

We aspire to inspire enthusiasm for STEM. Therefore, we take pride in sharing STEM's joy - achieving the impossible. We spread FIRST's message using 3 pillars: inspire youth to respect STEM, inspire the underrepresented to become leaders in STEM, and inspire the FIRST community.

## INSPIRE YOUTH TO RESPECT STEM

### 1. School Activities:

In order to encourage students to get accepted to our science-based school and study STEM we showcase our team to hundreds of potential students and parents during our school's open days. In addition, together with our school, we host a Science Day for 6th graders from all around Lod, where they interact with our robot and engage in FLL activities. On 22/12 we expose all 600+ students and teachers to the team and FIRST's mission. This year, we developed and carried out a hands-on physics activity for 70 physics majors. We also opened a robotics club to expose 9th graders to robotics and FIRST. In 2020, we taught 15 students (1/3 girls) 3D modeling and robotics using FLL parts.

### 2. Science on the Road

Since 2018, we've presented an interactive board designed to introduce kids to electronics and teach about sensors. Due to a language barrier with Arab speaking children, we've translated the board to Arabic. We've presented it 8 times.

### 3. Science Holiday

For 3 years, we've handed out 4300 science kits in Hebrew & Arabic that reflect the upcoming holidays: Hanukkah, Purim, Sukkot & Christmas. Since most of us aren't from Lod, it's been challenging to enter local schools. With this innovative project, we managed to overcome this problem and get teachers to welcome us with open arms. Using our kits, students experienced the excitement of STEM, which many in Lod would never experience otherwise.

### 4. Science Fair

In 2020, we launched our Science Fair in a religious school in Lod. In the beginning, we taught the steps of the scientific method to 30 kids, who later designed and performed experiments to test their hypotheses. After 14 weeks, they analyzed and presented their data in front of their school, parents & teachers (200+).

## INSPIRE THE UNDERREPRESENTED TO BECOME LEADERS IN STEM

Thanks to FIRST, we've felt the joy of STEM. Sadly, some struggle to pursue STEM. We strive to support the underrepresented and encourage them to become the next leaders in STEM.

### 1. Learning Center

Since 2013, our Learning Center has become a hub of STEM studies. Many parents in Lod can't afford private lessons for their kids. We tackled this issue and made it a priority.

The center opened off-campus with 6 kids and constantly grew. In 2017, we collaborated with our school to enable its students to volunteer and get help as well. In 2019, we added a 'logic hour' to show homework can be fun.

Kids that once struggled to face homework now show academic improvement. We are thrilled that 15% of 8th graders got accepted to our school in 2019-2020.

## 2. Arab Community

The Arab Community makes up 30% of Lod's population, most of which live in poor conditions. As of 2016, only 10% of students studying STEM are Arabs. Therefore, we invite Arab kids, who usually don't partake in STEM due to a lack of exposure, to our projects, such as: Learning Center, Science on the Road & Science Holiday.

We make our projects friendly to Arabic speakers by translating the above projects into Arabic. In 2018, we invited Arab kids from 3 local schools to join our Learning Center and in 2019 we expanded it to include 15 Arabic speakers wanting to improve their Hebrew proficiency. This year, we invited students majoring in Arabic to help tutor the Arab kids in the center.

In 2017, we also helped team 5636 from Majd Al-Krum with programming, fundraising & community work. In 2018-2019, we met with team 6168 from Iksal to help with their prizes submission.

## 3. LIGHT Conference

In 2018, we started LIGHT, an empowerment conference that shines the spotlight on female role-models to inspire girls to follow their own STEM dreams. This year, 70 people (compared to 50 last year) came to listen to Israeli women, business leaders, scientists, and FRC alumni lecture about their growth as women in STEM. Moreover, LIGHT's poster session discussed lesser-known women in STEM to raise awareness. This way, we inspired both genders to work for equality in STEM. This summer, our school decorated its main hall with the women's posters as a year-round reminder.

This year, we felt girls had nowhere to go after the conference so, in addition to FIRST, we featured CyberGirlz, a platform that unites and encourages girls to pursue computer science, a perfect place for girls to take the next step.

We take pride in inspiring and helping team 2630 start their own women empowerment convention.

## 4. #FIRSTLikeAGirl

In 2017, we joined forces with team 1902 from Florida to bring their social media movement to Israel. Since 2018, we've been the ambassadors of the project in Israel, encouraging girls to join FIRST by sharing inspirational stories of women in FRC. We have 4300+ views of over 20 girls filmed (13 this year) from teams: 1937, 2096, 2212, 2231, 3083, 3388, 3835, 4320, 4586, 4590, 4661, 5614, 5747 & 5951.

## INSPIRE THE FIRST COMMUNITY

All FRC teams require professional and financial support. When teams support each other, the FIRST community has a greater impact. Therefore, we go to great lengths to make sure all teams get the help they need.

## 1. Mentor Seminar

In 2013, we started our Mentor Seminar as a simple FLL seminar. We later added FLL Jr & FTC lectures. This year, these seminars trained 80+ mentors to provide better professional support for dozens of FIRST teams, making our vision of FIRST a reality. We've had guests from teams:

FLL: 730, 739, 922, 1200, 1536 & 1610

FTC: 12989

FRC: 1690, 1937, 1954, 3083, 3316, 3835, 4320, 4586, 4661, 4744, 5635 & 5951

## 2. Summer Workshops

Summer workshops are a perfect way for new Spikers to learn about FRC, engineering, system control, management & community work. Since 2009, our summer workshops have gained in popularity in the FIRST Israel community with teams 1657, 2096, 2231, 3034, 3388, 4416, 4590, 4661, 5635, 5747, 5951, 5961, 5990, 6738 & 7112 coming to benefit from our knowledge and experience.

## 3. Programming Support

In 2017, we published SpikesLib, an online programming library that many FRC teams use and 5747, 5990 & 7112 base their code on. After reaching 100% accuracy in computer vision, we decided to share our success with others. In 2018, we held the largest lecture in the conference FIRSTEVAL in front of 100+ attendees. The lecture's popularity led us to run a 2-day programming seminar which was attended by over 30 members from FRC teams 2096, 3083, 3835, 4416, 5635, 5747, 5928, 5951, 5990 & 7112.

The seminar was such a success that we soon held another high attendance seminar under the request of several FRC teams. Therefore, we believe we've truly raised the programming level of FRC in Israel.

## 4. Fundraising Booklet

Starting FIRST teams is a futile task if they soon close due to a lack of funds. This became more evident after budget cuts drove Israeli teams to find new ways to collect funds. We noticed this issue is often overlooked and decided to take matters into our own hands. We asked FRC teams around the globe for fundraising ideas and wrote our "Contributions for Solutions" booklet, used to help FIRST teams fundraise. In 2020, we scheduled joint fundraisers with teams 4586 & 4661 to share insights from the booklet.

## 5. FIRST Teams

Since 2017, we started 11 FLL Jr teams in Lod and 9 FLL teams. In 2017, we started FTC 12989 and in 2016 we started FRC 5961.

Over the past 2 years, we've been mentoring teams:

FLL - 529, 1059, 1199, 1539, 1930 & 2059

FTC - 12989 & 17131

FRC - 8333 (2020) and 5636 & 5961(2016).

Since 2018, we met with FLL teams 1256, 1418, 2209 & 2210 to help in every aspect of FLL.

We assisted FRC teams 1577, 2231, 3034, 4586, 4757, 5554, 5614, 5747, 5987, 6230, 6738, 6845 & 7067 with programming and FRC teams 2231, 3316, 4590 & 7112 in other matters.

We realize the importance of opening a second FRC team in Lod. To that end, we have sent emails and met with principals in several high schools. This year, seeing our dedication and motivation, our principal allowed us to open our doors and invite students from other schools to

join our team. We hope they'll be inspired to open a new team in Lod in the future. So far, one student joined, but every vision plays out in small steps.

#### 6. Volunteering in FIRST

FIRST lit the spark of volunteering, which blazes in our hearts. FIRST relies on the whole-hearted involvement of volunteers in its activities. Therefore, one of The Spikes' pillars is giving back to FIRST.

For over 5 years, we've run the assembly of ~80% of FLL kits. This year, in collaboration with team 4586, 70 volunteers from 24 teams came to our event. Together, we helped FIRST and shared the importance of volunteering.

Moreover, since our inception, we've been encouraging our members to contribute to FIRST.

This is evident by Spikers volunteering in 100% of FIRST competitions for the past 4 years.

Our volunteering spirit stays with us long after graduation. Countless Spikes alumni have volunteered in FIRST competitions over the years and 15+ alumni volunteer in key roles.

In addition, we inspire all those in The Spikes family to adopt FIRST's mission. This is reflected by our mentor, Chaim Most, winning the Woodie Flowers Award in 2015. That is also why Spikes' parents volunteer in FIRST competitions. And more recently, 4 alumni work in the offices of FIRST Israel.

Our high volunteer rates reflect not only our high spirit and dedication but also our belief in FIRST's vision. This belief is why we continue to develop new and long-standing projects alike. This belief inspires us to impact all the communities we are connected to. It inspires us to ensure that no one gets left behind.