Welcome to the Program

Welcome to FIRST® and the FIRST® LEGO® League program. FIRST LEGO League captures children’s curiosity and directs it toward discovering the wonders of science and technology. The program was created through a partnership between FIRST (For Inspiration and Recognition of Science and Technology) and LEGO® Education. FIRST LEGO League has three divisions: Discover, Explore, and Challenge. Your students will take part in the Challenge Class Pack!

Thank you for participating in this innovative STEM program for students. Your students join a global community across more than 110 countries. Its impact is profound and leads to a further progression of STEM exploration, skills, and experiences even after students complete the program.

The Class Pack provides schools with the tools to implement FIRST LEGO League Challenge in daily classroom lessons or as a structured after-school program. As the teacher, your role is to facilitate learning for your students and organize your implementation of the program. The guide is designed to help you do this.

This guide also contains information on how students can share their experiences and what they have learned throughout their journey – from highlighting your students’ hard work in a classroom showcase to putting on your own school or organization-based FIRST LEGO League Challenge event.

Useful resources are the Class Pack Videos, which show how to implement the program in the school environment.
Material Needs

Look over the following list for what materials and space you will need in your classroom. It is recommended that students work in teams of six. Each team will need space to design, build, and program their robot. They will need space to have brainstorming sessions, research, draw diagrams and participate in teamwork activities. Access to electronic devices and the Internet are important for each team to have, and for a successful program implementation.

For each student:
- 1 *Engineering Notebook*

For each team (within class):
- LEGO® Education SPIKE™ Prime or MINDSTORMS® EV3 Core and Expansion Sets
- 2 electronic devices (see *Team Meeting Guide* for specific details)
- Supplies to create Innovation Project and poster board recommended*

For each class:
- 2 Challenge Sets
- 4 *Robot Game Rulebooks*

Classroom space:
- 2 tables (recommended) or space on the floor for two Challenge mats with assembled models
- OR 1-2 *FIRST® LEGO League Practice Tables (4’ X 8’) – OPTIONAL*
- Small workstations/tables for each team (enough space for robot building, computers, assembled models, and project work)
- Portable or permanent storage
- Internet access
- Electrical support

*Items with an asterisk are consumable each time a team goes through this experience. If you need additional printed copies of the *Engineering Notebooks*, you can order them through the *FIRST Dashboard* or access digital PDFs of the *Engineering Notebooks* through the Access Thinkscape button on the dashboard.
Classroom Management

Teacher Role

The role of the teacher in a FIRST® Class Pack environment is more of a facilitator. Your teaching style should include a focus on developing holistic skills, building STEM confidence, embracing challenging activities and using play, discovery, and exploration.

Important things to consider when using the facilitator mindset is to:
• Reinforce FIRST Core Values.
• Ask the right kind of questions; guiding questions.
• Be comfortable with not having all the answers.
• Let students learn for themselves through problem-solving.
• Create opportunities for students to have ownership of the learning process and outcomes.
• Reflect on student and team goals and how they are working to achieve them.
• Guide students to the resources to help them achieve their goals.
• Celebrate mistakes and see learning opportunities.

Student Growth Mindset

As you guide students through their experience, having the right mindset is important. Creating student ownership of learning can assist with this. Ownership can be achieved by allowing students to focus on the skills they are developing and what they want to achieve and to use their problem-solving skills.

There are no right or wrong solutions, just different ways of solving problems. There is plenty of opportunity for students to enjoy their successes and learn from their mistakes.

As a teacher, if you can establish perseverance and resilience as traits to celebrate and be grateful for, students will be more likely to strive for them. Students need to be challenged just enough that it stretches their minds and creativity without overwhelming them.
**Scope and Sequence Options**

First®, has created various scope and sequences to provide options for implementation in the classroom. Below are high-level summaries of the scope and sequence options. Detailed documents for each of the different scope and sequence options can be found on the First® Education website [here](#).

<table>
<thead>
<tr>
<th>Scope</th>
<th>Sequence</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Hours</td>
<td>Sessions 1-12 outlined in guides</td>
<td>2 Hours: Event</td>
</tr>
<tr>
<td>7 Hours</td>
<td>Robot Skill Learning (Choose from LEGO® Education Unit Plans on next page)</td>
<td>24 Hours: Sessions 1-12 outlined in guides</td>
</tr>
<tr>
<td>7 Hours</td>
<td>Continue Robot Skills (Choose from LEGO Education Unit Plans on next page)</td>
<td></td>
</tr>
<tr>
<td>9 Hours</td>
<td>Robot Skill Learning (Choose from LEGO Education Unit Plans on next page)</td>
<td>24 Hours: Sessions 1-12 outlined in guides</td>
</tr>
<tr>
<td>25 Hours</td>
<td>STEM Learning and Skill Growth (<a href="#">FIRST @ Home Unit Plan on next page</a>)</td>
<td></td>
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<tr>
<td>25 Hours</td>
<td>Robot Skill Learning (Choose from LEGO Education Unit Plans on next page)</td>
<td>38 Hours: Sessions 1-12 with Extended Challenge Experience</td>
</tr>
<tr>
<td>25 Hours</td>
<td>STEM Learning and Skill Growth (<a href="#">FIRST @ Home Unit Plan on next page</a>)</td>
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**First® Certified Professional Development**

First offers an immersive learning experience for teachers that will help them acquire or strengthen their facilitation skills for project-based learning and building holistic skills.

First Certified Professional Development is available in both remote and in-person formats. We hold regional sessions at various locations in the US and Canada as well as custom sessions for school districts. To find more information about professional development and see available upcoming professional development dates, visit here or contact First School Engagement.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Duration</th>
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<tbody>
<tr>
<td>PreK-1</td>
<td>1 Day (6 hours)</td>
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<tr>
<td>Grades 2-4</td>
<td>2 Days (12 hours)</td>
</tr>
<tr>
<td>Grades 4-8</td>
<td>2 Days (14 hours)</td>
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**Additional Training Opportunities**

As part of our commitment to creating a diverse, inclusive, and equitable community for all our participants, First has trainings on how you can inspire the youth voice, create a sense of belonging, and more. You can access these trainings here.

LEGO® Education offers product-specific training available that you can access here. Your local First Program Delivery Partner might offer First training in your area. For information on local training and workshops, you can contact your Program Delivery Partner here.

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