FIRST® LEGO® LEAGUE

EXPLORE

FIRST® LEGO® League Explore Ignites Early STEM Engagement

Hands-On Classroom and After-School Programs

In *FIRST*® LEGO® League Explore, teams of students ages 6-10 focus on the fundamentals of engineering as they explore real-world problems, learn to design and code, and create unique solutions made with LEGO® bricks and powered by LEGO® Education SPIKE™ Essential.

Learn more about *FIRST* LEGO League by visiting www.firstlegoleague.org.

FIRST LEGO League Explore Class Pack

Explore can be implemented through *FIRST* Class Packs, which includes curriculum for educators and facilitators to guide their students through 12 sessions designed to introduce the fundamentals of engineering through real-world problem solving.

Explore Implementation Study

From 2019-2022, *FIRST* worked with the Lawrence Hall of Science, UC Berkeley[1] to evaluate the *FIRST* LEGO League Explore and Challenge programs. Goals of the evaluation included understanding impact the programs had on students and teachers. This evaluation was funded by the LEGO Foundation.

KEY FINDINGS

Teachers and facilitators noted positive student outcomes in core *FIRST* program areas, including:

Students have gains in STEM Outcomes

- Interest in STEM — 100%
- Confidence in STEM — 100%
- Programming and coding skills — 97%
- Understanding STEM content — 97%

Students have gains in teamwork and problem solving

- Ability to work with others — 100%
- Ability to make a decision as a team — 97%
- Ability to accept feedback or criticism — 97%
- Ability to adapt, improve, and modify ideas — 97%

Students reported increased interest in robotics and programming

- Robotics — 78%
- Programming — 71%

1 Collins, M., Sanchez, A., Yun, S., Grindstaff, K. (2022). Evaluation of the *FIRST* LEGO League Explore and *FIRST* LEGO League Challenge Class Pack Model. Berkeley, CA: The Research Group, Lawrence Hall of Science.

At the end of the program, students have gains in creativity:

IMAGINATIVE THINKING
100%

COMING UP WITH UNUSUAL, UNIQUE, OR CLEVER IDEAS
100%

At the end of the program, teachers feel more prepared to:

TEACH STUDENTS HOW TO PROGRAM/CODE
89%

CONNECT ACTIVITIES WITH STEM CONTENT
84%

LEAD YOUTH THROUGH THE CHALLENGE COMPONENTS
86%

"...Class Pack provides [the idea] that robotics is not just for most students, but for all students. So every kid can feel that they are worthy to work with [this] equipment."

— Teacher

At the end of the program, teachers feel more confident in:

TEACHING STEM
88%

USING PROJECT-BASED LEARNING TO TEACH STEM
87%

MAKING CONNECTIONS BETWEEN STEM CONCEPTS AND REAL-WORLD PROBLEMS
91%

TEACHING ABOUT PROGRAMMING/CODING
91%

"I learned that you can be an inventor, scientist, you can build things, you can listen to everyone's ideas. Just be you." *— Explore Youth*

Learn more at **firstinspires.org/impact**