SPARC Team Manual



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Introduction:

Team Mission:

While everyone was busy dreaming about going to the Moon, Neil Armstrong chased after his dreams, making him the first man to ever set foot there. Just like Armstrong, we weren't satisfied with "dreaming"; instead, we went out into the world in the hopes of making a difference.

Our foremost principle is not to improve solely within ourselves, but to bring people up with us while improving. That is why it doesn't suffice to share our projects in Turkey; we choose to carry the light of science out into any dark alleyway, while also chanting from the top of our lungs that being an 'Armstrong' isn't in fact that hard.

Hence, we take any measure necessary like building science, engineering and technology to inspire innovation while nourishing crucial skills like curiosity, creativity, risk taking, openness, perseverance, leadership, and self-confidence.

Our main ideals are:

- Creating projects in our team in technological and scientific areas, especially robotics.
- Exhibiting our robots and projects in national and international competitions.
- Representing our country and schools in the best way possible.
- Giving high school students ideas about their future by introducing them to engineering.

Our Foundation Principles:

- Organization
- Participation
- Inspration
- Productivity
- Respect
- Hard-working
- Integrity
- Creativity
- Determination

Team History:

Team 5665 (a.k.a SPARC) is the team of Sainte Pulchérie French High School and was established in 2015 with the contributions of Fikret Yuksel Foundation located in Istanbul, Turkey. We have been participating in FRC since 2015. Having started off solely with 18 students and 1 mentor in the same year, we have successfully expanded our team owing to the welcoming and accepting standpoint on science and technology here in Turkey. With this rather colossal progress, we have admitted students from all over our country and last year, we reached 55 students and 7 mentors. As a result, SPARC has claimed its welldeserved title of having the most number of students among all Turkish FRC teams. We also presented the FRC to them and helped them by all means to create and manage their own teams. As a consequence of the competitions being held in the U.S., just like any other foreign team, we too have had numerous amounts of problems concerning the transport, the accommodation, the fund and even all at the same time. However, we have learnt over time how to properly plan out our funds which, now and again, has been insufficient. There has also been several times where we have had to contribute to our goal by spending our ever so loved pocket money. Currently, our team consists of 26 students and 1 mentor. By learning how to think as one and finding solutions to problems which would otherwise derail people's daily lives, we believe that we are getting closer to our goal every passing day: Developing robots in the finest way possible.

TEAM SPARC 5665

SAFETY:

- Preparation of safety manual.
- Preparation of safety game.
- Collaboration with other teams.
- Gathering the necessary items.
- Preparation of brochures.
- Safety education

SOCIAL COMMUNICATION:

- [Chairman's, Entrepreneurship etc
- Interpotion with other teams
- Focial Modia
- Managing gifts

MECHANICS:

- SOLID Design of the robot.
- Gathering the necessary tools and pieces.
- Building the robot.
- Programming the robot.
- Driver Team

DESIGN:

- Preparing the brochures/ flags/ banners.
- Designing the uniforms
- Designing the pit

Team Facts:

- Approximately 100 accounts view every single one of our Instagram posts.
- We have been addressing to 70 million people via TV programs and radio programs.
- We have reached approximately 1 million people with local, national and private newspapers.
- We have reached 4500 people by our community involvement projects.
- Number of community involvement projects we complete exceed 20 per year, introducing more than a thousand children with STEM.
- Our fundraising team introduced FIRST and SPARC to more than 50 major companies and startups.

Projects:

Introducing/Establishing FRC and FLL:

To spread the Maker movement and increase the attention given to STEM education, we've been hosting Makerfaires Lycee Sainte Pulcherie where we also have FRC and FLL workshops. We also organized Edtechist where there were multiple workshops to help teachers use technology in their classes. We introduced many organizations to FIRST and started many teams. Either by giving presentations or organizing workshops in schools. Some of these schools and teams are;

- Team 7134 rOctopus
- Team 6989 KAISER
- Team 6416 Mev Makers
- Team 7140 Oksef Robotics
- Ankara Sınav Koleji
- Aydın Municipity of Education FRC team
- Mugla Yönelt Koleji
- Sainte Pulcherie FLL team
- Hüseyin Avni Sözen FLL team
- Italian Highschool FLL team

In order to introduce FRC and raise awareness to technology and robotics, we shared our robot with our mates in ceremonies. After this introduction, we saw that we actually managed our purpose because people started to use the robot in their projects and assignments!

Community Impact Projects:

STEM CENTERS	THE EDUCATIONS AND DONATIONS	NUMBER OF STUDENTS
Çankırı	8 Mindstorm kits8 VEX kits30 Ardunio kits	750 students per month
Payas (Hatay)	20 VEX IQ kits60 VEX kits	1250 students per season (a season is 3 months)
Ízmir (Denge Schools)	 VEX and VEX IQ education 	15 students
Gaziantep (DEVA Schools)	 VEX education 	50 students
Balıkesir	building STEM Center8 Mindstorm kits12 VEX IQ kits	33 students
Trabzon	Mindstorm educationVEX educationFRC education	42 students

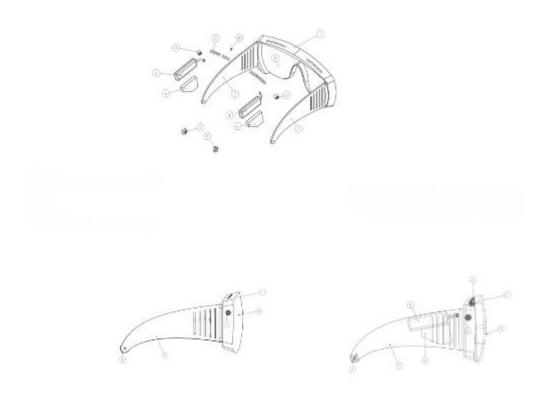
As team 5665 we signed a big development in our school via changing community project's curriculum. Before us, community impact projects were continuing with a stable programme. However, we decided to add STEM subjects to each of them. Now, nearly in all community impact projects, we have technology subjects for different groups of age. We have made 3 STEM Center projects; Çankırı STEM, Balıkesir STEM and Payas STEM. We have worked with children with leukimia in Çankırı STEM center. In both STEM Centers we teached MindStorm coding and making FLL robots, plus we gave basic Ardunio training and Fisher Robotics training. We build robotic labrotory for 2 public schools in Kocaeli. This year we are we are building a robotics labrotory for physical disabled individuals.





Optical-Acustic Glass:

In this project; we introduce an "optical-acoustic glasses" we designed to ease the life of visually impaired individuals whenever they would be independent in a location. It has been designed for the hearing impaired to wear it in any environment without any aesthetical worry. Thanks to its optical-acoustic properties, the glass warns the owner about the direction and intensity of surrounding sounds such as voices and warning signals. Hereby the individual can determine the source and intensity of a sound and turn to whoever is addressing to him. With the use of the "optical-acoustic glasses" it was intended to ease the hearing impaired person's communication and grant him awareness of the difficulties he might encounter in internal and external environment.



SP Makers:

SP Maker Faire is a festival where creativity, craftsmanship and inventions are celebrated. It is aimed for everyone who loves technology, is devoted to teach others or loves to create things. It is where every maker shares and learns from others, regardless of their age or skills. As SPARC, we organized this event and share our previous experiences to more than 60 schools. As we tried to introduce FRC to our friends, we also learned a lot from them. With SP Makers and other schools, we gave many different workshops to students who would like to learn more about Arduino, FLL, VEX, Fisher Robotics and much more. We tried to provide hand-on experiences for our friends as much as we can.

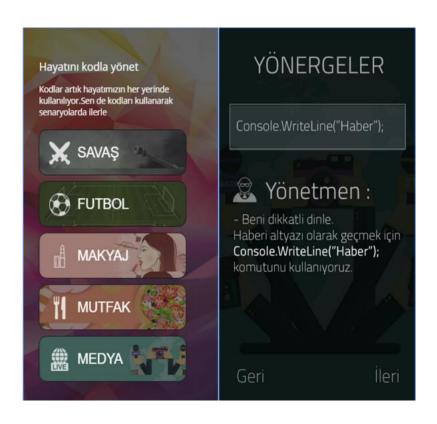




SCODE:

We created an application called "SCODE" for little kids especially for the ones that participate FLL or Jr.FLL. It's a simple app which provides learning simple coding to kids by having fun. The Application has various spectrum of topics as space, animals, clothing and such. It has over 50.000 downloads in Google Play.







Events and Awards:

2015 Central Illnois Regional

• Rookie Ispration Award

2016 South Florida Regional

2016 Turkish Offseason Semifinals

- Entreprenuership Award
- 5000\$ Grant Award

2017 Orange County Regional

- Judge's Award
- Dean's List Award

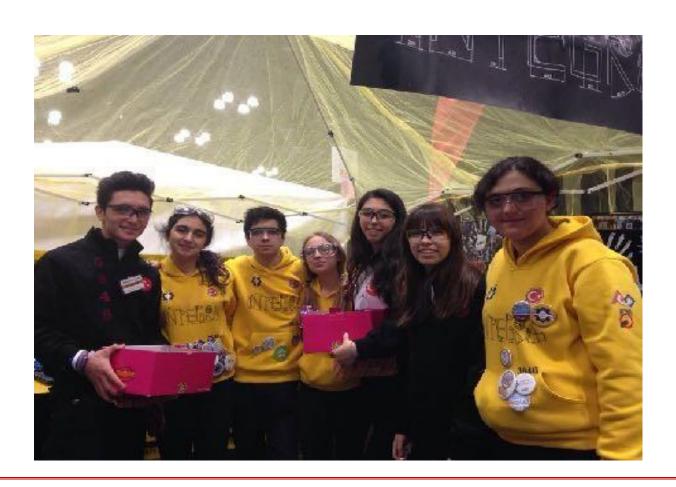
2017 Turkish Offseason

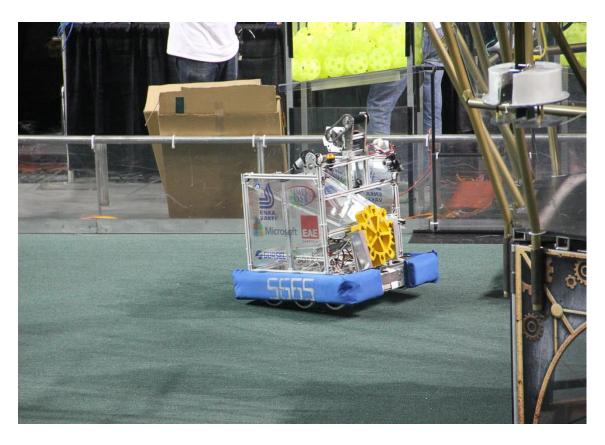
















Future Purposes:

Our future plans as SPARC are to reach even more students all over Turkey and inspire them to dive into the world of science and engineering. We wish to accomplish this by the help of the extremely positive and motivating comebacks from our recent projects. Therefore, we carried our knowledge to just about any city that would receive it: Kayseri, Mugla, Manisa, Gaziantep, Bursa, Antalya and Ankara.

In the near future, we are planning to acquaint Syrian



refugee children with STEM with the generous help of our sponsors. Furthermore, we want to continue installing and building workshops, libraries, etc. for our sister schools who are in need of the mentioned things. In addition, we would really like to organize yet another MakerFaire and improve it by all means. We also think about a special education seminar on FRC, FLL and VEX that includes workshops. This could be of great use among several Turkish schools too.

In the long run, our plans are to help create even more robotics teams, especially in France and Spain where we would get the support of our sister schools and spread FIRST in Europe in an efficient way. So, we make great efforts to join in a contract with expected sponsors and to ensure our current sponsors by showing them our strong desire to develop technology and science with the help of our projects.

SPARC in Media:

SPARC 5665 has always been active on social media since the day it was founded. We are posting at all times on facebook, instagram and twitter regularly. Our aim was always to propagate FRC and Robotics Technology. We added Turkish dubbing to FRC 2017 Steamworks video to make them easier to understand. We tried to gain awareness of FRC, Robotics and our team by giving interviews from each school to Shalom Newspaper. We tried to improve ourselves by attending different conferences and panels. We tried to help other teams as much as we could at the Offseason and we always made safety our top priority. We want to thank everyone who supports and follows us on social media.

Additionally we made interviews with one of the famous radio programs called "Geveze".

More than 10 newspapers (online, hard copy and local) wrote about the us.





"Filizlerin Mucizesi" otomotivde önyargıları yıkacak

Silikon Vadisi'ne StarTURK açılımı



NASA ve Google robotçuların peşinde



Dünya çapında bir keşif...

Hem çocuklara hem gençlere











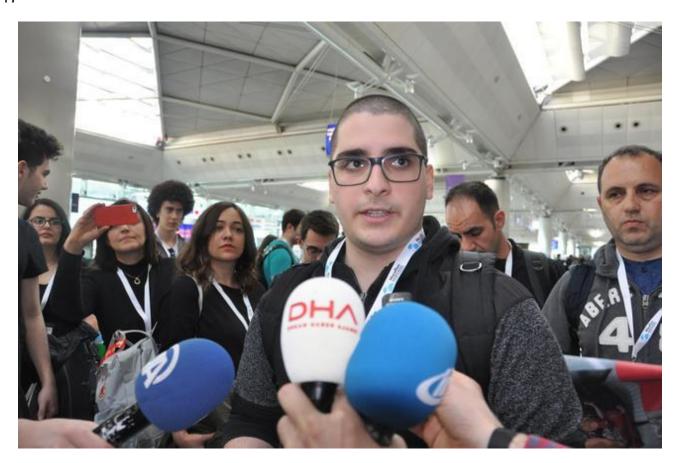
...KISA KISA... KISA KISA...



için üçüncü tazminat

GSS prim borçları yeniden tesaplanacak







NASA ve Google robotçuların peşinde

TORKIYE'de kimbilir kaç nesil "Japonlar bunu da yaptı" başlıklarıyla düyünülən robot haberlerini okuya okuya büyüdü. Şirndiki gençler bir nesin hayalıni kurduğu robotlan gözü kapalı üreliyöt. Halta robotlu gençlerilmilen ünü sınır ötesine ulaştı. Lise öğrencisi Alara Güler'in geliştirciği tanım robotlu Tayvan'da dünya ikincisi oldu. Şirndi de Robert Koleji, Sisint Pulcheire, Ulus Özel Musevi Lisesi, Maltape Anadou Lisesi, Muğla Yönett Ökuları, Erika Tekrik Ökulan, Koç Lisesi ve laklıldıra Amerikan Lisesi inden 83 öğrenci ve 10 öğretimenin oluşturduğu in ve aralarında. Alara Güler'in ide bulunduğu SPaRC 5665 Robotlik Takımı, ABD'de 8 binden fazla takımla

yarışacak, Türkiye'de 5 bir dolarlık girişimci ödülünü kazanan SPaRC 5665 Robotik Takımı Los Angales'te düzenlenen First Robotic Competition (FRC) de Türkiye'yi temsil edecek, RC, 1889'de Ginger'in mücldi Dean Kamen Taratından kurulan FIRST Veldi tarafından her sene 9 ve 12. sınıflar için düzenlenen bir robotik yarışma. Takımlar her yil bir tema çerçevesinde yaptıkları robotlarla beliri görevlerin üstəsinden gelmeye galışyorlar. Yarışmarın kuralı gereği atlı hafta gibi kazı silirede robot hazırlayan gençler NASA, Google ve dünyarın birde gelen şirket ve üniversiteleri tarafından da yakından takip ediliyot.

Charity Projects:

Donation to CYDD:

Every year our team gives 10th grades the opportunity to make their dreams come true by providing them the possibility to design a piece of cloth or a jewelry according to their own pleasure which are made collaboration with big companies such as Urart or Cacharel. Furthermore this project serves something much bigger than only one person's happiness, the money collected at the end of the disposal is donated to ÇYDD (Association for the Support of Contemporary Living)

Sale for the Şile Ecological School:

Sales of water bottles, promotional stickers and many other nature-friendly accessories are organized by the Environmental Club each year in order to raise money to help cover the expenses of the school's "Ecological House" in Şile. This year as the Robotics Club, we built two nest boxes for birds to find shelter when it's raining or for them to come in and cool down during hot summer days, as well as to decorate the house's vast gardens. our school, we have a environment association.

Sale for the Valentine's Day:

As a team, we gave eachothet heart shaped chocolates sold in the valentine's day for ÇYDD (Association for the Support of Contemporary Living) and then we donated them.

Library for our sister school:

Every year in our National Republic's day, we help a school that doesn't get hands on any books and doesn't have any library is chosen among all Turkish schools as the sister school. Then, all the students compile all the books for the sister school. Once the boxed spare books are ready to go, a tutor and a number of students go to the chosen sister school and build a library.

Hospital La Paix:

Some of our team members visit "La Paix" mental hospital for every week to make the patients feel better about their life and let them know that they are not alone. Especially in Noel our students prepare Christmas letter and make videos in which they sing french songs to give them a special New Year present and make them happy.

Donations to TEMA and Anadolu'da Bir Kızım Var:

Every year, 24 November is celebrated as the Teachers' Day in Turkey. And our high school, Sainte Pulchérie has a very special and meaningful way to celebrate this day. As the students, we think that the best present for the all teachers is not something material, but to see another child getting the chance to go to school... So, for this purpose, we have started the "Anadolu' da Bir Kızım Var" (I have a daughter in Anatolia) project to support two girls' education in Anatolia every year by collecting donations and it has been two years since we have started this project. What we had been doing before this project was to plant trees through the foundation of TEMA, for every single teacher in Sainte Pulchérie, by collecting donations from the students again. We believe that these are the best ways to show our appreciation for the teachers and to honour them as well...





Goals:

Safety First:

Our team members passed the "Work Safety" test of the Turkish Chamber of Mechanical Engineers and were awarded personal certificates. We care about safety in and outside our team and know our health is the highest priority.

Networking:

From our little makerspaces in our schools, by taking advantage of the uniting power of social media, we have been communicating with FRC Teams from all around the world. Our well rounded use of various social media platforms, whether it is Facebook or Instagram, has enabled constant access to collaboration with other teams regardless of the thousands of miles between our schools.

As our team is comprised of many different school, we all had different accounts on social media. Now we have combined our forces to reach an even bigger audience.

Through social media we have been able to:

- Receive and offer help to different FRC teams from all over the world during and after the build season.
- Keep our sponsors and fans up to date on what we are up to everyday by sharing our progress on various platforms.
- Use Skype and Google Hangouts to help FLL/FRC teams we support no matter where we are.

We also believe that the friends we made during the competitions are essential. We are constantly in touch with the teams we had made friends with during the Offseasons and Regionals and sometimes hang out with them outside of the competition.

We have been using the blessings the 21st century media offers us to the fullest, as it has provided us unlimited access to contact other teams to collaborate!

Mentoring Other Teams:

We have been mentoring more than 10 different FRC and FLL teams that we established or introduced. In addition to these team, we are always opened of any team's questions or friendship. We always get in touch with the teams via Instagram, Facebook or e-mail. It doesn't matter if we know that team or not. FRC's basis is formed absolute friendship and joy! We want to follow its path.

Hi, I'm Cihan Akbaba, mentor of Mev Makers team (6416). My story of acquaintance with FRC was too fast to be a story. One night Mehmet Özdemir (mentor of the team SPARC) called, whom I contact frequently, and started to talk about the excitement in the wournament and the stages of making the robot. "Actually it is much more than the robot," he said "why don't you join?" hereupon I started to search FRC. It was the last day to register. I told FRC to my students, they were as enthusiastic as I was. With help of

Ayşe Hanım we met FRC at the end. Only Mehmet Özdemir is responsible from all of the colds, flu, coming back home at 4 a.m., and the problems I went through because of the late comings within the process. Still thank you for spreading this "virus" to me.

-Cihan Akbaba, Mev Makers (6416) mentor

SPARC suggested starting this club, referring to FRC. It supported us by introducing the teachers, who set up this club in their schools and ensuring that we obtained all of the information we need. We contacted Fikret Yüksel Foundation from his backup. The club, which we were thinking to establish, has started this year and our students built their robot for the competition in 19-21 November. We really appreciate all of his support during the process.

-Hüsnü Yılmaz

Sponsorship:

As a team who represents a small company, by having every individual work on the subject they are more interested in, we are continuously in contact with other companies. Simulating and learning about advanced and knowledgeable corporations, allow us to understand the work life that is waiting for us in the future. Throughout this process, these companies have been generous enough to support us financially, whether this is for our long travel to the US or for the community service that we do all around Turkey. They try to support us as much as possible in order to spread the robotics spirit all around the country. With such support, we do not only teach everyone- from young to old- the developed technology, but we also use these donations to help newly developed teams by having them in our team sessions and teaching how the competition works so that they can be future teams of the First Robotics Competition.

As a team fact: "Our fundraising team introduced FIRST and SPARC spirit to more than 50 major companies and start-ups."

Koç Fiat Kredi

March 1, 2017

Team SPARC 5665 Spirit Pulcheria Lycen Français Intentiul

Dear Team SPARC 5865.

would like to thank you for your visit of last week.

It was a great pleasure to meet the representative of your team and learn about your very increasing technical as well as philanthriopic projects and activities, such as Richorics Community impact Project for Roman children of Islandiul Richorics Community impact Broject for Roman children of Manisa. "Teshnavetion" project only for female students as a tool to metiwate female students to study engineering. Development of an application, i.e. SCODE-app, and securing its approval by the Ministry of Education as well as signing a sentiast for experimental usage of this application in schools. "SCODE", to village schools in remote and less advantageous areas of the country, to Sysian immigrants.

I am very much impressed with the faul that you have enlarged your activities and projects beyond your stose area and reached other office. Also, your efforts in promoting your activities both to governmental agencies as well the besiness community is inspiring.

Congratulations.

Best regards.

Sinan Kesier Sales and Marketing Manager

Şirket İçi

Team Essay:

Deaf.

That's what we were 4 years ago.

We were just a bunch of kids with a big dream. We didn't know that we could make our dreams come true until we met the FIRST foundation. A foundation which helps kids to discover their sparkle. That's how we founded our team SPARC, with an instant sparkle. Team SPARC consists of 1 mentor and 26 students. We have been on our journey for 4 years. While being freed of our deafness we decided to help real deaf people. We created "optical-acoustic glasses". A creation that warns its owner by colour senses about the direction and intensity of surrounding sounds such as voices and warning signals. The project itself was really compelling at the start. We had been working on this project for 2 years without getting any results. During that time, we were slowly losing hope and people around us were telling us to abandon the project and move on to another one. But we don't lose hope easily. We grew up reading life stories of famous scientists. Stephen Hawking for example, his life was full of tragedies, but he overcame every single of them, published his A Brief History of Time and changed the world. Reading about their life, we were taught that we shouldn't abandon our dreams, so we worked twice as hard and were able to accomplish. Famous author George Orwell said that "To see what is in front of one's nose needs a constant struggle." As if confirming his quote, we discovered that our project was much easier than we thought. This year we finally concluded the project with great success.

But that wasn't enough for us, we wish to do something that would affect everybody out there, something that would touch every single person's heart. We wanted to inspire little children's minds and wanted them to question. So, every year at October 29 (Turkish Republic Day) we choose a school in Anatolia which is in a poor condition to donate books that we've gathered from our school. We give them our own books instead of buying new ones because we believe that the warmth that old books give us is much more than the new books and we build them a library. While building their library, we teach them the basics of Mindstorm and build a FLL robot with them. Most of our team members have participated FLL in their middle-school and we love mentoring about something that reminds us good memories. Firstly, we started team Spartans. Through our mentorship to Spartans they have won Inspiration and Research awards. In 2016, we started Hüseyin Avni Sözen (HASAL) FLL Team and Borusan Avcılar FLL Team. We trained mentors for FLL teams, consequently, they could teach to their own students. This way, we aim to make a chain effect that could train generations.

Nevertheless, we wanted to share our experience with other children who do not have the means to access to robotics and science. Thus, we have organised our first Maker Faire on May 13rd. SP Maker Faire is an event where creativity, craftsmanship and invitation are celebrated. It is aimed to please everyone who loves technology, is devoted to teaching others and loves to create things. It is where every maker shares information while learning from others, regardless of their age or skills. As 5665, we organize this event and share our experience with more than 50 schools and companies. As we tried to introduce FRC to our friends, we also learned a lot from them. With SP Makers and other schools, we organized many different workshops for students who would like to learn more about Arduino, 3D Design, FLL, VEX and much more. Since we had so many positive feedback, we decided to make the second one this year. We are also the team who distributed VEX in Turkey. We had workshops in Aydın, Izmir, Istanbul, Ankara and

Çankırı and gave them 30 VEX kit. We also participated in Haydarpaşa Maker Faire in November 12 and showed our VEX robot. Every year we have a Code Week in our school and help our friends learn the language of Python. We designed an application which is called SCODE. SCODE is an app which provides programming and algorithms education. It was created for children especially for kids who participate in FLL and Jr.FLL could easily start to learn the world of coding.

However, we realized that being a kid in East Anatolia costs much more than the need of technology. As we grow up our parents have always taught us to empathise and we also believe that the basis of understanding, respecting and helping someone depends on this ability. Hence, while trying to help them we saw that some of those children, particularly girls, can't even go to school. That's why we decided to contribute to social responsibility projects.

Every 24th November is celebrated as the Teacher's Day in Turkey. And for us, it is very special and meaningful to celebrate this day. We think that the best present for all of the teachers is not something material, but to see another child getting the chance to go to school... For this purpose, since 2015, we have started the "Anadolu'da Bir Kızım Var" (I have a daughter in Anatolia) project to support two girls' expenses of education in Anatolia every year with the help of donations.

In the meantime, since last year, we have sold heart-shaped chocolates on valentine's day for Çağdaş Yaşamı Destekleme Derneği (Association for the Support of Contemporary Living) in our school, we desire that warmth of our heart can reach families out there who lives on the edge of poverty. At the same time, we had plans for animals too, we built houses from recycled materials for cats and birds in our workshop.

Ever since we have noticed that changing a country's conception of the world depends on changing the education system of the country, we have been trying to do our best by spreading the message of FIRST. Turkey has a rote-learning based education system and this system has a bad impact on the students. By changing the system, we aim to create one which can allow students to discover their potential on maths, science and logic-based activities and which can allow STEM to be a part of our education system. So, we help the creation of STEM centre in Payas which assists students to have the education of coding and robotics. And we made presentation in Izmit, Hatay, Aydın, Bursa and Antep. We let students from Muğla Yönelt College, Ankara Sınav College, Hüseyin Avni Sözen Public High School, Köyceğiz Science High School join our team. Exclusively, we have as much girls as boys in our team because we believe that a society without woman is a society without a future. Mev Makers, the team we have started last year, went to Florida Regional and showed a great achievement as a rookie team. Team Kaiser 6989 won Highest Rookie Seed Award in 2017 Turkish Off Season This year we have started 2 new teams; Team rOctopus and Team Oksef. Team Oksef will attend Istanbul Regional and Team Roctopus will attend Shanghai Regional this year. Also this year, we have started negotiations with our sister schools in France to start a new French FRC team.

Long story short, we can say that we try to bring out the Hawking's in ourselves. To write our own *Philosophiæ Naturalis Prinicpia Mathematica* and to publish our *Annus Mirabilis*, we aim to never abandon our dreams. With the inspiration of FIRST, we know that we have traded our deafness with science and taught other aspiring engineers, scientists and mathematicians how to do so.