



‘Hugo the Dinosaur’ Tutorial

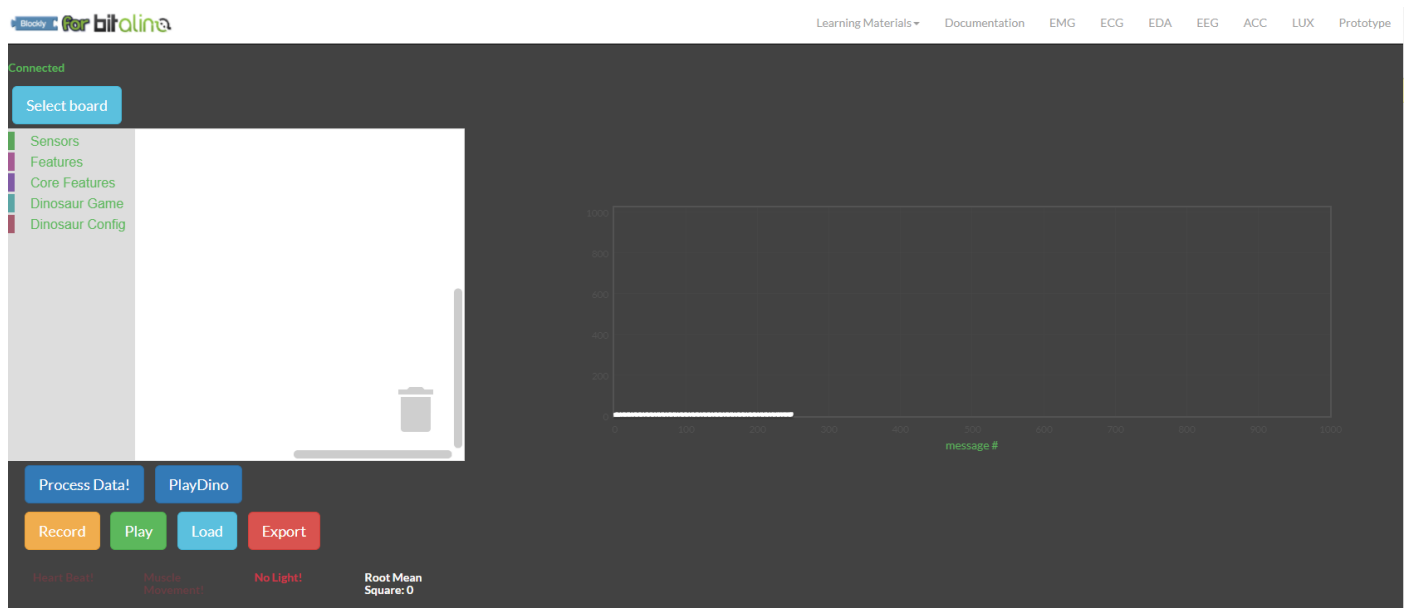
In this tutorial, we are going to control Hugo the Dinosaur using our arms! This will involve using the Electromyography (EMG) sensor on the BITalino and connecting to the ‘Blockly for BITalino’ app. The EMG sensor measures the electrical activity in our muscles, so by tensing the muscles in our arm, we can control Hugo! This tutorial provides the foundation, but then, see what you can do.

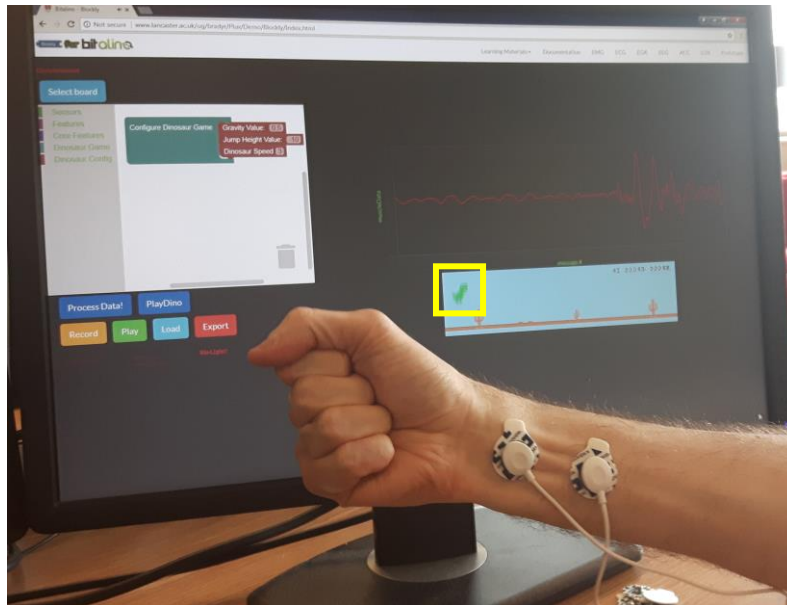
In this game, you play as Hugo. If you tense your muscles (or move your arm), then Hugo will be able to run along the track and gain speed. If you come across an obstacle, simply tense your arm again to allow Hugo to jump over the obstacle and continue along the track. The aim of the game is to keep running for as long as possible, achieving a high score without getting hit by any of the obstacles. If you do get hit, it's game over and you have to start again!

Hardware and Software

Start by connecting up the hardware to the ‘Blockly for BITalino’ interface. ***Instructions for this are contained in the ‘getting started with Blockly for BITalino’ guide.***

Once you have the hardware connected, you should see a screen similar to the following:





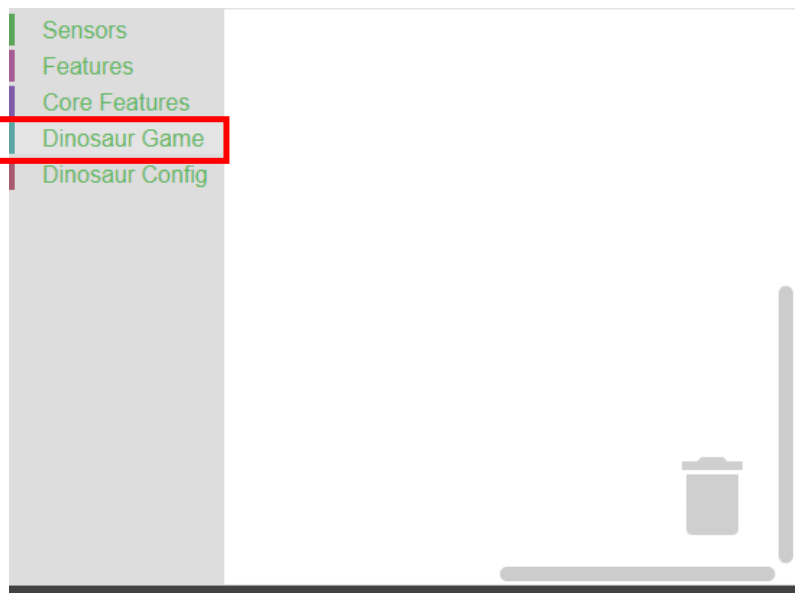
If the user tenses their arm, Hugo can jump over the obstacles!

Interacting with Hugo

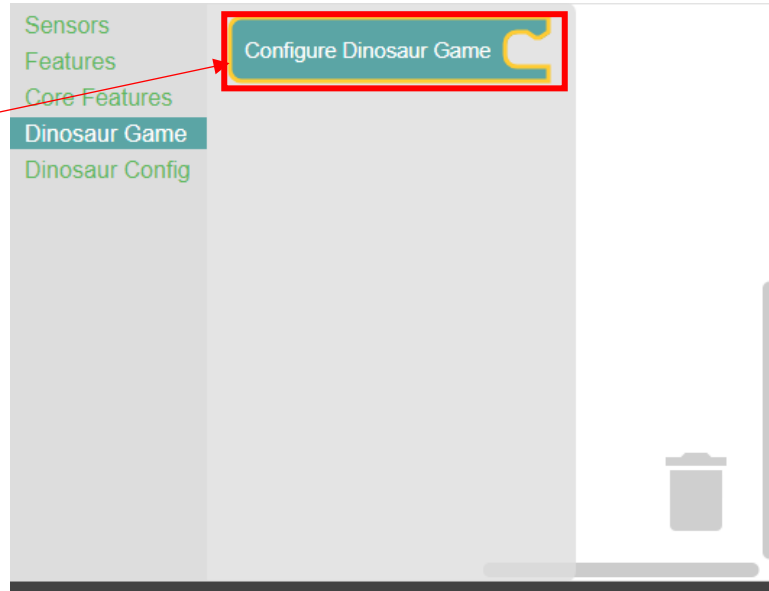
In order to interact with the game, you will need to use the 'Configure Dinosaur game' block. Click on 'Dinosaur game' and then drag the block to the block space.

Then, you can interact with the game using the blocks under 'Dinosaur config'. Once you are ready, click 'PlayDino' and the game should start with the settings you have provided. Sometimes, you may need to re-load the page if you change something.

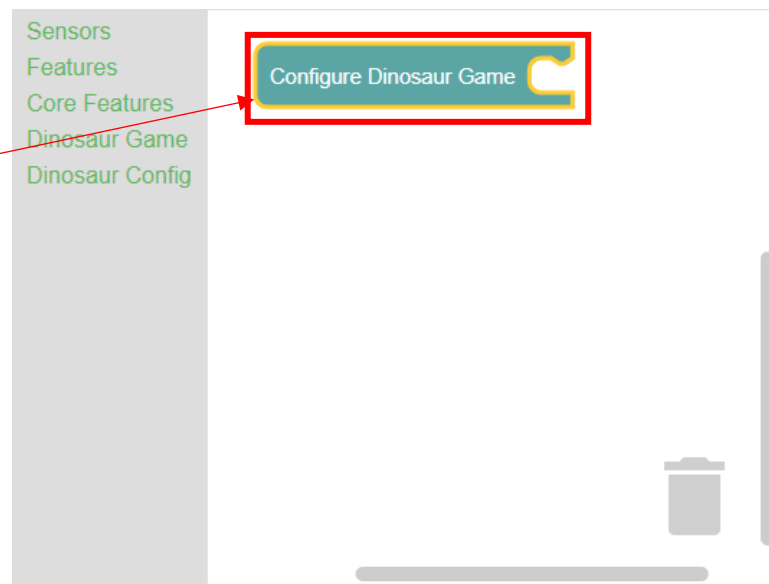
Click here first!



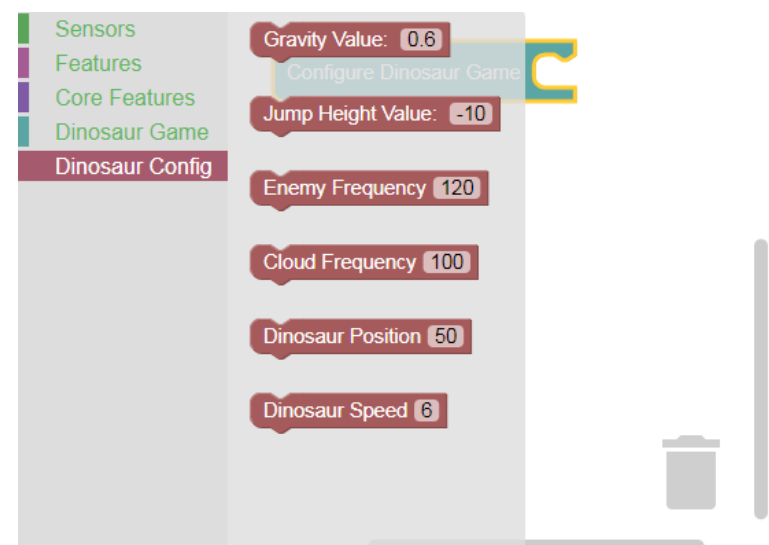
Then select the block.....



..., and then drag and drop it into the block space



Now you can select 'Dinosaur Config' and play with the game settings!



Plug the config blocks into the game block you just dragged and dropped, like this.



Over to you

Now that we have the basic game environment set up, it's over to you. Below, the tutorial describes the blocks that you can edit. Try experimenting with each of the different blocks, and seeing how the game changes as a result. There are some easier ones, and some harder ones, but they're equally fun!

Speed

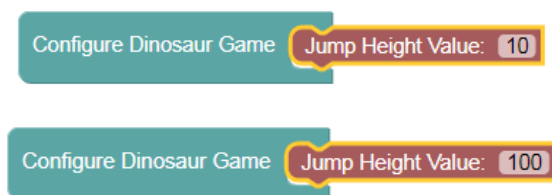
It's easy to control Hugo's speed, through the speed block. This block allows you to either increase or decrease the speed that Hugo runs, up to a maximum of 200. This will help Hugo progress through the levels quicker and gain more rewards.



Click on 'Configure Dinosaur game' and then try experimenting with the values in the 'Dinosaur speed' block. What difference does it make to the game?

Jumping

You can alter how high Hugo can jump by adding the 'Jump height value' block. Maybe you'd like Hugo to jump higher, or perhaps not too high? Try integrating this so that if you tense your muscle more, Hugo can jump higher.



What happens if you increase or reduce the height that Hugo can jump?

Enemies

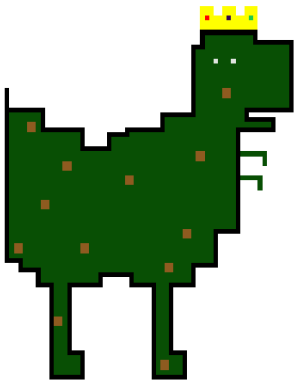
If you wish to increase or decrease the difficulty of the game, why not adjust the obstacles size and height using the 'enemy frequency' block?

The game is set to its easiest level (120), but that's boring! You can change the number of enemies by editing this block, meaning that more enemies will appear more frequently. Why not try experimenting with the enemies block, to change how often they appear?

Configure Dinosaur Game Enemy Frequency 120

Currently, the enemy frequency is set to 120. But what happens if you increase it? You can increase the frequency of the enemies up to a maximum of 700.

Configure Dinosaur Game Enemy Frequency 600



Congratulations! You have completed the tutorial!

You are now ready to have a go at my challenges...