

## Why Should Kids Learn LEGO Robotics?



We often hear about the need for more students to gravitate towards science, technology, engineering, and mathematics (STEM). For students to be successful in the future, they need to develop 21st century skills, so they can compete with others from around the world. STEM promotes these skills which include communication, collaboration, problem solving, and critical thinking. An education with a focus on STEM is really an integration of the four subjects where students utilize a hands-on approach to solve real-world problems.

Yet, how do we get kids interested in STEM?

Get them involved in LEGO Robotics.

LEGO Robotics allows kids to explore their creative side and build whatever their imagination can formulate. Playtime becomes the pathway to critical thinking and problem solving. When children are involved with Robotics, they begin to wonder how things work, and this curiosity becomes the impetus for computer programming, 3D printing, coding, and engineering.

In LEGO Robotics kids create robots that move and respond to commands. They must utilize physics and mathematical concepts to build robots, and as they become more proficient, their skills go beyond basic knowledge. These skills translate to better grades in school. Their curiosity increases and so does their confidence. They are more willing to ask questions and use their skills to solve problems.

Children can begin working with LEGO Robotics as early as three years old, but it's never too late to begin building the skills that will improve the future. At an early age children will use LEGOs to create buildings and then cars with wheels. Just playing with LEGOs lays the groundwork for STEM. Participating in new activities essentially trains the brain to create new neural pathways and these pathways get stronger with repetition.

As children progress and go further in school, they can join a Robotics team where students work together to build and program robots that respond to commands. These often sophisticated machines can be entered into contests where students learn about winning and losing. With each success, students gain a better understanding of what worked. And, with each loss, students learn about returning to the drawing board to problem solve and redesign.

Designing robots obviously takes skill in problem solving and critical thinking, but it also improves communication and collaboration. Since much of participating in LEGO Robotics involves teamwork, students must learn how to collaborate with fellow teammates. They learn how to promote their own ideas and listen to others. While working to build the robot, students become skilled in collaboration as they must learn to compromise and share ideas.

Involvement with LEGO Robotics lays the groundwork for the future. With an increasing need for robots in the military, service industry, and medicine, children who learn LEGO Robotics are in the early stages of solving future problems. All around us are examples of robots that solve problems for humankind. From self-driving cars to robots that perform surgery, the need for students involved with Robotics will only increase as we move through the 21st century.

LEGO Robotics teaches kids more than just STEM, it promotes skills that last a lifetime. Whether a child prefers to design, create, produce, or execute, he or she will find a passion within LEGO Robotics. It is this passion that can begin with a few LEGOs and transform into a lifelong 21st century career.