



Innovation Project Application

Library: LeRoy Collins Leon County Public Library

Project Manager: Debra Sears

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Name of Project: Growing STEM

Project Amount requested: \$3120

Scope of the Project:

With the ever-increasing importance of STEM education, we wish to purchase Mobile STEM Labs to provide a fun but educational learning experience outside of the classroom setting. This program will also demonstrate how the public library continues to innovate and provide needed skills in an increasingly technologically-driven world.

What need in the library/community will this project address?

Public Libraries today need to show that they are much more than a repository for books. To that end, the LeRoy Collins Leon County Public Library System is in the midst of a significant culture shift focused on community engagement and support, vital collections, and expanded, relevant programming. In keeping with our mission to "enrich the community by inspiring a love of reading and ... enabling residents to live a life of learning", the library seeks to offer state-of-the-art programming for all ages that can both educate and entertain.

STEM skills are rapidly changing from "desirable" to "vital" for youth. From pursuing higher education to gaining entrance into well-paying science and technology driven jobs, competencies in science, technology and math are essential. Although the 2019 grades for Leon County Schools indicated successes, including a one-grade bump for 10 elementary schools, 3 elementary schools dropped one grade each. Improvement of one grade level was also indicated for a single middle school, while two of the middle schools dropped one grade each. These mixed results are a concern to our community. Because these age groups constitute 52% of participants of library programming for youth, we believe the library is well-positioned to attract and engage students with this new programming. Students from Pre-K through 8th grade will gain skills such as coding, robotics, engineering, and applied mathematics. This will give them a needed head start (or boost) in the STEM fields. These skills can

be further developed with additional technological programming in the future.

Resources required and budget (NOTE: for items whose unit price exceeds \$500, 3 quotes are required or an indication that the vendor is sole source.):

The \$3120 requested would be for the purchase of 3 Engineering Pathways Mobile STEM LAB intended for grades 3rd-8th at \$700 per lab. For the younger patrons we'd also like to purchase 3 ROK Blocks Mobile STEM Labs intended for Pre-K through 5th grade at \$300/lab. The total amount requested also includes \$120 for 2 Rolling Bases to aid in transport. The Kids Spark Education kits seems to be the best at combining versatility and price after we looked for other sources.

Activities/Timeline (include estimated completion date):

The Mobile STEM Labs will be offered as soon as possible after notification of the grant award. Our plan is to begin providing programming no later than the first week of February 2020 after staff is trained on the Mobile Labs' equipment. The training can be done through the Kid Spark Education website which provides lesson plans, teacher tutorials, curriculum packets and workbooks, along with other instructional aids. The January 2020 monthly meeting of our Information Professionals serving youth will be an opportunity for group discussion, demonstrations, and problem-solving prior to launch. We plan to provide 2 programs per age range per month at our Main Library, with attendance determining demand for additional sessions. We also plan to send the labs out to our 6 branches in order to provide the widest possible reach within Leon County. Programs will be ongoing throughout the year.

How will the library sustain this project?

As the labs are reusable, this will be an ongoing program facilitated by library staff. Replacement parts will be purchased out of the library's existing materials budget, or by using other funding opportunities (Friends of the Library or other grants). Data on attendance, as well as results from surveys of the students and their parents, will reveal what is working and what needs improvement and guide our decisions going forward. We envision this program as a springboard into more STEM-oriented programming system wide and potential expansion to a summer STEM camp.

Library Director's signature: *Debra Sears* Date: 9/30/19

Kim S. Long Date: 9.30.19
Signature of agent, office, or board to whom the Director reports

For PLAN use only:

Approved _____ Not Approved _____

PLAN Executive Director _____



CORE LAB FOR ELEMENTARY & MIDDLE SCHOOL PROGRAMS

Engineering Pathways Mobile STEM Lab

The Engineering Pathways STEM Lab supports the Elementary (3-5) and Middle School (6-8) programs and supports a broad range of technologies and curriculum. More than a one-time-use STEM kit, the carefully curated materials are designed to follow your students throughout their learning. The materials are organized and unimimidating; the large scale elements allow for collaborative learning. As your students progress through the STEM lessons, they learn about mechanisms and movement, applied mathematics, programmable robotics and computational thinking, simple and compound machines, and rapid prototyping and 3D printing. Students drive their own learning through hands-on design and engineering challenges by defining problems, asking questions, and challenging their own thinking to learn through iteration.

This lab features two robotic platforms. The easy-to-use remote control Maker ROK-Bot requires no programming and makes the study of motorized mechanisms and machines easy and fun. The programmable ROKduino introduces students to coding, sensors, motors, and autonomous robotic design. Students with little to no coding experience can start with simple and intuitive drag-and-drop block coding, then transition to text-based coding.

Resources for this lab include access to the [Kid Spark curriculum and professional learning library](#), teacher lessons plans, student curriculum packets and workbooks, ready-made program sketches, and a digital 3D parts library.

Browser address bar: <https://kidsparkeducation.org/mobile-stem-labs/engineering-pathways>

Kid Spark Education logo: **KIDSPARK** EDUCATION

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CORE LAB FOR ELEMENTARY & MIDDLE SCHOOL PROGRAMS
Engineering Pathways Mobile STEM Lab



Need help figuring out which labs you need?

[Plan Your Program](#)

35051 Engineering Pathways Mobile STEM Lab \$699.99	<input type="text" value="1"/>	Add to cart
35057 Rolling Base \$59.99	<input type="text" value="1"/>	Add to cart

We're here to help!
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The Engineering Pathways STEM Lab supports the Elementary (3-5) and Middle School

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ROK Blocks Mobile STEM Lab

The ROK Blocks STEM Lab supports the Kid Spark Elementary Program (PK-5) and is perfect for children without any previous STEM experience. More than a one-time-use STEM kit, the carefully curated materials are designed to follow your students throughout their learning. The materials are organized and unintimidating; the large scale elements allow for collaborative learning. As your students progress through the STEM lessons, they engage in key engineering practices that include gathering information, explaining how things work, problem-solving, and critical thinking.

With this STEM lab, even the most inexperienced students can quickly and easily build sophisticated prototypes and grow their confidence in engineering. Early lessons focus on foundational fluencies that include reading step-by-step instructions, symbolization, measuring, patterns, and symmetry. Then students transition into more challenging concepts like how to make things move, how to make things strong, applied mathematics, the design and engineering cycle, and other foundational fluencies key to building their STEM identity. This identity—seeing one’s self as capable of learning and understanding science, technology, engineering, and math—is the cornerstone to instilling a love of science and technology in your students.

Resources for this lab include access to the [Kid Spark STEM curriculum library](#) and on-demand, online STEM teacher trainings, teacher lessons plans, and student curriculum packets and workbooks.

Browser address bar: <https://kidsparkeducation.org/mobile-stem-labs/rok-blocks>

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ROK Blocks Mobile STEM Lab



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35037	ROK Blocks Mobile STEM Lab	1	Add to cart
35057	Rolling Base	1	Add to cart

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The ROK Blocks STEM Lab supports the Kid Spark Elementary Program (PK-5) and is

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