

Bee-Bot didn't do what I told it!

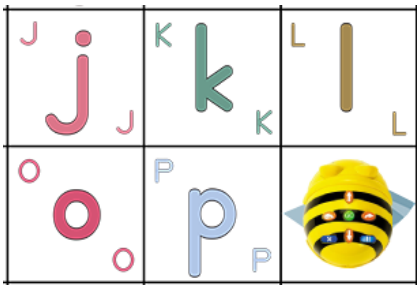
Here's how to find out what your students are thinking and how to help them.

Are your students confused by Bee-Bot's moves and turns, especially when they use the Bee-Bot emulator? They may expect Bee-Bot to move straight ahead when they press a turn button. They might press the Back arrow thinking Bee-Bot will move in the direction the arrow is pointing and be surprised when Bee-Bot backs up!

You may be interested in finding out how your students are thinking about Bee-Bot's moves and turns. Give them three challenges and see how they tackle them. Watching them will give you insights into how they are thinking.

Load the Bee-Bot emulator at beebot.terrapinlogo.com. The Alphabet mat will already be on the screen.

Challenge 1: Get Bee-Bot to go from its starting point to the letter J.



Watch to see how your students approach this challenge.

Some of your young students may try these commands:



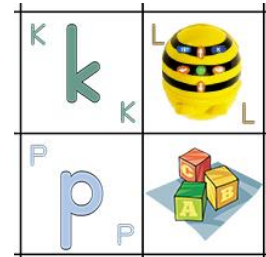
The orange command area shows that the child pressed the forward arrow once and then the left arrow two times.

That sounds right to them: Go straight, and then go to the left two times.

But does Bee-Bot get to J? Where does Bee-Bot end up after following those commands? It goes as far as the letter L and then turns around! Can they see how that happened?



Commands given to Bee-Bot



Where Bee-Bot ended up

They will probably say that Bee-Bot didn't do what they told it. (Bee-Bot always follows commands correctly, even if it isn't what the child intended.)

They can press the **Home** button and then **GO** to try the same commands again. Did it work the second time? No, Bee-Bot did the same thing. They need to find a different solution.

Can the children figure out how to get Bee-Bot to letter J?

They can press the **X** to erase their commands and then **Home** to start a new set of commands.

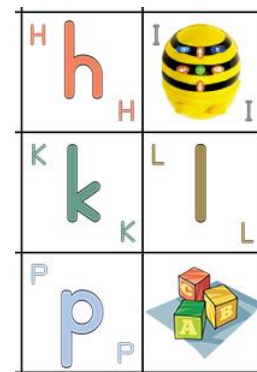
See if they can figure it out this time. You can try some of the strategies listed below in the numbered list if they continue to struggle.

Challenge 2: Now that you have gotten to the letter J, get to letter S.
You can keep your commands and press **Home** to put Bee-Bot back at its starting spot. Then add more commands to get to letter J and then continue to letter S.

Challenge 3: First, turn Bee-Bot all the way around so it is pointing to the floor.
(Wait for students to do this and check their screens.)
Now give commands to get Bee-Bot to letter Y.



Commands given to Bee-Bot



Where Bee-Bot ended up

It makes sense to press the arrow key that points the way you want Bee-Bot to go, right? That is what this student did. But no! Bee-Bot went backwards two times.

Can they eventually figure out that the Forward arrow means to move Bee-Bot the way it is facing?

Here are some tips to help them understand these concepts. These suggestions are different ways of achieving the same result. Different strategies may work for different children.

1. As a reminder, ask your students to look at the buttons in the Bee-Bot emulator. “Do you see buttons that move Bee-Bot forward and back? Do you see buttons that make it turn? Which button makes Bee-Bot go straight ahead?”
2. Play a Bee-Bot game away from the computer. One student acts as a human “Bee-Bot”. Other students give “Bee-Bot” commands to move and turn. They can use the words for the buttons: “Go Forward”, “Turn Right”, “Go Back”, “Turn Left”. Make sure that a turn command means just to turn in place, not to move anywhere.
3. Turn on the “**Talk to me!**” feature in the Bee-Bot emulator by clicking its check box. This causes a voice to speak each command before Bee-Bot runs it. It also slows down the process, which will help students follow Bee-Bot’s actions.
4. Have your students put themselves in Bee-Bot’s position. By actually getting out of their chairs, they can point themselves in the same direction that Bee-Bot is facing. They need to become the Bee-Bot! Once students see which way Bee-Bot is pointing, it can often help them decide whether to go straight ahead or turn.
5. Have students raise an arm in front of them with their fingers pointing the way Bee-Bot faces. Pressing the Forward button means to send Bee-Bot in the direction their fingers are pointing.

6. If students have a paper Bee-Bot in front of them, they can experiment with turning it and moving it forward or back before entering commands in the emulator.
7. Lay out cards with a sequence of Bee-Bot commands (either Command Cards or ones you make yourself). This can help students plan ahead and press the right buttons.

In time your students will learn that the Forward arrow sends Bee-Bot straight ahead in the direction it is facing, not to go the way the arrow itself points.