

Explore Lesson 1

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:

- Begin brainstorming solutions for the challenge problem.
- 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 1 lesson in the LEGO® Education SPIKE™ App.
- If necessary, pre-teach these related vocabulary words:
brainstorm, design, test, iterate.

Engage

(5 minutes)

- Facilitate a quick discussion about brainstorming.
- Encourage students to think about coming up with lots of ideas and then trying them out while they build and code. Remind them its ok if an idea does not work first time.

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 improve the ride.
 - Consider how to build on the simple solution and iterate the design.
-

Explain

(5 minutes)

- Talk to the students using SPIKE™ Essential to reflect on their challenges by asking questions such as:
 - What happened when the idea you brainstormed did not work?
 - How did you work together as a team to make it work?
-

Elaborate

(5 minutes)

- Prompt students to discuss and reflect on the brainstorming process.
 - What questions did you ask to help your brainstorming?
 - How did you use ideas from the Explore challenge story to help you brainstorm?

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 brainstorm to solve a problem.
 - Blue: I can brainstorm to solve a problem.
 - Green: I can brainstorm to solve a problem, 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 the Light or the Color Sensor to make it more exciting.
- Brainstorming a way to use the ride as a solution to the Explore challenge.