



ANNUAL REPORT 7.18 TO 6.19



LETTER FROM THE PRESIDENT

This year, in many ways, was truly the best of times and the worst of times. We were THRILLED by our teams' success. Our Geeks for Kids program got 18 kids with movement limitations exploring on their own with their custom, electric cars for them. And, our high school robotics team again earned a spot in the FIRST World Championship. But, during the car build and the day before we left for World, one of our long-time team members, Sasha Rumble, died. Our hearts were broken. Our kids and mentors struggled through World and the final weeks of Geeks for Kids.

Our community was unendingly helpful. Other FIRST robotics teams turned out to help. Donations flowed in to help us finish the cars. We are so very grateful! We couldn't have made it through this year without our students, parents, volunteers, donors and sponsors. This year was enriching, exciting and heart-warming, thanks to everyone involved. Together, our team made it possible for LEARN's kids to:



1. Our Sweet Sasha

- **Attend Fun, Hands-On Classes:**
 - **Explore FIRST LEGO League Junior – Mission to Infinity & Beyond!** – A hands-on intensive for 5 to 9-year-old kids in mechanics, engineering and invention, focused space.
 - **Explore FIRST LEGO League Robotics – Into Orbit** – A hands-on intensive in robot design, building and programming for 9 to 14-year-old kids.
 - **Take Flight** – An applied aeronautics and engineering class for 5 to 9-year-olds that introduces kids to science as they explore flight.
 - **Rockets Away** – A deep dive into rocket science for 9 to 14-year-olds in which kids build a dozen different rockets.
 - **Spy Games** – Our agents-in-training explore strategy, mapping, spy tech and codes and ciphers. In this program for 9- to 14-year-olds, kids put their spy skills to use righting crimes and solving mysteries.
- **Participate in One-Day Events:**

- **Engineering Extravaganza** – A fun-filled day of learning disguised as play as kids travel from station-to-station designing their own solutions to our engineering challenges!
- **City Imagineerium** – Another fun-filled day as hundreds of kids work together to build the model city of their dreams.
- **Dive deep into STEM in Summer Camps:**
 - **Explore FIRST LEGO League Junior – Mission to Infinity & Beyond!** – A hands-on intensive for 5 to 9-year-old kids in mechanics, engineering and invention, focused space.
 - **Explore FIRST LEGO League Robotics – Into Orbit** – A hands-on intensive in robot design, building and programming for 9 to 14-year-old kids.
 - **Take Flight** – An applied aeronautics and engineering class for 5 to 9-year-olds that introduces kids to science as they explore flight.
 - **Spy Games** – Our agents-in-training explore strategy, mapping, spy tech and codes and ciphers. In this program for 9- to 14-year-olds, kids put their spy skills to use righting crimes and solving mysteries.
- **High School Robotics** - Our FIRST Tech Challenge robotics team, The Red Hot Techie Peppers won numerous awards at local and regional events, earning spots in the MO State Championship and the FIRST World Championship. While achieving all these things, the team mentored younger kids in LEARN's classes, served as counselors at our summer camps and helped build Geeks cars.



2. Engineer Fends off Angry Birds with his Cork Shooter at this Year's Engineering Extravaganza



3. The Red Hot Techie Peppers, Celebrating Their Win at the MO State Championship

- **Geeks for Kids Car Build** – A community service project in which our mentors, our high school robotics team and 96 volunteers built 18 cars for kids with movement limitations, bringing our total cars delivered up to 31.

Every one of these programs was a blazing success thanks to the wonderful kids and the terrific mentors and sponsors who brought smiles to our faces. Read on to learn more about what the kids did!

Thanks for another wonderful year!

Rebecca Kidwell, President
LEARN Science & Math Club

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OUR PROGRAMS

LEARN Science & Math Club is a 501(c)3 non-profit. Since 2004, we have been providing kids from the Kansas City metropolitan area with rich science and math experiences through robotics, engineering and programming projects and laboratory experiments. We actively foster the collaboration, organization and communication skills necessary to work and play together.

At LEARN, we know there is a natural scientist inside every kid, and our mission is to foster those native abilities. Whether they plan to become lawyers, chefs or physicists, kids should feel bold and confident in a technical world; we work hard to make that possible. We use robotics programs such as the FIRST LEGO League and FIRST Tech Challenge as well as invention programs such as the Lemelson-MIT InvenTeam program as learning platforms as well as many home-grown curricula. Below, you will find a summary of our 2015 to 2016 programs.



4. A Proud Student, Showing off His Cartesian Diver

FIRST Tech Challenge

In 2010, LEARN Science & Math Club launched a high school robotics program. Our rookie team, The Red Hot Techie Peppers, had a bang up first year – winning the 1st Place Connect Award and the 2nd Place Inspire Award at the Southeast Missouri State Qualifier and the 1st Place Motivate Award at the Missouri State Championship. Every year since, the triumphs have continued as the team earned top honors at nearly every tournament they have attended.



5. The Red Hot Techie Peppers

If you've not heard of FIRST Robotics, you've missed out on one of the coolest, hands-on learning platforms for building math and science skills. FIRST makes computer science and engineering "hip" by

building a sports-like, team-based competition around robotics. Hundreds of thousands of kids from around the world get together and build robots that solve weird, exciting and difficult challenges every year.

When

The high school team met fifteen to twenty hours per week during the competition season, and they met ten hours per week in the off-season.

For Whom

Kids do not have to be super-geeks to get involved. If they are interested in business, graphic design, marketing, accounting, computer programming or engineering, we have got something for them! The FIRST Tech Challenge program is for kids 13 to 18 years of age.



6. The Red Hot Techie Peppers Get Silly with Their Peppers

Fall Classes

This fall was filled with fun! LEARN offered three programs for kids from 5 to 14 years of age: Explore FLL Jr. Mission to Infinity & Beyond and two sessions of Explore FLL Into Orbit.

Explore FIRST LEGO League Junior's Mission to Infinity & Beyond!

Space the final frontier...In a galaxy far, far, away...To infinity and beyond! These are amongst the most exciting phrases in science fiction. And, they're totally exciting in real life, too!

In this program, kids learned about what it takes to explore the universe, starting with gravity and the other forces that affect space travel. Then, we took off to the moon, exploring its phases, craters and humankind's experiences on the moon. Next, we launched into outer space, studying our solar system, our galaxy and the universe. After that, we figured out how we could colonize the moon and build a launching point for further exploration.

What the Kids Designed & Built

The kids made dozens of projects during their travel through space! Here is what was on the menu:

- The Earth
 - Our Amazing Blue Planet
 - Try Your Hand at the Magical Paper Clip Drop
 - Defy a Gravity-Defying Skyscraper
 - Create a Parachute for a Raw Egg
 - Slingshot a Rocket around the Moon
- Earth's Moon

- The Race to Space
- Eat the Phases of the Moon
- Create Moon Craters
- Whip up a Moon Crater
- Our Solar System
 - Our Incredible Star
 - Create a Solar Flare
 - Record the Earth's Rotation with Your Own Sun Dial
 - Build a Solar System Mobile
 - Test the Gravity on Other Planets
 - Create & Play Your Own Solar System Board Game
 - Make a Comet
- Our Galaxy & Others
 - "Follow the Drinking Gourd" and Learn the Constellations
 - Investigate (& Eat) Some Meteorites
 - Make & Explore Black Holes
- Getting to & Living in Space
 - Launch some Mice into Space
 - Create an Air-Powered Rocket
 - Land Safely on the Moon
 - Design a Moon Rover
 - Deliver a Payload to the Moon
 - Design a Core Sample Drill
 - Create Tools to Keep Your Food from Floating Away
 - Build a Solar Oven to Cook on the Moon
 - Learn to Moon Walk
 - Test Your Ability to Use Space Gloves
 - Build a Robotic Arm
 - Create a Space Habitat – a LEGO Design Challenge



7. Young Space Explorers Check out Gravity

In this program, our young space explorers discovered the physics of our universe. It was an exhilarating ride as they traveled through space!

Explore FLL – Into Orbit

For kids the ones who:

- Have to look under every hood, push every button, look behind every door
- Take everything from the DVD player to the bathroom doorknobs apart just to see how they work
- Love logic puzzles and mechanical challenges
- Are involved in romances with their computers that are so intense, it limits REAL human interaction

This class lit their fire! Better yet, parents didn't have to lift a single calculator, microchip or slide rule. We did all the heavy lifting in engineering, science and math – while parents sat back and watched the entertainment.

So, bring your sons and daughters for sixteen weeks of action-packed excitement. (Yes, bring those girls!) It will be so much fun, they won't even know that they're soaking up all sorts of arcane technical knowledge.

What Was on the Menu

During class, we:

- **Played Team-Building Games** – Solving big challenges requires great teamwork, and we foster these skills through games and a team-oriented approach to all our projects.
- **Learned How to Build Strong** – A lesson in structural engineering
- **Solved Engineering Challenges** – Putting those building lessons to work
- **Designed Great Robots** – The kids will learn tips and tricks for building a robot that actually works
- **Scoped Out the Playing Field** – See where you'll meet soaring success or crushing defeat...not really, competition is all for fun, right?
- **Built Lots of Cool Stuff** – This is where you get to put your mark on the robot world – add arms, design rams, create the next modern marvel...Navigating Effectively – You won't love your 'bot if it plays "dead bug" on the mat; so, we'll show you how to get it to jump tall buildings in a single leap...or, at least, go where it's supposed to go.
- **Took a Class in Programming 101** – A lesson in how to talk "robot"
- **Programmed Our 'Bots** – Putting that programming lesson to work
- **Put It All Together** - Test all that cool stuff you've been building and make it work.
- **Competed** – This is where you find out what your robot's made of! (Parents and grandparents are welcome to come, see what the kids have done and enjoy the show!)
- **Won Cool Prizes**



8. A Future Robotician Prepares to Launch into Orbit

And, there was a secret hidden inside every project! While the kids were making all that magic happen, they were learning about electricity, circuits, chemical reactions, polymers, thermodynamics, surface tension, non-Newtonian fluids and more!

Spring Classes

This year, LEARN hosted three spring classes: Take Flight for younger kids and Spy Games and Rockets Away for 9 to 14-year-old kids. All three were bang-up successes.

Take Flight

Last spring, our kids took flight. What kid (or adult for that matter) hasn't wanted to fly? Kids tie capes around their necks and jump off the highest mound, dream of hang-gliding and being a fighter pilot because flying is cool! For these reasons, flight makes a great platform for teaching physics. First, the kids learned the underlying principles of flight through hands-on, STEM projects and challenges that explored:

- Matter
- Air
- Wings and Airfoils
- The Forces of Flight
- Bernoulli's Principle
- Convection

Then, they built more than a dozen flying machines including:

- The Circulatory System
 - Test Your Heart
 - Check out an Animal Heart
 - Make a Batch of Blood
- Blimps
- Kites
- Parachutes
- Gliders
- Rockets
- Airplanes
- And more!

Kids will have so much fun in Take Flight!, they won't even notice that they're learning.

Spy Games

This just might be the coolest class on the planet! Aspiring secret agents solved mysteries and righted crimes from across history. At the beginning of each class, our agents received a coded mission. If they



9. A Group of Future Aeronautical Engineers Prepare Their Rotocopter for Flight

chose to accept the challenge, they tracked down bad guys, infiltrated enemy strongholds, braved laser-protected vaults to steal back national treasures and more with their spy craft. They learned mapping and strategy through:

- Battleship
- Observation
- Message Passing
- Minefield
- Basic Target Practice
- Mission: Be a Super Spy

They learned mapping, strategy and codes. They created spy tech, and they conducted a variety of missions using their newfound skills.

What Was on the Menu

Of course, that's not all! Where would James Bond have been without Q Branch and all its cool gadgets? Every kid (not to mention most men) would love to have cars that spout jets, shoes that conceal phones and rocks that hide coded messages. Our agents:

- Created Spy Technology
 - Periscopes
 - Tiger Traps
 - Trip Alarms
 - Broken-Seal Alarms
 - Pressure Plate Alarms
 - Mission: Protect the Treasures at the National Museum
- Deciphered Codes & Ciphers
 - Morse Code
 - Mirror Writing
 - Invisible Ink
 - High-Tech Codes
 - Weapons Training
 - Mission: Track Down the Missing Treasure
 - Mission: Avert an Alien Invasion
- Mission: Find the Spy
 - Put together all the skills you've learned
 - To solve this final challenge - Who amongst you is a double-agent? Find him or her before your mission is blown!



10. A Class for Kids Who Love Video Games

We did not tell our want-to-be spies, but codes and ciphers taught math! Fingerprinting, facial recognition and all those other crime-solving techniques demonstrate science in action. And, we did some serious engineering while building those spy gadgets. Our aspiring secret agents never knew they were the subjects of the ultimate cover up – learning disguised as play!

Rockets Away

Tighten those seatbelts and prepare to blast off for the ultimate experience in rocketry. If you like (harmlessly) blasting objects into the lower atmosphere, if you are intrigued with (benign) explosives and/or you love to make things go (safely) “boom,” this is the class for you!

What's on the Menu

You will learn how to build and launch:

- Water Rockets
- Balloon Rockets
- Seltzer Rockets
- Bottle Rockets
- Solid-Fuel Rockets
- And, compete in the Mission to Mars Challenge



11. A Class for Kids Who Love Video Games

While this class is all about fun, you'll also be learning a lot of hands-on, applied physics and math while you're building those rockets. Over the course of twelve weeks, you will test different nose cone and fin designs, try out various payloads and track flight paths and altitudes as you fly your various rockets. You will also learn about kinematics, vectors, projectile motion, Newton's laws of motion, the chemistry of combustion reactions, aerodynamics and stability. And, with every 3-2-1-Liftoff!, you will be a step closer to becoming a true rocket scientist!

Then, on the final day, we will tackle the “Mission to Mars.” For this exciting challenge, we will take your solid-fuel rockets for a test flight at a local park. Invite your family, bring a picnic and get ready for the wildest, coolest blast off yet. We will set up launch pads, a control station and see if you can get your rockets to Mars – or, at least, to a variety of height and distance targets. It's sure to be a blast – literally and figuratively.

LEARN STEM Tastings

Here at LEARN, STEM Tastings are short-term programs that last for just a day or two and are designed to excite and enthuse kids so much that they want to try their hands at more complex projects and programs. Some STEM Tastings repeat every year. Others are one-time events, and the remainder rotate through our program line-up every few years. They all have something in common, though. They are whole lot of fun! Below, you will find a list of this year's events.

Engineering Extravaganza

Kids from five to fourteen years of age joined us for a fun-filled day of learning disguised as play! Inside every child there was an engineer just waiting to...

- **Survive the Giant Egg Drop** - Design & test parachutes to protect the magical chicks that could save the world
- **Clear the Valley of Poisonous Snakes** - Construct extending grabbers & capture the snakes
- **Craft Paper Circuits** - Use our templates or design your own to create sparkling paper circuits
- **Build a Bristlebot** - Design and race your own bristle robot
- **Shoo away Angry Birds** - Build and test fire your own cork shooter
- **Paddle Down our River** - Create and race your paddle boat
- **Create the Coolest Paper Airplanes** - Then, compete to fly the farthest or most acrobatically
- **Fabricate a Triangle Slinger** - And, then, use it to fight off the angry hoards surrounding our castle
- **Build a LEGO City** - Help us create the coolest LEGO city ever!
- And More!



12. A Young Engineer Racing His Bristlebot

The kids moved from station-to-station building cool things all day long with our fun and wacky technical mentors or settled in and worked on a project for hours. We provided the challenges, the supplies and the engineering guidance; the kids built whatever they could dream. Their imagination is the only limit!

City Imagineerium

For this STEM Tasting, kids from all over town joined us in building the City of Their Dreams! As kids arrived for this huge event, they applied for a building permit, were issued a “plot of land” and received mountains of recycled materials and art supplies. Then, they spent the day building their city. Volunteer city planners, architects, builders and engineers were on hand to help. This event was huge fun for the entire family.

This was our Seventh Annual City Imagineerium build. Over 300 people participated in the build. It was no surprise that kids created the most amazing cities - eco-friendly, beautiful and fun to live in. So, it's no surprise that the volunteer city planners, architects, builders and engineers who have been on hand to help the kids say they have learned as much from the kids as the kids have learned from them. We know that this year, the kids will just keep “wow'ing” us!

We spice up City Imagineerium each year with special building challenges. This year, the theme was "Futuristic City." We invited our young architects, builders and city planners to create the most forward-thinking buildings, power plants, highways and other city structures they could imagine. We announced special, themed building challenges each hour, spurring the kids to even greater heights of imagination. And, of course, there were prizes to recognize their flights of fancy.

Summer Camps

Weekdays, from June 3rd thru June 28th, 9a to 4:30p, LEARN Science & Math Club hosted the coolest summer camps! This summer, we hosted four week-long camps.

Mission to Infinity & Beyond!

Over the summer, we took another tour of the universe – starting at Planet Earth and traveling to the farthest reaches of space. The kids had a blast exploring physics and astronomy.

Take Flight

Our 5- to- 9-year-olds also dived into aeronautical engineering. Building and flying planes, helicopters, hovercraft and many other flying machines proved just as exciting as it had this spring.

Explore FLL – Into Orbit

The big kids (9- to-14-year-olds) had a chance to tackle robotics again this summer. Using the LEGO Mindstorm EV3 robotics platform, they built and programmed their bots to tackle the Into Orbit challenge.

Spy Games

And, in the final week of summer camps, the big kids tested their spy skills on a variety of missions. After learning mapping, strategy, codebreaking and spy tech, they used their skills to save national treasures at the Smithsonian, crack a crime ring and find the spy amongst their CIA class.



13. A Young Architect with His Robot-Building



14. A Young Scientist and His Solar Flare Painting

Community Events

To extend our reach, LEARN Science & Math Club also sponsors activities at many free community events. This year was no exception. We hosted booths with lots of fun, hands-on projects at a variety of events. These included KC Maker Faire and school Science Nights.

Community Service Program – Geeks for Kids Car Build

In the spring of 2016, LEARN's Board, tech mentors and high school robotics team – The Red Hot Techie Peppers – decided to put their years of engineer training and their community connections to an even more exciting use – building custom, electric cars for kids with movement limitations. That year, they build one test car. The next year, together with professional engineers, programmers and other robotics teams, they built a dozen more cars. This year, they built 18.

Our Motivation

More than 500,000 American kids under the age of 5 have mobility problems that keep them from exploring, learning and playing like other kids. There are even more kids over the age of 5. Sitting on the sidelines, waiting for others to wheel them around, limits their intellectual, social and physical growth. We are committed to changing this dynamic.

Our Kids

Our kids' challenges vary. Some cannot walk. Others can stand and walk with aids. Some cannot use their hands effectively or at all. Some can only move their heads and necks. We customize a car for each child's needs. Here are the stories of just a few of the kids we served this year:

Whitney

Whitney's muscles are weaker on the left side. She has to focus hard to make her left side do what she wants it to do. As a result, her balance is poor. She can stand with support, but she cannot and doesn't want to try to stand or walk on her own. It is hard for her to use her feet and hands at the same time. It would be great for Whitney to be able to get where she wants to go on her own. It would give her independence that she doesn't have right now.



15. A Family Taking Their New Car for a Spin

Lauryn

There is not much that is easy for Lauryn. She does have full body movement, but her movements are mostly involuntary. She can follow people and objects with her eyes. She smiles and makes eye contact. Her doctors and family do not yet know what she will be able to do long-term. We would like her to have some experience of playing outside, to feel the wind and be around other kids. It would be awesome if Lauryn were eventually be able to drive herself.



16. A Sibling Enjoying Riding along with Her Brother

Jeremiah (JD)

JD has weak muscle tone and is unable to sit unassisted/supported. He crawls or is carried everywhere he goes. While JD has a LOT of upper body strength, walking, standing and sitting cross-legged are hard. He army crawls and sits well in a W-position or with support, and he can pull up and slide down steps. Plus, JD is incredibly brave and willing to try anything. A car adapted to his needs would give him the opportunity to be more independent.

Cate

Cate would benefit greatly from an adaptive car because she is very behind in gross motor skills due to her Downs Diagnosis, but mostly because of her past medical complications. You can't learn to walk when you are in a coma in the PICU. She WILL eventually walk with her cute little one and a half feet, but it will take much longer than if they were both still intact. She is very high functioning: sassy, smart and VERY social. The car would allow her to engage and "keep up" with all her little friends and neighbors - of which there is no shortage. She has a SERIOUS fan club wherever she goes. This car would allow her autonomy and independence, and the fact that it is a two-seater means she can bring a friend along on her adventures, which she would LOVE. Thank you for doing this program for so many kids!!

Conrad

Our grandson has no mobility from the waist down due to the Spinal Bifida. Conrad is great at doing fine-motor tasks with his hands. He can sit independently. He finds any lower body movement difficult, however. An electric car would allow him to get around with his family and have some fun outside, not just sit and watch. And, he absolutely loves going fast!

Evie

Evie is almost 2 years old, but she is not yet walking. She loves being active with her family and friends outside, but she spends much of her time confined to a chair, wagon or being held by someone. Also,

she is about six months behind developmentally in her gross/fine motor skills development. Evie loves to explore the world around her, but she is limited in how far she can go. With a car, she could go practically anywhere she wanted (within Mom and Dad's limits, of course :). Plus, she would have more freedom to explore. Evie's grandparents live and work on a farm, and Evie loves being at the farm. Having a car would allow her to explore the farm on her own.

Zoe

Zoe was 12 weeks premature and suffers from cerebral palsy. Her left side is weak, and she has little lower-body control. It would mean so much to Zoe if she could play alongside her sister who is always running around and riding her bike ahead of her.

Our Volunteers

Dozens of people – from seamstresses to computer programmers – came together to make this program possible. One of them described his experience as a volunteer, saying “I’m an IT consultant. I help companies figure out

how to solve IT problems.... I don’t build things. But, five minutes after meeting “my kid,” I was hooked. After working all day on her car, I spent the evening shopping for a Moana doll because Moana is her favorite. Watching her drive her car for the first time with Moana by her side was the bomb!”



17. Our Team on Delivery Day 2019

The Statistics

- 9 months
- 42 strategy, design, build and delivery sessions
- 94 builders
- 6 corporate sponsors plus dozens of individual donors
- Over 6,700 labor hours
- Over \$23,000
- 18 cars delivered
 - 9 hand-driven cars for kids with lower-body movement disabilities
 - 2 joystick-driven cars for kids with limited upper and lower body strength
 - 5 joystick-driven and remote-control driven cars
 - 2 steering-assisted and remote-control driven cars
- And, endless joy and new opportunities for all the kids who received cars

Geeks for Kids' Successes

For the kids we serve, these cars deliver freedom; they give them a chance to “run” and play with other kids. Jerry’s mom sums up the feeling that so many of the parents have shared. She wrote:

Jerry has loved his car so much! He drove it almost every weekend including in the snow!! This car was amazing! He was able to be outside with family and friends, go places he would never have been able to roll his wheelchair!

We as his parents were able to see him be a “normal” kid again, the best part is that while he was in his car, he didn’t get stares, people didn’t assume that something was wrong with him. He looked like any other kid. I as his mom used to, and honestly sometimes still do, get so upset because people treat him so different. He is in a wheelchair; so, they assume he is unaware or delayed so they talk about him as if he doesn’t know. But in his car, that NEVER happened. No matter where we went, for a walk, to the park, we even took it to the zoo! He at that moment was, the same, “normal...”

Our volunteers, too, found Geeks for Kids rewarding. We learned that we could promise no greater benefit to our volunteers (and ourselves) than the joy that we gave and the joy we received when we participated in Geeks for Kids. Delivering the cars we build is better than the best Christmas morning. As the kids drive their cars for the first time, they glow.



18. Cars Lined up for Delivery Day



19. Builders Form Tight Teams Working for “Their Kids”

Their parents cry. And, all of us - the sponsors, donors and volunteers - feel like we have done something that really matters.

Building these cars is also a great way to build team spirit. Geeks for Kids get teams thinking outside the box, working together and striving for the thrill of victory. Sure, the jocks have the Olympics and Corporate Challenge, but your team will build the tech that could one day save the world...or, at least, make a huge difference in kids' lives.

LEARN's RESULTS

At LEARN Science & Math Club, we operate on the assumption that kids can do extraordinary things. And, they always prove us right! Our kids:

Build Teams and Communicate Effectively

Our programs teach kids to:

- Work closely with other kids to analyze and solve complex, on-going challenges
- Treat others with respect, kindness and appreciation for the skills and abilities they bring to the project
- Research a topic, identify opportunities and present new ideas to professionals, government officials and the community

Build Life Skills

Our kids:

- **Develop Strong Technology Skills** – Not all our kids want to be engineers; some want to be doctors, programmers or lawyers. All of them, however, know they benefit from being able to put technology to use. They learn sound engineering principles, strong computer, project management, mechanical and electrical engineering skills.
- **Build Business Skills** – Building and programming robots is cool, but solving real-world problems is even better. So, our team does more than compete in FIRST robotics challenges. They are launching a technology-related business. We bring in marketing, sales and accounting professionals to help them commercialize concepts like:
- **Created Script Alert** – One of our FLL teams proposed an innovative, Web-based product to prevent millions of injuries and deaths related to prescription drug dosing errors. Several members of that



20. Our Red Hot Techie Peppers Preparing Their Bot for Competition at the MO State Championship

team moved up to our new high school team, and they won the Lemelson-MIT InvenTeam grant to fund the prototyping of this product.

Make a Difference

Our kids have:

- Worked to reduce energy usage and pollution. They:
 - Developed a Web application that encourages people to carpool by helping them to easily catch a ride with their Facebook and My Space friends
 - Presented a proposal to the KC City Council and the Missouri State Legislature, encouraging them to implement a metro-area wide ride- and bike-sharing project
 - Built emissions-free pedal cars and displayed them at the Nelson-Atkins Museum of Art and the KC Zoo on Earth Day to demonstrate it's possible to get around town without polluting
 - Conducted a flash mob event called, "FREEZE to Save the Planet," to promote awareness of the many small things we can all do to reduce energy usage and pollution. To see a video of this event, visit [FREEZE](#).
- Created a patented biomedical engineering product called Script Alert that could save thousands of lives each year
 - Developed two food safety product concepts:
 - One, called Food Tracker, uses RFID technology to trace foods from farm to fork, ensuring the CDC and other experts can quickly track and stop food poisoning and contamination.
 - The other, called Stick EZ, uses existing immunoassay technology in the form of a small sticker to identify foods that are contaminated with food poisoning or pesticides.
 - Host Open Houses and Science Fairs
- Mentored Our FLL And Jr.FLL Teams – Most of our high school team members volunteer four to ten hours a week year-round to coach the younger kids in our program. This year, they led these teams to three 1st place awards.
- Hosted Summer Camps and STEM Classes – LEARN hosts three to five week-long science and math enrichment programs each year. Team members volunteer as camp counselors. These camps serve as both community outreach and a principal fundraiser for the team. Our high school team also assists with a variety of STEM classes including Circuit Board Design & Production, AutoCAD



21. Our Shadow Knights FLL Team Presenting Sticky EZ

Inventor, the Mini-Bot Build and Programming in Robot-C. They also help us put on several free community service events such as Science Nights at the Kansas City Public Library and projects at the Kansas City Maker Faire.

- Designed and build custom, electric cars for kids – paying forward the skills they have learned and the gifts they have received in our programs.

Achieve Big Things

Our younger teams:

- Took 1st Place awards in local and Regional competitions every year (and they've often taken home more than one award)
- Won 1st Place for the Chairman's Award – the top honor – their last two years in FLL
- Represented the Western Missouri and Kansas Region at North American Championship and at World Festival – making them one of the top 79 teams out of over 22,000 teams for the last two years. On both occasions, they finished in the top ten teams, earning the 1st Place Award for Inspiration.
- Been nominated twice and won an International Core Values Award for being one of a handful of teams from around the world that best demonstrates gracious professionalism, kindness and support for other teams

Our high school teams:

- Score High – Eight years ago, our rookie FTC team won the 1st place Motivate award, the 2nd place Inspire award and was nominated for the Connect award at the Southeast Missouri State Qualifier. They went on to earn the 1st Place Motivate Award at the 2012 State Championship. Since then, they have won numerous awards every season, advanced to the Missouri State Championship every year and won numerous awards there and competed in the World Championship several times.
- Designed Exhibits for Science City – For their City Imagineerium proposal, the team won a \$2,500 grant in the Burns & McDonnell's Battle of the Brains
- Developed Life-Saving Product – They won one of only fifteen MIT InvenTeam grants that were issued worldwide in 2012. Over the course of the school year, they developed a working prototype of their product, Script Alert. This biomedical



22. Our InvenTeam Presenting Script Alert at MIT's Eureka Fest

engineering device tracks, guides and reports on patients' prescription medication. It has the potential to save hundreds of thousands of lives each year and was hailed as the most commercially viable and life-saving product at the Lemelson-MIT Eureka Fest in June 2013.

- Earned Money & Win College Scholarships – The team has two financial goals – to earn all the money they need to fund their robotics program and to help kids invest in their future. They earn a stipend for their outreach and community service work as well as qualify for FIRST scholarships.

OUR TEAM

LEARN Science & Math Club is an all-volunteer organization. We owe huge thanks to our wonderful Board members, mentors, coaches and teachers for their tireless devotion to making so many opportunities possible for kids from all over the Kansas City metropolitan area and around the world. Many of our team members work twenty to forty hours per week at LEARN after putting in full days at their “real” jobs.

Our Board

We have a strong and diverse Board that provides guidance and unflagging support for our programs. Our Board includes:

- President – Rebecca Kidwell
- Vice President, Technology – David Sherrick
- Vice President, Security & Operations – Jeff Stice-Hall
- Secretary – Amanda Madrigal

Our Volunteers

LEARN simply could not function without the many people who give their time to helping kids. For some of our larger events, we have as many as fifty volunteers devoted to helping, encouraging and keeping kids safe. This is equally true of our on-going programs. Week after week, dozens of parents and professionals band together to mentor and guide our kids.



23. Some of the Geeks for Kids Volunteers, Celebrating the Delivery of a Car

OUR DONORS

LEARN's donors bring joy, opportunity and a life-long love of science and math to kids throughout our community. With immense gratitude, we thank all our donors for making our work possible. Some of you are individuals, and others are large organizations. Whatever the size, your contributions are invaluable. You made so many children happy this year.

Below, you will find a list of our corporate sponsors. Many, many individuals generously contributed to our kids' success as well. With concern for their privacy, we have not listed our individual donors by name.

\$10,000 or More

- Rockhurst University

\$1,000 to \$10,000

- Black & Veatch
- United Healthcare
- Dean Underground
- Synthesis Solutions, Inc.
- The United Way
- Coleman Equipment
- Aratana

\$500 to \$1,000

- Garmin
- The KC STEM Alliance



24. Our Young Aeronautical Engineers Preparing to Test Their Mini-Kites

HOW TO HELP

As we all know, success is expensive. Parents and kids continue to ask LEARN Science & Math Club for more – more classes, more camps, more events, more cars for kids with movement limitations. While this is a wonderful situation to be in, it comes at a cost.

Over the last seventeen years, LEARN has grown significantly. The number of classes, camps and events we offer has grown enormously. And, our new Geeks for Kids is growing quickly: from one test car in our first year to 18 last year. We plan to build 36 this year, and we need your help to get these kids racing. The kids' challenges vary. Some cannot walk. Others can only walk with crutches or other aids. Some cannot use their hands effectively or at all, and others can only move their heads and necks. None of them can physically keep up with their able-bodied peers, but we can get them moving with the coolest car on the block.

And, Geeks for Kids is just beginning. While we plan to continue building more of the hot rods we have been building, we also plan to build new kinds of vehicles. And, we hope to launch a bigger program

called Project Invention, designed to challenge young engineers and programmers to work in tandem with the pros to invent new and innovative solutions to other challenges kids face.

Demand has outstripped our resources. We need to buy more computers, robots and other STEM equipment to meet the need. We also need dedicated meeting space to offer more programs, more often. And, we've done all this with no paid staff. Everyone involved has volunteered their time; some Board members have routinely volunteered 20 to 40 hours per week for thirteen years.

To continue to grow, we will need to eventually offer some form of compensation to those who are giving full-time service. In addition, we would like to offer scholarships for those kids who can't afford LEARN's very modest fees. Currently, fees are set at or below direct costs; consequently, we cannot easily afford to waive fees, but many families have asked for help. Presently, when we waive fees, a Board member will step in and pay the child's costs. We would like to be able to do more.

We also need to find a permanent home. LEARN always needs computers, supplies, accounting, marketing, legal and printing services. To meet these objectives, we will need to raise over \$100,000. And, our kids always need mentors. So, there are many ways you can contribute. Get involved and make a lasting difference in kids' lives.



OUR BUDGET

For its first two years, LEARN Science & Math Club was funded largely by Kauffman Foundation grants and private donations. Since then, program income has brought in a significant share of our budget. We are deeply grateful to our sponsors, donors and grantors who providing the remaining funds and make it possible for us to buy supplies and equipment for our programs.

Income	2018-2019 Actual		2019-2020 Projected	
	Cash	Non-Cash	Cash	Non-Cash
Contributions and Support - Cash	\$22,491		\$25,000	
Contributions – Goods		\$41,800		\$49,160
Contributions – Services		\$9,400		\$9,400
Grants	\$5,000		\$5,000	
Services	\$30,033		\$35,000	
Membership Dues	\$6,318		\$5,500	
Subtotal Income	\$63,842	\$51,200	\$70,500	\$58,560
TOTAL INCOME	\$115,042		\$129,060	
Expenses				
Advertising				
Bank Charges				
Contractor Expenses				
Insurance - Corporate	\$322		\$900	
Legal Fees				
Office/Gen. Admin. Expenses	\$516		\$600	
Payroll Expenses				
Postage and Delivery				
Printing and Reproduction				
Professional Services Fees			\$2,000	
Salaries and Related Expenses				
Rent	\$4,163		\$4,500	
Program Costs	\$54,650		\$70,500	
Taxes				
Telephone				
Travel				
Refund Expenses				
Utilities				
Web Development/Maintenance				
TOTAL EXPENSES	\$59,651		\$78,500	
NET PROFIT/LOSS	\$4,191		-\$8,000	

Income

This year, LEARN Science & Math Club grew substantially. Geeks for Kids was the largest contributor to this growth – bringing in substantial funds, creating serious expenses and will cause a loss in 2019. We anticipate, however, that Geeks for Kids will soon balance this loss as fundraising gains momentum.

LEARN Science & Math Club's other programs have not grown substantially. This stasis is due to lack of resources. Demand exceeds our physical capacity. We need more space, more instructors and more supplies to host more classes, camps and events. Our current partners cannot lend us any more space, provide more time or funds; their resources are tapped out. We need to find new partners or new sources of income to pay for this space.



25. Young Roboticists Testing the Strength of Their LEGO Structure

Contributions and Support

The largest share of our income came from was contributions, contributed largely by Rockhurst University, United Healthcare, Coleman Equipment, Aratana, Black & Veatch, Synthesis Solutions, Inc. and The United Way of Greater Kansas City.

Expenses

Through its history, LEARN's expenses have been largely those needed to deliver its services to the community. We have had incredibly low administrative expenses, and this year was no exception.

Our largest expense categories this year were those that represent LEARN's Cost of Goods which are the funds spent to serve our kids. The expense categories included in COG are Supplies & Materials for Geeks for Kids, classes, camps, competitive robotics and STEM tastings. Combined, these categories represent 97 percent of LEARN's expenses. This year, LEARN created a small reserve. This reserve will be set aside to offset the loss we anticipate in 2019 to 2020 due to the explosive success of Geeks for Kids; because every car is delivered as a gift, the only income from this expense is from donations and sponsorships; we are ramping up our efforts to raise more money, build more cars and reverse this loss.

Administrative expenses included, in order of cost, rent for a storage facility to hold class supplies, office supplies and insurance. Together, these expenses amounted to 1.4% of our total expenses. This administrative to production expenses ratio is so low because LEARN has operated as an all-volunteer organization throughout its history and channels nearly every dollar into services for kids.

2019 to 2020 Projected Budget

We have projected an 15% increase in income for next fiscal year as we push to expand Geeks for Kids. Currently, our goal is to achieve this increase through additional sponsorships.

We have projected an increase in expenses. These increases occur in the following categories, in order of cost: program costs, rent, insurance and professional fees. The increase in program costs is entirely due to an expansion of Geeks for Kids. The cost of the storage unit increases about 10% each year. We have expanded our insurance coverage, and that cost too increases each year. And, so has the cost of our financial review.