

Explore Lesson 2

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:

- Change a solution to meet the needs or wants of others.
- 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 2 lesson in the LEGO® Education SPIKE™ App.
- If necessary, pre-teach these related vocabulary words:
change, need, solution.

Engage

(5 minutes)

- Facilitate a quick discussion about changing a solution.
- Prompt students to think about an object such as a car or a cell phone.
- How might people use that object differently?

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:
 - Change the program to modify how the model can be used.
 - Upgrade the model and use creativity to iterate on the design.
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Explain

(5 minutes)

- Talk to the students using GECKO to reflect on their challenges by asking questions such as:
 - What did you change to modify how the object could be used?
 - How did you work together and combine ideas to make it different?
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Elaborate

(5 minutes)

- Prompt students to discuss and reflect on the importance of changing solutions to meet the needs or wants of others..
- Why do you think it is important to include what other people want as you create something new?
- What does it feel like when your needs or wants are included?

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 change a solution to meet the needs of others.
 - Blue: I can change a solution to meet the needs of others.
 - Green: I can change a solution to meet the needs of others, and I can 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...

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:

- Adding a motor and include it in the program.
- Iterating on the design so that it could be a solution to the Explore challenge.