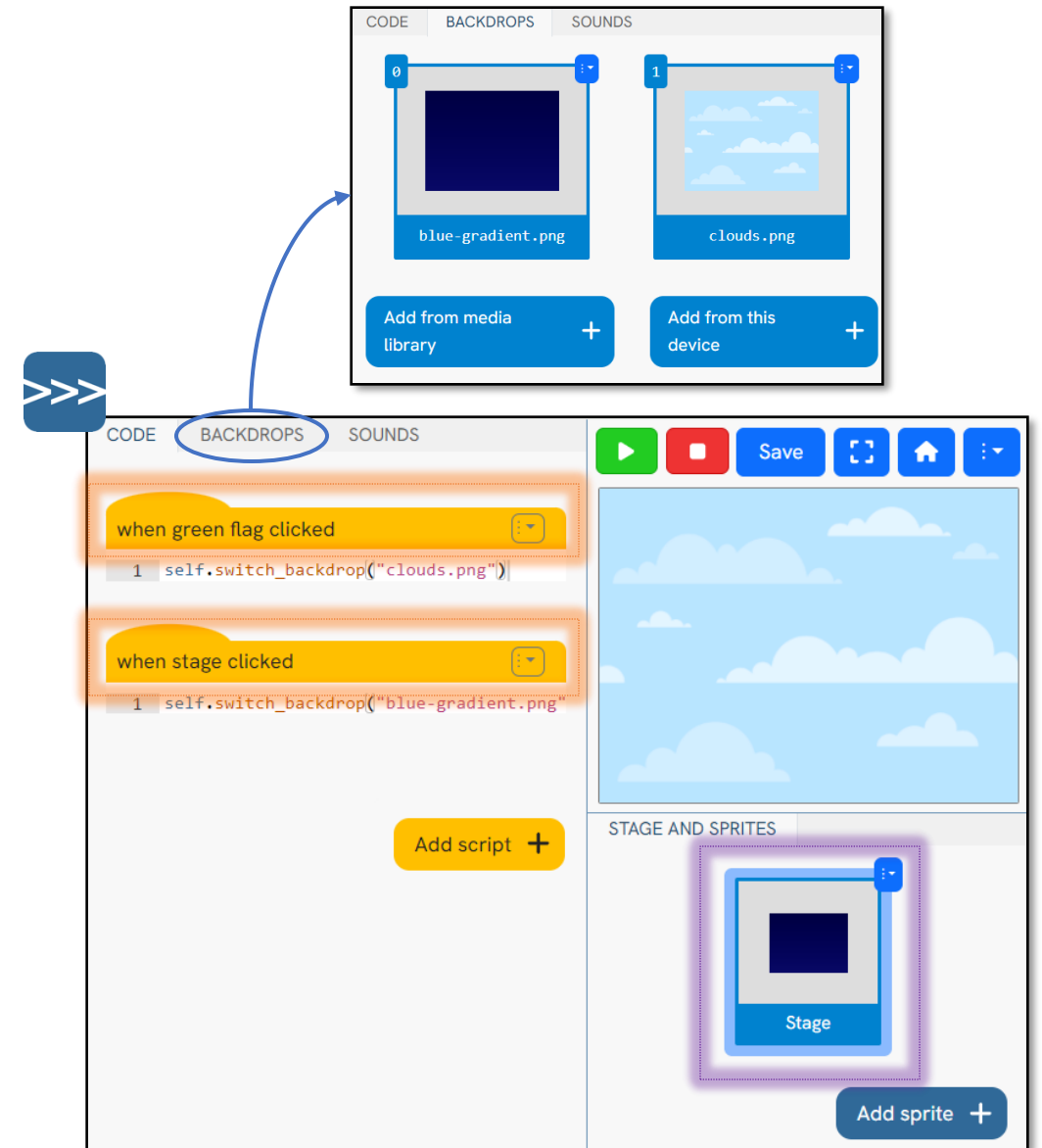
Pytch Stage and events

- **Pytch Stage:**

The Stage contains everything that happens in your Pytch program. Like in Scratch: you can have only one Pytch Stage with multiple costumes (called backdrops) and sounds. The Stage can also have scripts/functions.

- **Pytch events:**

They are used at the start of your scripts/functions to sense events, which trigger the script/function to run. Event blocks are how we say *when* we want some commands to run.



Pytch Stage coordinates

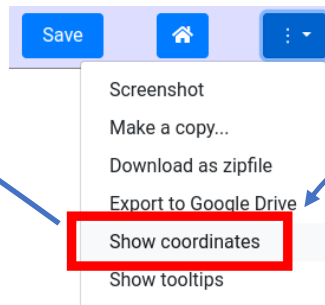
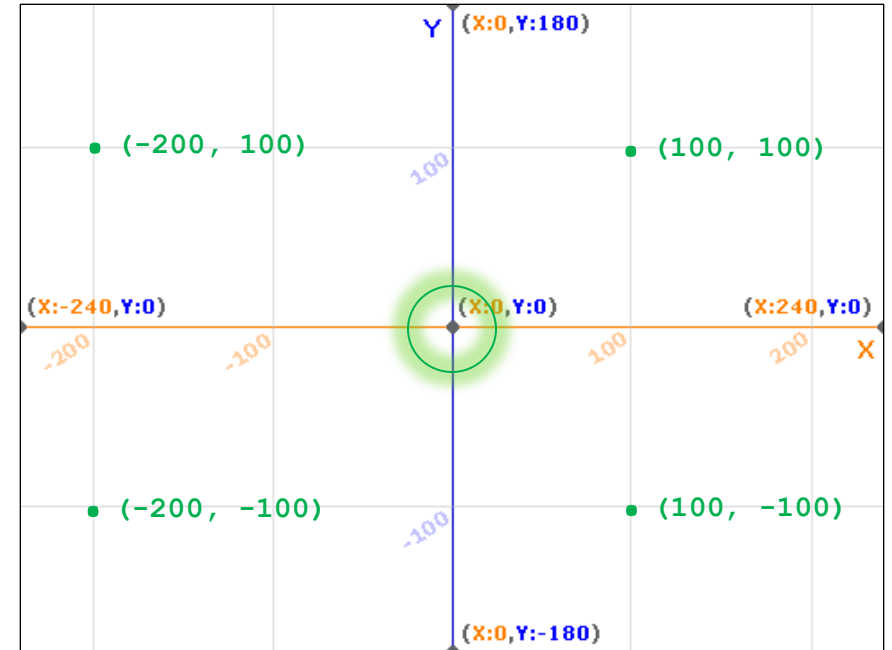
To position elements on the Pytch Stage we have to set their locations. The location is defined by two numbers (x, y) where: **x** represents the horizontal value and **y** represents the vertical value. Both can but don't have to have a negative value.

If you have seen Scratch, it uses the same idea.



Horizontally the Stage expands from -240 to 240, while vertically from -180 to 180.

At the centre of the Stage, both x and y values are 0, so the centre of the Stage is (0, 0). Look in the map for other examples.



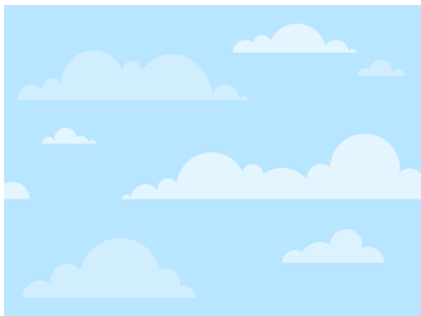
Pytch has a feature that will support you finding the coordinates for a specific point on the Stage. It brings up an overlay on the Stage that shows the coordinates as you move around.



Worksheet 1 – part 1

Now work in pairs:

- What does this code in the Bird sprite do?
- Write your answers on worksheet 1



Stage



Bird



when green flag clicked

```
self.set_size(0.3)
```

when "⇐" key pressed

```
self.change_x(3)
```

Worksheet 1 – part 2

- Now let's add a new script to our program that reacts when the down-arrow key is pressed
 - When we add new pieces of code, we will highlight them in green.
- What does this new script do?
- Add your answer on worksheet 1

In our lessons we will use [...] to represent pieces of code not shown on the slide. This lets us focus on just the section of the program we're talking about.



[...]

when "⇨" key pressed

```
self.change_x(3)
```

when "⇩" key pressed

```
self.change_y(-3)
```



Try it out

- Follow the link to get a Pytch project that you can run
- Run the program
- Does it do *exactly* what you thought it would do?
- If not:
 - Look at the differences
 - Correct your answer on worksheet 1

<https://pytch.org/app/lesson/sbys/2>

Questions to do in pairs – Worksheet 2

1. How does varying the number in `self.change_x` affect what happens? Try it with: Positive numbers, negative numbers, big numbers, small numbers and 0. What do you think this value represents?
2. What happens if we increase the number in `self.set_size`? If you write `self.set_size(1)` you can see the normal/default size of the bird in your stage.
 - What numbers would you use to make it half size or double size? What other numbers work?
 - What do you think will happen if the number is 0?
3. If you click the three-dots arrow at the side of a script you can change its hat block. What happens if you change the “right arrow” hat block to be a “down arrow” hat block?
4. How does a `when-key-pressed` script work if you hold down the right arrow key for a while (key repeat)?

<https://pytch.org/app/lesson/sbys/2>



Tasks – Worksheet 3

Work in pairs on these three activities:

1. Change the program so that the Bird can move in all four movement directions.
2. A little more challenging is to add a script that lets the bird move in a *diagonal* direction when you press a key. Try combining the commands you know for moving to get the bird moving diagonally up and to the right. (If you like you can add some more scripts for the other diagonals when that's working.)
3. Can you change the speed of the bird so that side-to-side movement is faster than up-and down movement?

Extension

Finished early? Can you also change the Sky to look different when a specific key is pressed?



- You will need to add a new backdrop – pick an image you like from the media library.
- Explore the help panel on the left to find which Pytch method you can use to change the Stage backdrop.



Recap

Today we have

1. Learned about the Pytch Stage
2. Learned how to make a program react to different kinds of events
3. Learned how to make Sprites move around the stage

In the next lesson we will learn more about Python and Pytch and we will continue developing our “Chase Game” project.

