



Firebot CODI





THE PERFECT COMPANION TO LEARN PROGRAMMING, ROBOTICS AND ELECTRONICS In this activity, we will give CODI the tools and program him in such a way that he will be able to extinguish fires.

STEP 1:

Attach the infrared sensor and the fan to the CODIBOT as shown in the picture.



STEP 2:

Make the connections between the motors and the Arduino. (refer the getting started manual)

STEP 3:

There are two components that we have to connect with the Arduino in this activity.

1. First, connect the infrared sensor to the Arduino, Infrared Sensor has four pins on it, make the connections as follows:

Infrared Sensor	Arduino
G	GND
+	5V
D0	Digital Pin # 2

2. Second, connect the Actuator with the Arduino. The actuator spins or stops the fan connected to it, make connections as follows:

Actuator	Arduino
IN1	Digital Pin # 3
GND	GND



STEP 4:

Once the connections have been made startup ArduBlock via Arduino. (for setup and installation see Getting Started Manual). Make the Code as follows:

1. Drag and drop a do loop panel from the control tab.

Control	
Pins	setup
Tests	program
Math Operators	Loop
Variables Constants	~ ~
Generic Hardware	Loop do
Commutestion	
Storage	if ~
Networking	then then
Code Blocks	

2. Select a Set Digital Variable panel from the Variables/Constants Tab and snap it as shown.

Control			
Tests	set integer variable value		
La la factore de co		7	
Variables/Constants	Integer Variable name		
University in the second to			do variable digital variable name
Communication	(loop set digital variable
Storage	set digital variable		Value HIGH
Networking	Value		
Code Blocks	digital variable name		
TinkerKit			
DFRobot	нтен		
Seeed Studio Grove	LOW		
DuinoEDU Grove Add	TRUE		

3. Snap out the High panel from the value slot and insert a digital pin panel from the Pins Tab.



4. Change the digital variable name to Fire and change the digital pin # to 2.

do	set digital variable variable Fire
Loop	value digital pin # 2

5. Snap a SerialPrintIN panel, replace the message panel with the glue panel, clone the Fire Panel (Right click and select clone) and snap it as shown in the picture.

ArduBlock untitled *							
		New	Save	Save As	Open	Upload to Arduino	Serial Monitor
Control							
Pins	serial nead						
Tests	serial read						
Math Operators							
Variables/Constants	sorial data available						
Generic Hardware	1005511702 L						
Communication	serial print new line (
Storage		de				riable (Fire)	
Networking	serial println	Loop	set di	gital var	iable	value digital	pin # 2
Code Blocks	- The second sec				r		
TinkerKit			social	l printla		10	
DFRobot	<u>cflue (</u>						
Seeed Studio Grove	_ cilue (
DuinoEDU Grove Add	alma l'						
Adafruit Motorshield	- CELIG 1,						
Makeblock	seerifie entrels						



6. Snap an if/else loop below the Serial PrintIN panel.



7. Select a "= = " panel from the Test Tab and snap it in the test slot of the if/else panel.



8. Insert the Fire panel (Clone it by right clicking in it and selecting clone) and the LOW panel as shown.

Control		
Dins	variable	
Tests	Value value	
mani operatora		do variable fire
Variables Constants	integer variable name	value digital pin # 2
Generic Hardware		sarial printin L cine fire
Committeation		Loop test firs - Inv
Storage	set digital variable	
Networking	Value	if/else
Code Blocks	digital variable name	else
TinkerKit		
DFRobot		
Seeed Studio Grove		
DuinoEDU Grove Add	TRUE	
Adafruit Motorshield		

9. Snap five set digital pin panels and two Analog Pin panels in the then slot and change their values as shown.



10. Select a delay MILLIS milliseconds panel from the control tab, snap it as shown and change its value to 5000.



11. Snap another set of five set digital pin panels and two analog pin panels in the else slot and change their values as shown in the figure.



- 12. Upload the code into Arduino.
- 13. Now your CODIBOT is a firefighter. It will move forward until it encounters a flame, once it finds a fire it will stop and will turn on its fan to extinguish the fire, once the fire is extinguished the fan will stop and the CODI will move forward.

