

Snack Stand

Oh, no! Daniel dropped his snack. Help him get a new one from the snack stand.

🕒 30–45 min. 📦 Beginner 🎓 Grades 1–2



Teacher Support

Key objectives

Students will:

- Practice testing prototypes to ensure that they meet a need
- Modify and remix a solution
- Practice helping a story character
- Describe key ideas or details from a text

Things you will need

(one for every two students)

- LEGO® Education SPIKE™ Essential Set
- Device with the LEGO® Education SPIKE™ App installed

Additional resources

[Building instructions](#)

[Meet the Team: Minifigure Bios](#)

[Assessment Rubric](#)

Educational standards

- CSTA 1A-DA-11
- NGSS K-2 ETS 1-3
- ISTE 1.4c
- CCSS.ELA-LITERACY.SL.2.2

Math Extension

- CCSS.MATH.CONTENT.2.MD.D.10

Prepare

- Review the *Snack Stand* lesson in the LEGO® Education SPIKE™ App.
 - If necessary, pre-teach these related vocabulary words: *effective*, *serve*, and *tool*.
 - Consider the abilities and backgrounds of all your students. Differentiate the lesson to make it accessible to everyone. See the *Differentiation* section below for suggestions.
 - If time allows, plan and facilitate the math extension. See the *Extension* section below for more information.
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Engage

(Whole Class, 5 Minutes)

- Facilitate a quick discussion about the importance of testing to make sure an object works as it should.
 - Talk with your students about objects that need to work properly when they're eating.
 - Ask questions, like: *How could you test to make sure a table is flat so that your food won't roll off? If the table isn't flat, what could you do to fix it?*
 - Introduce your students to the story's main characters and the first challenge: serving another snack to Daniel.
 - Distribute a brick set and a device to each group.
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Explore

(Small Groups, 30 Minutes)

- Have your students use the LEGO® Education SPIKE™ App to guide them through their first challenge:
 - Create and test the program that serves another snack to Daniel when he shows his blue ticket to the Color Sensor.
 - Have your students iterate and test their models to complete the next two challenges in the app:
 - Change the program to improve the snack stand.
 - Upgrade the snack stand for Daniel. Make sure he can still reach his snack.
 - You can find coding and building support in the *Tips* section below.
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Explain

(Whole Class, 5 Minutes)

- Gather your students together to reflect on their completed challenges.
 - Ask questions, like: *What did you do to upgrade the snack stand? How did you make sure that Daniel could still get his snack from the upgraded snack stand?*
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Elaborate

(Whole Class, 5 Minutes)

- Prompt your students to discuss and reflect on the importance of testing a prototype to ensure that it works as intended.
 - Ask questions, like: *Why is it important to test and make sure your prototype works as you want it to? What happens when your upgraded prototype fails and doesn't work as you wanted?*
 - Have your students clean up their workstations.
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Evaluate

(Ongoing Throughout the Lesson)

- Ask guiding questions to encourage your students to "think aloud" and explain their thought processes and reasoning in the decisions they've made while building and programming.

Observation Checklist

- Measure your students' proficiency in testing an upgraded prototype to ensure that it works as intended.
- Create a scale that matches your needs. For example:
 1. Needs additional support
 2. Can work independently
 3. Can teach others

Self-Assessment

- Have each student choose the brick that they feel best represents their performance.
 - Yellow: I think I can test an upgraded prototype to make sure it does what I want it to.
 - Blue: I can test an upgraded prototype to make sure it does what I want it to.
 - Green: I can test an upgraded prototype to make sure it does what I want it to, and I can help a friend do it too.

Peer-Feedback

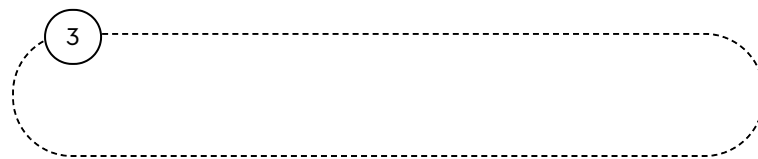
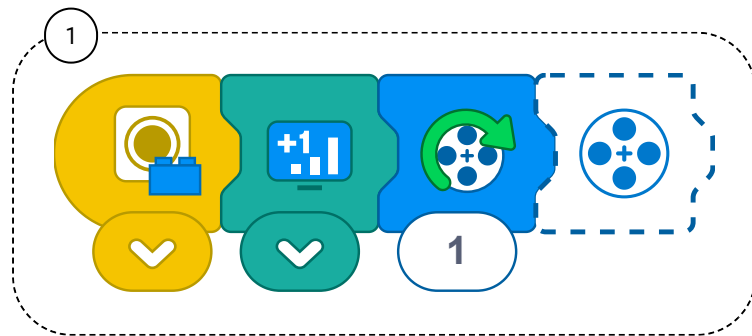
- In their small groups, have your students discuss their experiences working together.
- Encourage them to use statements like these:

- I liked it when you...
- I'd like to hear more about how you...

Tips

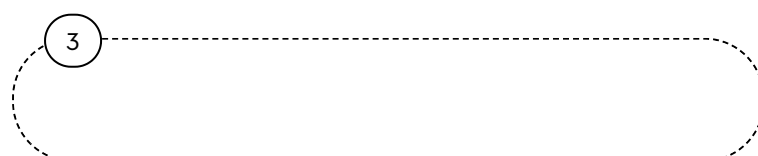
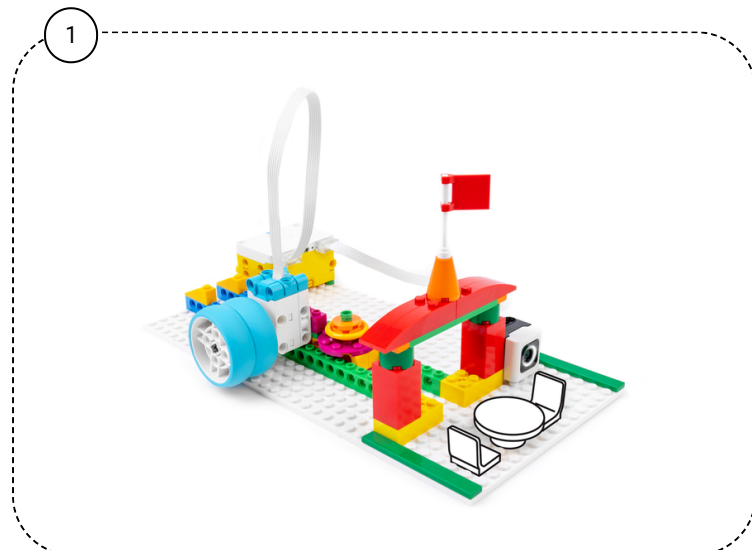
Coding Tip

- After your students complete their first challenge, they'll be provided with three Inspiration Coding Blocks to help them modify their programs.
- The Inspiration Coding Blocks are intended to spark their imaginations as they experiment to find their own solutions.



Model Tip

- After your students complete their second challenge, they'll be provided with three Inspiration Images and an open-ended prompt for improving their models.
- The Inspiration Images are to help spark their imaginations as they experiment and change their models.



There aren't any building instructions for this challenge.

Differentiation

Simplify this lesson by:

- Shortening the lesson to only include the first challenge
- Selecting one Inspiration Image to help your students change their models

Increase the difficulty by:

- Adding other colors for the Color Sensor to react to
 - Adding more items to the menu for Daniel to order and eat
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Extension

- Have your students use the collected data from the snack stand to create a bar graph on paper or using different manipulatives. Guide your students in a discussion about which color was used the most, least, etc.

If facilitated, this will extend beyond the 45-minute lesson.

Math: CCSS.MATH.CONTENT.2.MD.D.10