



SUSTAINABLE  
DEVELOPMENT GOALS



## ***What is STEM Racing ?***

**STEM Racing** (formerly F1 in Schools) is a STEM education program for students aged 6 to 19, supported by Formula 1.

Students design and build their own miniature racing cars (F1 cars) and compete in races, while gaining hands-on experience in engineering, teamwork, project management, business, and more.

By bringing the excitement of Formula 1 into the classroom, the program provides opportunities for students to pursue careers in STEM fields and the motorsports industry.

To date, the program has reached over 60 countries, around 28,000 schools, and more than 1.8 million students — approximately 35% of whom are female.

These students work daily toward the goal of becoming world champions.

Through STEM education, we aim to nurture problem-solving skills and an innovative mindset in the next generation of Japan.



## ***World Finals 2024 Highlight Movie***

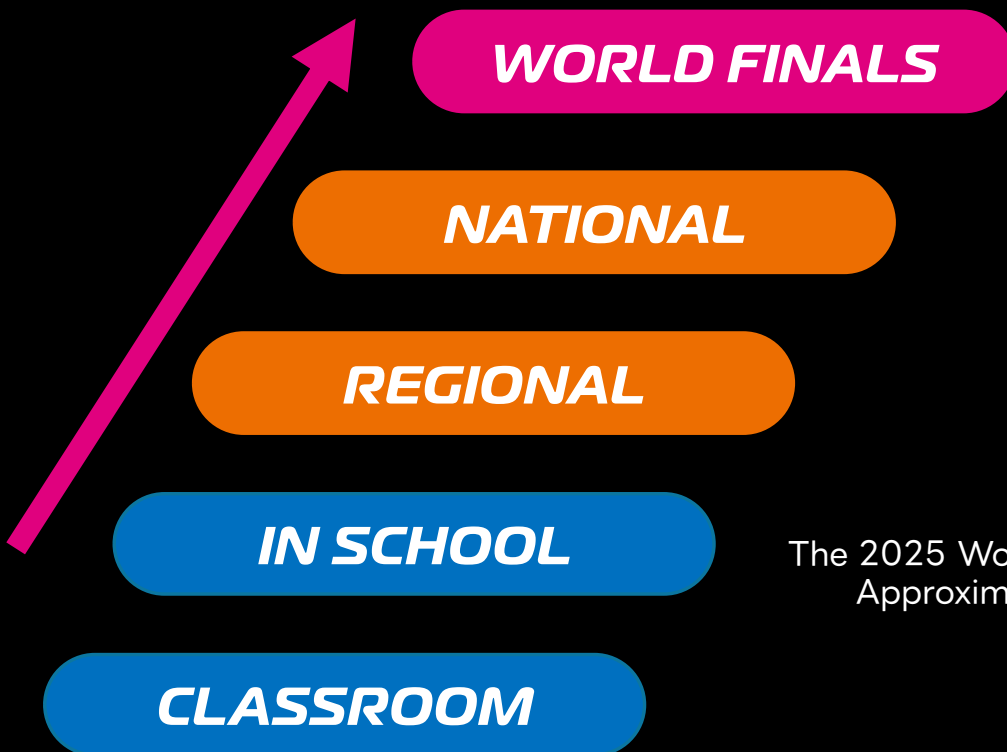
[Click Here!](#)



## Challenge the **WORLD FINALS** !

Students continually strive toward the World Finals, held every autumn. Top teams from around the world represent their countries and compete at this global event.

### ► The Road to the **WORLD FINALS**



The 2025 World Finals will be held in Singapore from September 25. Approximately 80 teams from around the world are expected to participate, including 3 teams from Japan.

- 1) Team Phoenix (Fukui High School)
- 2) Hayabusa Racing (Independent Team)
- 3) Fusion Force (ASIJ&Thai Independent Team)



## Participating Schools & Independent Teams

### ► Schools : **4**



福井工業大学附属

福井高等学校

Since **2016**

Fukui Senior High School

**ASIJ**

The American School in Japan

Since **2025**

The American School in Japan



Since **2025**

K International School



山口県立山口高等学校

Since **2025**

Yamaguchi Senior High School

### ► Independent Team : **1**



CHANGE HOLDINGS  
Hayabusa Racing

Since **2024**

CHANGE HOLDINGS  
Hayabusa Racing



## ***The Purpose of Expanding STEM Racing in Japan***

### ***1. Providing Opportunities to Aim for the World Stage***

Through STEM Racing, we offer young people the chance to challenge themselves in the World Finals, nurturing their spirit of ambition and imagination, and developing globally minded future leaders.

### ***2. Cultivating Creative and Innovative Talent***

By practicing STEM education through hands-on activities such as 3D printing and aerodynamic design, students develop problem-solving skills and technological innovation, nurturing the next generation of advanced engineers.

### ***3. Increasing Young Motorsport Enthusiasts***

By introducing the excitement of motorsports to schools and educational institutions across Japan, we provide opportunities to experience the fun of manufacturing and the thrill of speed. This helps deepen young people's interest in the automotive industry and connects to the future of mobility that drives Japan's economy.

## ***What Students Learn : **STEM** + Business Skills***

### ***Science***

Students optimize the design of miniature F1-style racing cars to achieve maximum speed by applying scientific principles and considering factors such as downforce and aerodynamic drag.

### ***Techonology***

From CAD and CFD (Computational Fluid Dynamics) software to 3D printing, students utilize advanced tools to carry out the full design-to-manufacture process.

### ***Engineering***

Future engineers tackle problems related to aerodynamics, materials science, and mechanics as they design and build their own miniature F1 cars.

### ***Mathematics***

By analyzing performance data and making calculated adjustments, students ensure that every element of the car is precisely designed and manufactured.◦

### ***Manufacturing***

Students learn manufacturing techniques using a variety of machines — from entry-level 3D printers to advanced CNC (Computer Numerical Control) equipment.

### ***Businesss Communication***

Participants develop essential business skills such as negotiating sponsorship deals, drafting professional documents, and building interpersonal relationships. They also practice delivering persuasive presentations.

### ***Marketing & Branding***

Teams create and implement marketing strategies to promote their brand through social media, PR campaigns, and outreach to the local community.

### ***Financial Management***

By planning and managing a limited budget, students gain insights into cost control and budget allocation — key aspects of business operations.

### ***Presentation Skills***

As oral presentations are part of the evaluation criteria, students learn to speak confidently and persuasively in front of peers and professionals.

### ***Project Management***

Through organizing and executing their STEM Racing project, students acquire fundamental project management skills essential for smooth and successful teamwork.

## Main Judging Criteria at the WORLD FINALS



### Scrutineering

The car is rigorously inspected to ensure it complies with the regulations.



### Portfolios

3 types of portfolios — Enterprise, Engineering, and Project Management — are evaluated.



### Pit Display

Teams assemble their display booth within a two-hour time limit.



### Engineering Judging

Oral engineering interviews are conducted to assess technical knowledge of the car.



### Pit Display Interview

Judges conduct interviews on team identity and sustainability initiatives.



### Collaboration/Partnership

Evaluation is also based on partnerships and collaborations with companies involved in the project.



### Presentation

Teams deliver a 10-minute presentation using visual aids to explain their project.



### Race

Teams compete for the best race time based on car speed and reaction time at the start.



## STEM Racing: 4 CATEGORIES



### PRIMARY



#### Paper Car

《Introductory Level》

Have fun learning the basics of STEM and spark curiosity in science!

Students experience the joy of hands-on activities and develop creative problem-solving skills.



### ENTRY



#### 3D Printed Car

《Beginner Level》

Take on the challenge of designing a car using a 3D printer!

Students learn the basics of CAD software and gain an understanding of how 3D printer work.



### DEVELOPMENT



#### 3D Printed Car

《Intermediate Level》

Advance your design and manufacturing skills!

Students work on developing high-performance cars with improved aerodynamics and durability.



### PROFESSIONAL



#### CNC Machined Car

《Advanced Level》

Use CNC precision machining, material science, and fluid dynamics!

Students design racing cars that push the limits of technical regulations.

## Achievement: F1 Tokyo Fan Festival 2025



@ODAIBA 2, 4-6 April 2025

Demonstration Race  
Team Phoenix vs Hayabusa Racing

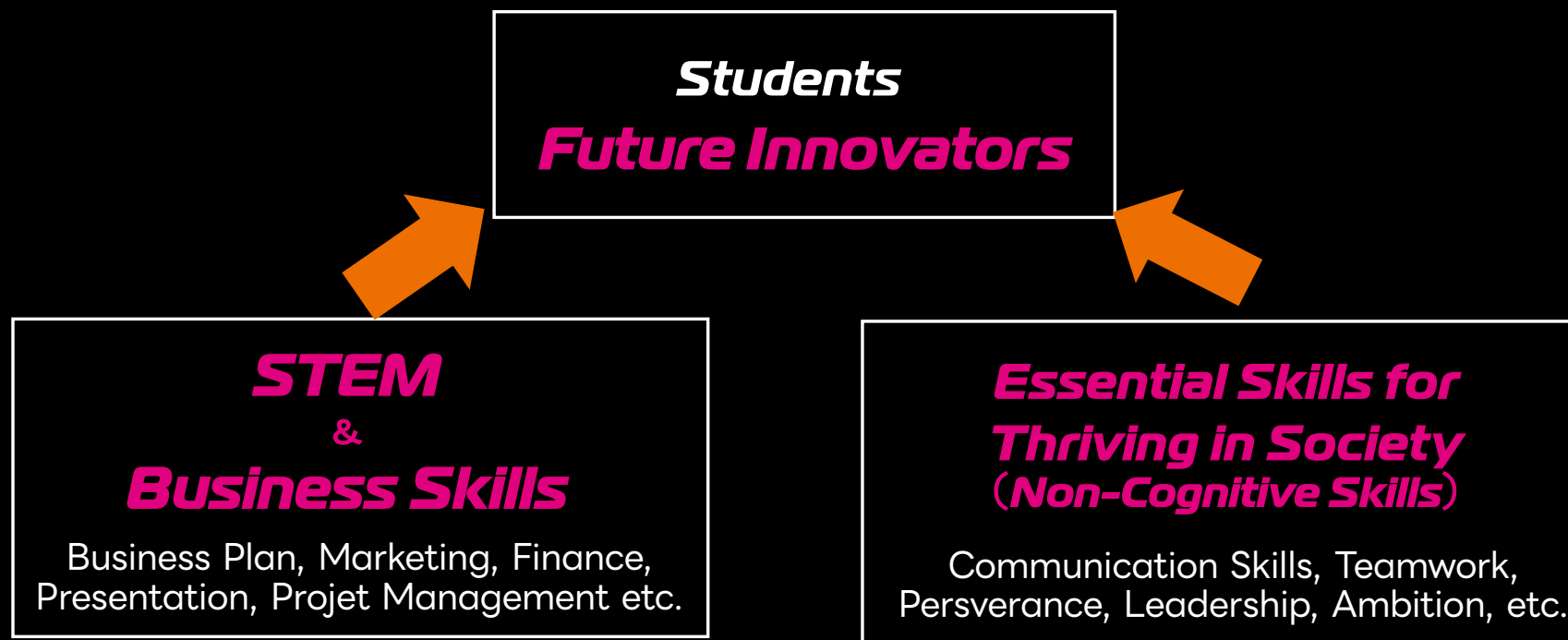
Meet & Greet  
Yuki Tsunoda & Liam Lawson

Primary Challenge Workshop  
For elementary schools' students

Total # of visitors : 2859 ppl  
Workshop participants : 165 ppl

## ***Purpose of STEM Racing in Japan***

We aim to provide “a platform where young people with dreams for the future can take on the challenge of becoming the best in the world,” and to cultivate creative and innovative talent through practical STEM education!!



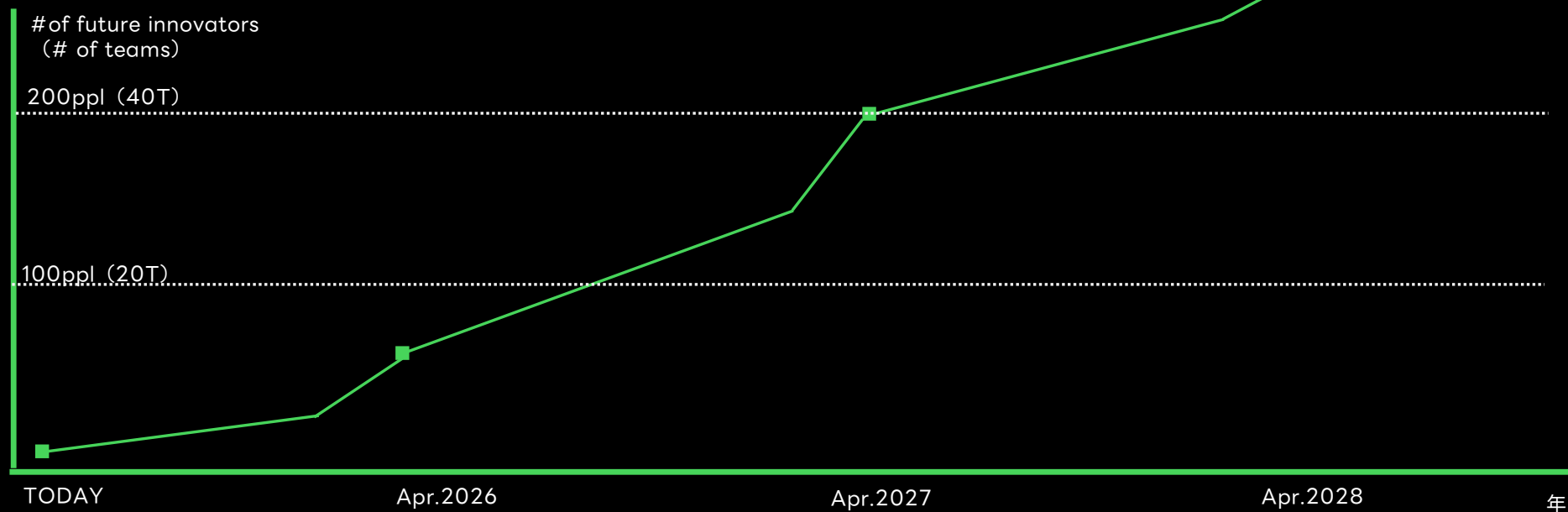
***Creating a new value in local communities and industries!***

## History: *STEM Racing Japan (F1 in Schools)*

2016	Fukui University of Technology Fukui Senior High School (Fukui Senior High School) Participated in F1 in Schools	STEM PLUS JAPAN(NPO) operated F1 in School in Japan
2017	Team Phoenix (Fukui Senior High School) participates in world competition for the first time in Japan	
2018	Two teams from Fukui Senior High School and Nihon University Buzan Girls' High School participated in World Finals	
2019	Team WA (Nihon University College of Economics) and Team Phoenix (Fukui Senior High School) to participate in world finals	RIIT(NPO) was appointed as the representative of F1 in Schools in Japan  ↓  July 2025 STEM Academy will enter into agreement with STEM Racing HQ
2020 -2022	Refrained from activities due to the covid-19	
2023	Team Phoenix (Fukui Senior High School) + one male student from Hiroo Gakuen participated in the world finals.	
2024	Independent Team “Hayabusa Racing” joined this program.	
2025	Engineering Club from American School in Japan and K international school participated in STEM Racing.  Showcase event at Red Bull Show Run x Powered by Honda and F1 Tokyo Fan Festival 2025	



## Goals for Participating Schools and Teams



### PR/Marketing

Year 1 : Focus on PR · Marketing to encourage participation - Build official website and utilize social media and reach out to educational institutions and related organizations  
 Year 2 onward : Continue public relations efforts to increase the number of participating schools, expand corporate sponsorships, and obtain official endorsements from government ministries and local authorities

### Competitions

Year 1 : Organize Mini National Finals with existing Japanese teams and invited teams from overseas (mainly Asia)  
 Year 2 onward : Organize a National Finals in Japan and invite and co-host International (Asia-wide) Competition

## ***Activities by STEM Racing Japan***

### ***1. Bringing the STEM Racing experience to future innovators***

- Organize Primary Challenge workshops, where participants create paper cars
- Host Entry Class workshops as an introduction to 3D printing
- Offer public speaking lessons in both Japanese and English – a skill many Japanese students struggle with
- Provide project management classes, focusing on real-world, practical skills

### ***2. Raising Awareness of STEM Racing in Japan***

- Develop a dedicated website and utilize social media
- Engage with educational institutions and media related to education
- Build partnerships with motorsports-related companies, including Suzuka Circuit

### ***3. Hosting STEM Racing Competitions in Japan***

- Organize competitions not only with existing Japanese teams, but also by inviting teams from across Asia

## STEM Racing JAPAN Ideal Structure

**STEM Racing Ltd.**  
Headquarters



**General Incorporated Association  
STEM Academy**

**STEM Racing JAPAN Admin Office**

\* The general incorporated association is currently being prepared.

- Managing & Operating STEM Racing JAPAN
- Hosting Regional Finals & National Finals

With endorsements from government ministries, the Tokyo Metropolitan Government, and other local authorities, and in partnership with educational institutions and corporations, we are working to expand STEM Racing across Japan!

### National Endorsement (TBC)



MEXT



METI

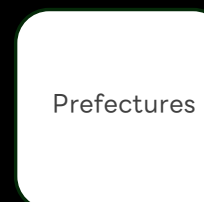


MLIT

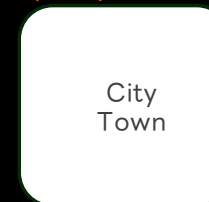
### Prefectural Endorsement (TBC)



Tokyo



Prefectures



City  
Town

### Supported By (TBC)



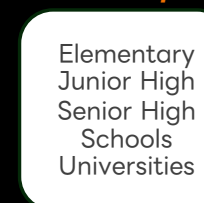
Keidanren



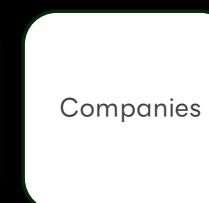
### Partnership with



Educational Org.



Elementary  
Junior High  
Senior High  
Schools  
Universities



Companies

## Collaborations / Partnerships

*To sustainably promote STEM Racing across Japan, strong collaboration with companies, universities, and local communities is essential. We need to build an environment where students can fully commit to the challenge.*



**Students**  
**Future Innovator**

- Practical resources
- Career education & role models
- Sustainable learning programs

- Fresh ideas & innovation
- Talent development for industry & communities
- Revitalized local ecosystems

### **Companies**

- \*Financial sponsorship
- \*Technical support  
(e.g., CNC machines, 3D printers)
- \*Mentoring by professionals
- \*Resources for car manufacturing and race operations

### **Colleges / Universities**

- \*Access to research labs and equipment
- \*Guidance from university students and researchers
- \*Support for design workshops and data analysis

### **Communities**

- \*Event venues (e.g., community centers, local circuits)
- \*Networks with local schools and businesses
- \*Volunteer support from local residents





***Thank You !!***

STEM Racing Japan  
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