FIRST LEGO LEAGUE EXPLORE

CLASS PACK GUIDE

FIRST

LEGO education

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 Explore 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 Explore 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 Explore event.

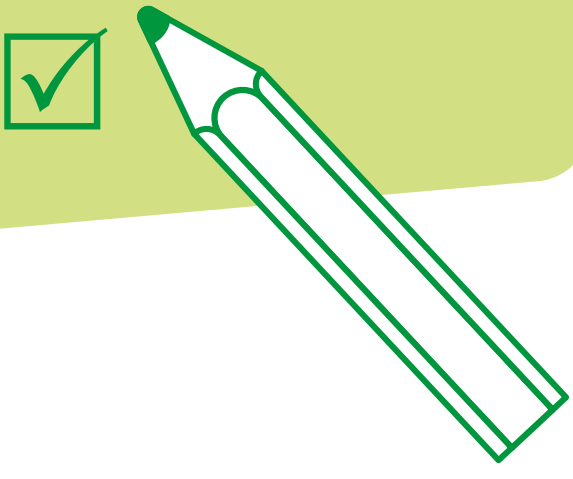
Getting Started Checklist

Thank you to all the teachers and youth leaders who will be delivering the *FIRST*® LEGO® League Explore Class Pack to your students.

Please read the *Engineering Notebook* (this guidebook is given to the students) and the *Team Meeting Guide*. They are full of very useful information to guide you through the program. After completing the 12 sessions, your students will be prepared to participate in a festival that celebrates the magnificent achievements made by the teams.

We've created a checklist to guide you toward success. Use this to help you get started.

- ☐ Ensure you have received all materials needed to run the program. See page 6 for list.
- ☐ Identify the space where you will implement the program and store materials. Think about the robot sets and any assembled models that may need to stay together.
- ☐ Think about the size of the event you want to have. Your festival could be in your classroom or be a bigger event for the whole school.
- ☐ Create an implementation plan and timeline for how you will use the program. See pages 8-9 for implementation tips.
- ☐ Determine who will be participating in the program. Is it your entire class? Will the same materials need to be shared by different classes or other teachers?
- ☐ Encourage family and home engagement.
- ☐ Determine how you will place the class into teams. The recommended team size is no more than 4 students.



Classroom Implementation

Flexible Implementation

First and foremost, use your professional judgment to augment this program to meet the needs of your students, class space, class timing, and additional curricular requirements. Set student expectations for participation in the program based on the student growth mindset of holistic and STEM skills.

Working in Teams

The sessions in the guidebooks have guided tasks for each student team. Here are the reasons behind this design:

- Ensures equitable experience for every student in all aspects of the program.
- Additional opportunity for collaboration and communication.
- Small groups promote deeper learning of content and build holistic skills to share out learning with other team members.
- Fewer materials are needed, and they can be used by more students.
- Having smaller groups allows for students to get hands-on time with building, coding, and exploration.

How to Run Differentiated Groups

- Physically split space to facilitate working in small groups.
- Establish norms for movement and talking in small groups.
- Be comfortable with talking and movement within groups.
- Orient students to daily goals for learning using the student outcomes for each session listed in the *Team Meeting Guide*.
- Have individual check-ins with each team at the start of class.
- Determine the length of time for daily tasks ahead of class and share with students.
- End each class with whole group sharing using the guiding questions outlined in the *Team Meeting Guide* as inspiration.

You will need to adjust how each session is completed by your students if your designated class time to complete each session is different than the allotted 60 minutes per session outlined in the guides. The length this program will take to complete will depend on time within the day you have available to do *FIRST*® LEGO® League Explore and how often you will teach this program (daily, weekly, etc.).

Following is a daily lesson planning example for how to adjust the session content to meet a different class time frame. This example is from Session 1 and uses a 30-minute class time.

Day 1 (Session 1)

Time	Activity	Teacher Notes
10 minutes	Introduction Activity	Review activity listed in Session 1 of the *Team Meeting Guide*.
15 minutes	Complete the first page of Tasks in Session 1.	Each student should fill out the writing and drawing space on the first page of Session 1 in their *Engineering Notebook*.
5 minutes	Clean Up	Show teams where to keep their *Engineering Notebooks*.

Day 2 (Session 1)

Time	Activity	Teacher Notes
5 minutes	Check in with teams.	Review Session outcomes in the *Team Meeting Guide*.
15 minutes	Complete the second page of Tasks in Session 1.	Each student should fill out the drawing space on the second page of Session 1 in their *Engineering Notebook*.
5 minutes	Share Task	Look at Guiding Questions in the Team Meeting Guide.
5 minutes	Clean Up	Look at the Cleanup Pointers in the *Team Meeting Guide*.

*If your school or district is running as a cohort using reusable materials, collaborate with other teachers who will run the program on daily lesson planning and timing.

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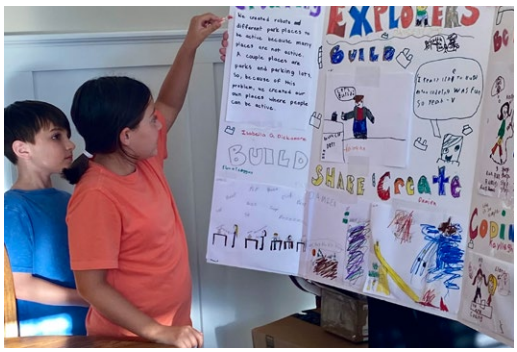
CLASS PACK EVENT GUIDANCE

All you need to know about running a festival in your school.

Follow the advice and teacher tips in this section as you prepare to host your exciting festival to celebrate all the students' achievements at the end of their experience.



Running Your Festival

Purpose: The school festival is the culmination and celebration of the teams' work throughout the program.

PREPARATION (60 minutes before event)

Teacher:

- Set up the space.
- If you have space, set up seating for spectators, team members, and families.
- Allocate each team an area with a table where they will sit and work during the festival and display their team model and poster.
- Get materials ready for additional activities (if desired) for teams to do during the reviewing time.

Teacher/Reviewer:

- Decide where the teams will present their work and whether this will be to the whole class or just to the teacher and/or volunteer reviewers.
- Make sure you have copies of the reviewing sheets and questions (one per team).
- Look at the formative assessment the teacher has recorded to understand the progress each team has made since the beginning of the program.
- You may want to have additional activities for the teams to do while other teams are being reviewed. This could include free building with LEGO® pieces or STEM-related activities.

Scaling up from the Classroom

- If you have more than 5 teams, you can scale up the size of your festival and use a bigger room.
- The teams could do their presentations to reviewers in a separate room.
- You could provide STEM-related activities for teams.
- If there is sufficient capacity invite parents or other classes so teams can share the excitement with them.
- You could hold this event as a STEM night and invite the whole school and parents.

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