

Explore Lesson 3

Coach your team through the FIRST LEGO League Explore guided lessons and prepare them for the challenges to come!

🕒 30–45 min.

📦 Beginner

🎓 All Grades



Teacher Support

Key objectives

Students will:

- Use the gathered information about the problem to create an improved solution.
- Learn to use SPIKE™ Essential to help solve the Explore challenge.

Things you will need

(one for every two students)

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

Additional resources

- [Building instructions](#)

- [Meet the Team: Minifigure Bios](#)

FIRST LEGO League Explore Engineering Notebook

Prepare

- Review the Explore Lesson 3 lesson in the LEGO® Education SPIKE™ App.
- If necessary, pre-teach these related vocabulary words:
information, improve.

Engage

(5 minutes)

- Facilitate a quick discussion about asking questions to identify and understand a problem, such as the Explore challenge.
- Encourage students to use key questions to find out information before they try to solve a problem.

- Introduce students to who, what, when, where, why, and how questions.
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Explore

(20 minutes)

- Allow students to be guided by the LEGO® Education SPIKE™ App to complete their first challenge.
 - Build the basic model, on which the students can explore new ideas.
 - Students will then iterate and test their model to complete the next two challenges in the app.
 - The next challenges include:
 - Program the snowmobile to move.
 - Consider how the a driving robot might be used in a solution to the Explore challenge.
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Explain

(5 minutes)

- Talk to the students using GECKO to reflect on their challenges by asking questions such as:
 - What was the problem that needed solving?
 - How did you work together as a team to solve the problem?
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Elaborate

(5 minutes)

- Prompt students to discuss and reflect on how what they've learnt in the last three sessions will help them create moving models for their Explore challenge

solution.

Evaluate

(as needed)

- 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.

Teacher Observation Checklist

- Measure your students' proficiency in brainstorming solutions for a defined problem.
- 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 ask questions to identify a problem.
 - Blue: I can ask questions to identify a problem.
 - Green: I can ask questions to identify a problem, and help a friend do it too.

Peer Assessment

- 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

Model Tip

- After your students complete their second challenge, they'll be provided with an open-ended prompt for improving their models.

- Encourage them to consider the Explore challenge, and, how they might create something relevant to that context.

There aren't any building instructions for this challenge.

Differentiation

Simplify this lesson by:

- Shortening the lesson to only include the first challenge.

Increase the difficulty by:

- Modifying the front of the snowmobile to use wheels.
- Consider how the driving robot could be integrated into the Explore set model.