**Android robot instructions**

On the Arduino, in config.h line 5, ensure you have

#define SERIALX Serial2

Pair the phone and the HC-05 if not already paired

Download phone files from:

<https://drive.google.com/drive/folders/1l9Q3YRCNxh2HheDVlaV8MAEW-gxUZEM5?usp=sharing>

Have the wireless mouse dongle in

Open Pydroid3, open **main.py** and press the yellow button. (Note: NOT CBint.py)

Hide the screen navigation buttons. Then you should see “Let’s play chess” at the top of the screen.

This area will be used for messages. The phone is likely to be slow, so at each stage, wait for a new message.

Ensure that you can see the whole of the chessboard in the video view. Click on the “Calibrate chessboard” button. A static image will appear below, and a new message.

Using the mouse, click on the corners of the playing area **starting at the bottom left**. (Note: NOT top left)

You should then see the redlines image (which will be slightly wrong at the moment!!)

Ensure that you have power to the RAMPS.

Click on Start game, and wait … until it says Game Started.

Click on Start robot and wait.

That button text will change to say “Switch on steppers” Do that.

Button text will change to “Adjust ROBOT placement”. Adjust position of robot base if needed, then press button.

Make a move then press “I’ve moved”

Installation:

Pydroid 3

Pydroid repository plugin

Pydroid Permissions Plugin

Change two lines in an Arduino library file, which in my case is at:

ProgramFiles(x86)\Arduino\hardware\arduino\avr\cores\arduino\HardwareSerial.h

A couple of lines with buffer size 64 – change to

#define SERIAL\_TX\_BUFFER\_SIZE 128

#define SERIAL\_RX\_BUFFER\_SIZE 128

Once my code is up and running, steppers are on and robot is in home position:

At any time you can put the chess pieces back to the opening position and  
 Optionally re-calibrate chessboard  
 Optionally re-calibrate robot  
 Click on New Game  
 Then make move

In particular, you can start a new game without re-calibrating the chessboard and without re-calibrating the robot.

You can re-calibrate the chessboard or the robot if the pieces are in the opening position.

If Pydroid is not running  
 Ensure chess pieces are in the opening position  
 Open Pydroid, open and run main.py  
 Optionally calibrate chessboard  
 Click on New Game  
 start and calibrate the robot  
 make move

When the program is closed, the connection to the robot is irretrievably lost, so the robot always has to be re-calibrated when starting from scratch.  
  
The calibration of the chessboard is retained, so as long as the board, robot and phone have not moved, it is not necessary to re-calibrate the board