

Arctic Ride

Leo is going on an Arctic adventure to see polar bears. How can he use his snowmobile to get there?

🕒 30–45 min. 📖 Beginner 🎓 Grades 1–2



Teacher Support

Key objectives

Students will:

- Use directional vocabulary to describe a sequence
- Break a problem down into smaller parts
- 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-11
- NGSS K-2-ETS1-2
- ISTE 1.5d
- CCSS.ELA-LITERACY.SL.1.1
- CCSS.MATH.CONTENT.1.OA.C.5

Language Arts Extension

- CCSS.ELA-LITERACY.W.1.7

Prepare

- Review the *Arctic Ride* lesson in the LEGO® Education SPIKE™ App.
- If necessary, pre-teach these related vocabulary words: *the Arctic*, *backward*, *forward*, *left*, *right*, and *snowmobile*.
- 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 following directions to get somewhere, like a playground.
 - Talk with your students about using directional vocabulary, like left, right, forward, and backward.
 - Ask questions, like: *How could you explain to a friend how to get to a playground? What words would you use?*
 - Introduce your students to the story's main characters and the first challenge: making the snowmobile go.
 - 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 makes the snowmobile go.
 - Have your students iterate and test their models to complete the next two challenges in the app:
 - Change the program for Leo's next trip. Don't forget to make sure he can get home!
 - 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: *Where did Leo go on his next adventure? How did your snowmobile get him there?*

Elaborate

(Whole Class, 5 Minutes)

- Prompt your students to discuss and reflect on how to describe a sequence.
 - Ask questions, like: *Why is it important to use words like "left, right, forward, and backward" when giving directions? Why is it important to be able to give directions to a friend?*
 - 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 describing where the model goes and how they can get there.
- 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 describe where my model needs to go and how it can get there.
 - Blue: I can describe where my model needs to go and how it can get there.
 - Green: I can describe where my model needs to go and how it can get there, 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 a map.
 - Your students can use the map and experiment with the available Coding Blocks to modify their programs to follow the route for the trip.
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Differentiation

Simplify this lesson by:

- Reading the *Arctic Ride* 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:

- Creating a map that their peers can use for Leo's next adventure
 - Clicking *Show Full Palette* in the app to utilize more Coding Blocks
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Extension

- Have your students participate in a shared research and writing project to create a "how-to" brochure about exploring the Arctic.

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

Language Arts: CCSS.ELA-LITERACY.W.1.7