



**FLL**®

**FIRST® LEGO® League MALAYSIA 2018**

# NEWSLETTER



## ***Congratulations***

Team **PHANTOM-X ASSASSINS** from Assassins Penang, Pulau Pinang  
**The Champion's Award - GOLD**  
at the OPEN EUROPEAN CHAMPIONSHIP 2017 Aarhus, Denmark

**FLL**  
**UPCOMING CHALLENGE**



**On your mark, Get set, FLOW!**

**FLL JR.**  
**UPCOMING CHALLENGE**



**Get Pumped!**



## What is **FIRST**®?

FIRST (For Inspiration and Recognition of Science and Technology) is a not-for-profit organisation devoted to help young people discover and develop a passion for science, technology, engineering, and math (STEM).

## Vision

To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders.

## Mission

To inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programmes that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.



FIRST LEGO League (FLL) is a project-based programme teaching students age 9 to 16 about science, technology, and collaborative working. FLL is a partnership between the non-profit organisation FIRST and the LEGO Group. It had its first season in 1998. Now over 230,000 students from 80 countries take part.

“We want to change the culture by celebrating the mind. We need to show kids that it’s more fun to design and create a video game than it is to play one.”  
(Dean Kamen, Founder of FIRST)

“FLL encourages children to design, construct, and programme their own intelligent inventions. This allows them not only to understand technology, but to become masters of it.”  
(Kjeld Kirk Kristiansen, Owner and Deputy Chairman of the LEGO Group)



# THE FIRST® LEGO® LEAGUE 2017/2018 CHALLENGE:



On your mark, get set, flow! Drink in the **2017/2018 HYDRO DYNAMICS<sup>SM</sup>** season and learn all about water – how we find, transport, use, or dispose of it. In the 2017/18 **FIRST® LEGO® League Challenge**, students age 9 to 16\* from 80 countries will make a splash with HYDRO DYNAMICS. What might become possible when we understand what happens to our water?

## Missions include:

- Remove broken pipe and install new pipe into pipeline
- Collect raindrops for water source
- Convert waste into fertilizer
- Place inspection camera tripod to designated location
- Extinguish fire by firetruck
- Remove manhole cover for underground access

**FIRST® LEGO® League** challenges kids to think like scientists and engineers. During the **HYDRO DYNAMICS<sup>SM</sup>** season, teams will choose and solve a real-world problem in the Project.

They will also build, test, and program an autonomous robot using **LEGO® MINDSTORMS®** technology to solve a set of missions in the Robot Game. Throughout their experience, teams will operate under the **FIRST® LEGO® League** signature set of **Core Values**, celebrating discovery, teamwork, and Gracious Professionalism®.

\*Ages vary by country

## Teams will:

- Choose a topic they are passionate about and have always wanted to learn
- Find a solution that improves the way people find, transport, use, or dispose of water
- Share their solutions with others
- Build, test, and program an autonomous robot using a **LEGO® MINDSTORMS®** set to solve mission on an obstacle course



*Get ready. Get set. ROAR!*

## FLL 2017 MALAYSIA FIGURES:

- 1,000 children nationwide
- 89 teams
- 16 states
- 8-week design, build, and research period
- Over 50 judges & 100 volunteers
- Over 10 sponsors & partners
- 1 National Competition



*We're not talking trash  
We're cleaning it up!*

## FLL 2015/16 WORLD FIGURES:

- 232,000 children worldwide
- 29,034 teams
- 80 countries
- 8-week design, build, and research period
- 66,000+ volunteers
- Over 1,000 sponsors
- 1,248 Qualifying Tournaments
- 153 Championship Tournaments
- 5 Open Championships
- 1 World Festival





# ABOUT **FLL**®

## HOW IT WORKS

FIRST LEGO League (FLL), created through a partnership between FIRST (For Inspiration and Recognition of Science and Technology) and The LEGO Group, inspires future scientists and engineers.



### How FLL® Works:

- Sports-like tournaments with judges and awards
- Teams consists up to 10 children of ages 9-16
- Teams guided by adult coaches and mentors
- Participants from schools, home schools, churches, civic groups, neighbourhood groups
- Assisted by parents, teachers, community volunteers
- Support from corporate sponsors
- Theme based on new real-world game challenge each year

### FLL® Children:

- Learn teamwork skills
- Build self-confidence, knowledge, and life skills
- Research challenges facing today's scientists
- Design, build, and program autonomous robots
- Use LEGO® MINDSTORMS® technologies
- Engage with their community
- Compete in tournaments and present their solutions to a panel of judges

### What FLL® Offers:

- Discovery of the fun in science and technology
- Real-world application of science and math concepts
- Hands-on problem solving
- Programming experience
- Research presentation project
- Adult role models
- Team activities guided by FLL Core Values
- Self-esteem and confidence







## TEAMS

FIRST LEGO League (FLL) puts children in charge. Teams mix curiosity and imagination with LEGO Education bricks, sensors, motors, and gears to invent unique, autonomous robots capable of completing various missions.



### TEAM ACTIVITIES

- Build autonomous robot
- Program robot
- Research real-world challenge
- Deliver presentation project
- Compete at sport-like tournament

### FLL® Teams:

- Investigate, strategise, design, build, programme, and test their robotic inventions
- Search the web, talk to scientists, visit the library, and develop compelling research presentations which relate to a problem or opportunity facing the world today
- Develop employment and life skills including critical thinking, time management, collaboration, and communication while becoming more self-confident
- Compete with peers in high energy sport-like tournaments

### Getting Started:

- The annual Challenge is revealed in early September

### Who can form a team?

- A school classroom, after-school program, extracurricular group, learning centre, home school, neighbourhood group, club or civic organization
- Up to 10 children, ages 9-16, and at least one adult coach





# THE THREE ESSENTIAL PARTS

A FIRST® LEGO® League Challenge consists of three parts:

- A research assignment called '**The Project**' where students research and come up with innovative ideas for solving a defined, real world challenge.
- A '**Robot Game**' where students design and programme a LEGO® MINDSTORMS® robot to solve missions on a special obstacle course.
- '**Core Values**', the work process the students go through to obtain important life skills such as problem solving, critical thinking, creativity, and team-work.



## Core Values

By embracing the Core Values, participants learn that friendly competition and mutual gain are not separate goals, and that helping one another is the foundation of teamwork.



## Robot Game

The Robot Performance Award recognizes teams that score the most points in the Robot Game. Winners will be determined by the number of points the robot scores during scheduled matches.

For Robot Design Award, judges will review some parts of the programming. There may be a competition table with mission models and teams should be prepared to demonstrate their solution to at least one of the missions.



## Project

Participating teams are required to choose a problem, research it, and design their own innovative solution to the problem. Each team will have 5 minutes to summarize their project in a presentation to the judges.



# THEMES and Global Numbers (1998 - 2017)

<b>2017</b>  Looking for better ways in handling our precious water <b>22,840 TEAMS</b>	<b>2016</b>  Making interactions better with animals <b>29,034 TEAMS</b>	<b>2015</b>  Finding better ways to manage our trash <b>29,142 TEAMS</b>	<b>2014</b>  The future of learning <b>26,500 TEAMS</b>
<b>2013</b>  Exploring natural disasters <b>22,840 TEAMS</b>	<b>2012</b>  Quality of life for seniors <b>20,430 TEAMS</b>	<b>2011</b>  Keeping food safe <b>18,323 TEAMS</b>	<b>2010</b>  Explore cutting-edge world of biomedical engineering <b>16,762 TEAMS</b>
<b>2009</b>  Transforming transportation <b>14,725 TEAMS</b>	<b>2008</b>  Study and research of the climate <b>13,705 TEAMS</b>	<b>2007</b>  Energy management and conservation <b>10,941 TEAMS</b>	<b>2006</b>  Science at the molecular level <b>8,847 TEAMS</b>
<b>2005</b>  Health, diversity and productivity of the world's ocean <b>7,501 TEAMS</b>	<b>2004</b>  Address the needs of individuals with disabilities <b>5,859 TEAMS</b>	<b>2003</b>  Visit and explore the Red Planet <b>4,331 TEAMS</b>	<b>2002</b>  Challenges of urban planning <b>3,001 TEAMS</b>
<b>2001</b>  Impact of global climate change <b>1,902 TEAMS</b>	<b>2000</b>  Predict the timing and nature of volcano eruptions <b>1,540 TEAMS</b>	<b>1999</b>  Visit the international Space Station <b>960 TEAMS</b>	<b>1998 Pilot</b> <b>RACE AGAINST TIME</b> Robots race through mazes <b>200 TEAMS</b>



# FIRST® LEGO® LEAGUE (FLL®) WORLD FESTIVAL

**FLL World Festival** is a culminating celebration of the FIRST LEGO League season, NOT a level of competition. Regions are selected by lottery to send their 1st Place Champion's Award-winning team to World Festival. World Festival is a beautiful mix of cultures and skill sets, a true celebration of FIRST LEGO League. The teams are often the Champion's Award team at the regional level with some other criteria including special nomination from FLL Operational Partners globally.

The award categories include Innovative Design Award, Quality Design Award, Programming Award, Research Quality Award, Innovative Solution Award, Creative Presentation Award, Teamwork Award, Team Spirit Awards, Against All Odds Awards, Outstanding Volunteer Awards, Adult Coach/Mentor Awards, Young Adult Mentor Awards, and Judges' Awards. The most notable awards are Champion's Award and Robot Performance Award.

## FLL® OPEN EUROPEAN CHAMPIONSHIP 2017



Assassins Penang, Pulau Pinang  
Venue: Aarhus, Denmark  
Date: 25-28 May 2017

### Winner Of The **CHAMPION'S AWARD - GOLD** Team name: **PHANTOM-X ASSASSINS**

"Phantom-X Assassins consists of 9 enthusiastic individuals who are passionate about design and technology. We take pride in our commitment. Our everlasting pursuit for perfection and simplicity is drawn from our motto and quote from the great Leonardo da Vinci "Simplicity is the ultimate sophistication". Our close bond between members allows us to overcome various obstacles in our journey as we are from different schools in the state.

Throughout the season, the Team drew inspiration from the efficient workflow of major global corporations such as Google by learning how the companies operate. Of particular interest is the Moonshots concept which enabled us to achieve maximum inclusion as a team where ideas from every member are considered and executed. As we also gained tremendous volume of knowledge during our research by collaborating with professionals such as marine biologists/ecologists and chemical engineers from around the world.

At the European Championship in Aarhus, Denmark, the judges and scientists were impressed by our team's dedication and extensive research which ranked us as the 1<sup>st</sup> in the Core Values, Robot Design and Project sectors and 4<sup>th</sup> in Robot Performance. We are extremely proud of this achievement. We enjoyed interacting and exchanging knowledge with teams from different countries as well as the trips made to theme parks, especially the original LEGOLAND in Billund! Our mentors and coaches enjoyed the trip and learned as much as we did in Europe. This proves that we never stop learning. Regardless of the results, we acquired extremely valuable knowledge that we can be proud of."

**Ms. Ng Lee Chuang, Coach for Phantom-X Assassins team,  
Assassins Penang, Pulau Pinang**

## FLL® FIRST® LEGO® LEAGUE WORLD FESTIVAL 2016

### Winner Of The Mechanical Design Award **1<sup>ST</sup> RUNNER-UP** Team name: **#REVELES**

"Our team which consists of 10 person had brainstormed for more than 6 months to prepare the competition. Teammates that are honest, reliable, hard working, cooperative, integrity and courteous allow us to gain many experiences and success in the competition.

Throughout the competition, we have learned that it isn't all about winning, its about having fun together. We have discovered different ways to overcome those ups and downs we have faced throughout the journey to success. Members also feel thankful to each other for their contribution in the competition. We must also thank our mentors from the bottom of our hearts for their supportive guidance."

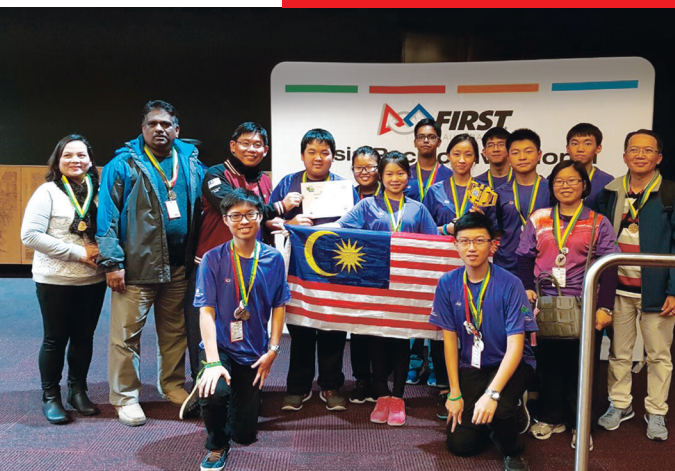
**Mr. Lye Tuck Sing, Coach for #REVELES team,  
SMJK Chung Ling, Ayer Itam, Pulau Pinang**



SMJK Chung Ling, Ayer Itam, Pulau Pinang  
Venue: St. Louis, United States of America  
Date: 21-30 April 2016







SMK Bintulu, Bintulu, Sarawak  
Venue: Sydney, Australia  
Date: 3-5 July 2016

Winner of The **BEST PRESENTATION AWARD**

**Team name: Bintulu Hawks**

"With our team consisting of 7 boys and 3 girls, we structured our team in such a way that all of us can cooperate and accomplish tasks simultaneously without overloading ourselves. Three of us make up the Project team, researching, documenting and perfecting the Waste Oil Transformer. Another five of us are in the Technical team, spending hours on end completing the robot missions to accumulate the maximum amount of points attainable. Joining this competition was humbling, and it has opened our eyes towards the enormity that Mother Nature faces now due to our egoistic actions. As Julius Caesar once said, "Experience is the teacher of all things". Being crowned national champion and winning the Best Presentation Award at the Asia Pacific Open Championship has given all of us insurmountable knowledge that is both ubiquitous and worth its weight in gold."

**Mr. Ling Sim Hie & Ms. Yong Yee Yung, Coach for Bintulu Hawks team, SMK Bintulu, Bintulu, Sarawak**

Winner of The Strategy & Innovation Award **1<sup>ST</sup> RUNNER-UP**

**Team name: JS Flawless**

"The success of our team depended on the students' team work, commitment, time management, and problem solving skills. The success of a team is not only in gaining an award but also in the learning process experienced by the students. At the FLL World Festival in the USA, I was really proud and glad to see the students have a chance to compete with other teams from other countries whereby their knowledge has increased tremendously. Other than that, they also learnt cooperative, collaborative and communicative skills. They have acquired patience on top of passion, allowing them to persist until they have obtained satisfactory results through trial and error. I believe that this competition is definitely a stepping stone for students to be successful in their future career."

**Ms. Wong Pei Funn, Coach for JS Flawless team, SMJK Jit Sin, Bukit Mertajam, Pulau Pinang**



SMJK Jit Sin, Bukit Mertajam, Pulau Pinang  
Venue: St. Louis, United States of America  
Date: 21-30 April 2014



SMK Bintulu, Bintulu, Sarawak  
Venue: Mannheim, Germany  
Date: 6-9 June 2012

Winner of The **CHAMPION'S AWARD - GOLD**

**Team name: Bintulu Hawks**

"Judges around the world were caught by surprise with our outstanding achievement despite our first appearance in FLL international competition. I would like to take this opportunity to encourage and urge all students to participate in FLL European Championship and hope our students will share their success stories with their peers. Winning this competition proves our Malaysian education is on the right track towards a developed nation. Besides, we learned that the American education system emphasizes on the learning process throughout the competition instead of focusing only on the final result. I believe our students have earned a lot of experiences over here and I am confident that the knowledge they gained will definitely aid them to success in their future careers."

**Mr. Anathan a/l Subramaniam, Principal, SMK Bintulu, Bintulu, Sarawak**



# FLL<sup>®</sup> IN MALAYSIA

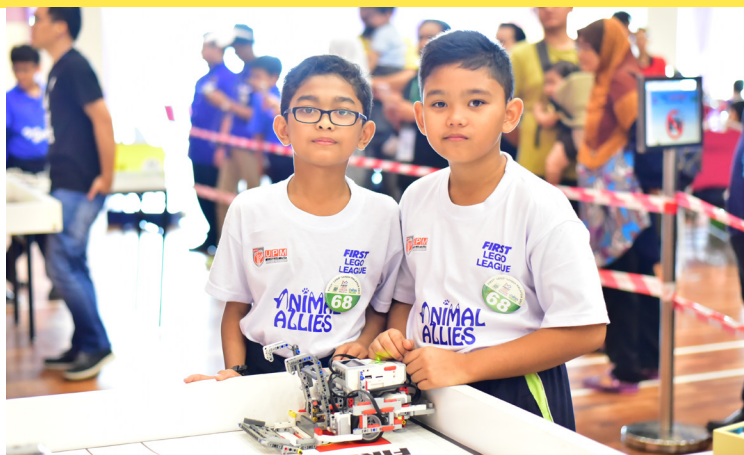
**FLL Malaysia** was held for the first time in the year 2008 at Pusat Sains Negara. From just 20 teams participating in the inaugural competition, FLL Malaysia's number of participants grew year after year and by 2017, FLL Malaysia received 89 teams taking part in the competition.

FLL Malaysia is a programme in line with the Ministry of Education's effort to promote Science, Technology, Engineering & Mathematics (STEM) amongst Malaysian students. Participating in the FLL Malaysia

provides children with a novel opportunity to gain a strong foundation in robotics as well as critical thinking, problem-solving and creative skills. The rich learning experience afforded by the competition is not only aligned with the Malaysian government's aspirations but also shapes participants' future. The skill set being exposed to children will be deeply engraved as they take it with them through their future endeavours. Indeed, the FLL Malaysia is helping to shape Malaysia's tomorrow for the better.

## FLL<sup>®</sup> 2017

FLL Malaysia 2017 was successfully held at the Institut Pendidikan Guru Kampus Bahasa Melayu, Lembah Pantai, Kuala Lumpur on 14 - 16 July 2017. 89 teams of children aged 9 till 16 participated in the competition. The theme for 2017 - Animal Allies - required teams to do research and solve real-world problems about interactions between people and animals. Teams must propose innovative and practical solutions for human and animals to better co-exist. These ideas are presented based on an understanding and application of science, technology and robotics. Team Nemesis Assassins from Assassins Penang, Pulau Pinang was awarded the Champion's Award – Gold winner.







### AWARD WINNERS

#### Awards Presentation and Closing Ceremony

Officiated by  
**Y.Bhg. Tan Sri Dr. Khair Bin Mohamad Yusof**

Director General of Education,  
Ministry of Education Malaysia



**CHAMPION'S AWARD  
GOLD**

**NEMESIS ASSASSINS  
ASSASSINS PENANG,  
PULAU PINANG**



**CHAMPION'S AWARD  
SILVER**

**ROBODES  
SMJK CHUNG LING,  
BUTTERWORTH, PULAU PINANG**



Officiated by  
**Y.Bhg. Tan Sri Dr. Khair Bin Mohamad Yusof**

Director General of Education,  
Ministry of Education Malaysia

at  
Dewan Usma Aminuddin Baki,  
Kampus PG Kampus Bahasa Melayu,  
Lembah Pantai, W.P. Kuala Lumpur, 14<sup>th</sup> to 16<sup>th</sup> July 2017

#### Awards Presentation and Closing Ceremony

Officiated by  
**Y.Bhg. Tan Sri Dr. Khair Bin Mohamad Yusof**

Director General of Education,  
Ministry of Education Malaysia



**CHAMPION'S AWARD  
BRONZE**

**RADIOACTIVE  
SMJK KATHOLIK,  
PETALING JAYA, SELANGOR**





Institut Pendidikan Guru Kampus Bahasa Melayu,  
Lembah Pantai, W.P. Kuala Lumpur  
14<sup>th</sup> to 16<sup>th</sup> July 2017

## AWARD WINNERS

**BEST ROBOT PERFORMANCE:**  
*Champion*

**NEMESIS ASSASSINS**  
Assassins Penang, Pulau Pinang

**BEST ROBOT PERFORMANCE:**  
*1st Runner-Up*

**PHANTOM ASSASSINS**  
Assassins Penang, Pulau Pinang

**BEST ROBOT PERFORMANCE:**  
*2nd Runner-Up*

**SILENT-X ASSASSINS**  
Assassins Penang, Pulau Pinang

**BEST PROJECT Award**  
**WISSENSCHAFT**

Hin Hua High School, Klang, Selangor

**RESEARCH Award**  
**TECH NO LOGIC**

SMK Infant Jesus Convent, Johor Bahru, Johor

**INNOVATIVE SOLUTION Award**  
**SRC' 17**

SMK Seri Manjung, Seri Manjung, Perak

**PRESENTATION Award**  
**PECULIAR**

Kolej PERMATAPINTAR UKM, Selangor

**BEST ROBOT Award**  
**TEMPLAR ASSASSINS**

Assassins Penang, Pulau Pinang

**MECHANICAL DESIGN Award**  
**VICTORY**

Techtronic, Kuantan, Pahang

**STRATEGY & INNOVATION Award**  
**PHANTOM ASSASSINS**

Assassins Penang, Pulau Pinang

**PROGRAMMING Award**  
**SILENT-X ASSASSINS**

Assassins Penang, Pulau Pinang

**BEST CORE VALUES Award**  
**SEMERBAK VEREINEN**

SMK Seri Gombak, Gombak, Selangor

**INSPIRATION Award**  
**PERSATUAN ROBOTIK PUTRAJAYA 01**

SMK Putrajaya Presint 8(1), W.P. Putrajaya

**TEAMWORK Award**  
**VHEYTOS**

SMK Chung Ling, Ayer Itam, Pulau Pinang

**GRACIOUS PROFESSIONALISM<sup>®</sup> Award**  
**BESTECH**

Sam Bestari, Subang Jaya, Selangor

**RIISING STAR Award**  
**ASTRADSEAN**

SMK Dato Syed Esa, Batu Pahat, Johor

**AGAINST ALL ODDS Award**  
**PEARL OF THE ORIENT**

SJKC Perempuan China, Georgetown, Pulau Pinang

## STEM Invention & Innovation

**GOLD**  
**SMART FURNITURE 2017**

SMK Ibrahim, Kedah

**SILVER**  
**SMART WARDROBE**

SMK Tinggi Batu Pahat, Johor

**BRONZE**  
**THE SMART BOX**

SK Taman Megah, Selangor

# CONGRATULATIONS TO THE FLL MALAYSIA 2017 GRADUATES

103 Teams / 974 Young Engineers & Scientists / 192 Coaches / Over 50 Judges & 100 Volunteers

## FLL MALAYSIA TEAMS

1. **MRSM JOHOR BAHRU, JOHOR BAHRU, JOHOR**  
TEAM: JOBARIAN FORCE
2. **SMK TINGGI BATU PAHAT, BATU PAHAT, JOHOR**  
TEAM: XENON
3. **SMK DATO SYED ESA, BATU PAHAT, JOHOR**  
TEAM: ASTRADSEAN
4. **SMK INFANT JESUS CONVENT, JOHOR BAHRU, JOHOR**  
TEAM: TECH NO LOGIC
5. **SEKOLAH MENENGAH ISLAM HIDAYAH, JOHOR BAHRU, JOHOR**  
TEAM: KHAWARIZMI
6. **CR8 ALOR SETAR, KEDAH**  
TEAM: SCRAP FORCE
7. **CR8 ALOR SETAR, KEDAH**  
TEAM: BUBALUS BUBALIS
8. **SMK IBRAHIM, SUNGAI PETANI, KEDAH**  
TEAM: FINIS CORONUT OPUS
9. **ROBOCOM, MELAKA**  
TEAM: ROBOCOM
10. **SM IMTIAZ ULUL ALBAB, MELAKA**  
TEAM: ROBOTIK IUAM
11. **SMK INFANT JESUS CONVENT(M), MELAKA**  
TEAM: SCBOT
12. **SEKOLAH DATO' ABDUL RAZAK, SEREMBAN, NEGERI SEMBILAN**  
TEAM: SDAR
13. **SMK TUNKU BESAR TAMPIN, TAMPIN, NEGERI SEMBILAN**  
TEAM: ATOMIC ROBOTIC
14. **APPLIED KINETICS RESOURCES, PAHANG**  
TEAM: THE BARBETS
15. **SMK AIR PUTIH, KUANTAN, PAHANG**  
TEAM: INFINITY
16. **SMK AIR PUTIH, KUANTAN, PAHANG**  
TEAM: VICTORY
17. **SMK HWA LIAN, MENTAKAB, PAHANG**  
TEAM: REVOLUTION EVOLUTION DEFIANCE
18. **SMJK HWA LIAN, TAIPING, PERAK**  
TEAM: TAIPING HWA LIAN
19. **PUSAT DIDIK INTELEK PINTAR, PERAK**  
TEAM: TAIPING INTELEK
20. **MRSM FELDA, TROLAK, PERAK**  
TEAM: NANOTECH
21. **SMK METHODIST. TANJUNG MALIM, PERAK**  
TEAM: SOCIUS TITANS
22. **SM YUK CHOY, IPOH, PERAK**  
TEAM: YUK CHOI HIGH SCHOOL
23. **SJK HUA LIAN 3, TAIPING, PERAK**  
TEAM: TAIPING HL3
24. **TELEKOM MALAYSIA BERHAD, PERLIS**  
TEAM: SMK ARAU
25. **SMJK CHUNG LING, BUTTERWORTH, PULAU PINANG**  
TEAM: ROBODES
26. **SMJK CHUNG LING, BUTTERWORTH, PULAU PINANG**  
TEAM: ROBODES 2
27. **SK BUKIT GAMBIR, GEORGETOWN, PULAU PINANG**  
TEAM: GAMBERIAN'S
28. **SK PERMATANGTOK MAHAT, NIBONG TEBAL, PULAU PINANG**  
TEAM: PANTHERA
29. **SMK CONVENT LEBUH LIGHT, GEORGETOWN, PULAU PINANG**  
TEAM: TECHTHON
30. **SJK PEREMPUAN CHINA, GEORGETOWN, PULAU PINANG**  
TEAM: PEARL OF THE ORIENT
31. **SMK TINGGI BUKIT MERTAJAM, BUKIT MERTAJAM, PULAU PINANG**  
TEAM: HRC HEIST
32. **CR8 PENANG, PULAU PINANG**  
TEAM: NEMESIS ASSASSINS
33. **CR8 PENANG, PULAU PINANG**  
TEAM: PHANTOM ASSASSINS
34. **CR8 PENANG, PULAU PINANG**  
TEAM: SILENT-X ASSASSINS
35. **CR8 PENANG, PULAU PINANG**  
TEAM: TEMPLAR ASSASSINS
36. **SMJK CHUNG LING, AYER ITAM, PULAU PINANG**  
TEAM: VOYAGERS
37. **SMJK CHUNG LING, EYER ITAM, PULAU PINANG**  
TEAM: VHEYTOS
38. **HAN CHIANG HIGH SCHOOL, GEORGETOWN, PULAU PINANG**  
TEAM: ALPHA 1.0
39. **SMK BERAPIT, BUKIT MERTAJAM, PULAU PINANG**  
TEAM: TEAM: BERAPIT LIONS
40. **SJK KWANG HWA, SUNGAI NIBONG, PULAU PINANG**  
TEAM: AMAZING KWANG HWA
41. **CR8 SABAH**  
TEAM: PINNACLE OF AWESOME
42. **CR8 SABAH**  
TEAM: ROBOT KNIGHTS
43. **SABAH CHINESE HIGH SCHOOL, TAWAU, SABAH**  
TEAM: SCHS ROBOTICISTS
44. **SMK MUKAH, MUKAH, SARAWAK**  
TEAM: SMART BRAIN ROBOTICS
45. **YOUTH ROBOTICS ACADEMY & SOLUTIONS, SELANGOR**  
TEAM: Y.R. PROJECT Z
46. **CR8 SETIA ALAM, SELANGOR**  
TEAM: FLYING MARINES
47. **EDU360 ACADEMY, SELANGOR**  
TEAM: GEN3SIS
48. **EDU360 ACADEMY, SELANGOR**  
TEAM: QUANTUM
49. **SJK YUK CHAI, PETALING JAYA, SELANGOR**  
TEAM: SUPER YC KIDZ
50. **ROBOWIS SDN BHD, SELANGOR**  
TEAM: ROBOWIS ALLIESTECH
51. **REAL SCHOOLS, SHAH ALAM CAMPUS, SHAH ALAM, SELANGOR**  
TEAM: EVOTECH
52. **SMK SERI GOMBAK, GOMBAK, SELANGOR**  
TEAM: SEMERBAK VEREINEN
53. **SMK SERI GOMBAK, GOMBAK, SELANGOR**  
TEAM: SEMERBAK VALORUS
54. **HIN HUA HIGH SCHOOL, KLANG, SELANGOR**  
TEAM: WISSENSCHAFT
55. **SMK DARUL EHSAN, BATU CAVES, SELANGOR**  
TEAM: TEAM: EHSAN MECHATRONICS
56. **SMK BESTARI, SUBANG JAYA, SELANGOR**  
TEAM: BESTECH
57. **SMK SUBANG UTAMA, SUBANG JAYA, SELANGOR**  
TEAM: SU CHALLENGERS
58. **SJK PIN HWA 1, SHAH ALAM, SELANGOR**  
TEAM: PIN HWA PROJECT Z
59. **SK BUKIT RAHMAN PUTRA, SUNGAI BULOH, SELANGOR**  
TEAM: PUTRA ROBOTICS TEAM
60. **SEKOLAH KIBLAH, SEPANG, SELANGOR**  
TEAM: KIBLAH 1
61. **SEKOLAH KIBLAH, SEPANG, SELANGOR**  
TEAM: KIBLAH 2
62. **SK SEAFIELD, PETALING JAYA, SELANGOR**  
TEAM: SEAFIELD
63. **UNIVERSITI PUTRA MALAYSIA, SELANGOR**  
TEAM: LEGO PUTRA
64. **SK BANDAR BARU BANGI, BANDAR BARU BANGI, SELANGOR**  
TEAM: LEGO SKBBB
65. **UNIVERSITI PUTRA MALAYSIA, SELANGOR**  
TEAM: LEGO PRINCE
66. **ROBOTECH EDUCATION CENTRE, SELANGOR**  
TEAM: ELITE REC'S
67. **SMK BUKIT RAHMAN PUTRA, SUNGAI BULOH, SELANGOR**  
TEAM: BRP'S APPRENTICES
68. **SMK TROPICANA, PETALING JAYA, SELANGOR**  
TEAM: TROPBOTZ
69. **KOLEJ PERMATAPINTAR UKM, SELANGOR**  
TEAM: PECULIAR
70. **ACADEMY DS, SELANGOR**  
TEAM: AKADEMI DS
71. **TELEKOM MALAYSIA BERHAD**  
TEAM: SMK MUNSHI ABDULLAH
72. **SMK RANTAU PETRONAS, KERTEH, TERENGGANU**  
TEAM: RANTAU X INFINITY
73. **SMK ITTIFAKIAH, JERTEH, TERENGGANU**  
TEAM: THE VULTURES
74. **SMK DATO' RAZALI ISMAIL, KUALA TERENGGANU, TERENGGANU**  
TEAM: SOCIAL BUTTERFLIES
75. **SRI SEMPURNA INTERNATIONAL SCHOOL, W.P. KUALA LUMPUR**  
TEAM: ENSEMBL3

76. **SRI SEMPURNA INTERNATIONAL SCHOOL (PRIMARY), W.P. KUALA LUMPUR**  
TEAM: THE SEMPURNIANS
77. **CHONG HWA INDEPENDENT HIGH SCHOOL, W.P. KUALA LUMPUR**  
TEAM: CHKL ROBOTIC
78. **SMK SERI BINTANG UTARA, W.P. KUALA LUMPUR**  
TEAM: SBU
79. **ASRAMA 1MALAYSIA, W.P. KUALA LUMPUR**  
TEAM: A1M PRINCE
80. **BECHTEL SMK SERI MANJUNG, SERI MANJUNG, PERAK**  
TEAM: SRC'17
81. **BECHTEL SMJK KATHOLIK, PETALING JAYA, SELANGOR**  
TEAM: RADIOACTIVE
82. **BECHTEL SMK SEKSYEN 5, WANGSA MAJU, W.P. KUALA LUMPUR**  
TEAM: SV TECH
83. **BECHTEL SMK JALAN EMPAT, BANDAR BARU BANGI, SELANGOR**  
TEAM: JESSTRONIANS
84. **SMK SERI BINTANG SELATAN, W.P. KUALA LUMPUR**  
TEAM: THE SOUTHERN STAR
85. **SMK PUTRAJAYA PRESINT 8(1), W.P. PUTRAJAYA**  
TEAM: PERSATUAN ROBOTIK PUTRAJAYA 01
86. **SMK PUTRAJAYA PRESINT 8(1), W.P. PUTRAJAYA**  
TEAM: PERSATUAN ROBOTIK PUTRAJAYA 02
87. **SMK PUTRAJAYA PRESINT 8(1), W.P. PUTRAJAYA**  
TEAM: PERSATUAN ROBOTIK PUTRAJAYA 03
88. **SMK PUTRAJAYA PRESINT 8(1), W.P. PUTRAJAYA**  
TEAM: PERSATUAN ROBOTIK PUTRAJAYA 04
89. **SMK PUTRAJAYA PRESINT 8(1), W.P. PUTRAJAYA**  
TEAM: PERSATUAN ROBOTIK PUTRAJAYA 05

## FLL MALAYSIA STEM TEAMS

1. **SMK TINGGI BATU PAHAT, BATU PAHAT, JOHOR**  
TITLE: SMART WARDROBE
2. **SMK TINGGI BATU PAHAT, BATU PAHAT, JOHOR**  
TITLE: MULTI-FUNCTION TABLE
3. **SMK TINGGI BATU PAHAT, BATU PAHAT, JOHOR**  
TITLE: SMART FURNITURE TRANSFORMER 1.0
4. **SMK IBRAHIM, SUNGAI PETANI, KEDAH**  
TITLE: SMART FURNITURE 2017
5. **TECHTRONIC, PAHANG**  
TITLE: ULTIMATE KITCHEN FURNITURE
6. **SEKOLAH KEBANGSAAN TAMBUN, IPOH**  
TITLE: SKT SMART FURNITURE
7. **PUSAT PERMATAPintar NEGARA, SELANGOR**  
TITLE: SMART HOLDER
8. **PUSAT PERMATAPintar NEGARA, SELANGOR**  
TITLE: CONVERTABLE BED
9. **SJK YUK CHAI, PETALING JAYA, SELANGOR**  
TITLE: SMART ROOM
10. **SJK YUK CHAI, PETALING JAYA, SELANGOR**  
TITLE: OUTDOOR STORAGE ROOM
11. **SK TAMAN MEGAH, PETALING JAYA, SELANGOR**  
TITLE: MULTI-PURPOSE AND SPACE SAVING BED
12. **SK TAMAN MEGAH, PETALING JAYA**  
TITLE: SPACE SAVING PORTABLE HOUSE
13. **SK TAMAN MEGAH, PETALING JAYA, SELANGOR**  
TITLE: THE SMART WALL
14. **SK TAMAN MEGAH, PETALING JAYA, SELANGOR**  
TITLE: THE SMART BOX



# AQUA ADVENTURE<sup>SM</sup>

**Hi,** I'm Hydro  
the water drop!

Find out how water like  
me gets to you. Can you  
help make my journey  
better? Join me on an  
AQUA ADVENTURE<sup>SM</sup>!



**Explore** how you use water at home or in your community, the water's journey, and how to improve a part of this journey.

**Create and Test** a Team Model to show your ideas.

**Share** what you learn through your Team Model and a Show Me poster.

## Explore!

You and your community use water for many things every day. Where does your water come from? How does it get to you? Is the water cleaned or treated before you can use it? Why is it important to use water wisely? Pick one way that you use water at home or in your community. Learn as much as you can about the water's journey. Then design a solution to improve a part of this journey.



## Create and Test!

Design, build, program, test, and improve a Team Model to show your chosen water use, the water's journey, and your idea for how to improve a part of the journey. Include the AQUA ADVENTURE<sup>SM</sup> Inspire Model (a LEGO® water pump) in your design. Also be sure to use LEGO® Education WeDo 2.0 or WeDo to build and program at least one motorized part of your Team Model.

## Share!

Make a *Show Me* poster, and use it and your Team Model to share what you have learned with others. Participate in FLL Jr. Malaysia, invite your family and friends to a special team meeting, or share your Engineering Notebook to show what you know about water!

**No matter what you do, have fun!**





# What is FIRST® LEGO® League Jr.?

**It's never too early to discover STEM.** FIRST LEGO League Jr.\* is designed to introduce STEM concepts to kids aged 6 to 10 while exciting them through a brand they know and love – LEGO®.

Guided by one adult Coach, teams (up to 3 members) explore a real-world scientific problem such as food safety, recycling, energy, etc. Then they create a Show Me poster that illustrates their journey of discovery and introduces their team. They also construct a motorised model of what they learned using LEGO elements. In the process, teams learn about teamwork, the wonders of science and technology, and the FIRST LEGO League Jr. Core Values, which include respect, sharing, and critical thinking. At the close of each season, teams come together on a regional basis to share their Show Me poster and model, celebrate, and have fun!

\* An alliance between FIRST and the LEGO Group

## Impact

**Proven, verifiable impact!** Visit our impact resource page to see for yourself how immersion in FIRST Programs, even at an early age, positively impact students throughout their education and even into careers.

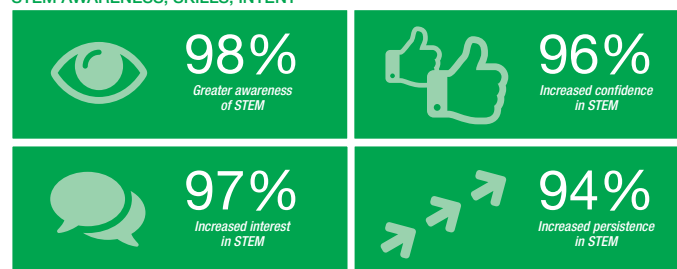
### FIRST LEGO League Jr. teams get to:

- Explore challenges facing today's scientists
- Discover real-world math and science
- Design and build a challenge-related model using LEGO® elements
- Create a *Show Me* Poster and practice presentation skills
- Develop teamwork skills
- Choose to participate in Expos and showcases
- Engage in team activities guided by the FIRST LEGO League Jr. Core Values

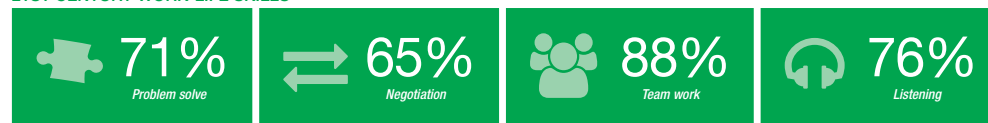
## FIRST® LEGO® League Jr. IMPACT

Coaches indicate that the majority of team members experienced gains on a number of outcomes as a result of participating in FIRST LEGO League Jr.:

### STEM AWARENESS, SKILLS, INTENT



### 21ST CENTURY WORK-LIFE SKILLS



### LEADERSHIP, INNOVATION, ENTREPRENEURSHIP



Source: FIRST® LEGO® League Jr. Evaluation Study (2014), The Research Group, Lawrence Hall of Sciences, University of California, Berkeley



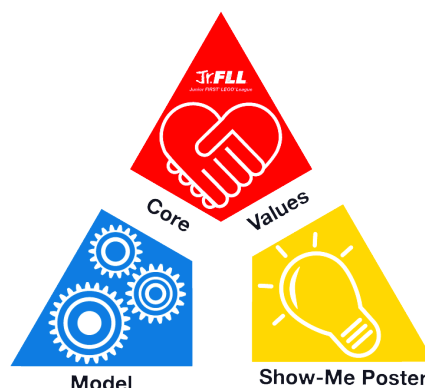
## Core Values

- We are a team.
- We do the work. Our Coaches and Mentors help us learn, but we find the answers ourselves.
- We share our experiences and discoveries with others.
- We are helpful, kind, and show respect when we work, play, and share. We call this Gracious Professionalism.
- We are all winners.
- We have fun.



## Model

The Model gets teams moving! Teams build a representation of what they are researching, based off the Challenge, and incorporate simple machines and movement into their creation.



## Show-Me Poster

The Show-Me Poster requires teams to illustrate their research and team journey. It provides an opportunity for them to share what they studied, what they learned, and to show information about the team and each team member.



## A group of four young girls are posing in a brightly lit indoor space, likely a school hall. They are dressed in costumes: a red ladybug, a purple fairy, a black ballerina, and a white princess. Each girl is holding a large, colorful pom-pom (red, purple, green, and silver) above her head. They are all smiling and looking towards the camera. The background shows other people and tables, suggesting a social event or performance.





## AWARD WINNERS

### **AMAZING MOVEMENT Award**

#### **LET ME GO BRAINSTORM**

Let Me Go Brainstorm Sdn Bhd, W.P. Kuala Lumpur

### **GRACIOUS PROFESSIONALISM<sup>®</sup> Award**

#### **THINKERKIDS**

EARLYEDUKIDS, Johor

#### **LITTLE EXPLORER KIDZ**

SJKC Yuk Chai, Petaling Jaya, Selangor

### **AGAINST ALL ODDS Award**

#### **AKADEMI DS 3**

Akademi DS, Selangor

### **EFFORT AND LEARNING AWARD Award**

#### **JCBOT 01**

SK Convent Infant Jesus 1, Melaka

#### **THE MASTERMINDS**

SK Subang Jaya, Selangor

### **COMPLEXITY AND DECORATION Award**

#### **THE SUN BEAR GUARDIANS**

SJKC Yuk Chai, Petaling Jaya, Selangor

### **MOST EXPLOSIVE Award**

#### **LITTLE NATURE KIDZ**

SJKC Yuk Chai, Petaling Jaya, Selangor

### **ROBUST DESIGN Award**

#### **BLOKKEBUGS**

Blokke Labs Sdn Bhd, Selangor

#### **DARE DREAMER**

MY BRICKS4KIDZ, Selangor

### **TEAMWORK Award**

#### **AKADEMI DS 1**

Akademi DS, Selangor

#### **ALPHA OCEANS**

Alpha Ocean Learning Centre, Johor

### **INQUIRING MINDS Award**

#### **AKADEMI DS 2**

Akademi DS, Selangor

#### **JCBOT 02**

SK Convent Infant Jesus 1, Melaka

## CONGRATULATIONS TO

1. **ALPHA OCEAN LEARNING CENTRE, JOHOR**  
TEAM: ALPHA OCEANS
2. **EARLYEDUKIDS, JOHOR**  
TEAM: THINKERKIDS
3. **SK CONVENT INFANT JESUS 1, MELAKA**  
TEAM: JCBOT 01
4. **SK CONVENT INFANT JESUS 1, MELAKA**  
TEAM: JCBOT 02
5. **SJKC YUK CHAI, PETALING JAYA, SELANGOR**  
TEAM: THE SUN BEAR GUARDIANS
6. **SJKC YUK CHAI, PETALING JAYA, SELANGOR**  
TEAM: LITTLE NATURE KIDZ
7. **SJKC YUK CHAI, PETALING JAYA, SELANGOR**  
TEAM: LITTLE EXPLORER KIDZ
8. **SK SUBANG JAYA, SUBANG JAYA, SELANGOR**  
TEAM: THE MASTERMINDS
9. **AKADEMI DS, SELANGOR**  
TEAM: AKADEMI DS 1
10. **AKADEMI DS, SELANGOR**  
TEAM: AKADEMI DS 2
11. **AKADEMI DS, SELANGOR**  
TEAM: AKADEMI DS 3
12. **BLOKKE LABS SDN BHD, SELANGOR**  
TEAM: BLOKKEBUGS
13. **MY BRICKS4KIDZ, SELANGOR**  
TEAM: DARE DREAMER
14. **LET ME GO BRAINSTORM SDN BHD, W.P. KUALA LUMPUR**  
TEAM: LET ME GO BRAINSTORM



## THE FLL JR MALAYSIA 2017 GRADUATES

14 Teams / 84 Young Engineers & Scientists / 28 Coaches

# HOW TO PARTICIPATE IN **FLL**<sup>®</sup> Malaysia



## FORM A TEAM

A team is made up of 2 to 10 students and a Coach (two Coaches are also possible). Team members can come from different schools and ages, but they must be within the age of 9 and 16. The FLL is open to students from all types of schools - national, private, international, and etc. The Coach must be an adult and may be a teacher, professor, parent, college student, or even an ex-FLL participant.



## GET THE KIT

The LEGO MINDSTORMS robotics set is required for the Robot Game. It is recommended for teams to have at least two robotics sets to allow more flexibility when testing different robot designs. The LEGO MINDSTORMS set can be purchased from Sasbadi.



## REGISTER

All participating teams must register with Sasbadi. Fill up the registration form and submit it to Sasbadi before the registration deadline. Participation is limited and registration is on a first-come, first-served basis. Please refer to the registration form for more information.



## PRACTICE

The Challenge kit will be delivered to registered teams for practice. There will be ample time for teams to work on the Project and to practice on the Robot Game. The Challenge will be the same as the one in real competition day.



## BE THERE

The event will be held at a local venue. All teams will gather and compete at the national level competition for three days. Please refer to Sasbadi for venue information and competition date.

# HOW TO PARTICIPATE IN **FLL**<sup>®</sup> JR Malaysia



Each August, the program releases a two-part Challenge for teams.

- **Create:** Teams illustrate their research and team journey in a *Show Me Poster*, sharing what they studied and learned.
- **Build:** Teams design and build a Team Model based on the Challenge, representing what they have learned.
- **Program:** Teams use LEGO<sup>®</sup> Education WeDo to build and program a model that moves, learning basic engineering and programming concepts.



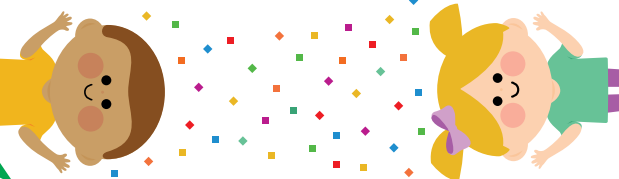
### You need:

- Up to 3 team members
- Within the age of 6 and 10
- 1 Coaches
- Meeting space
- Computer with internet access



### You need:

- FIRST LEGO League Jr. Inspire Set – includes bricks, elements, and an exclusive model that serves as the hub of every season.
- Poster board
- Markers



### Celebrate your hard work

- Check out the Competition Schedule at [fll.sasbadi.com](http://fll.sasbadi.com)
- Share ideas with other teams on Pinterest: [www.pinterest.com/firstinspires](http://www.pinterest.com/firstinspires)
- Plan a time to present what you've done with friends and family

### Explore:

- Visit the FIRST LEGO League Jr. YouTube Channel for Getting Started Tutorials and more
- See what other teams are doing at [www.pinterest.com/firstinspires](http://www.pinterest.com/firstinspires)





# OFFICIAL COMPETITION KIT



45544 LEGO® MINDSTORMS®  
EDUCATION EV3 CORE SET  
& SOFTWARE



45560 LEGO® MINDSTORMS®  
EDUCATION EV3 EXPANSION SET



45803 INSPIRE SET



45300 WeDo 2.0 CORE SET

9286 LARGE LEGO BUILDING PLATE

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[www.firstlegoleague.org](http://www.firstlegoleague.org)

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**SASBADI HOLDINGS BERHAD** (1022660-T)

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