# DA #33

Italy

# The Adventures of Bee - Bot





# The Adventures of Bee-bot

#### An idea from:

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Time: 10 activities with the children of 40-50 minutes each for a total of approximately 6 hours.

#### **Materials**

At school

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#### At Home

- Smartphone/tablet/digital camera
- Cardboard,
- glue, pastels, markers, temperas,
- recycled materials,
- natural elements.
- natural elements.
  Bee-Bot (in the absence of a Bee-Bot all activities can be developed the same in an analogical way, using a self built character and cards for the commands instead of the buttons!)

• glue,pastels, markers, temperas,

tablet, computer

• recycled materials,

• cardboard,

#### **Software/ Apps:**

Learning apps	Power point	BeeBot
<b>Objective:</b> creation of interactive teaching exercises	<b>Objective:</b> video creation from images	<b>Objective:</b> Programming a digital bee to move through mazes of
<b>Media:</b> Computer; smartphone; tablet	<b>Media:</b> Computer	increasing complexity <b>Media:</b> Smartphone, tablet
Link: www.learningapps.org	<b>Alternatives</b> OpenOffice Tool, iMovie, VN, CapCut, InShot	Link: <u>Android</u> , <u>IOS</u> Alternatives Lightbot, kodable

### **Short Presentation**

Children are introduced to problem solving and the logic of computational thinking through the adventures of a little bee, who is the protagonist of each activity, either as a mascot in the unplugged coding games, as well as a programmable robot that the children will have to help find their way back to its hive. Families are involved through creative recycling activities with the aim of enriching the world of the little bee with friends and natural elements. Furthermore, with the characters made at home, the children invent and create a story to raise awareness of environmental protection.

## **Step by Step**

<b>Step 1</b>  At school	The educators introduce the topic 'bees' through an initial conversation with the children. The activity continues with a reading of a bee-themed illustrated book ( for example <i>The Honeybee</i> by Kirsten Hall and Isabelle Arsenault) At the end of the story, children can graphically represent their favourite part of the story, or invent a different ending or simply draw a bee.
	<b>For distance learning</b> Through a video message, the educator introduces the topic "bees" by reading them a themed picture book, for example <i>The Honeybee</i> by Kirsten Hall (available in Italian, English, Spanish, German and French) At the end of the story, children can graphically represent their favourite part of the story, invent a different ending or simply draw a bee.
Step 2 At school	The educators introduce the robot bees to the children and give them some time to observe and play with them freely to discover how they work. It is important that at this stage the educators guide the children, through invitations and suggestions to experiment and to discover the functioning of all bee's buttons and the bee's ability to memorise commands in sequence.
	<b>For distance learning</b> Go to step 3.
<b>Step 3</b>  At home	Families are invited to "play bees" freely at home. Children become "home bees", which are commanded by their parents using 4 commands: forward, back, turn left, turn right. The commands are made by touching the "bee" on the left arm (turn left), right arm (turn right, on

	the back (going backwards) on the front (to go forward). After a while parents and children change roles.	
<b>Step 4</b> At school	children are asked to construct the floor on which the Bee Bot will e. First they will have to measure the movements of the bee, using onventional units of measurement (for example lego bricks), to sure the distance from the starting point to the end point of a single Bot movement. e they have discovered the dimensions, the children can use sheets hite cardboard to create the tiles that make up the floor. n child decorates one at will.	
	<b>For distance learning</b> Go directly to the next step.	
<b>Step 5</b> At home	Each child, with the help of the family, creates a simple bee costume using recycled material, paper, cardboard (it can be a pair of antennae or two cardboard wings, anything will do). The children can play at flying like a bee. The costume is kept for the next activity at home.	
Step 6 At school	<text></text>	

	<b>For distance learning</b> Go directly to the next step.		
<b>Step 7</b> At home	The educators invite the children and their families to transform themselves into a "Bee Bot", constructing a home-made grid on the floor using paper scotch (or the tiles of the floor), making flower prints or drawings, and to print symbols to be used as movement instructions that the educators send them. Children and parents take turns playing 'Bee Bot and the Programmer': Children programme first, parents observe the style they use to communicate the programme and use the same style when changing roles.BeeBot wears the previously created bee costume and the programme Bee Bot to run the programme, moving around the track. The paper symbols can be shown to the bee one at a time or placed in a row, starting from the left, side by side.		
<b>Step 8</b>  At school	Children play again with the bees, trying though this time to develop a story that accompanies the bee in their movements and trying to think of what or whom the bee could meet in their path. Subsequently the children build with recycled material other elements that emerged from the storytelling and that they would like to add to the "meadow".		
	For distance learning Go directly to the next step.		

Step 9 ---At home The educators organise a video conference meeting to invite families to create, together with the children, other characters that could be the other inhabitants of the meadow. Each child chooses one character that is to be built with recycled materials found at home. Once the project is finished, children take a photo and share with the educators.



#### Step 10

At school The characters built with the families and at school are placed on the meadow (grid floor). Children play again with the robot bees by programming them to reach the hive while avoiding obstacles. Subsequently the children invent a story to raise awareness of environmental protection, inspired by the paths and encounters BeeBot makes in the meadow with the help of their educators.



**For distance learning** Go directly to the conclusion.

## Conclusion

Presence	Virtual
Families are invited to the school for a	The educators edit the submitted
screening of the story created by the	documentation into a video that will be
children and to play, guided by the	shared with families and uploaded on the
children themselves, with the Bee Bots.	school website.