

Scratch 5.3

So I guess you have created something like this. There are some variation possible of course, but it will be something along the lines of first clear the entire screen. Set the pen color to black, set pen size to five, point in the right direction, so moving to the right. And then forever move until we hit the wall.

So this is a nice start. It's a good start for Mondriaan, already. But if you want to paint it now, we have to go all the way here – remove the clear- and then create another line. And then move it here. Create another line. And so it's possible but it is quite some work that we have to drag the Mondriaan around.

What we would rather do is have the Mondriaan be generated using random numbers. And remember last week, in the videos but also in the exercises we used a random number. What we will prefer is to pick a random height and then from there draw a line across the entire painting. We can do that of course.

So let's do this. We clear. So now everything is clear. Move here. And maybe you've seen on the exercise before this little x and that y. We used it a little bit in the Giga game and also in the Devon Dinosaur game, where we moved the dinosaur around and then you saw these two updates. But now it's time to talk about the x and the y in a little bit more detail. Because that's what we're going to need.

So you see that these two numbers here are moving if we move the mouse cursor. So you can see if we go all the way to the left, x is minus 240. We go all the way to the right, x is plus 240. So this direction from left to right is where the x value changes from minus 240 to this side, to 240 on the other side. This is the x-axis. In the other direction from top to bottom we have the y-axis, which goes from on the top 180 to all the way down minus 180. So after this video you will get a few exercises to pin point where locations are. What is important to remember, is that this way is x, and this way is y, up and down.

And later when you are a little bit further in your mathematical career these are things that you will talk about a lot. For example if you create drafts in math class. But if you haven't done them before, here is already a little trick, this is the x and this is the y.

What we want from the Mondriaan painting is lines that go like this. So that means we want a random y a random height and one fixed x value. so for that we use this part, 'go to block'. So what we want is a random value between 180 and minus 180. Somewhere on this line. Take a random value – minus 180 and 180 – and then for the x we want to go all the way at where we were starting on the left, you could of course also start on the right. But we want to go all the way to the left. So we go to minus 240 every time. And then from there we pick a random height and then we go – woop – make a line. So here what we want is, minus 240, so all the way on the left and then a random height. There we go. We get a random

value. In the beginning you see a little bit of fluff but we will fix that later. So here again we get a random value, every time it moves to a different place.

Now this fluff of course is happening because we don't remove the pen from the pencil. We've never done that before, not in the drawing game as well. So we need to do that. Once we're moving and we don't want to draw. We have to lift the pen up, move it and then drop it down. So here in between we clear everything and before we move, remove the pencil from the field. Pen up. And then we have reached the location we pointed in the right direction and then you put the pen up. So now every time we click the green flag, everything is cleared we set the pen, we move the pen up, we go to the right direction on the left side of the screen, we move the pen, and then we cross the field. Let's have a look – zooop – there we go. A nice little Mondriaan.

But sadly we only get one line. So your next programming assignment is to change this code so that we get not one line, not two lines, but three different lines, in one field. Play with the code a little bit and show me the three lines and from that we will build a bigger Mondriaan in the next video.