



Lesson 20 – Getting Started with Codey Rocky



**A robot worth its weight
in gold**

**Teaches Scratch & Python
from Grade 3 to 9**



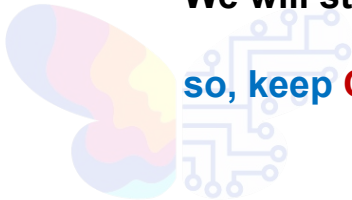
What we will learn

So far, we have learnt that coding is about **passing actionable instructions** to a sprite to move, message, calculate, sense the environment & take decisions.

We shall now see how to **pass the same instructions to a robot or a machine**, to enable them to work for us.

We will start with a pre-assembled robot – **Codey Rocky**.

so, keep **Codey** with you, & keep **Following** what he does





Project 46. Codey Introduces Himself

To get an idea of what we are going to learn ahead let us study this code of Codey introducing himself & then says “bye bye”.

It is same as that for a sprite.
Only the block statements are different. →





Let us also see Codey execute this code.

**Let us now code Codey ourselves.
Let us make a few variations & see.**





Procedure for Coding a Device

Now that we have seen a demo, let us learn the coding procedure.

Procedure & SW used for coding a device is **same as for sprites**.

Only differences is that in case of a sprite, the stage on which the sprite runs the code is in the coding SW itself.





In the case of a device -

The **code we write**

Must be uploaded
in the brain of the robot

To enable it to perform in the
environment outside the SW.





Five Key Blocks of Codey Rocky

While Codey has many blocks, in level 1 we shall focus on only five blocks.



These are:

Event blocks



when Codey starts up

Action blocks



move forward at power 50 % for 1 secs

Looks blocks



show hello

Emotion blocks



smile

Speaker blocks



play sound hello

They are quite similar to, similar blocks for sprites.



Functionally they are similar to, similar blocks for sprites.

In this lesson we shall learn about the Event, Action & Looks blocks.

Emotion & Speaker blocks will be learnt in the next lesson.





A Word about Codey's Event Blocks

Event blocks of Codey are of three different categories.

1. **When Codey Starts.**

A yellow rectangular block with the text "when Codey starts up" in a light blue font.

2. **Broadcast messages.**

A yellow rectangular block with the text "when I receive" in a light blue font, followed by a dropdown menu showing "message1" with a downward arrow.A yellow rectangular block with the text "broadcast" in a light blue font, followed by a dropdown menu showing "message1" with a downward arrow.



3. Sensor based events that trigger its internal sensors.



Note & see for yourself.

*Statements – When green flag clicked, when space key pressed, Broadcast & wait, get highlighted in **live mode only**.*



A Word about Sensors

Sensors check, detect & respond to an **input** from the physical environment.

The **input can be** temperature, heat, light or any other environmental phenomena.

Ex, a **temperature sensor** will **monitor** the room temp.

When it goes over 27 degree, sensor tells the code which in turn orders another device to **Switch on AC** for us automatically.



All SW automation works this coding principle.



Images of a few common sensors





A Word about Action Blocks

We have five categories:

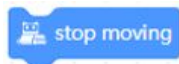
1. Forward & backward moves.



2. Turns



3. stops.





4. Gyro controlled moves.

keep straight forward at power 50 % for 1 secs

keep straight backward at power 50 % for 1 secs

5. Turn using power steering.

left wheel turns at power 50 % and right wheel at power 50 %





Project 47. Basic Movements of Codey Rocky

Storyline is “Codey moves at 50 % power for 5 sec, turn left at 30 % for 2 sec, moves forward at 50 % power for 3 sec & stops”.

It is similar to sprite except block is named **Action** instead of **Motion**.

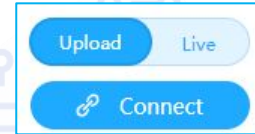
To run, the code must be uploaded in the device memory.





Operating Modes for Running the Code

We have two modes - **Live & upload**.

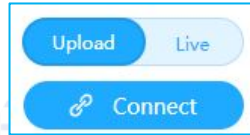


- **In Live mode**, device remains connected using USB cable while the code is run. This is because the code has not been put in its brain, but is still **live** on the PC.
- **In Upload mode**, we can remove cable once the code is uploaded. This is because the code has been **uploaded** from the PC to its brain.



Procedure to Upload

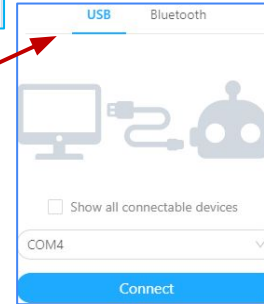
Connect PC to Codey.
Click Connect icon in SIA.



This screen appears
It gives two options:

- Connect via USB.
- Connect via Bluetooth.

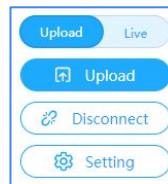
Choose & click Connect.





New upload window opens: →
Select upload. The code gets uploaded.

Now you can disconnect USB cable.





Saving the Project Codes

The procedure for this is same as for sprites explained in lesson 6.



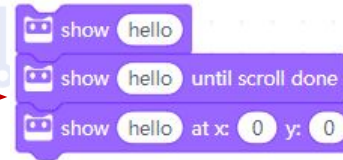


Understanding Looks Blocks

Codey cannot speak, but he can talk & express himself using the display.

Show blocks control Codey's display. It can **show** the following to us:

1. Show Codey is speaking. →



2. Emotions, animations & turn off →





3. Show light up.




In Level 1, we will see first category, & other two in Level 2.





Project 48. Codey Learns to Speak

Say you want Codey to say “How are You all”.

To do this drag & drop  show hello in to the script area.

Change **hello** to desired text (line 2).
Add trigger
& its done.



*Note: Full text does not come on the screen.
To see full text, make it scrollable using.*





End of Lesson 20



Code Karega India Badhega