

Bee-Bot Basics: Forward and Backward Fun!

25 minutes

Exploring Robotics and Commands

WHAT THIS LESSON DOES

In this lesson, you will guide your students in exploring the Bee-Bot, a programmable robot. The lesson involves introducing the Bee-Bot, conducting number strip and colour-based activities, demonstrating Bee-Bot operations, and facilitating student practice. The students will learn to give commands, clear the code, and engage in a group activity. The lesson concludes with a wrap-up reinforcing the skills learned.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the basic functions and controls of a Bee-Bot.
- Develop skills to instruct Bee-Bot to move forward and backward using a number line.
- Apply knowledge of Bee-Bot controls in a game-based activity.
- Comprehend the importance of 'clearing the code' before entering new instructions.
- Work collaboratively in small groups to guide Bee-Bot along a number line.

BEFORE THE LESSON

- Have Bee-Bots charged and ready, one per small group.
- Set up number-line mats, or print the card variations from the lesson if mats are short.
- Open the direction games on the IWB, projector or large screen and check they display clearly.
- Clear space for a circle demonstration and for group floor work with the mats.

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HOW THE LESSON RUNS

Meet the Bee-Bot

Number Strip Activity

Colour Based Activity

Teacher Demonstration

Student Practice

Clear the Code

Student Activity

Wrap up

TEACHING MOVES

1. Meet the Bee-Bot. Gather the class and introduce the Bee-Bot as a robot they will tell to move forward and backward along a number line.
2. Number Strip Activity. Run the ladybird direction game on the large screen. Model using the blue arrows to reach Digi's target square, then take pupil turns.
3. Colour Based Activity. Replay the same game with colour targets so pupils practise giving clear direction instructions again.
4. Teacher Demonstration. In a circle, show the Bee-Bot. Name the forward and backward buttons and say each press is one step. Mention its memory as a tiny brain that keeps directions.
5. Student Practice. Invite a few pupils to try simple moves such as forward two or backward one. Insist they clear first. Ask how they chose their sequence.
6. Clear the Code. Teach pressing X before every new set of instructions. Have the class say "clear the code" aloud and make an X with their arms as they press.
7. Student Activity. In small groups with a Bee-Bot and number line, set targets on the line. Let them use forward and backward. Allow gentle explore of rotate if it happens.
8. Wrap up. Praise the forward, backward and clear-the-code habits. Suggest Bee-Bot free play in Aistear time so practice continues.

WHAT TO WATCH FOR

- Pupils add new button presses without clearing, so the Bee-Bot runs old commands plus the new ones. Stop before every fresh try. Chorus "clear the code", press X together, then enter the new sequence only.
- Pupils think one long press or one instruction sends the Bee-Bot the whole way, not one step per press. On the mat, press forward once and watch one square. Count presses aloud to match the number of steps needed.
- Pupils mix up forward and backward when the Bee-Bot is facing them or is mid-path on the line. Point to the Bee-Bot's face, name the direction it is looking, then choose forward or backward from that facing.

DIFFERENTIATION

- Emerging: Pair the pupil with a partner who presses while they say the steps aloud on a short target, such as forward one or two. Stay with the group for the first clear-and-go so the X button becomes a habit before they work alone.
- Developing: Give number targets a few steps away and ask them to predict the presses before they run the Bee-Bot. Prompt them to explain why they cleared the code before the new sequence.
- Proficient: Set farther or two-stage number targets on the line using only forward and backward. If they discover rotate, let them explore briefly, then bring them back to clear sequences that still hit the number.