Story Sequence – Algorithms, Sequence

Yellow, Lesson 4

Objective

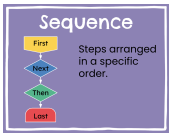
- Students will practice making algorithms and attending to sequence
- Students will use the BeeBot to retell a 4 sequence story in the correct order

Prerequisite skills: Students should know how a Bee-Bot works and be able to code it with a simple algorithm. (Lesson 1 - How does Bee-Bot Move)

Materials:	**Key Vocabulary:**
• Story Sequence Cards • Small Code Cards • Vocabulary Cards • Bee-Bot Robots (alternative Virtual BeeBot Emulator) • Bee-Bot Mat (Grid of 6" squares) • Bee Bot Planning Sheet • "Driver" lanyards	• Algorithm • Sequence • Debugging

Activity Details:

10 min *Build Background*	**Read/Review:** • Choose a story your class has recently read/studied. (Reading a story from your ELA curriculum will have maximum cross-curricular impact.) • Use story sequence cards to briefly retell the story.

20 min
Explore
	Make Bee-Bot travel through the story sequence
	• Lay the Bee-Bot mat in the middle of the circle and, as a class, place the story's 4 sequence cards in various squares.
	• Review the term **algorithm** (vocabulary card)
	  ○ Discuss using the coding cards to plan the algorithm the Bee-Bot will follow to get from the 1st card in the story to the last card.
	• Review the term **sequence** (vocabulary card)
	  ○ Encourage the kids to make sure they know the sequence of the story so the Bee-Bot travels in the correct sequence.
	• Model programming the Bee-Bot to travel from the first story card to the second story card.
	• Debugging: Did it do exactly what you expected?
	 
	 

15 min *Connect*	**Students work in small groups to take turns programming story sequence algorithms.** • Have students work in groups of 2-3 • Give each group a Bee-Bot Dance Planning Sheet and a set of Code Cards. • Have one student put the cards in random squares on the mat, one student plans the algorithm, and another student program the sequence into the Bee-Bot.

	• Rotate roles so each student gets to do each job.

Teacher support ideas while students work

- How will groups ensure that everyone gets a turn?
- What will the other students do as they are waiting their turn? (eg. work in pairs with one calling out the code cards while the other pushes the buttons, work together to debug and verify sequence)

Extensions

- Have students write their own original story and make 4 pictures to illustrate the sequence.
- Put red squares on several squares on the story mat. Tell the students the Bee-Bot is not allowed to travel on any red squares.
- Have students imagine that one of the buttons (i.e. forward button) doesn't work. Can they create an algorithm to program the Bee-Bot to successfully complete the sequence without using that button?

Reviewing Student Work

➔ Are students able to sequence the story correctly?

➔ Are students able to plan the algorithm and successfully enter the code into the BeeBot?

➔ Are students able to take turns and work respectfully and responsibly with their group?

Lesson Notes

★ Have students debrief orally to identify the story sequence.

CS STANDARDS

Standard K.AP.1 - Model processes by creating and following algorithms to complete tasks.
Standard 2.AP.2 - Collaboratively develop plans that describe a program's sequence of events, goals, and expected outcomes.
Standard 2.AP.4 - Debug and solve simple problems within an algorithm or program that includes sequences and simple loops.
Standard 1.IC.1 - Develop and demonstrate the ability to work respectfully and responsibly with others whether communicating face-to-face or digitally.

CROSS-CURRICULAR CONNECTION

Standard RL.2 - Retell stories, including key details, and demonstrate understanding of their central message or lesson.

Credit for lesson inspiration from: https://sites.google.com/sfusd.edu/k-2cs/

Story sequence cards from Wonder's Curriculum lessons.