









FIRST® Impacts on Learning

FIRST® uses evidence-based strategies for STEM learning to prepare students for the new world of work. The FIRST program model includes strategies known to increase student interest in STEM: hands-on learning, working as a team on real-life problems, exposure to careers and caring adult mentors, emphasis on FIRST Core Values, and a culminating celebration where students can showcase what they created and learned. These program strategies and design result in an experience that helps all kids bridge the global achievement gap and achieve positive outcomes beyond high school graduation.

EVIDENCE-BASED STRATEGIES AT FIRST

STRATEGY	FIRST ALIGNMENT
Community-Based Projects	FIRST participants tackle real-world issues and connect to the community for mentorship and knowledge.
Integrated Kinesthetic or Cognitive Growth	STEM skills come to life when applied through hands-on learning across FIRST programs.
STEM-Based Programs	Robotics and Engineering activities introduce students to all types of STEM careers to help hone their passion.
Integration of Public-Private Partnerships	Companies lend financial support, mentors to work side-by-side with the students, and support partner school districts around the country.
Standards-Aligned	FIRST programs are aligned with core academics, computer science, and a variety technology education across grade levels.
Themed Enrichment	Annual theme around a STEM-focused topic drives yearly design of FIRST games across programs at all levels.
Student Voice and Choice	Small groups work to design/build/program robots, students choose desired areas of concentration and project theme and do the work associated with the program.
Social-Emotional Learning	Gracious Professionalism®, Coopertition®, and FIRST Core Values build cognitive/behavioral competencies such as social awareness and relationship skills.
Student-Connected Learning	Students gain purpose and belonging through connection to peers and caring adults serving as mentors.
Building 21 st Century Skills	FIRST uses an interdisciplinary approach to learning through teamwork, focused on a STEM-based challenge requiring youth to innovate, collaborate, communicate, problem solve, and use critical thinking.
Combination Physical Activity & Social-Emotional Learning	Prototyping, fabricating, and coding a robot as a group takes hard work, leadership, self-management, and social skills.
Project-Based Learning	Use sustained inquiry to solve authentic real-world challenge, have voice/choice in solutions, publicly present solutions and robots at culminating events.
Transdisciplinary Learning	Learners explore challenging 21 st century content that requires deep thinking, using the context of inquiry and application.
Career Connections	Students in FIRST explore careers, have access to industry professionals, and are engaged in relevant topics that build strong foundations for STEM literacy and prepare them with skills needed in the workforce of the future.
Computational Literacy	FIRST empowers participants from PreK to Grade 12 to be capable of solving complex problems with data through active and engaging activities that build computational thinking and programming skills.
Robotics & Engineering	Students in FIRST programs have access to increasingly challenging problems that provide technical rigor at an age-appropriate level using relevant technology tools used in a high-tech workforce.
Partnerships with Colleges and Universities	Colleges run workshops, host events/build spaces for teams, and offer \$80 million in scholarships to FIRST students.
Professional Development	Professional learning that explores the techniques and instructor tools needed to facilitate FIRST programs is provided in our FIRST professional development series.
Equity, Diversity, and Inclusion	FIRST is committed to fostering, cultivating, and preserving a culture of equity, diversity, and inclusion. We embrace and encourage differences in race, ethnicity, national origin, sex, gender, gender identity, gender expression, sexual orientation, disability, age, religion, income, language, learning difference, or any other characteristics that make our adult-force and students unique.

FIRST Core Values We express the FIRST philosophies of *Gracious Professionalism*® and *Coopertition*® through our Core Values:

-  **DISCOVERY** We explore new skills and ideas.
-  **INCLUSION** We respect each other and embrace our differences.
-  **INNOVATION** We use creativity and persistence to solve problems.
-  **TEAMWORK** We are stronger when we work together.
-  **IMPACT** We apply what we learn to improve our world.
-  **FUN** We enjoy and celebrate what we do!

Check out firstinspires.org/impact for information on the lasting impact FIRST has on all participants.

Empowering Untapped Communities



How I Found My Path Forward

While DeAnna's home life in Chicago's South Side was going through turmoil, she struggled to stay engaged in school – until *FIRST* gave her an environment and mentorship that **helped her stay connected and find purpose**. After joining a *FIRST*® Tech Challenge team and learning from her team mentor, DeAnna graduated, went to college, and landed her dream job, and now the *FIRST* alum helps younger members of her family find their own paths forward.



Building STEM culture in Compton

Compton Unified School District in California received a 2017-2018 *FIRST*® STEM Equity Community Innovation Grant to provide greater access to STEM pathways to underserved and underrepresented students by expanding its robotics programs in 20 elementary and middle schools.

Fostering Arts, Culture, & Creativity



Emma Dumont

Actor & *FIRST* Alum

"I have learned so many skills in *FIRST* that have carried over to my acting career. *Gracious Professionalism*, on its own, is one of the most important things that I use every single day of my life. Another value *FIRST* instills is how to give back. That's why immediately after graduation I started mentoring. The *FIRST* community is diverse and spans across so many different countries and cultures. It reminds us all that no matter our differences, innovation and teamwork have no boundaries. **It changed my life.** I can honestly say that *FIRST* has made me a better person, and now I hope to pay it forward."



Jason Rudolph

Emmy Award Winning Screens Producer & Lighting Director

"I wouldn't be where I am today if *FIRST* hadn't changed the game for me early on, teaching me how to take a large group of people and pull off a project under extreme stress and a short timeline."

Strengthening STEM in the Classroom



Jonathan Carpenter

Fourth Grade Teacher, Gossler Park School

"I already knew I loved how robotics increases STEM interest and skills like coding, but my students taught me that STEM project-based programs like *FIRST*® LEGO® League Explore can also have remarkable – and somewhat unexpected – benefits. I saw an **increase in reading and writing skills**, increased student engagement for students who typically struggle in the classroom, and development of important skills like collaboration and problem solving that address the needs of the whole child."



Zandra Jo Galván

Superintendent Greenfield Union School District

"In stakeholder surveys, our students said, 'We need more hands-on. We love science; we love doing things with our hands.' They learn so much conceptually by being able to build and design. They're able to use reading and mathematics and writing and the languages they're learning as it applies to engineering and designing their robots."

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