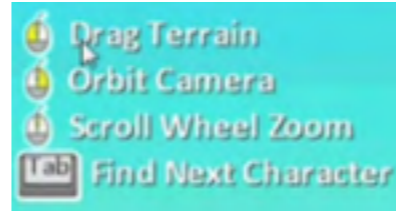
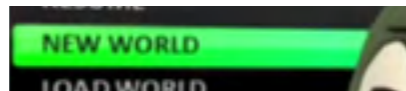




# Programming in Kodu

## Activity 1. Build a world and add objects.

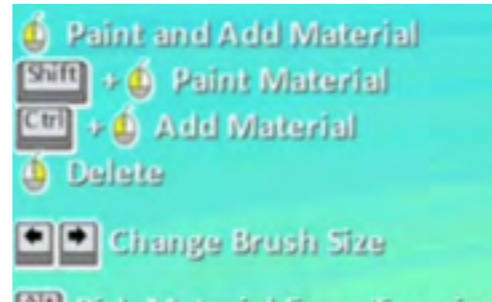
Start a new world by choosing



Use the instructions in the top left to help navigate around your Kodu world.



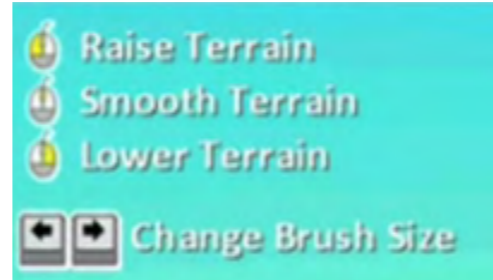
Use the paint brush to add more land to your world to make it bigger



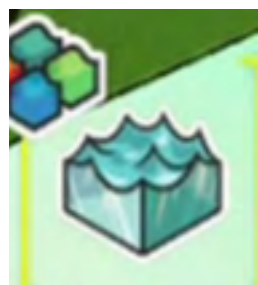
Use the instructions in the top left of the screen to change the size and material of the land you add as well as delete it.



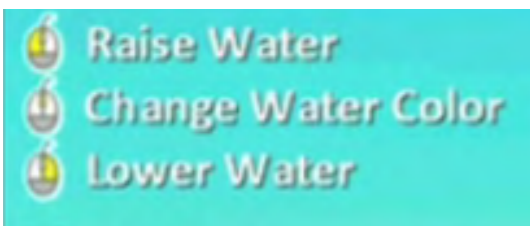
Add hills and terrain by choosing from the three types.



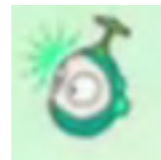
Use the mouse and keyboard control instructions to change the size of the terrain as well as smooth, raise and lower it.



Use the water icon to add water between your terrain. Be careful not to flood your world!



Use the mouse controls to raise and lower the water as well as change the colour.



Click on the Kodu icon and then click on your world to add an object.

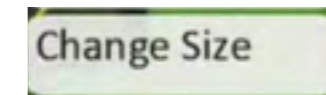


Choose an object such as rocks and trees from the wheel.

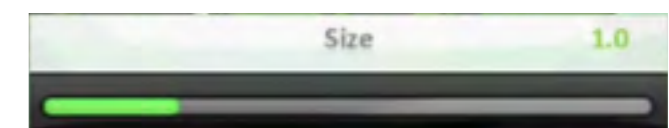


Use the mouse and keyboard controls to change colour and type.

Right click on the object and then click



Use the arrows on your keyboard to change the size.



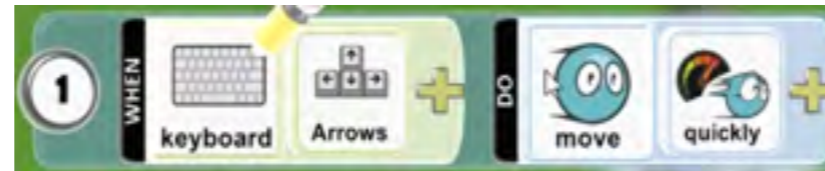


# Programming in Kodu

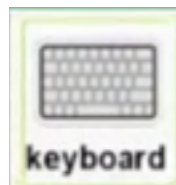
## Activity 2. Program Inputs and conditions

Add a Kodu to your world and then right click on it. Then click

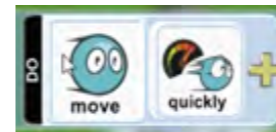
Program



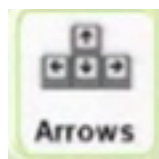
The code section is divide into two parts: When and Do.



Click the + next to WHEN and then choose KEYBOARD as that is the *input* device we are going to use.



Now select the + in the DO section and choose MOVE and QUICKLY.

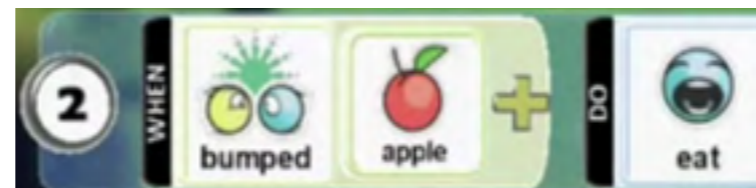


Then click the + again in the WHEN section and choose arrows as this is what we will use to control the Kodu

Now press the ESC key on your keyboard and click PLAY icon. You can now control the Kodu with the arrow keys on the keyboard.



Add some 🍏 to your program by clicking the Kodu icon and then your world and choosing the Apple.



Right click on your Kodu in the world and choose program.

In the second section, use the WHEN section to add the *selection*; when the kodu bumps the app. Then use the DO section to add EAT as a consequence of the condition.

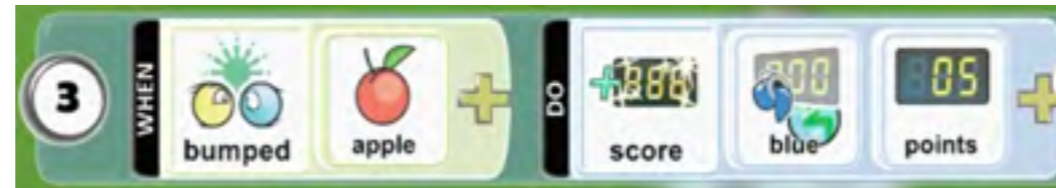
Now press ESC on your keyboard and click the PLAY icon to try to connect the apples with your keyboards arrows.



# Programming in Kodu

## Activity 3. Program a points system

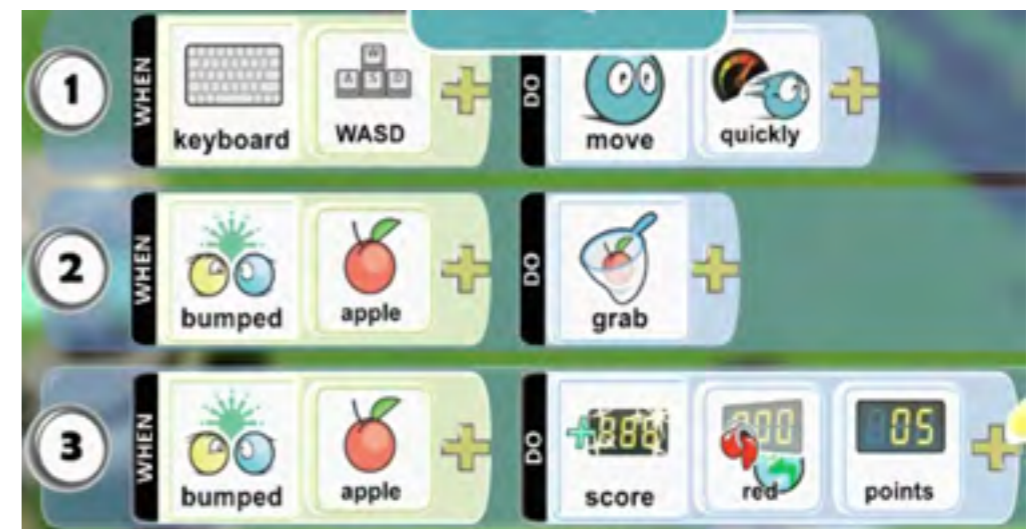
We are now going to add some code that means when a Apple is bumped, the points go up. Right click on your Kodu and go to program again.



In the third line, add the same WHEN section as before with BUMPED Apple. In the DO section click the + and add +SCORE, then the colour of the score and then choose how many points you would the score to go up by when the Apple is bumped.

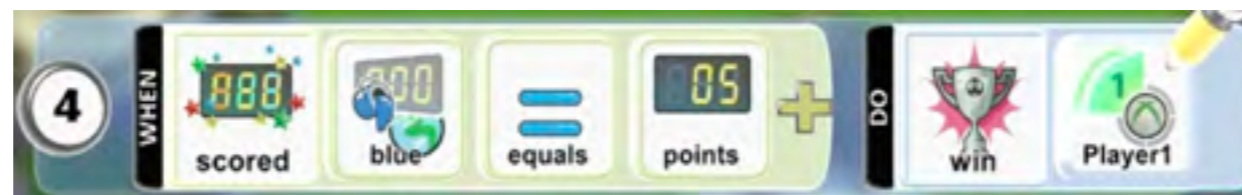
## Activity 4. Program a multi-player game

Now add another Kodu to make the game multi-player. Do exactly the same as Activities 2 and 3 apart from choose **WASD** instead of arrow keys to control the Kodu otherwise you will have the same controls for two Kodus. Also, choose a different coloured score.



## Activity 5. Add a Game Over condition

We are now going to add a operator (equals), that when a Kodu reaches a particular score then that Kodu will win. Add in the code as below to the 4th line of each Kodu - you can choose your own number of points to reach and make sure Player is different for each Kodu!

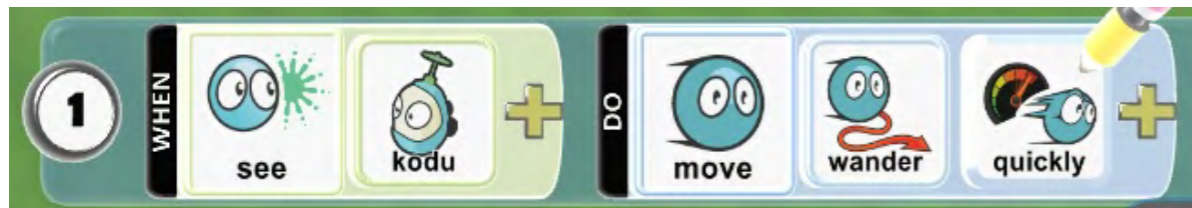




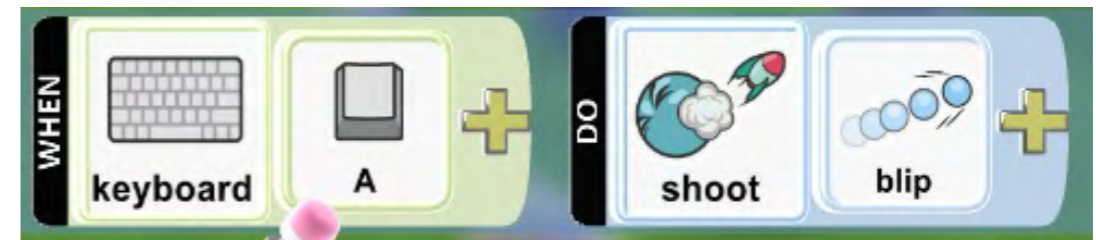
# Programming in Kodu

## Challenges

Add another Kodu to your world such as a Cycle and then add the code below that when the Cycle sees your Kodu it will move in a wander.

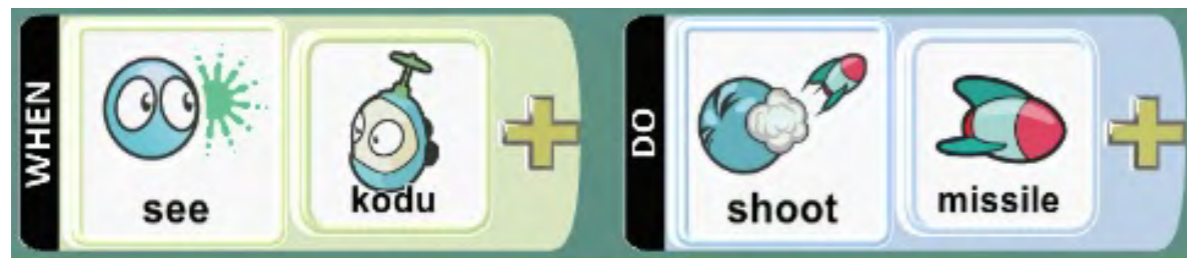


Add a program to your Kodu that uses a keyboard key or mouse button to shoot a blip or missile to destroy another Kodu. You could use this in your project to destroy enemies or in a multi-player game against each other.



You could experiment with using the pathways instead of the wander. For example, if you want your enemy to guard a certain part of your world you could make a pathway where they walk backwards and forwards.

Add a program line to your 'Enemy' Kodu that when they see the 'Player' Kodu they will fire a missile or blip.  
Make sure your world is big enough or you may find the enemy destroys your Kodu straight away.



Add a program line to your 'Player' Kodu that when it hits the 'Enemy' Kodu it scores some points.  
Alternatively, in a multiplayer game you could score points by hitting each other.

