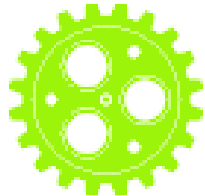
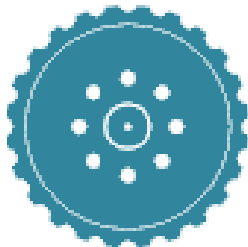


Istituto Comprensivo Camera

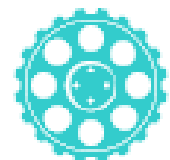
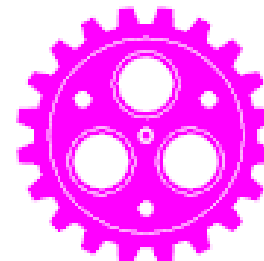
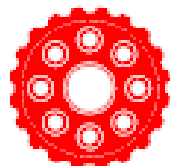
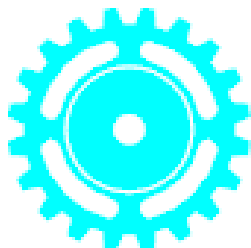


Scuola primaria

a.s. 2021-2022



Classe VA



Today we present to you our robots

WEDO



Mindstorms_NXT



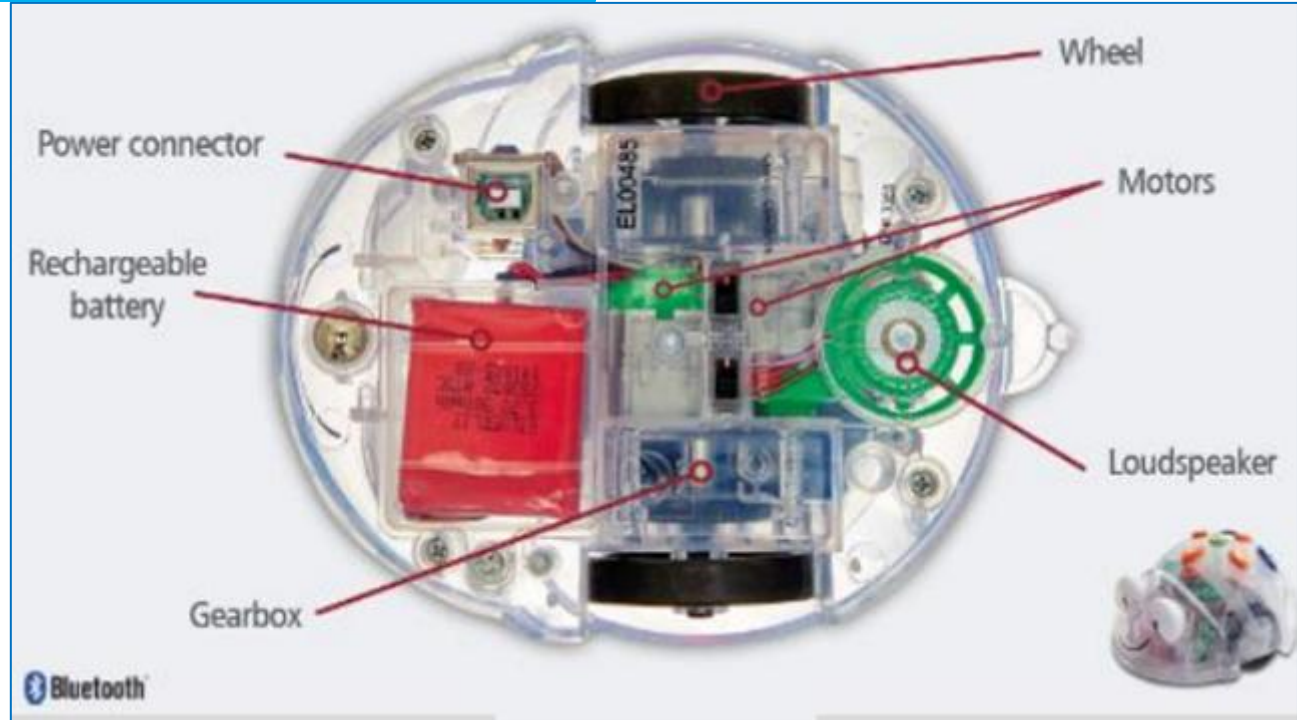
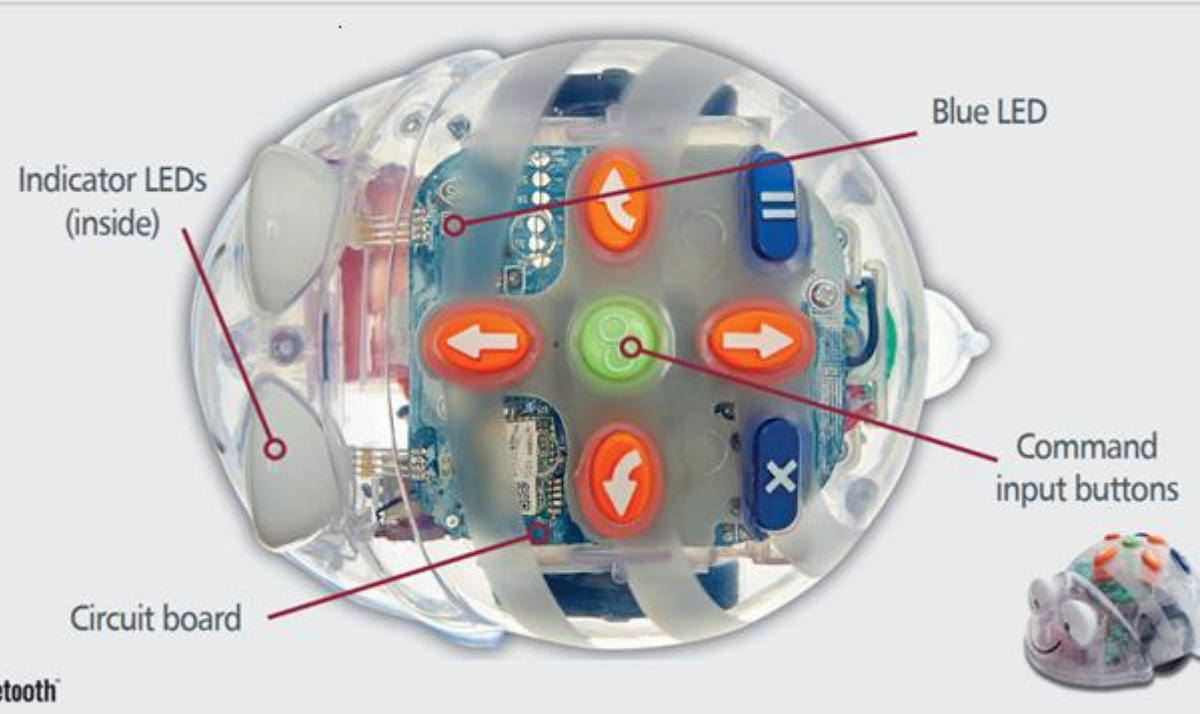
Blue_Bot



Blue_Bot

Blue_Bot is a bee-shaped robot.

It has a transparent shell so that you can see the components inside.



Blue_Bot

This robot has «on board» controllers, tablet's controllers and Pc's controllers.

The buttons of Blue_Bot are 7.

The user can press a sequence of commands, which are stored in the sequence memory. A maximum of 200 commands can be stored.

Blue_bot can make these movements: forward/backward movement, left/right turn, or a pause. Each forward or backward command causes the unit to move approx. 15cm in the required direction.

Each turn command causes the unit to rotate 90°. A pause command causes the unit to pause for 1 second.

When the <Go> button is pressed, the unit will execute all the commands stored in order with a short pause between each command.

When the command sequence completes, the unit will stop and play a sound.

Move forward

90° Right turn

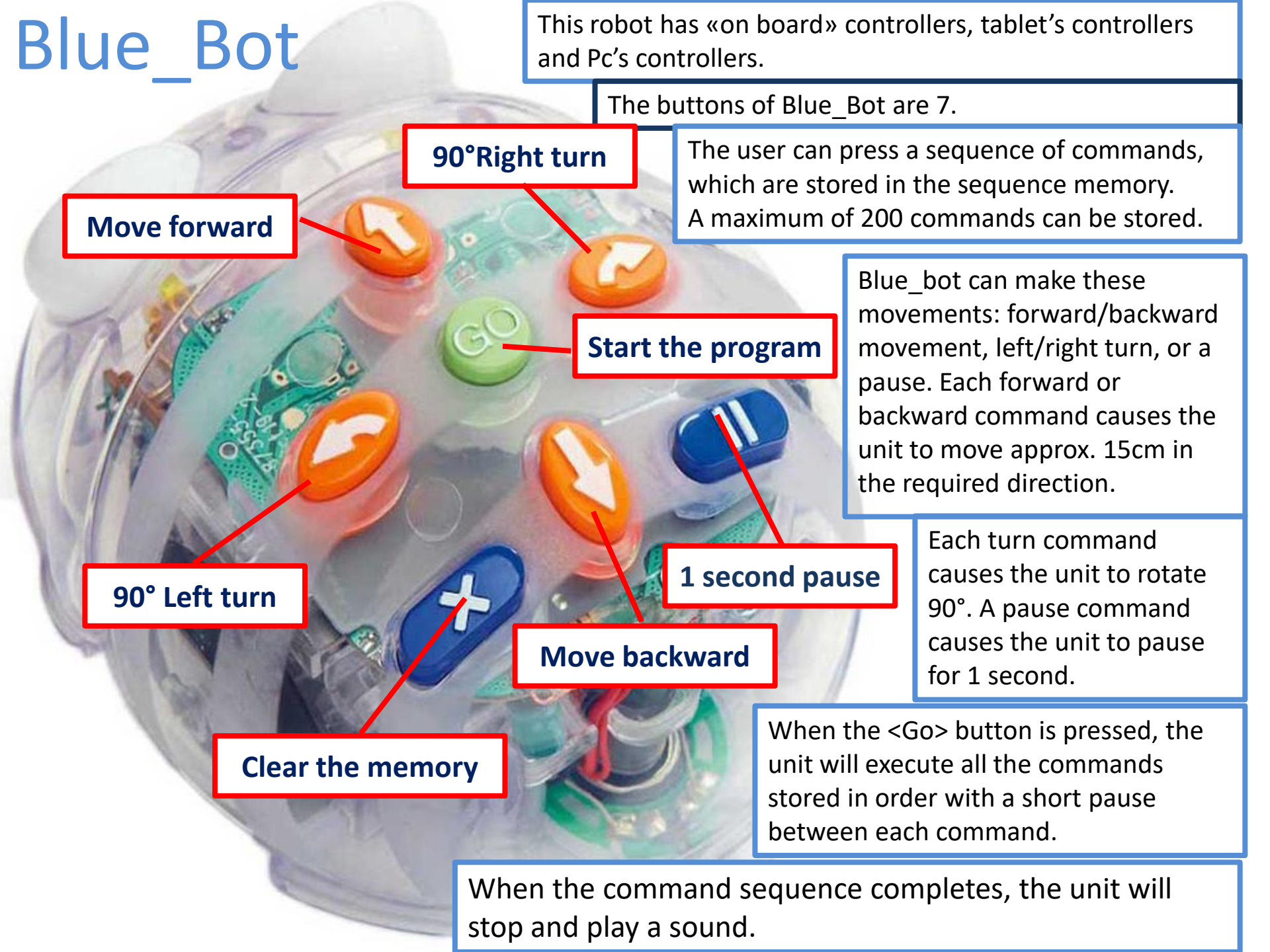
Start the program

90° Left turn

1 second pause

Move backward

Clear the memory



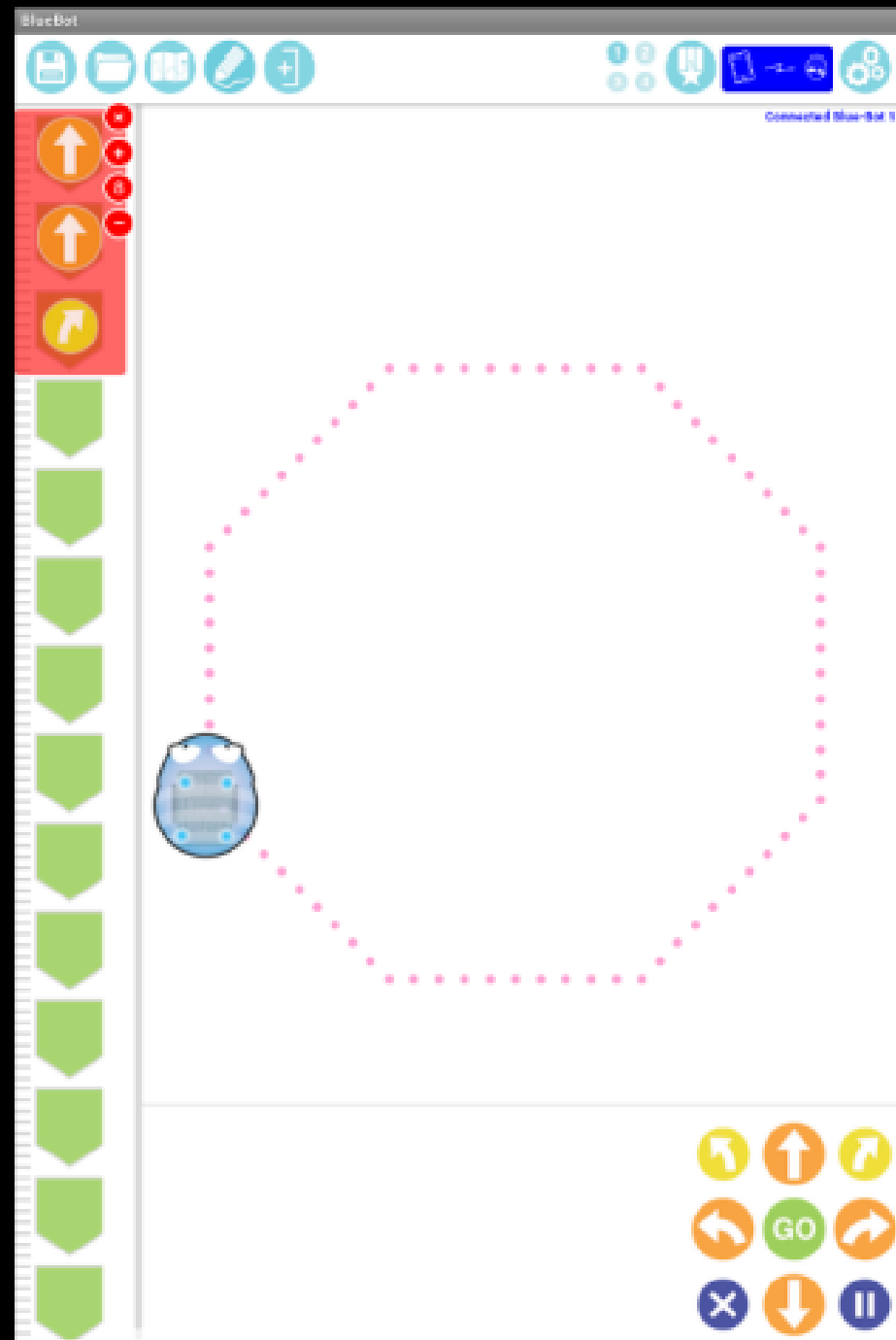
Blue_Bot



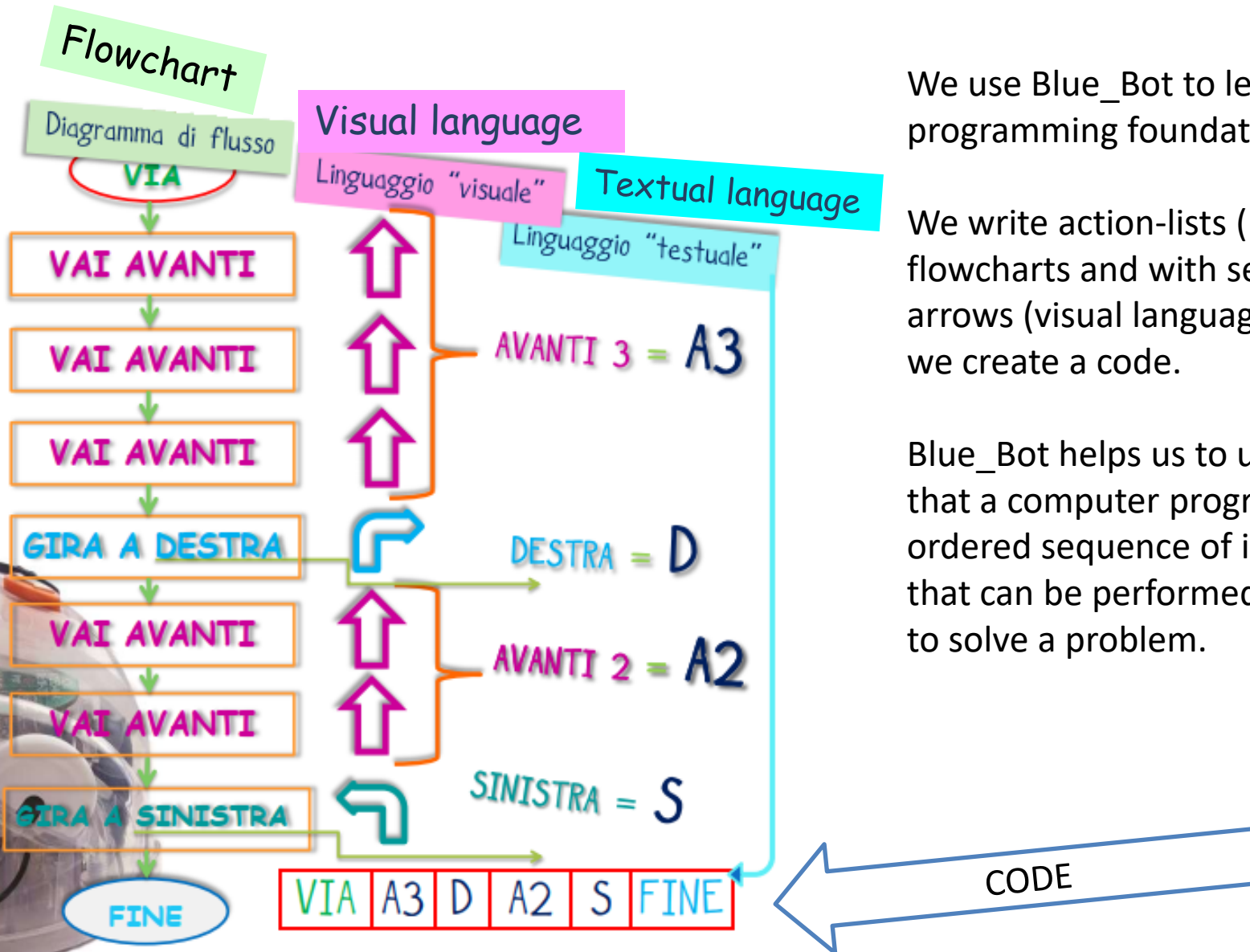
Thanks to its Bluetooth receiver, Blue_Bot can be controlled from a mobile device via the app.

The app allows you to make a step-by-step program or create a complete algorithm, also inserting a continuous cycle and 45° rotations.

While the app sends commands to the robot, on the device screen a virtual bee performs the same programming on one of the available backgrounds or on the customized ones (we can take a photo to use as a background).



Why we use Blue_Bot?



We use Blue_Bot to learn programming foundations.

We write action-lists (listing) with flowcharts and with sequences of arrows (visual language) so finally we create a code.

Blue_Bot helps us to understand that a computer program is a ordered sequence of instructions that can be performed by a robot to solve a problem.

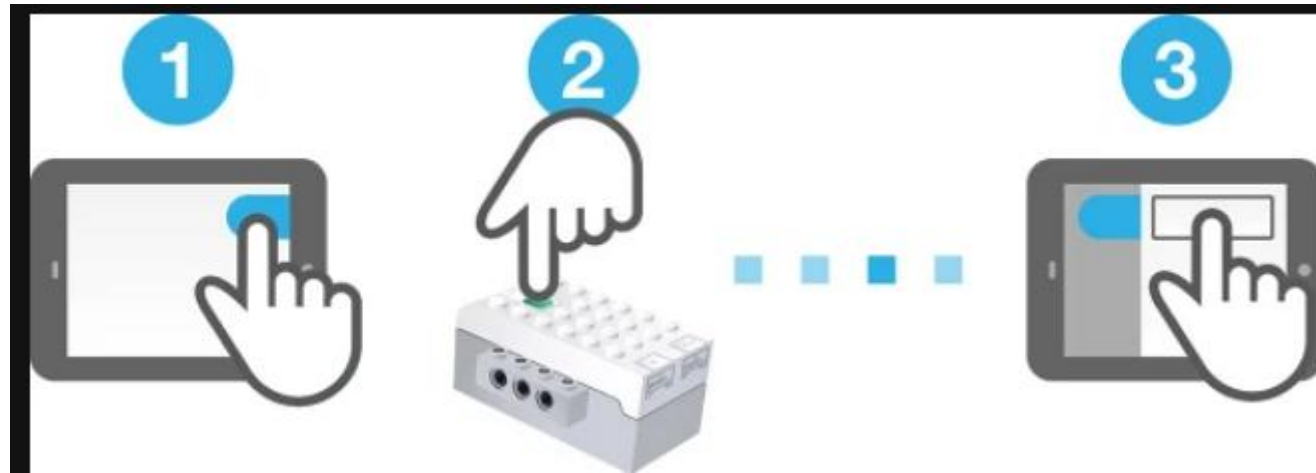
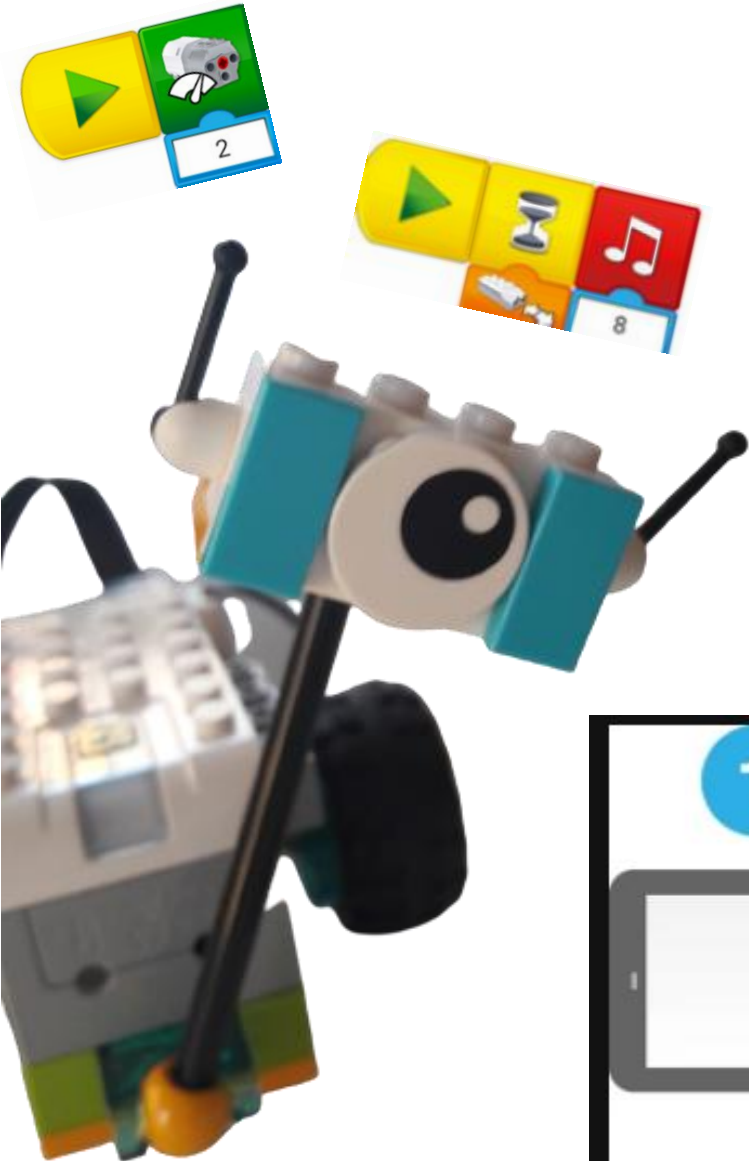
WeDo 2.0

WeDo 2.0 is a set of materials that allows us to quickly build simple robots and program them. We program the robots using blocks that are dragged into the work area and organized in a sequence of actions, which the robots will have to perform to solve a problem.

The first block is hooked to the start point and all those that follow are placed near the previous one. Blocks make programming easier because on each block there is an icon that represents the function of the block.

Through the Bluetooth receiver, the robots built with WeDO can be connected to a PC or a mobile device to receive the programming to be performed.

The connection is made by pressing the button located on the brick.



MINDSTORMS NXT

3 motors, 4 sensors and about 500 pieces (including bricks and small mechanical components), form the kits that allow us to experiment and tinker with robotics, science and mathematics.



Born in 2006, it arrived in our school in 2007. Outdone by EV3 in 2013, NXT is still very useful for us students of the last grades of primary school (8-9-10 years). We also have EV3 but we cannot do without NXT.

Why we use Mindstorms NXT

- Mindstorms NXT allows us to build robots a little more complex, robust and autonomous than Blue_Bot and WeDO.
- NXT allows us students to be more autonomous because our teacher becomes a mentor. The teacher help us but doesn't teach, often the teachers learns with us. This pushes us to find solution on our own and not to give up easily.
- With NXT we experience all the phases of robotics: identification of the problem; construction; programming; testing; error correction (debugging).
- With NXT we make many mistakes. Building and programming a robot is difficult and complicated, it is very common to make mistakes, it takes a lot of knowledge and many minds working together to achieve the goal, so we must learn not to be afraid of mistakes and making mistakes. One of the most important activities in robotics is debugging indeed.
- With NXT we work as a team to learn how to face and solve problems together. There are very specific values and rules to respect, even these are quite difficult to put into practice, in fact we don't always succeed but we often try.

Thank you for your attention!

