

First ever in Bangladesh at IHSB

# STEM FEST 2019

Learn

Explore

Create

Organised by:



**INT'L HOPE SCHOOL BANGLADESH.**

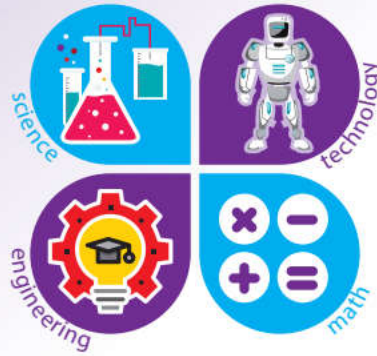
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## *Brief Introduction of* **STEM FEST**

In the 21st century, scientific and technological innovations have become increasingly important as we face the benefits and challenges of both globalization and a knowledge-based economy. To succeed in this new information-based and highly technological society, students need to develop their capabilities in STEM to levels much beyond what was considered acceptable in the past. We are grateful to our school for giving us this opportunity to be a part of this Internationally recognized event.

Long a part of the educational landscape in developed countries, STEM Fest is a festival of science, technology, engineering and mathematics that aims to inspire a new generation of leaders in these fields. Students have the chance to showcase their talents, celebrate innovation and participate in exciting competitions that are so much fun they hardly realise they are learning!

It is anticipated that science and technology companies will join the festival, providing a valuable link between the key players in today's corporate sector and our upcoming scientists and engineers.

Science and technology is the driving force behind national development. As inspiration for the coming generation to celebrate science and technology in all its forms, STEM Fest is a major calendar event on the road towards a more advanced and prosperous Bangladesh.





## প্রধান অতিথির ভাষণ

আমি অত্যন্ত আনন্দিত যে, ইন্টারন্যাশনাল হোপ স্কুল বাংলাদেশ প্রথমবারের মতো স্টেম ফেস্টিভাল করতে যাচ্ছে। আমাদের দেশে স্টেম শব্দটি সম্ভবত খুব একটা ভালোভাবে পরিচিত না। এটি দিয়ে কি বোঝানো হয়, এটিও সম্ভবত আমাদের ছাত্র-ছাত্রী এবং অভিভাবকেরা খুব ভালো করে জানেন না। আসলে বিষয়টা হয়েছে বিজ্ঞান, প্রযুক্তি, অংক এবং প্রাসঙ্গিক যে নতুন প্রযুক্তি সমূহ আসছে, সেগুলোর চর্চা করার বিষয়। আমরা এমনিতে সাধারণভাবে এসব বিষয় নিয়ে শিক্ষা গ্রহণ করে থাকি। প্রাতিষ্ঠানিকভাবে শিক্ষা গ্রহণ করে থাকি, প্রশিক্ষণের ব্যবস্থাও থাকে, কিন্তু তাকে চর্চা করার বিষয়ে আমরা সেই পরিমাণ সচেতন না অথবা তেমন কোন আয়োজন আমাদের এখানে এখনো পর্যন্ত চোখে পড়েনি। খুব সাম্প্রতিককালে আমি ঢাকার গুলশানে জাপান-বাংলাদেশের একটি যৌথ উদ্যোগের খবর জানি, যারা স্টেমন নামে পরিচিত এবং তারা একেবারে শিশুদেরকে এই বিষয়গুলোতে, বিশেষ করে প্রোগ্রামিং অথবা রোবোটিক্স চর্চা করাচ্ছে।

এই ইন্টারন্যাশনাল স্কুলটি সেক্ষেত্রে একটি বড় পদক্ষেপ গ্রহণ করতে পারল। এটি চর্চা করার জন্য একটি প্যাটফর্ম হতে পারল। এখানে ছেলেমেয়েরা অন্ততপক্ষে ধারণাটি পাবে, চর্চা করবে এবং ভবিষ্যতের জন্য নিজেদেরকে তৈরি করার জন্য সক্ষমতা অর্জন করতে পারবে। একটি বিষয় খুব স্পষ্ট করে বলা দরকার, আমরা যে পৃথিবীতে বসবাস করি, সেই পৃথিবীতে যে শিক্ষাটি এখন আমরা আমাদের সন্তানদেরকে দিচ্ছি, সেটি প্রথম শিল্পযুগের শিক্ষা এবং সেই শিক্ষার একটি প্রধানতম উদ্দেশ্য ছিল কেরানি তৈরি করা অথবা সাধারণ কর্মী তৈরি করা। কিন্তু আমরা ইতোমধ্যেই ডিজিটাল বিপ্লবের যুগে এসে গেছি এবং এই ডিজিটাল বিপ্লবের যুগে কেবলমাত্র সাধারণ শিক্ষা দিয়ে অন্তত পক্ষে নতুন প্রজন্মের কর্মসংস্থান থেকে শুরু করে জীবন-জীবিকা পেশা তৈরি করা সম্ভব হবে না।

আমি ইন্টারন্যাশনাল হোপ স্কুলের এই উদ্যোগকে স্বাগত জানাই, শুভেচ্ছা জানাই। আমি নিজে উপস্থিত থেকে যদি কথা বলতে পারতাম, তবে নিঃসন্দেহে আরো খুশি হতাম, কারণ নতুন প্রজন্মের ছেলে-মেয়েরা সব সময় আমার কাছে প্রিয়। ওদের চোখের দিকে তাকিয়ে আমরা বাংলাদেশের ভবিষ্যৎ দেখি। এই ভবিষ্যৎ দেখাটা সত্যিকার অর্থেই ফলপ্রসূ করার জন্য তাদেরকে উৎসাহিত করা, তাদেরকে প্রকৃত তথ্যসমূহ পরিবেশন করা এবং আগামী দিনের জন্য প্রস্তুত করা আমাদের সকলেরই কর্তব্য হওয়া উচিত।

যারা এই অনুষ্ঠানে অংশগ্রহণ করছে, প্রতিযোগিতায় অংশগ্রহণ করছে বা অন্যান্যভাবে আয়োজন করছে, তাদের সকলের প্রতি আমার ধন্যবাদ রইল, কৃতজ্ঞতা রইল এবং অভিনন্দন রইল। আমার প্রত্যাশা যে, এই আয়োজনটি প্রতিবছরই হবে। আমাদের ছেলে-মেয়েরা এখান থেকে সামনে যাওয়ার চমৎকার পথ খুঁজে পাবে। আপনাদের সবাইকে জয় বাংলা জয় বঙ্গবন্ধু।

মোস্তফা জব্বার

ডাক, টেলিযোগাযোগ ও তথ্যপ্রযুক্তি মন্ত্রী  
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার



# Guest SPEAKER



**Solaiman Shukhon**  
Director Public Affairs Officer  
Nagad



# Guest SPEAKER



**Ayman Sadiq**  
founder and CEO  
10 Minute School





## IHSB Chairman's MESSAGE

STEM is a curriculum based on the idea of educating students in four specific disciplines science, technology, engineering and mathematics in an interdisciplinary and applied approach. Rather than teach the four disciplines as separate and discrete subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications.

What separates STEM from the traditional science and math education is the blended learning environment and showing students how the scientific method can be applied to everyday life. It teaches students computational thinking and focuses on the real world applications of problem solving. As mentioned before, STEM education begins while students are very young.

The kind of material offered in a STEM education is focused on engaging kids in critical thinking. Critical thinking is the process of actively conceptualizing, applying, analyzing, and evaluating information through observation, experience, reflection, reasoning or communication. As such, students will be encouraged to answer questions or solve problems not based on memorization but based on actively engaging with the material to understand the issue at hand and solve it using logic. These kinds of situations better reflect what is expected of them in the workplace experiencing situations like this early in their education will better prepare them for their futures.

Communication skills are perhaps the most important of all life skills. Having the ability to discuss and convey complex concepts to others while also learning from one another will be the key to achieving success in a child's life as they grow up. Group activities in STEM promote sociable skills like active listening, open-mindedness, and open them up to giving and receiving constructive feedback.

Thank you

**Abdilaziz Zholdoshev**  
Chairman





## IHSB Principal's MESSAGE

It's really a terrific feeling to be among the students and a pleasure to share few words about this beautiful event. I am proud and so overwhelmed to see the great endeavor taken by us, International Hope School Bangladesh. In the 21st century, science and technology have reached its peak. And its charisma has spread as far as our country. To speak about STEM Fest, this festival was founded and created by Brian Greene, professor of mathematics and physics at Columbia University and author of several science books. , and Tracy Day, a prominent journalist. The festival's events are rooted in science. And then it spread worldwide, especially in the developed world. Australia is another pivotal country to organize STEM Festival remarkably.

It's a really wonderful moment for us as Hope School is becoming a part of the developed world. STEM Fest's mammoth arrangement gives a fresh impression on this. It seems the kids here were so well taught and that made it possible for them to come up with so many brilliant projects based on science, technology, engineering, and mathematics. As far as I know, there are ample science fairs in our country here and there but this STEM Fest is still at the beginning stage to flourish as it should.

I thank all the participants and the school team for pioneering such an event. This will obviously encourage the students to be more engaged in inventions which will definitely lead our country to achieve more success as a nation in the nearest future. Thank you and have a great day!

**Roksana Zarin**  
Principal  
International Hope School Bangladesh





## PROJECT MANAGER

The thrill and exhilaration about STEM education and its comprehensive and nouveau curriculum is overwhelming on a global scale. Stem education is way ahead of our traditional education system. This curriculum is not just comprised of science but also Technology, Engineering and mathematics, which prepare students to challenge themselves on a global level. Science renders an in-depth understanding of the physical and natural world to its learners. Technology prepares young individuals to be exposed to an environment catering high-tech innovation. Engineering allows students to practically apply scientific skills and knowledge in technical fields. Mathematics enables people to analyse information with accuracy, minimize potential error, and make precise decision while designing a solution. Therefore, STEM education is an amalgamation of all of these components assembled into a single platform that could groom and direct our young generation toward future challenges.

Moreover, STEM education is the future of holistic development. Every aspect in Stem education requires team work, collaboration and prowess from various fields. Being part of STEM education, one doesn't really require to be an expert in a specific subject area, rather one needs to acquire a mind-set that enables them to be a part of highly qualified workforce, which rather focuses on teamwork, dedication and cooperation. Consequently, team work brings significant increase in productivity and work satisfaction. To add to that, active engagement of specialist from diverse background will transform our society for betterment. Furthermore, Stem education expose students to effective interdisciplinary communication.

STEM Fest is a reflection of STEM education where worldwide students have demonstrated excellent project work skills with dedicated effort. Being one of the pioneers, we are very proud to organise this daylong event in our school. Thanks to the school management for their constant support and aid in terms of all the suitable logistics required to smoothly conduct this event. Lastly, special thanks (in advance) to all teachers involved in monitoring and supervision of students to help accomplish their outstanding work on time.

I wish the success of STEM Fest in advance to everyone involved. In conclusion, I am hoping IHSB to conduct inter-school and international STEM Fest in the near future.

Thanks

**Md Rockibul Karim**

O Level Coordinator & STEM Fest Project Manager  
Int'l Hope School Bangladesh





IHSB Student participant in  
**FIRST GLOBAL CHALLENGES**  
DUBAI, UAE

The First Global Challenge was one of the best experiences for IHSB students. Not only has it given the opportunity to represent our country on a global stage, but it also taught students effective real-world skills like critical thinking, problem-solving, and teamwork. First Global also paved the way for us to become more globally engaged, meeting and making friends from diverse groups of people all over the world. First Global is a robotics competition that not only is the largest for high school students but is also a part of the World Olympics. Every year, around 190 countries send teams to compete and cooperate in the challenges the competition offers.

Mahi Zarif, have been a member of Team Bangladesh and First Global for two consecutive years. First in 2019, which was held in Dubai, finishing 7th out of 190 countries.





# STEM FEST 2019



## Honourable Judges



**Dr Rajib Bhattacharjee**  
Associate professor  
Department of pharmacy  
Independent University of Bangladesh



**Dr. Md. Nurul Islam**  
Associate Professor  
Department of Pharmaceutical Sciences  
North South University



**Md. Rezaul Karim**  
Associate Professor, Department of Physics  
Dhaka University of Engineering & Technology (DUET)



**Dr. Himangshu Ranjan Ghosh**  
Lecturer  
Institute of Energy  
University of Dhaka



# 1st Category

## Top 10 Projects in First Category

### Primary (Grade 6 Only)

Grade six students have enrolled in "Science Expo" (two members in each group) where they have impersonated renowned and prominent scientists and their inventions.

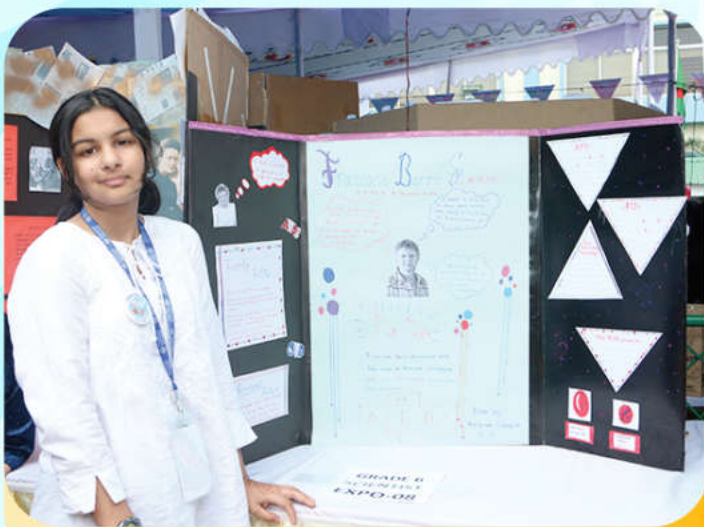
Besides, some students from grade six have demonstrated other scientific projects respectively.



Fibonacci Series



Lisa Randall



Francoise Barre Sinoussi



Magnetic Levitation





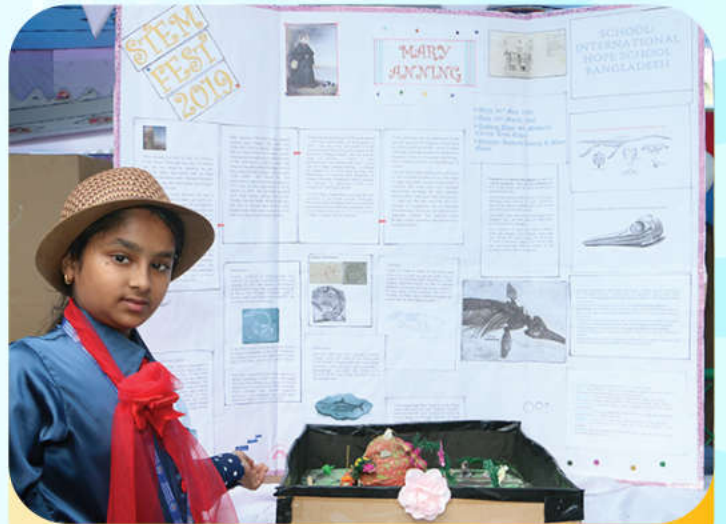
Hyperloop Train



Marie Curie



Infinity Mirrors



Mary Anning



Point Mutation & Consequences



Sir Jagdish Chandra Basu



**Secondary (Grade 7-9):** Students under these categories have enrolled themselves in the following subjects: Biology, Chemistry & Physics. The selected projects were assigned to a group of three students and specific aspect of the project, for instance, research, introduction, demonstration, and conclusion have presented by the particular student respectively. All pupils were instructed to consult and seek help from their respective subject teachers in this regard.



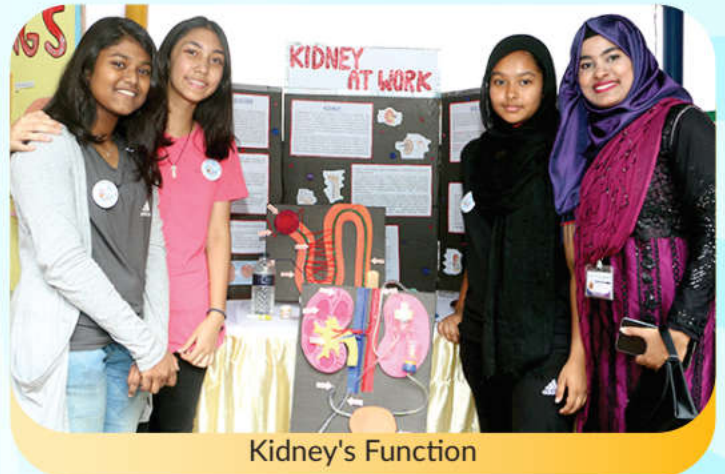
Crisper Technology



Does Caffeine Affect Plant Growth



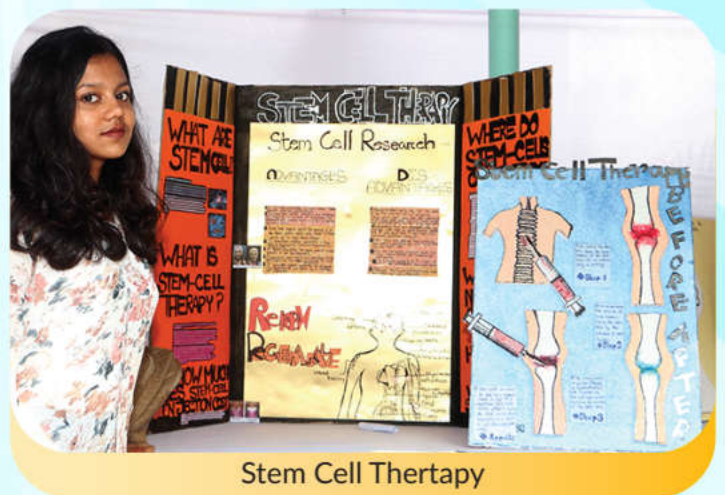
Drug Abuse



Kidney's Function



Music & Memory

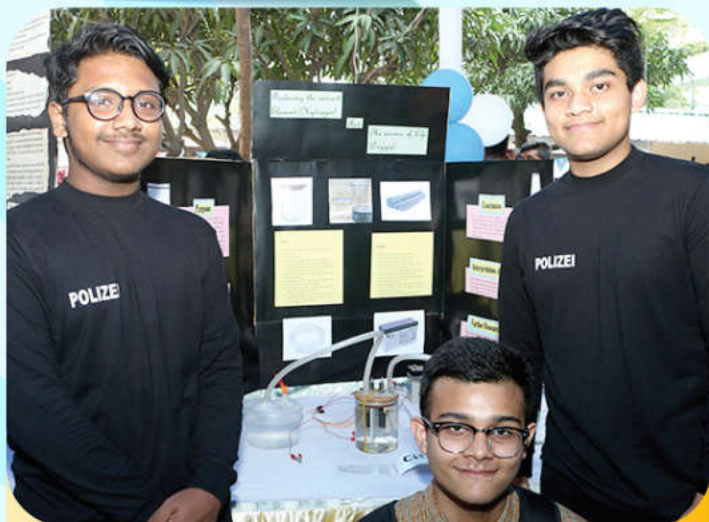


Stem Cell Therapy



## Top 5 Projects in

## 2nd Category (Chemistry)



Producing The Outcast Element-hydrogen & Oxygen



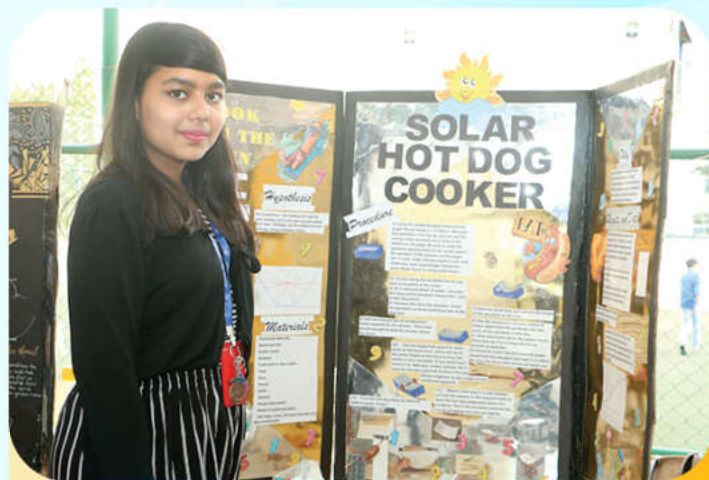
Electroplating

## Top 5 Projects in

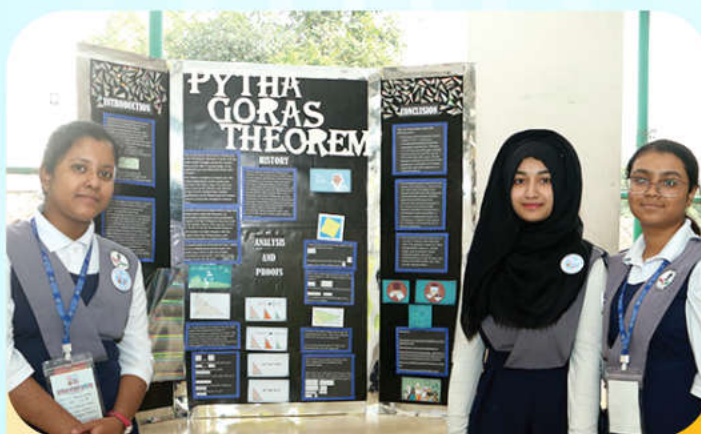
## 2nd Category (Math)



Golden Ratio



Solar Hotdog Cooker



Pythagorean Theorem & It's Proof



# Top 5 Projects in

# 2nd Category (Physics)



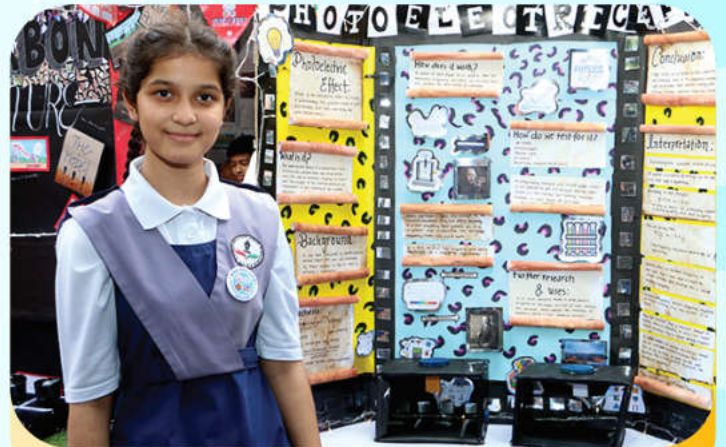
Smart Light



Water Is Indispensible



Robotic Hand



Photoelectric Effect



Materials Works For Sound Proofing



Higher Secondary (Grade 10-12) : Students under these categories have enrolled themselves in the following subjects: Biology, Chemistry & Physics. The selected projects were assigned to a group of three students and specific aspect of the project, for instance, research, introduction, demonstration, and conclusion have presented by the particular student respectively. All pupils were instructed to consult and seek help from their respective subject teachers in this regard.



Biodegradable Plastic From Starch



Bio Plastic Using Gelatin



Plastic Eating Enzyme



Music & Psychology



Bioluminescence





Edible Water Pods



Bio Fuel



Hydrogen Fuel Cell

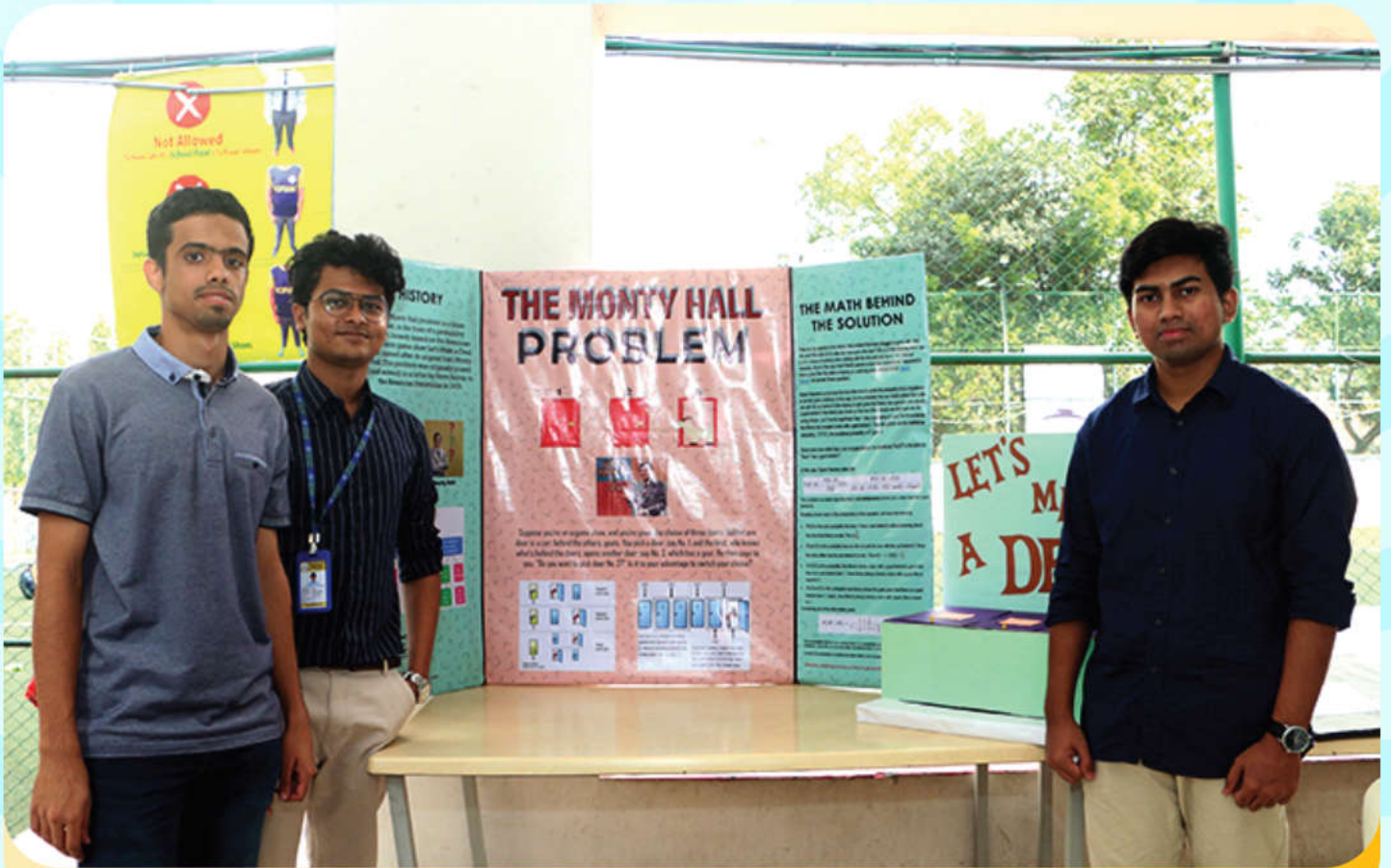


Green Carmesi



## Top 5 Projects in

## 3rd Category (Math)



Monty Hall Problem

## Top 5 Projects in

## 3rd Category (Physics)



Fire Retardant Gel



Solar Tracker



# 3rd Category (Physics)



Smart Glove



Home Automation



Halo (Arduino)

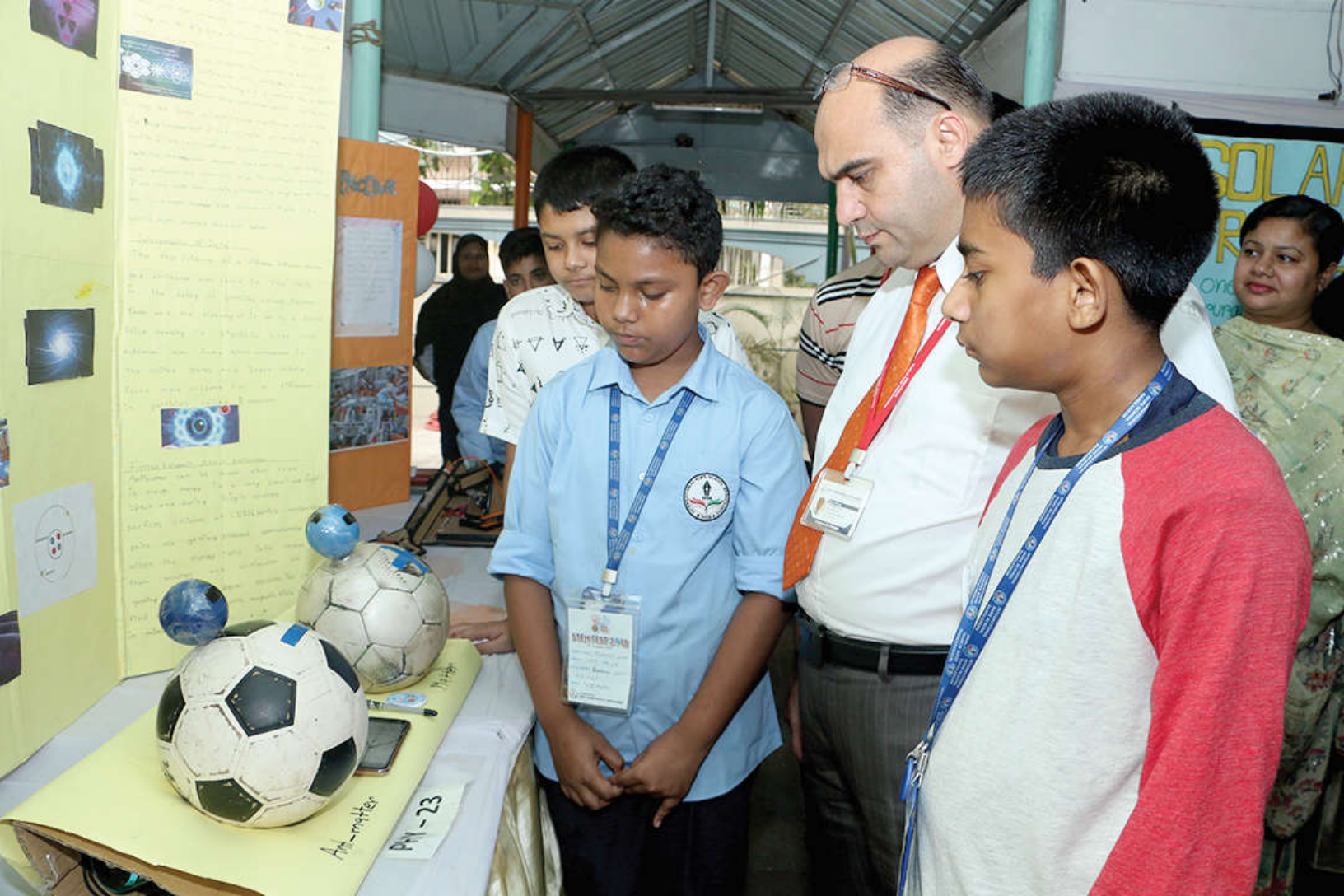


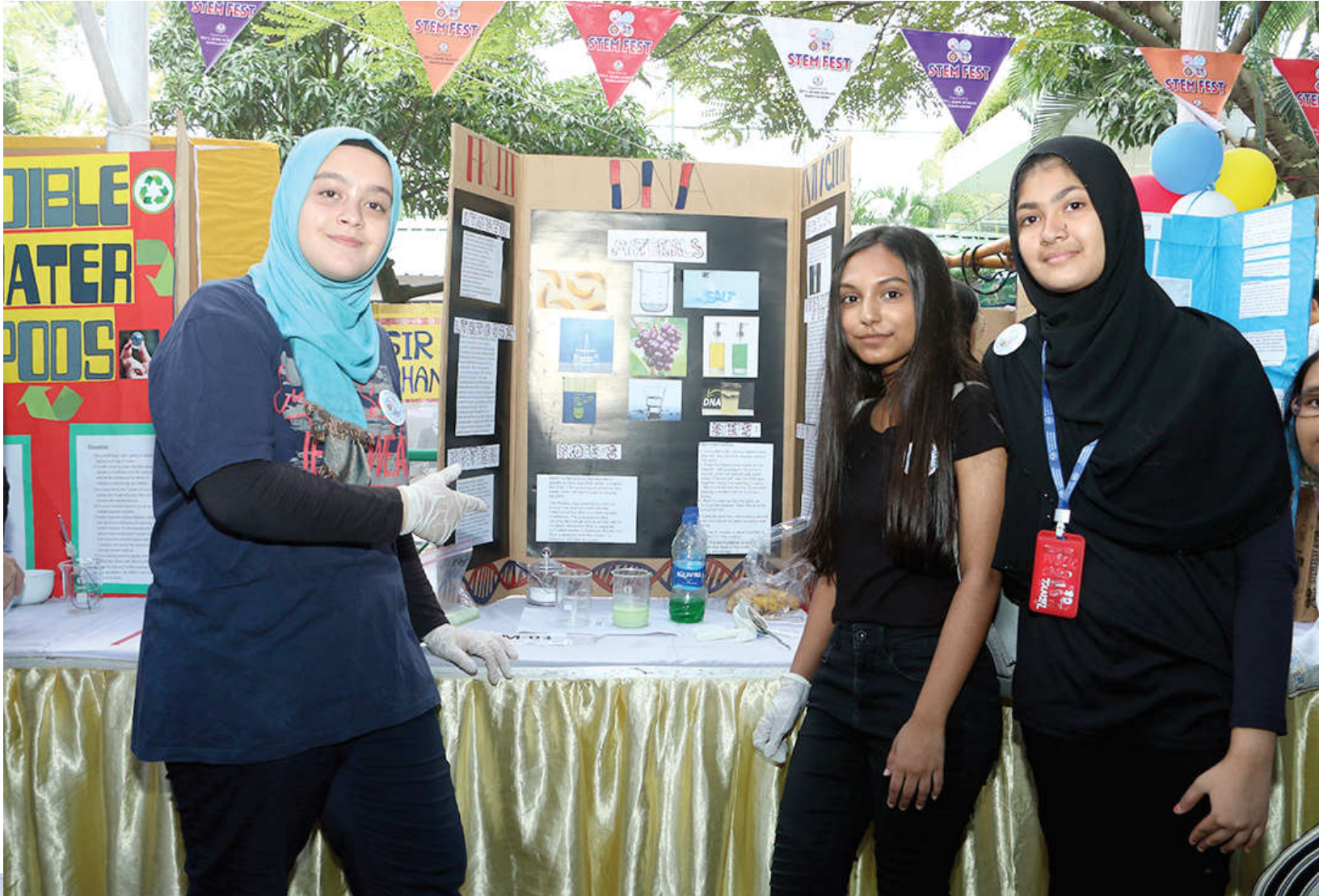


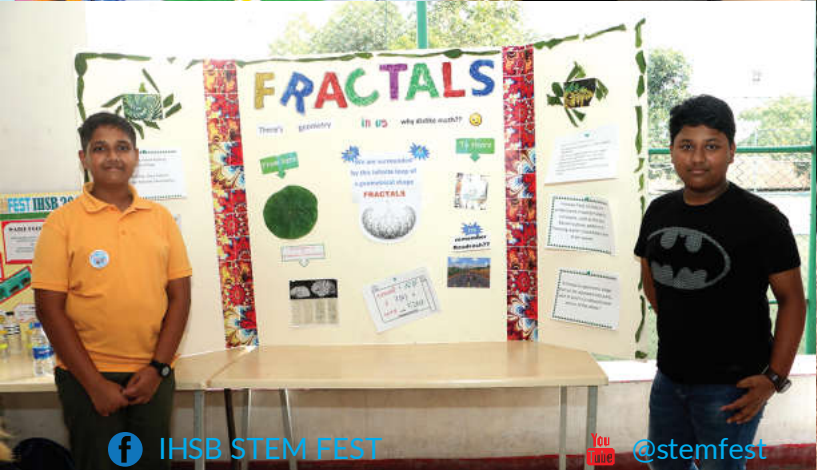
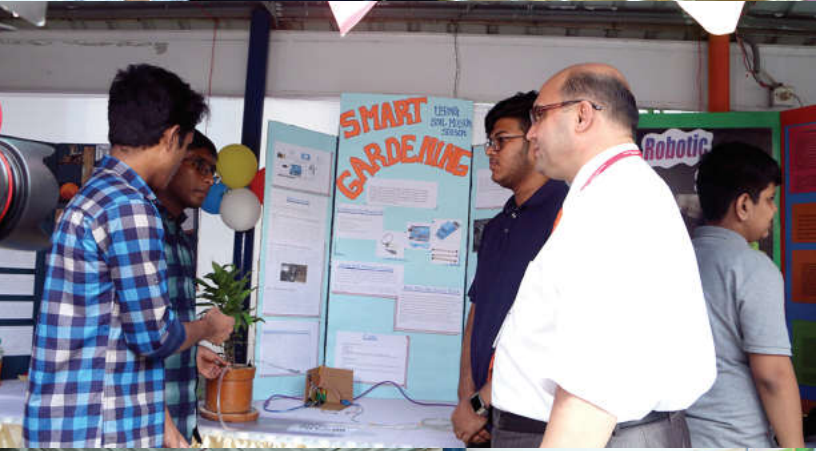
*Some Other* PROJECTS





















Bridge Construction from spaghetti



Rubik's Cube Solving Competition: Human Vs Robot





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# STEM FEST 2019



## Executive Member of **STEM FEST 2019**



**Yasar Savran**



**Md. Rockibul Karim**



**Suhatjon**



**Shamsil Arifeen**



**Mirza Md. Ragib Un-Noor**



**Tonmoy Khan**



**Md. Yusuf Khan**



**Mr. Abdus Samad Shohan**



**Abul Kalam Azad**



**Nafis Hyder Alam**



**Nashir Uddin**



**Rifatul Hassan Ritul**



**Shuchuna Akter Shuchi**



**Nazia Afrin**



**Adnan Shihab Ahmed**



**Aneeka Zaheen Kamal**



**Bushra Rahman**



**Iftekhar Hossain**



**Nafis Hyder Alam**





# Award





# Ceremony



**It is high time to meet the inspiring scientists,  
technologists, engineers, and mathematicians  
behind some of the coolest ideas and innovations!**

### **Uttara Preschool & Primary Section**

Plot-7, Road-6, Sector-4, Uttara, Dhaka- 1230.

Tel: +880.2.48956999, +880 1775966264

### **Uttara Senior Section**

Plot-7, Road-6, Sector-4, Uttara, Dhaka-1230.

Boys: Tel: +880.2.48953723, +88 01763809476

Girls: Tel: +880.2.48953722, +88 01706044717

### **Gulshan Pre-School Section**

House # 4B, Road # 118, Gulshan-2, Dhaka -1212

Tel.: +88 02 41080791, 01791-715556

### **Gulshan Primary & Middle Section**

House # 9 Road # 111, Gulshan-2, Dhaka-1212

Tel.: +88 02 222284242

### **Chattogram Section (PG to Grade-12)**

77/A East Nasirabad, Chattogram

Tel.: +880 1772511784, +880 31 652529

### **Bogura Pre-School, Primary & Senior Section**

Carmichal Road, Shejugari, Bogura.

Tel.: +880 51-67702, 1781-172230, 01781-197951



**INT'L HOPE SCHOOL BANGLADESH**

*Concern of International Hope Co. Ltd.*

[www.ihsb.edu.bd](http://www.ihsb.edu.bd)