

aramco

 **in Schools**

SILVERSTONE UK | 2022

**WORLD FINALS**



**EVENT  
REPORT**

**Our 17th World Finals have been absolutely amazing and we were delighted to welcome 34 teams to Silverstone in person, with a further 19 teams competing virtually via Zoom, seamlessly bringing together a total of 53 teams worldwide!**

We were honoured to have Aramco as our Title Sponsor this year, a year which has seen Formula 1® and the F1® Teams offer even more support to us for the World Finals, and I am thrilled that so many guests from Formula 1 were able to attend the Awards Ceremony Celebrations, along with representatives from the Formula 1 Teams, and the FIA.

A big thank you to the student teams for all their hard work, and I would also like to thank all of our sponsors, in-country partners, teachers, parents and volunteer judges, without whom the event would not be possible.

Each year, I am completely blown away by the professionalism, innovation, engineering capabilities and overall passion and dedication shown by our World Finals' teams and this year was no exception.

I am unbelievably proud of the quality of work produced by all of the teams, who once again raised the level of the competition to a significant high: the teamwork, the displays, the presentations and the levels of detail included in the portfolios, which were all of the very highest standard, making it extremely difficult to judge, but team Hydron shone out from their rivals and deserved all their success and the World Champions' title!

F1 in Schools absolutely changes lives around the world, and I congratulate each of the participating students for making the 2022 World Finals such an amazing showcase for the future of Formula 1.

**Andrew Denford**

Founder and Chairman of  
The F1® in Schools STEM Challenge



It has been an absolute pleasure and privilege to host the Awards Show at this year's Aramco F1® in Schools World Finals at Silverstone, the home of British Motorsport.

F1 in Schools is a fantastic experience for all of the students who have taken part and I congratulate each and every one of them for making the event such a tremendous success. It truly is a World Class competition!

The standards just keep improving year-on-year, which is testament to the hard work and dedication of the teams, and with so much support from the F1 community, I'm looking forward to seeing some of these young people in the Formula 1® Paddock in the not-too-distant future.

**David Croft**

Awards Show Host / Sky Sports F1® HD Commentator



As title sponsor of the Aramco F1® in Schools World Finals, we are now providing a platform for the brightest young STEM minds from around the world to test their skills and be inspired to pursue a career in solving some of the most pressing challenges facing the world. Our sincere congratulations to Hydron who won the coveted university scholarships to study at UCL Engineering in London and the prestigious World Champions title.

**Tala H. Al-Marri**

General Manager, Public Affairs, Aramco



I have hosted the F1® in Schools National Finals for the past few years and this is my second year hosting the Aramco F1 in Schools World Finals – once again, with amazing assistance from Amy Martin, who has helped me to understand the challenge from an ex-competitor's point of view.

This year's event at Silverstone has been absolutely fantastic, with a real buzz, as teams from all corners of the globe came together – in person and via Zoom – to compete in such an intense, yet enjoyable competition.

It really was inspiring to meet the teams and to see the brilliant work achieved by them all – they certainly have bright futures ahead of them!

**Tom Deacon**

Host and Racing Commentator



I'm delighted to have, once again, taken on the role of Chair of Judges this year – always a challenging, yet extremely rewarding role.

It's been an outstanding World Finals here at Silverstone, with such high standards of work. The effort, commitment and dedication which all the students put into their cars is phenomenal, along with the depth of research, innovation, engineering excellence and entrepreneurship, all of which extend way beyond classroom learning. Each year I see new approaches, new materials and ideas, and this year was no exception, with some fascinating cars which really push boundaries and challenge the judges.

Well done to all students who made it to the World Finals and congratulations to our new World Champions, team Hydron, who deserve their success!

**Gary Anderson**

Chair of Judges

# The Challenge

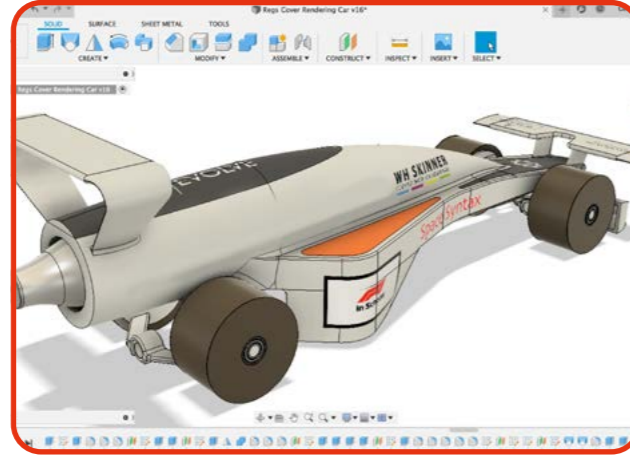
## 1 - Form an F1® in Schools Team

A team is formed of 3 - 6 students, who decide on a team name and job roles, and then follow a systematic engineering design process to manufacture and race their cars, making sure that they comply with a comprehensive set of technical regulations. Teams then register for regional final events.



## 2 - Project Management & Enterprise

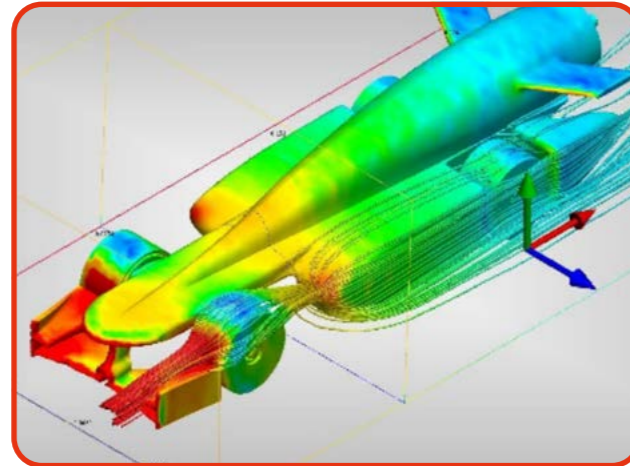
The teams prepare a **project management** and **business plan**, develop a budget and raise sponsorship. Teams are encouraged to collaborate with industry and create business links.



## 3 - Design



Using 3D CAD (Computer Aided Design) software, the team **designs** an F1® car of the future to the specification set by the International Rules Committee, just like in Formula 1.



## 4 - Analyse



Aerodynamics are **analysed** for drag coefficient in a Virtual Reality Wind Tunnel using Computational Fluid Dynamics (CFD) software.

## 5 - Make



Using 3D CAM (Computer Aided Manufacture) software, the team evaluates the most efficient machining strategy to **make** their car on a CNC machine such as a Denford CNC Router.



## 6 - Test



Aerodynamics are **tested** in Air Trace Visualisation Tunnels. Aerodynamics is a major focus for all teams involved in the world of Formula 1® and can make the difference to a winning team. Students can fine tune designs to optimise speed and drag coefficient.



## 7 - Pit Display

Teams put together an informative display showcasing their work through all stages of the competition, also incorporating their team identity.

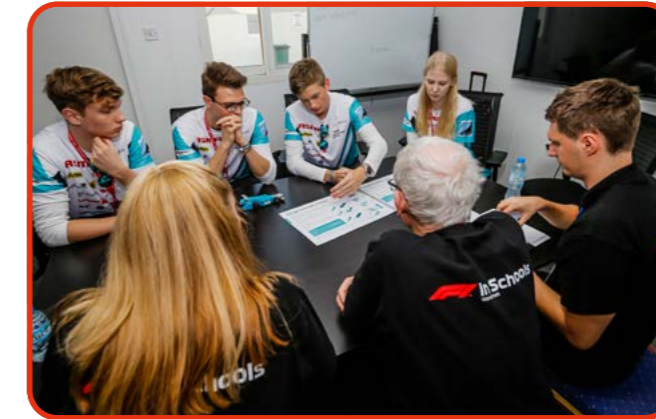


## 8 - Scrutineering

Scrutineering judging is a detailed inspection process where both the primary and back-up race cars, plus the optional replacement components, are assessed for compliance with the F1® in Schools World Finals Technical Regulations. The engineering drawings, rendering and quality of finish and assembly will also be assessed.

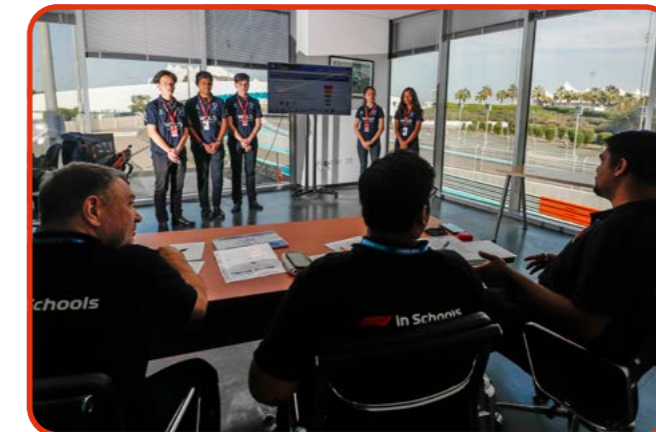
## 9 - Design & Engineering Judging

The Design & Engineering Judges examine each team's 10-page Design & Engineering portfolio, so that they can assess the team's car design and use of CAD/CAM technologies, along with the quality of manufacture of both the primary and back-up race cars submitted.



## 10 - Verbal Presentation

The Verbal Presentation Judges assess each team's 10-minute verbal presentation across the areas of technique, composition, and subject matter, including the use of visual aids, levels of enthusiasm and energy, concepts clarification, presentation structure and learning experiences.



## 11 - Portfolios Judging

The Enterprise Judges examine each team's 10-page Enterprise Portfolio and Pit Display, so that they can assess specific areas, including the team's Project Management, Teamwork, Sponsorship & Marketing Summary, Team Identity and Pit Display Content.



## 12. Race



Teams put the cars to their ultimate test by **racing** them over a measured 20m distance with the F1® Race Track and F1 Race Control System.

The F1 in Schools Race Officials co-ordinate the World Finals racing, where points are awarded across 8 races. The Knock-Out Competition Races include a manual/driver launch of the race.

# The Teams



**T01**  
**Team Ford Celeritas**  
**ROMANIA**  
"Andrei Şaguna" National College,  
Braşov



**T02**  
**Kinnaree Racing**  
**THAILAND**  
Singapore International School Of  
Bangkok, Bangkok



**T03**  
**FALCON SPEED**  
**FRANCE**  
Lycée Rocroy Saint-Vincent de Paul,  
Paris



**T04**  
**In Motion**  
**AUSTRALIA**  
Riverside High School, Riverside



**T05**  
**AMM Racing**  
**VIETNAM**  
British International School Ho Chi  
Minh City,  
Ho Chi Minh City



**T06**  
**TEAM BITARA**  
**MALAYSIA**  
Kolej GENIUS Pintar Negara, Bangi



**T07**  
**Team Aqueous**  
**AUSTRALIA**  
Blue Mountains Grammar School,  
Wentworth Falls  
Newington College, Stanmore



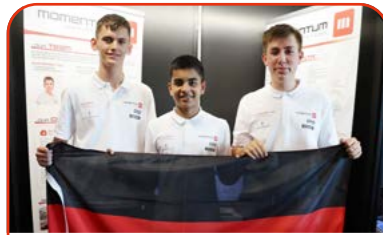
**T08**  
**Tonaltech Racing Team**  
**MEXICO**  
Preparatoria de Tonalá, Tonalá



**T09**  
**Sirius Lucibus**  
**CHINA**  
The Experimental High School  
attached to Beijing Normal  
University, Beijing



**T10**  
**SN**  
**CHINA**  
Chengdu Shude High School  
International Department, Chengdu



**T11**  
**Momentum Racingteam**  
**GERMANY**  
Gymnasium Unterrieden,  
Sindelfingen



**T12**  
**Greco Racing Team**  
**GREECE**  
Anatolia College, Pylaia



**T13**  
**SLK Racing Team**  
**SAUDI ARABIA**  
International French School In Al  
Khobar, Bayan Gardens School, Ibn  
Roshd International School, Dhahran  
Ahliyya, Dhahran



**T14**  
**Helios Racing**  
**INDIA**  
Jodhamal Pubic School, Jammu



**T15**  
**Anemoi Racing**  
**ENGLAND**  
St Paul's Girls' School, Hammersmith



**T16**  
**Kingspan Racing**  
**IRELAND**  
Blackrock College, Blackrock



**T17**  
**SBA Avidity Racing**  
**UNITED KINGDOM**  
Scarborough UTC, Scarborough



**T18**  
**Future Racing**  
**IRELAND**  
St Mary's Secondary School, Ballina



**T19**  
**Fibonacci**  
**SCOTLAND**  
JGHS, GHS, Edinburgh



**T20**  
**Vision Racing**  
**GREECE**  
Erasmelos Greek & German School  
Ekpedeftiki Anagennisi School,  
Pallini



**T21**  
**Quantum Racing**  
**INDIA**  
Amity International School, Delhi



**T22**  
**AXION**  
**AUSTRALIA**  
Penrith Christian School,  
Orchard Hills



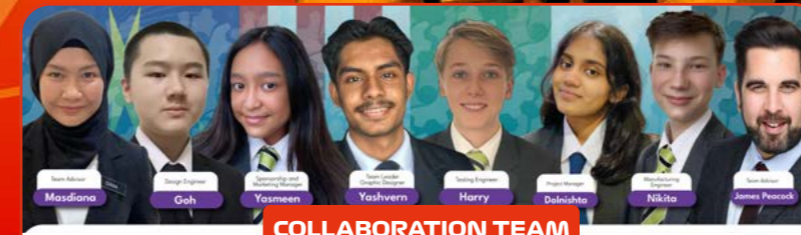
**T23**  
**Team Aerios**  
**FRANCE**  
Independent Team



**T24**  
**BLACKOUT**  
**WALES**  
St John's College, Cardiff



**T25**  
**SPARK SESI-SENAI SC**  
**BRAZIL**  
ESCOLA S - SESI/SENAI SC, Criciúma



**T26**  
**PROPULSAR**  
**UNITED ARAB EMIRATES & MALAYSIA**  
Hartland International School, Dubai  
SMK Bandar Putra, Kulai



**T27**  
**Aerth Racing**  
**NORTH MACEDONIA**  
SUGS Orce Nikolov - Skopje, Skopje

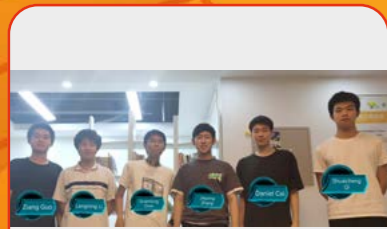


**T28**  
**Pharos**  
**CHINA**  
Shanghai Pinghe Bilingual School,  
Pudong



**T29**  
**ALEST9**  
**MALAYSIA**  
SMK Seksyen 9, Shah Alam

# The Teams



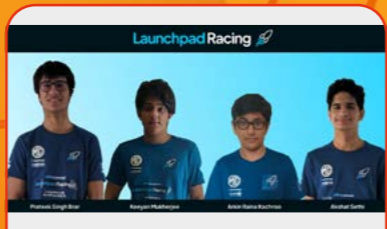
**T30**  
**Aurora Borealis**  
**MACAU**  
Centro de Ciência de Macau (Macau Science Centre), Macau



**T31**  
**Ascension**  
**THAILAND**  
The American School of Bangkok - Green Valley Campus, Samut Prakan



**T32**  
**Aetos Racing**  
**LUXEMBOURG**  
International School of Luxembourg, Luxembourg



**T33**  
**Launchpad Racing**  
**INDIA**  
The British School, New Delhi, Delhi



**COLLABORATION TEAM**  
**T34**  
**VOLTA RACING**  
**BRAZIL & IRELAND**  
ESCOLA S - SESI/SENAI SC, Criciúma  
St Colman's College, Fermoy



**T45**  
**Biatia Racing Team**  
**SPAIN**  
IES Santísima Trinidad, Baeza



**COLLABORATION TEAM**  
**T46**  
**Quantum GC**  
**CYPRUS & GREECE**  
Pascal English School Limassol,  
Hellenic French School Kalamari, Thessaloniki



**T47**  
**Team Istiophix**  
**UNITED ARAB EMIRATES**  
Private International English School, Musaffah



**T48**  
**Team Coalition**  
**SAUDI ARABIA**  
DAS, KFUPM, Dharan Hills Schools, Dharan



**T35**  
**ARION**  
**SAUDI ARABIA**  
KFUPM School, Bayan Gardens School, Ibn Roshd School, Ibn al-Mudhaffar School, Dharan



**T36**  
**Vortenova**  
**IRELAND**  
St Brigid's College, Loughrea



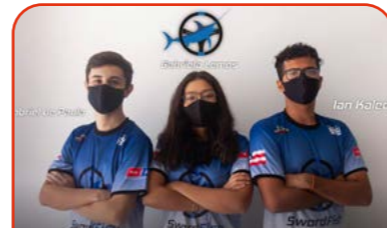
**T37**  
**Lupus Racing**  
**GREECE**  
American Farm School of Thessaloniki  
9th Junior High School of Volos, Themi/Volos



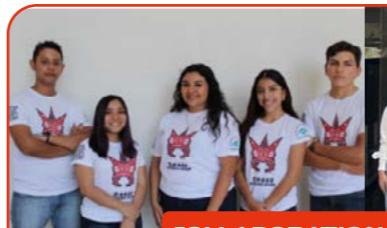
**T38**  
**Zenith UAE**  
**UNITED ARAB EMIRATES**  
Hartland International School, Dubai



**T39**  
**POCADORES RACING TEAM**  
**BRAZIL**  
SESI Jardim da Penha, Vitória-ES



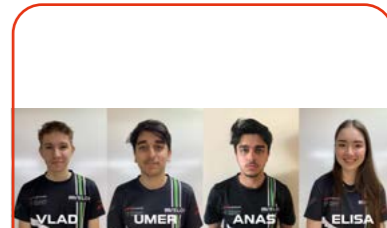
**T49**  
**SwordFish**  
**BRAZIL**  
SESI Anísio Teixeira School, Vitória da Conquista



**COLLABORATION TEAM**  
**T50**  
**Dragon Racing**  
**CHINA & MEXICO**  
Shenzhen College of International Education  
Conalep Magdalena de Kino



**T51**  
**Sonic Boom**  
**GERMANY**  
Graf-Rasso-Gymnasium, Fürstenfeldbruck



**T52**  
**Velox Performance Racing**  
**BAHRAIN**  
St Christopher's School, Isa Town



**T40**  
**Eclipse**  
**UNITED KINGDOM**  
Queen Elizabeth's Grammar School, Faversham



**T41**  
**Hydron**  
**AUSTRALIA**  
Trinity Grammar School, Kew Melbourne



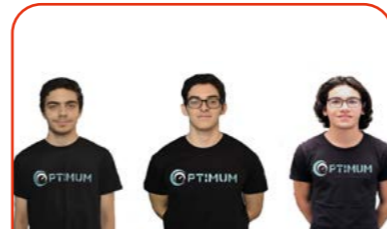
**T42**  
**K-WINGS**  
**PORTUGAL**  
Escola Secundária de Ponte de Lima, Ponte de Lima



**T43**  
**Leben Forcer Akron**  
**MEXICO**  
Panamericana Highschool, Álvaro Obregón



**T44**  
**Zenith Cyprus**  
**CYPRUS**  
The English School Nicosia, Nicosia



**T53**  
**Optimum**  
**CYPRUS**  
The English School Nicosia, Nicosia

Meet the  
Future Faces  
of F1®



## Opening Ceremony

"F1 in Schools is very representative of real-life Formula 1 in that there is intense competition, and the tiny incremental gains that you need to be competitive is exactly like Formula 1. It's always about the absolute contribution of every member of the team being of the very highest level. That intense team effort is what really makes the difference in Formula 1 and in F1 in Schools.

You will learn so much by taking part in F1 in Schools, contributing to your success in all walks of life. The professional and personal skills and experience you will gain will not only be relevant in motorsport, but also in whatever direction and career path you follow in the future. So, chase your dreams and F1 in Schools will help you get there."

**Ross Brawn OBE**  
Managing Director, Motorsports, Formula One Management Limited

## Competition - Day 1: Judging & Racing

Day 1 saw all 53 teams take to the track for the first of three rounds of racing. Teams were able to join our commentator, Tom Deacon, either in the event studio or via Zoom. Tom was joined for the second year by Amy Martin, one of our World Finalist alumni, who gave her expert views on racetrack performance. Technical analysis came from the alumni pundit team of Sam Chapman and Michael Farrell.

Eclipse, from the United Kingdom, took the fastest track time of the day of 1.028 seconds.

Judging took place on-line with the attending teams presenting their work via Zoom in the F1® commentary boxes within the Silverstone Wing. Our virtual teams were able to join the judging Zoom calls from their schools.



## Competition - Day 2: Judging & Racing

Day 2 continued with more racing and judging sessions. To enable reaction racing to take place, team reaction times were recorded using the Race Reaction Portal, presented by the IET. Reaction times were loaded on to the start gate prior to each race.

Aurora Borealis from Macau claimed top of the leader board with a race time of 1.207 seconds.



## Competition - Day 3: Knockout Racing

Full Knockout Racing returned to the 2022 event, with attending teams taking to the racetrack starting triggers to launch their cars down the track. Not only do you need a fast car, but reaction times are key to beating the rest of the teams and taking the win. This is always the most competitive and tense day of the competition and this year we did it twice by running a 'virtual' knockout competition, alongside the 'physical' competition.

Helios Racing from India took the 'virtual' crown and Sonic Boom from Germany won the 'physical' one.



# The Awards

For the first time since 2019, our Awards Ceremony celebrations returned in-person - hosted by David Croft, Sky Sports F1® HD Commentator - and the teams were joined by friends and family, alongside many VIP's from the world of Formula 1® and our partners - not forgetting our teams and guests joining the ceremony via Zoom.

The ceremony featured 22 awards and celebrated the achievements of all the F1 in Schools World Finalists, who had worked tirelessly in pursuit of the ultimate prize: to be crowned World Champions and win coveted university scholarships from UCL Engineering, London.



This year, the World Champions Trophy went to team Hydron from Australia and was presented by Khalid Al-Zamil from title sponsors, Aramco. Prior to presenting the trophy to the world champions he said:

"I want to say to all of you, whether you have the opportunity to come to this stage as winners, or not, in our eyes you are all champions."

**Khalid A. Al-Zamil**  
Acting General Manager, Public Affairs, Aramco





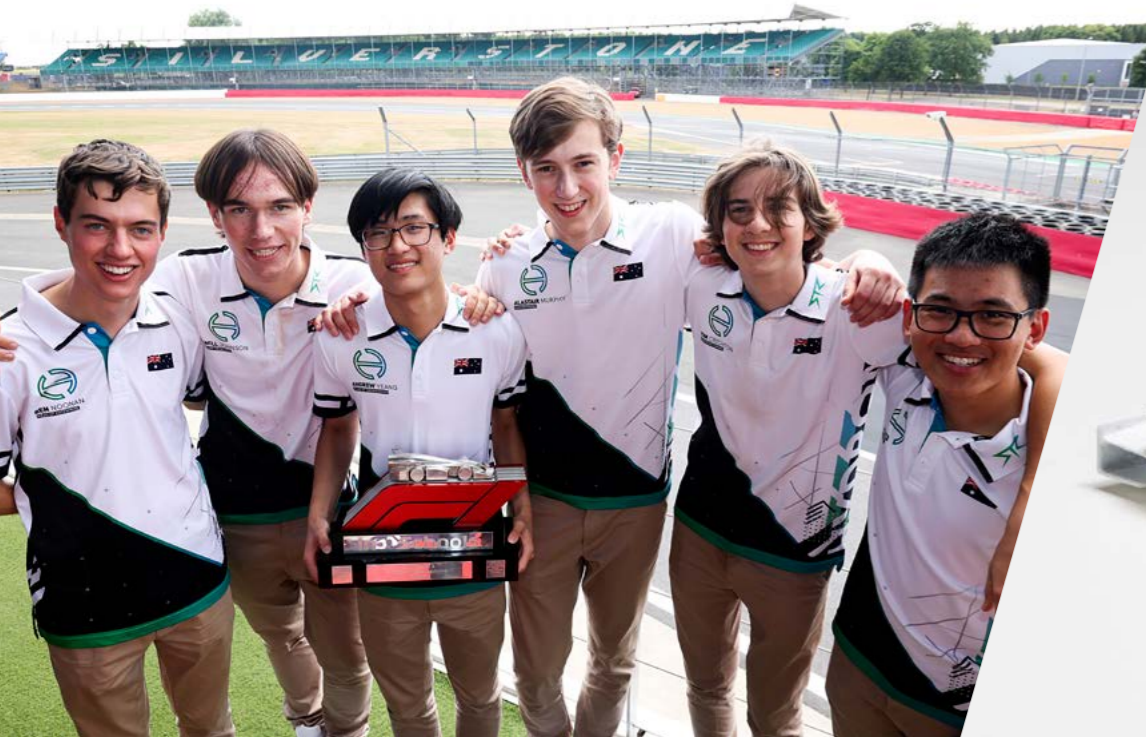
# World Champions Hydron



**AUSTRALIA**  
Trinity Grammar School, Kew,  
Melbourne

Hydron, a team of six 17-year-old students with team members Will Johnson, Benjamin Noonan, Alexander Liu, Andrew Yeang, Timothy Crichton and Alastair Murphy earlier won Fastest Car and Best Engineered Car Awards, before being presented with the prestigious Aramco F1® in Schools World Champions Trophy, along with university scholarships to study at UCL Engineering in London.

Award supported by:



# #1



"When we set out it was our dream to come to the World Finals and here we are now, it's crazy to think how far we've come. We can't believe we've done it. It's not one person, it's a real team effort. It's the teamwork, the relationship between us and our shared ambitions, all going for one thing that makes it so special."

"Our engineers did a fantastic job of designing our cars, hours and hours of work, thousands, doing the CAD modelling, but it's the gelling of the team and working together that made our car the best too. Some of us are keen to look at the opportunity of the scholarship which is great too. We've put in so much work, late nights, staying back at school, getting through to the end was a big challenge, but it's paid off for us. We're just over the moon!"

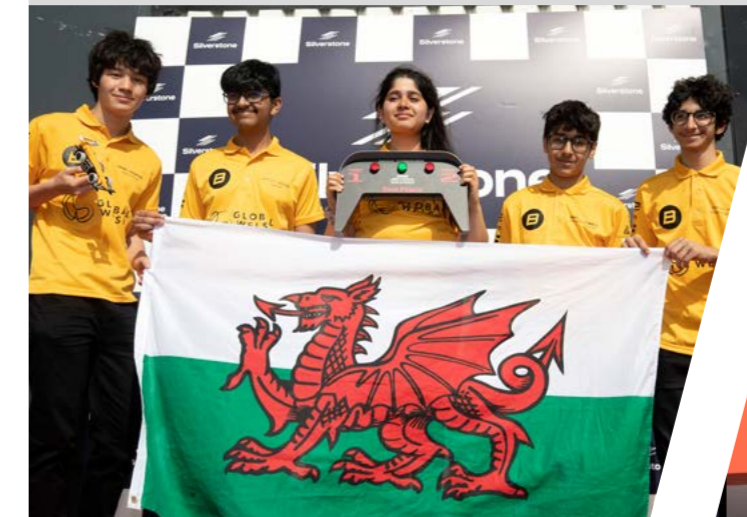
**Will Johnson**  
Team Principal Hydron

# #2 BLACKOUT



**WALES**  
St John's College, Cardiff

Award supported by: DENFORD®



# #3 SBA Avidity Racing



**UNITED KINGDOM**  
Scarborough UTC, Scarborough

Award supported by:





**Pressure Challenge  
Winners**  
Pharos, China

Supported by:



**Best Newcomer Award**  
Aetos Racing, Luxembourg

Supported by:



**Innovative Thinking  
Award**  
TEAM BITARA, Malaysia

Supported by:



**Research & Development  
Award**  
Greco Racing Team, Greece

Supported by:



**Knock Out Competition  
Winners (in Person)**  
Sonic Boom, Germany

Supported by:



**Chair of Judges Recognition of  
Achievement Award**  
Fibonacci, Scotland

Supported by:



**Sponsorship & Marketing  
Award**  
Greco Racing Team, Greece

Supported by:



**Best International  
Collaboration Award**  
VOLTA RACING, Brazil & Ireland

Supported by:



**Knock Out Competition  
Winners (Virtual)**  
Helios Racing, India

Supported by:



**Digital Media Award**  
Vision Racing, Greece

Supported by:



**Scrutineering Award**  
Pharos, China

Supported by:



**Sustainability Award**  
Kinnaree Racing, Thailand

Supported by:



**Best Application of  
Project Management**  
SBA Avidity Racing, UK

Supported by:



**Fastest Car Award**  
Hydron, Australia

Supported by:



**Team Identity Award**  
ECOLEST9, Malaysia

Supported by:



**Verbal Presentation  
Award**  
Sonic Boom, Germany

Supported by:



**Women in Motorsport  
Award**  
SLK Racing Team, Saudi Arabia

Supported by:



**Pit Display Award**  
ECOLEST9, Malaysia

Supported by:



**Best Engineered Car  
Award**  
Hydron, Australia

Supported by:

**Meet the  
Future Faces  
of F1®**

# SILVERSTONE 2022



## FIA WOMEN IN MOTORSPORT

# Women in Motorsport

**F1® in Schools is proud to deliver such an exciting initiative, which attracts so many females to take part in the competition.**

We continue to work with and support the FIA Women in Motorsport Commission to show that motorsport is open to women in all its aspects, whether as competitors, officials, team managers, engineers or mechanics. It's important that we continue to promote the place of women in motorsport and encourage the next generation of young women to see and take up the opportunities available to them.

# Where will F1® in Schools take you?



**GEORGE BRITTON**



**George Britton**, 2015 World Champion and member of USA team, Union Racing International, now works trackside as a Performance Engineer at Williams Racing, with F1® in Schools playing a key role in his success. George says:

“Winning the F1 in Schools World Champions 2015 title and securing a place in the Williams Engineering Academy was a pivotal moment in my career. I started doing F1 in Schools in High School in the States as a fun way to learn more about Formula 1, which was one of my interests. I dreamed of being part of a Formula 1 team and had set my heart on being an engineer, but I didn’t know how I was going to achieve that ambition.

“I had no idea that doing F1 in Schools would be the first step of my journey that has led to being trackside at Formula 1 Grands Prix with Williams. I can credit Williams Engineering Academy for mentoring me through my university degree and giving me the opportunity to join the team, but if it hadn’t been for F1 in Schools I wouldn’t have been in the Academy, so the programme has a special place in my heart.”



**PAUL CUMNER**



Red Bull Racing Aerodynamics Engineer, **Paul Cumner**, was a team member of the 2014 World Finals winning team, Colossus F1, from the UK. Paul competed in F1® in Schools for three years, setting him on a path to working for the multiple championship winners in Milton Keynes.

“F1 in Schools was an amazing experience which first introduced me to real world engineering, enabling me to develop key skills that I’ve used throughout my studies and now in my career. It not only developed my technical engineering skills, but also helped build confidence in public speaking and showed how hard work and dedication can really pay off.

“The competition opened lots of doors, including traveling to Abu Dhabi and touring F1 factories. It inspired me to study engineering at university which has culminated in my job as an Aerodynamics Engineer at Red Bull Racing. F1 in schools is a really exciting opportunity, which provides you with so many skills for the future, and I would recommend it to everyone.”

F1® in Schools, the biggest global STEM challenge, is a proven route to motorsport and automotive careers and this year’s Aramco F1® in Schools World Finals 2022 has showcased the amazing work of over 280 talented students, many of whom are aiming to join former competitors in the motorsport industry, and the ultimate goal: Formula 1®.



**MARY ALDERSLEY**



F1® in Schools ignited the passion of the sport for **Mary Aldersley**, now a Transmission and Component Assembly Lifting Engineer at McLaren Racing. Mary competed at the national level in the UK, before earning a Motorsport Engineering degree and securing her role working for the multiple championship winning team.

Mary said: “Getting involved with F1 in Schools when I was younger opened my eyes to the careers behind the sport and the opportunities it offered to someone like me, who was interested in Formula 1. I’d recommend any student who is interested in motorsport to take on the challenge of F1 in Schools and who knows where it can take you. It was the first step for me and set me on my path to F1”



**BILAL YILDIRIM**



**Bilal Yildirim** competed in F1® in Schools Germany and his success in the competition led him to pursue a career in Formula 1®. He now works as a Digital Performance Engineer at Alfa Romeo F1 Team ORLEN.

“I have had a passion for fast cars, motor racing and especially Formula 1, since a young age, so F1 in Schools was a great opportunity for me to explore the technical side of racing cars and gain important skills, which I still use today. It was a great competition and taught me so much, from public speaking to working with CAD, introducing me to a career path which could lead me to a job in Formula 1. It certainly opened doors for me and started me on the road to my current role at Alfa Romeo F1 Team ORLEN”.

**Andrew Denford, Founder and Chairman, F1® in Schools is proud of the springboard that the challenge gives to young STEM talent.**

“Seeing our alumni working in the F1 pitlane and factories makes me immensely proud and proves just how valuable and influential our programme can be for students who have the passion and determination to reach the pinnacle of motorsport.

“George, Paul, Mary and Bilal put in the hard work and dedication that is needed to secure coveted job roles in the Formula 1 industry and there are many more students who have competed in F1 in Schools who have gone on to achieve their ambitions, whether this is within finance, management, science, or many other different careers. The programme is all about self-discovery, unearthing talent, nurturing and developing life skills, as well as rewarding exceptional STEM talent. I know that every student who participates in F1 in Schools will have benefitted and use their learning in later life.

“I’m looking forward to following the future careers of this year’s Aramco F1 in Schools World Finalists of 2022. I’m sure we’ll be seeing more Formula 1 stars of the future.”

aramco

# F1™ in Schools

SILVERSTONE UK | 2022

# WORLD FINALS



# #F1SWF22

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