K20 LEARN

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Dear Mr. BeeBot, I Can Help You!

Coding and How-to Writing

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Grade Level	1st Grade	**Time Frame**	150 minutes
Subject	English/Language Arts	**Duration**	5 class periods

Essential Question

How can we use sequential language to write and explain how to complete a general task? How can we use this knowledge of sequential vocabulary to complete a coding task?

Summary

In this lesson, students use an autonomous robot called a BeeBot. Students discover coding is a tool for learning to read and write step-by-step instructions. As students translate by verbalizing step-by-step instructions (sequencing) into real-world tasks, they also make connections to the process of writing a sequential story.

Snapshot

Engage

Students verbalize how to walk to create a square. The class then creates an Anchor Chart of the sequence words they used when verbalizing walking in a square. Next, ask students to demonstrate how to make Mr. BeeBot move using the commands the class gives.

Explore

Students work in pairs to explore how to make the BeeBots move by inputting simple commands.

Explain

Students use the S-I-T strategy to explain exploration of the BeeBots. Read *If Your Monster Won't Go to Bed* aloud on the carpet.

Extend

Mr. BeeBot has a problem he needs solved. Students work in pairs to solve an assigned task of getting Mr. BeeBot from one point to another. Students map out their routes and test until successful.

Evaluate

Students write a letter to Mr. BeeBot explaining "how to" solve his problem by writing out the step-by-step directions they used for getting from one place to another.

Standards

ISTE Standards for Students (For Students (2016))

ISTE5a: Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.

Oklahoma Academic Standards for English Language Arts (Grade 1)

1.3.W.1: Narrative: Students will begin to write narratives incorporating characters, plot (i.e., beginning, middle, end) , and a basic setting (i.e., time, place) with guidance and support.

Attachments

- Letter Template—Dear Mr. BeeBot - Spanish.docx
- Letter Template—Dear Mr. BeeBot - Spanish.pdf
- Letter Template—Dear Mr. BeeBot.docx
- Letter Template—Dear Mr. BeeBot.pdf
- Task Cards—Dear Mr. BeeBot - Spanish.docx
- Task Cards—Dear Mr. BeeBot - Spanish.pdf
- Task Cards—Dear Mr. BeeBot.docx
- Task Cards—Dear Mr. BeeBot.pdf

Materials

- Task Cards (attached)
- Mr. BeeBot Letter Template (attached)
- BeeBots or other age-appropriate autonomous robots
- *If Your Monster Won't Go to Bed* by Denise Vega
- Read-aloud video: "Storytime - If Your Monster Won't Go to Bed - Read Aloud"
- Chart paper

30 minutes

Engage

Ask students how they would walk to make the shape of a square. Then have students stand, verbalize the step-by-step directions, and walk to make a square.

Create a class Anchor Chart of sequencing words by asking students what words they used when verbalizing their step-by-step procedure of creating their square.

When the Anchor Chart is complete, have students sit in a circle on the carpet. Show them a BeeBot and ask if any students have ever seen or used one before. Tell them they will use the vocabulary on the chart to make the BeeBot move in a square. When they create a command to make a robot move a certain way, it is called coding.

25 minutes

Explore

MODEL HOW TO APPROPRIATELY USE THE BEEBOT! Remind the students that BeeBots are delicate and need to be handled with care. Let them know that they will be working with the BeeBots on the floor so that the BeeBots will not accidentally fall off of the table and break.

Use fair share sticks to partner students. Have BeeBots set up around the room (ON THE FLOOR) and give students 15-20 minutes to freely explore with the BeeBots. Suggest that they practice making the BeeBot go in different directions and on multiple paths.

30 minutes

Explain

Using the S-I-T strategy, have students talk with their table groups about their experiences with the BeeBots. They can name **S**urprising, **I**nteresting, and **T**roubling components of using the BeeBots. After a few minutes of table talk, each table will choose a representative to present one *surprising*, *interesting*, and *troubling* part they discussed. Doing this will enable other student groups to help each group troubleshoot their "troubling" component.

Have students come to the carpet and read the book *If Your Monster Won't Go to Bed* aloud. Then, have students turn and talk with an Elbow Partner about the sequence words from the Anchor Chart that were used in the book.

Ask students if any new sequence words need to be added to the Anchor Chart. Add these words to the chart.

Then, ask students how our character solved the monster's problem of not going to bed.

Finally, have students use the sequencing vocabulary to tell their Elbow Partner "how to" get a monster to go to bed.

30 minutes

Extend

Use the attached **Task Cards**, which will require the students to create a 4-5 step coding process, to help Mr. BeeBot with his location problems. Next, have students work in pairs to help Mr. BeeBot solve these problems by mapping out, creating the code, and testing to see if their code works to get Mr. BeeBot to the correct places.

30 minutes

Evaluate

Use the **Letter Template** to have students complete a "Dear Mr. BeeBot" letter. This letter should explain to Mr. BeeBot how they successfully helped him get to a specific location. Tell them they can use arrows along with their sequencing vocabulary in their writing.

60 minutes

Differentiation for Gifted Learners

Some of your students will move through the coding process very quickly. To keep all students actively engaged, here are a few suggestions that students will find interesting and challenging.

- Have them create their own situation that Mr. BeeBot needs help solving; then they can create a map of the solution.
- Have them create mazes that Mr. BeeBot could travel through.
- Have them create how-to videos modeling how to use a BeeBot.
- Have them create stop-motion videos moving the BeeBot from one place to another.

Resources

- K20 Center. (n.d.). Anchor chart. Strategies. https://learn.k20center.ou.edu/strategy/58
- K20 Center. (n.d.). BeeBot. Strategies. https://learn.k20center.ou.edu/tech-tool/606
- K20 Center. (n.d.). Elbow partners. Strategies. https://learn.k20center.ou.edu/strategy/116
- K20 Center. (n.d.). S-I-T (Surprising, Interesting, Troubling). Strategies. https://learn.k20center.ou.edu/strategy/926
- Munchkin Storytime. (2021, August 16). Storytime - If Your Monster Won't Go to Bed - Read Aloud Stories for Children [Video]. YouTube. https://youtu.be/WXwYCOlJOgg