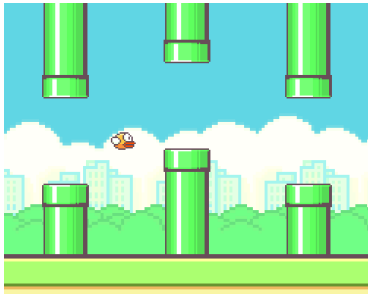


# Flappy Bird (Scratch 2.0)

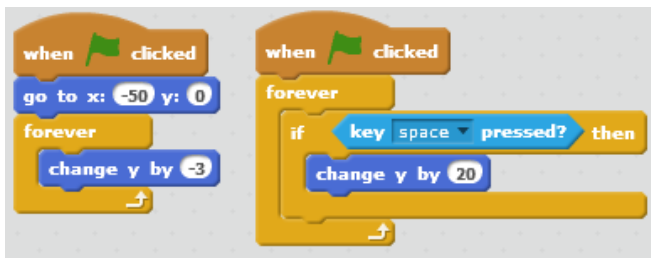


Flappy Bird is a simple game where you steer the bird between the obstacles (pipes). Hit the space key to control how high Flappy flies.

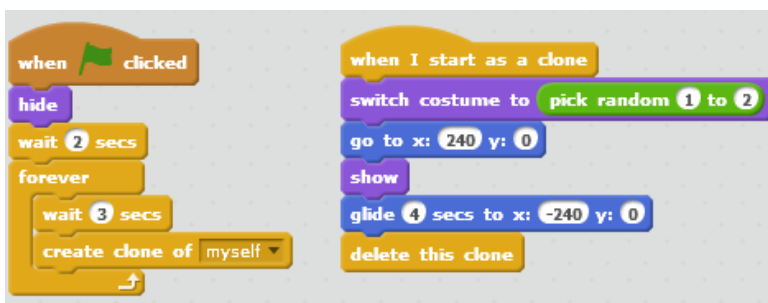
We are going to use **cloning** scripts for the pipes. Cloning is a quick way to make a copy of a sprite. It is only available in Scratch 2.0.

Start by creating a background (Stage) and two sprites: a bird (Flappy) and a Pipe (two rectangles with a space in between). Make 2 costumes for the Pipe, with the gap between the rectangles at a different height in each.

**Here are the scripts for Flappy.** He will keep falling unless you hit the space key, which will make him fly upwards. Feel free to change the numbers below until you are happy with how he flies.



**Here are the scripts for the Pipe.** Each pipe appears at the right hand side of the screen, then glides across to the left hand side. Each pipe is randomly given costume1 or costume2.



**Now it's up to you to improve the game:**

- Check if Flappy has hit a pipe (game over)
- Keep track of the score
- Add clouds that float across the screen (optional)
- Add a start screen
- Add more costumes for the pipes.

# Cloning Sprites (Scratch 2.0)

---

You have a game. You want 10 fish (or whatever). In Scratch 1.4 (the old version), you would create the sprite and then “duplicate” it 9 times. But if you need to change the code then you need to either: change it 10 times or change or change it once and then delete and recreate the 9 copies.

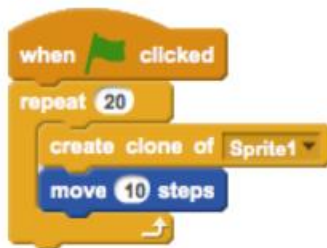
With Scratch 2.0 you can:

- Create a “Clone” of yourself
- Create a “Clone” of any other sprite
- Delete yourself
- Run code when you are started as a clone

When a sprite is cloned, the new copy:

- Has the same code as the original
- Has the same position as the original
- Has the same size, appearance, etc. as the original
- Has a copy of all of the “local” variables that the original had

Try this to get started:



Some things we can use clones for:

- A lot of enemies for a game from one sprite, including different types of enemies
- A sprite for unlimited bullets in a shooting game
- Creating several copies of a sprite (e.g. Minecraft type game)

Bullets example:

