

The Very Hungry Bee-Bot

Red Level: Unit 1, Lesson 8

Objectives

In this activity, students will:

- Rehearse several possible paths before selecting one to program.
- Incorporate original storytelling with colors and shapes on the Bee-Bot Color Shape Mat.

Activity Description (30-40 minutes)

10
min.

Welcome:

- Review the anchor chart from last class. Highlight what each switch and button does and how we need to press Go at the end.
- Give a brief synopsis of [The Very Hungry Caterpillar](#) then say today's lesson is the Very Hungry Bee-Bot! Show the Color Shape Mat, and lead students in a brief brainstorm of what foods the colors and shapes can represent.*
- Today, you will tell your own Very Hungry Bee-Bot story as you program Bee-Bot to eat from a starting place to an ending place!

*Some ideas. Please use examples that your students will relate to:

- Orange Circle: bowl of phở or ramen, roti, birthday cake, tortilla, falafel, carrot
- Green Rectangle: box of cereal, kale, pesto, avocado
- Red Triangle: pizza slice, lychee, Sriracha sauce, chili, salsa
- Blue Hexagon: blueberry, honeycomb, _____ on a hexagon-shaped plate
- Purple Cube: ube ice cream, box of pasta, grape, mangosteen
- Yellow Square: curry, dumpling wrapper, mango, ginger rice

Warm-up:

- Choose one partner to model with.
- Choose a starting and ending spot.
- Use the [flat Bee-Bot](#) to rehearse different paths. Choose one path as a group and draw a line connecting the start to the end point.
 - [The Very Hungry Bee-Bot Recording Sheet](#)

	○ Example sheet ● Model the Three-Button Protocol. (1-2 minutes) ○ The Driver wears the lanyard and presses Clear (X), Orange (arrow), Go. ■ Use arm gestures such as 1) crossing arms into an X, 2) pointing up/down/sideways, 3) arms forward. ○ Even if there's a bug in the program, pass the Driver lanyard to the next groupmate to debug.
# 15 min.	Main Activity: ● Each group needs: ○ One Color Shape Mat ○ One flat Bee-Bot ○ One Driver Lanyard ○ One Recording Sheet ■ Colored pencils/crayons to draw foods and the Bee-Bot path ■ Have extras, in case groups finish one path and have time to plan a second or third path.
# 10 min.	Circle share: ● Student showcase (1-3 groups). ○ Can be them presenting their Recording Sheet under a document camera. ● Debrief content: ○ How did your group decide which path to take? ● Debrief process: ○ Who would we like to thank in our group for taking turns, treating Bee-Bot kindly, having great ideas, etc.?

Reviewing Student Work

- ★ Consider student talk during not only the group share but the independent or partner/small group work time. Are certain students dominating? Is there a balance of female, male, gender-fluid, mono and multilingual students speaking?
- ★ What kind of language did students use to describe their process and negotiate with peers?
- ★ Consider reflections, either done orally or in journals. What concepts from the lesson resonated most with particular students?

Lesson Notes

- + In kindergarten, we want to encourage children to devise as many ways possible to solve a problem. In the future, they will learn to choose the best one. When we think about the best algorithms, they solve a problem effectively. Sometimes, in computer science, efficiency, speed, and “the shortest algorithm” is praised, but let’s recenter on our definition: computer science is using the power of computers *to solve our problems* and express ourselves. Let us continue to celebrate the diversity of ways that a problem may be solved, and people whose diverse thought-processes devised them.
- + Students may need to review what a hexagon and cube are.
- + For children who see colors differently, we designed the mat to have shapes and text for support and additional options.

Extension Activities

- + Consider following-up with language arts and math lessons inspired by The Very Hungry Caterpillar.
- + Have classroom teachers make the connection to Math Talks, where we celebrate different ways of solving the same problem.
- + Do a cooking activity. Follow the recipe’s (algorithm’s) steps in order. Note the colors and shapes of the ingredients.
- + Debrief the content and the process orally and/or in journals. Feel free to select one or of these prompts, or create one specific to your class:
 - Who is someone you’d like to thank for working with you today?
 - Draw yourself as a computer scientist, trying many different ways to solve a problem.
 - What will you tell someone at home about what you learned today?

Vocabulary

- **debug** - find and fix errors (bugs) in programs
- **perseverance** - continued effort to do or achieve something despite difficulties, failure, or opposition
- **sequence** - events arranged in a specific order, from beginning to end
- **step** - one of multiple actions in a sequence

Standards

- CA CSS K-2. CS. 1 - Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

- CA CSS K-2. AP. 14 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.
- CA CSS K-2. AP. 15 - Give attribution when using the ideas and creations of others while developing programs.
- CA CSS K-2. AP. 16 - Debug errors in an algorithm or program that includes sequences and simple loops.