# How2 add objects and characters to your world

In the ***How2 create your first world in Kodu*** you learned how to produce a world with different terrain, hills and water. The next step is to add a character to your world, who will move around it when you use your mouse.

I am going to use the world I created for the first how2, and you can do the same, or create a new one. To find the objects you can add to your world, click on the tool that looks like Kodu.
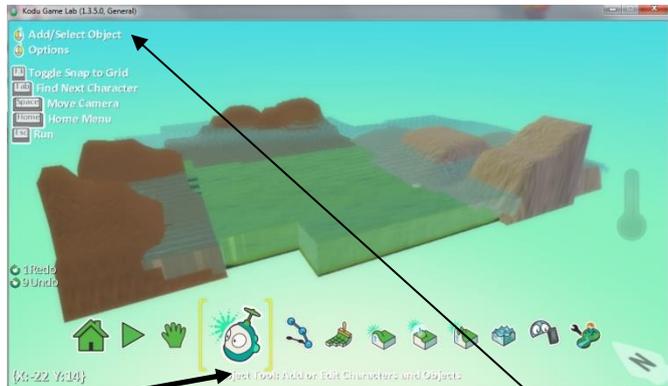
You can choose between different objects by clicking on the **Add/Select Object** option at the top left of the screen. When you click on this, a wheel of different objects appears.

On some of the options on the wheel, more information appears when you hover over it. Here you can see that the Mars Rover can perform special actions. Next to Rover is Kodu, but when you hover over him, you will find he doesn't like steep slopes, and my world has lots of hills.

So I have decided to choose the Rover for my character. Click to select him.
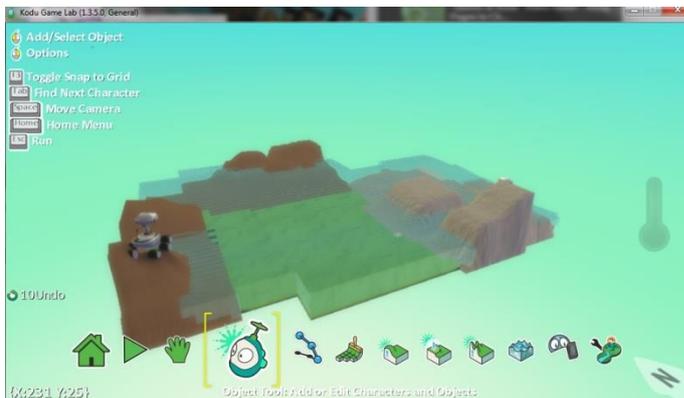
You can see Rover sitting patiently on a hill waiting for something to do!

Making the Rover character move around the world

You can make your character move around your world by programming him. Select the character and then right click and up pops a menu of different items. You can do quite a lot with this menu, but the item we are interested in is Program. This will allow us to make Rover move around the world.
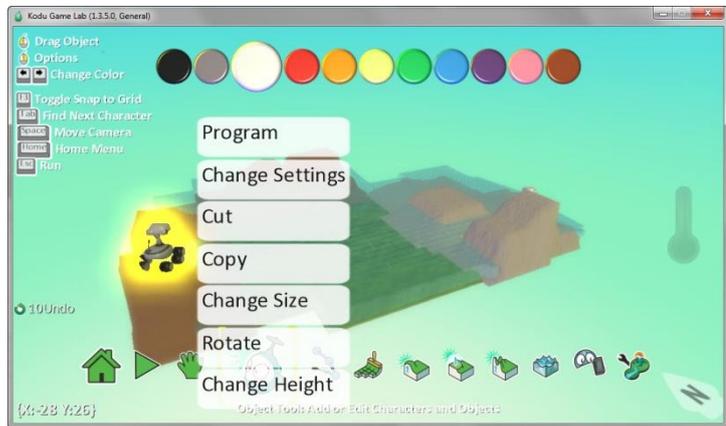
When you select Program, a screen appears that shows a line with two tiles in it. One says 'WHEN' and the other 'DO'. The grey tile that appears is explaining to you how to use an Xbox controller to add more tiles to the line. We want to use the mouse to control our character, rather than an Xbox controller, so we need to tell Kodu what we are using.

When you click on the 'WHEN' tile, a wheel appears with lots of options. Firstly we need to tell Kodu what we're using to control Rover – select 'Mouse'.

Now that Kodu knows you want to control your character with the mouse, it needs to know what happens when you click the mouse. To tell it what to do, click on the 'DO' tile, which is sitting next to the 'WHEN' tile (which now shows the icon with the word 'mouse').
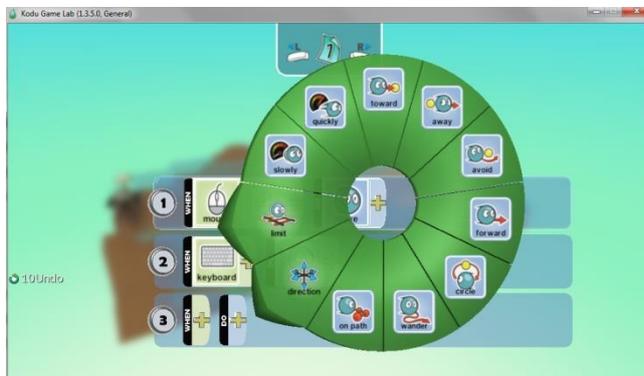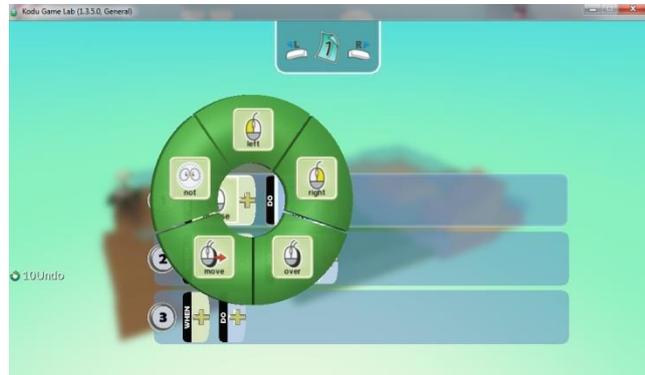
When you click on 'DO', another wheel appears with lots of options. One of those is 'rover' which allows us to use some of Rover's special functions. But for now we just want Rover to move. So click on 'move' and that will make the Rover move when we click the mouse.

When you have completed the selection of 'move', the screen looks like it does on the left with both the 'WHEN' and 'DO' programmed.

We haven't really programmed this with enough detail, though. You can click a mouse a number of ways. And when we say 'move' we're not saying where or in what direction. This means we need to add more information, and that is what those large '+' signs are for on the 'WHEN' and 'DO' tiles.

When I click on the '+' sign in the 'DO' tile, another wheel pops up and this one has all the different functions a mouse has – right click, left click, moving and mouseover. I am going to choose left click. Click on 'left' to set the left click to cause Rover to move.

Now I need to tell Kodu how I want Rover to move. This time I click on the '+' button in the 'DO' tile. Another wheel appears with lots of different options that can be selected. So Rover can move slowly or quickly, towards or away, avoiding objects, or going around in circles! I am going to select 'wander' so he will just wander around my world.

When I press escape to leave this part of the program, I can test what Rover does by clicking on the forward arrow (next to the home icon) on the bottom of the screen. This will run my game program. When I left click the mouse, Rover wanders all over my world, even in the water! He does get stuck on some of the hills though, but in the end he does manage to climb them!
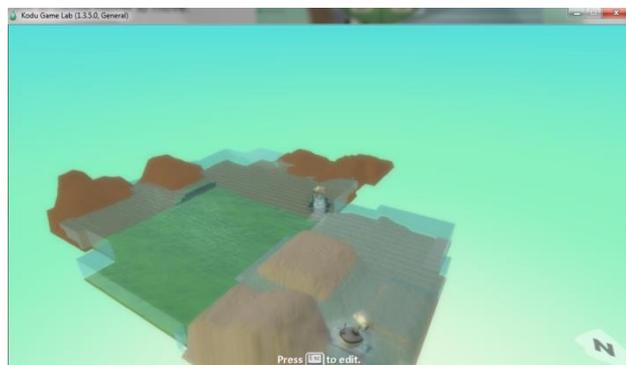
Now it's your turn to add a character (you could try Kodu!) and program him to move around your world. Try different mouse actions and different movement.