

Animal Alarm

Leo doesn't want to miss any of the animals walking by his campsite while he's asleep. How can his animal alarm help him?

🕒 30–45 min. 📖 Beginner 🎓 Grades 1–2



Teacher Support

Key objectives

Students will:

- Identify cause and effect
- Develop a program to solve a problem
- Practice helping a story character
- Participate in collaborative conversations

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-AP-10
- NGSS 1-PS4-4
- ISTE 1.5d
- CCSS.ELA-LITERACY.SL.1.1
- CCSS.MATH.CONTENT.1.MD.C.4

Language Arts Extension

- CCSS.ELA-LITERACY.W.1.2

Prepare

- Review the *Animal Alarm* lesson in the LEGO® Education SPIKE™ App.
- If necessary, pre-teach these related vocabulary words: *alarm*, *cause*, *Color*, *Sensor*, *creature*, *effect*, and *react*.
- 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 language arts extension. See the *Extension* section below for more information.

Engage

(Whole Class, 5 Minutes)

- Facilitate a quick discussion about cause and effect.
 - Talk with your students about what happens when an alarm (e.g., fire alarm, alarm clock, cell phone alert) goes off.
 - Ask questions, like: *What would happen if you heard an alarm going off? What would you think is happening?*
 - Introduce your students to the story's main characters and the first challenge: turn on the animal alarm.
 - 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:
 - Make and try the program that turns on the alarm when a blue creature walks by the Color Sensor.
 - Have your students iterate and test their models to complete the next challenge in the app:
 - Change the program to react when a red creature walks by.
 - You can find coding 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 happened when a blue creature walked by the alarm? How did you change the alarm to react when a red creature walked by?*
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Elaborate

(Whole Class, 5 Minutes)

- Prompt your students to discuss and reflect on cause and effect.
 - Ask questions, like: *Where do you see cause and effect happening around you?*
Why is it important to predict cause and effect?
 - 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 identifying cause and effect.
- 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 identify cause and effect.
 - Blue: I can identify cause and effect.
 - Green: I can identify cause and effect, and I can help a friend do it too.

Peer-Feedback

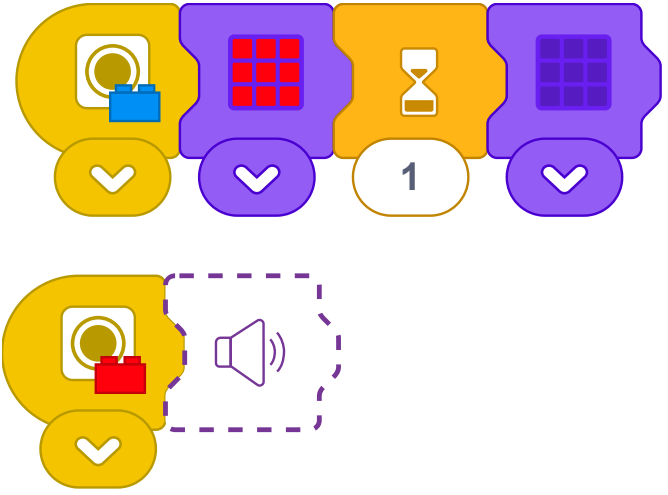
- In their small groups, have your students discuss their experiences working together.
 - Encourage them to use statements like these:
 - I liked it when you...
 - I'd like to hear more about how you...
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Tips

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.

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Differentiation

Simplify this lesson by:

- Reading the *Animal Alarm* story and instructions from the LEGO® Education SPIKE™ App aloud to your students
- Shortening the lesson to only include the first challenge

Increase the difficulty by:

- Changing the alarm to react differently when a yellow or green creature walks by the Color Sensor
 - Clicking *Show Full Palette* in the app to utilize more Coding Blocks
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Extension

- Have your students research and write about different nocturnal animals that could walk by Leo's campsite.

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

Language Arts: CCSS.ELA-LITERACY.W.1.2