

Library Robotics - Modern Literacy Enrichment

Introduction

Where traditional Storytime introduces reading and word recognition, robotics programs begin to introduce science, technology, engineering, and math (STEM) while keeping children engaged in a fun way. Leading robotics enrichment programming is made easy through the use of ready-made curriculum accompanied with thematic materials from the FIRST (For Inspiration and Recognition of Science and Technology) organization. As robotics programs usually begin at the middle or high school levels this leaves an opportunity for libraries to offer an early introduction to robotics for their communities using the FIRST LEGO League (FLL) program. FLL has three divisions: Discover (ages 4 to 6), Explore (ages 6 to 10) and Challenge (ages 9 to 14). FLL participants gain real-world problem-solving experiences through guided hands-on learning. Curriculum is kept fresh through the annual themes chosen by FIRST and their partners. Program curriculum and materials can be reused for repeat programming.

FIRST LEGO League - The Inspiraion used for Library Robotics



FIRST LEGO League Discover - PreK- Grade 1 | Ages 4 - 6:
For children ages 4-6, this playful introductory STEM program ignites their natural curiosity and builds their habits of learning with hands-on activities in the classroom and at home using LEGO® Duplo bricks.



FIRST LEGO League Explore - Grades 2-4 | Ages 6 - 10:
In 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 a LEGO Education robot.



FIRST LEGO League Challenge - Grades 4-8 | Ages 9 - 14:
Friendly competition is at the heart of Challenge, as teams of students ages 9- 14 engage in research, problem-solving, coding and engineering – building and programming a LEGO robot that navigates the missions of a robot game. As part of Challenge, teams also participate in a research project to identify and solve a relevant real-world problem.



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Library Robotics - Non-FIRST LEGO League Programming

Though there are a variety of ways to implement a robotics program at a library, the use of the FIRST LEGO League content makes for an easy way to start a program with little to no prior robotics experience. FIRST designs their program content to be friendly towards both new participants and coaches/program leaders. If a library does not wish to participate in the league they can still order the seasonal thematic kits to conduct a program at their own pace and without the pressure of an event timeline.

Madera County Library first participates in the FIRST LEGO League season to then reuse the season's thematic content for a Library Robotics program. Though the FIRST LEGO League content is reused, the program delivery is friendlier to participants as program leaders are able to guide participants more thoroughly than when participating in the season. In a FIRST LEGO League season, participants are responsible for all the work while coaches can only present concepts, resources and use questions to guide since a coach shouldn't give solutions related to season's challenges. Meanwhile, in a Library Robotics program, by participants not being involved in an official FIRST competition, program leaders are able to give more direct hints, partial solutions, and help get participants to their final solutions.

Library Robotics curriculum comes in the form of the use of FIRST's Team Meeting Guides. The Team Meeting Guide is used in a FIRST LEGO League season to keep the team on track session by session and comes with a host of supplementary resources for coaches to include as they see fit. In Library robotics the Team Meeting Guide is again used for session pacing but now program leaders are able to provide more detail for participants to more quickly achieve a solution and keep the program more concise.

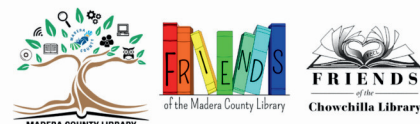
Library Robotics takes the leap from the reading literacy Story Time provides to STEM literacy as participants discover, explore and challenge themselves to conduct research on real-world problems, innovate technological solutions through use of the scientific method and coding robots to complete challenges with engineering and math skills.



Scan this QR code to visit <https://www.firstlegoleague.org/about> for more information about the FIRST LEGO League



FIRST® Core Values



Scan this QR code to visit <https://Robotics.maderalibrary.org> for more information about the Madera County Library's Library Robotics Program

