



# KANAGAWA INTERNATIONAL SCIENCE FAIR 2018

Organizer: Kanagawa Prefectural Atsugi High School

Kanagawa Prefectural Atsugi High School and Super Science High School in Kanagawa host Kanagawa International Science Fair 2018, KISF 2018, which offers the opportunity for students to make a presentation on their research. The aims of this fair is to enhance presentation skills, to motivate students to do their scientific research and to heighten their internationality through cultural change.

## Participating school

### 23 Japan schools

Kanagawa Prefectural Atsugi High School

Kanagawa Prefectural Hiratsuka Secondary School

Yokohama Municipal Yokohama Science Frontier High School

Kanagawa Prefectural Tama Senior High School

Bunkyo Gakuin University Girls' Senior High School

Caritas Senior High School

Tokyo Metropolitan Toyama Senior High School

Kanagawa Prefectural Yokosuka Senior High School

Notre Dame Seishin Gakuen Seishin Girls' High School

Seiko Gakuin High School

Kanagawa Prefectural Hakuyo Senior High School

Hosei Univ. girls' High School  
Kojo High School  
Azabu University High School  
Kanagawa Prefectural Seishou High School  
Kanagawa Prefectural Zama High School  
Kanagawa Prefectural Hiratsuka Konan High School  
Kanagawa Prefectural Ikuta Senior High School  
Kanagawa Prefectural Sagamihara High School  
Kanagawa Prefectural Kawasaki High School of Science and Technology  
Kanagawa Prefectural Atsugi West High School  
Kanagawa Prefecture Hiratsuka Agricultural High School Hasse Branch School  
Chuo University Yokohama High School

### **23 Taiwan schools**

Taipei Municipal Nei-Hu Vocational High School  
Taipei Municipal Nei-Hu Vocational High School/Inter-school cooperation  
New Taipei Municipal Qingshan Elementary and Junior High School  
Hanyin High School  
Taipei Municipal Xihu Junior High School  
Taipei Municipal Binjiang Junior High School  
Taipei Municipal Nei-Hu High School  
Taipei Municipal Yang Ming Senior High School  
Taipei Municipal Yong Chun Senior High School  
Taipei Municipal Lishan Senior High School  
Taipei Senior High School  
Taipei Senior High School/Inter-School Cooperation  
I-Shou International School  
Kaohsiung Municipal Rueisiang High School  
Kaohsiung Municipal Siaogang Senior High School  
The Affiliated Senior High School of National Chi-Nan University  
National Taitung Girls' Senior High School  
National Taitung Senior High School  
National Nanke International Experimental High School  
National Experimental High School at Central Taiwan Science Park  
The Affiliated High School of National Chengchi University  
Taipei Municipal Dazhi High School  
Guoguang Laboratory School, National Sun Yat-sen University

### **1 Philippine school**

Philippine Science High School Western Visayas Campus

## Schedule

KISF 2018 has two days. Day 1 is cultural exchange and Day 2 is science event.

### Day 1: Cultural Exchange

March 17<sup>th</sup>, 2018

Kanagawa Prefectural Atsugi High School

Program

13:30	Opening Ceremony @ School Gym 1) Welcome Address by Principal of Atsugi High School 2) Welcome Address by a representative of Atsugi High School 3) Greeting Address by a representative from the Philippines. • Philippine Science High School Western Visayas Campus 4) Greeting Address by two representatives from Taiwan; • Taipei Municipal Dazhi High School • Taipei Senior High School
13:40	Presentation (5 min each) • Japanese Culture by Atsugi International Club • Philippine Culture by Philippine Science High School Western Visayas Campus • Taiwanese Culture by Taipei Municipal Yong Chun Senior High School Yong Chun (traditional Chinese: 詠春) Kung Fu Show
14:00	Kendo Show (Japanese fencing) by Atsugi High School students
14:10	Gifts Exchange
14:30	Cultural Exchange among students @ Class 3-A ~ 3-I (9 classrooms) • Participants are to be separated into 9 groups • Teachers in a managerial position are going to Principal's Office
15:20	Closing @ each classroom • Photo Session

### Day 2: Science Fair

March 18<sup>th</sup>, 2018

Yokohama National University

Program

8:50-9:30	Reception
9:30-9:40	Opening Ceremony
9:50-10:50	Poster Presentation 1 <sup>st</sup> Term
11:00-12:00	Poster Presentation 2 <sup>nd</sup> Term
12:00-12:45	Lunch Break
12:45-14:15	Oral Presentation
14:25-15:25	Poster Presentation 3 <sup>rd</sup> Term
15:30-16:00	Closing Ceremony

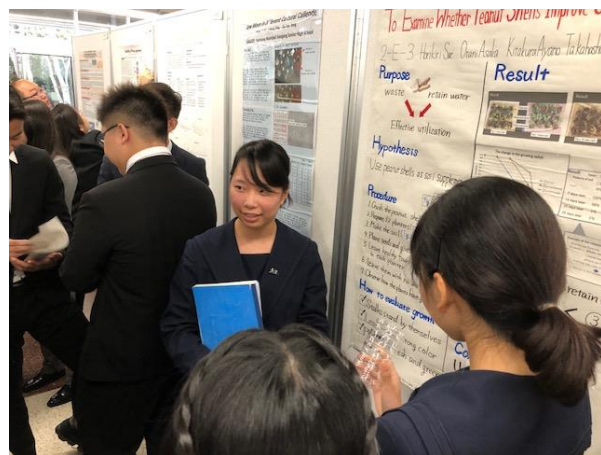
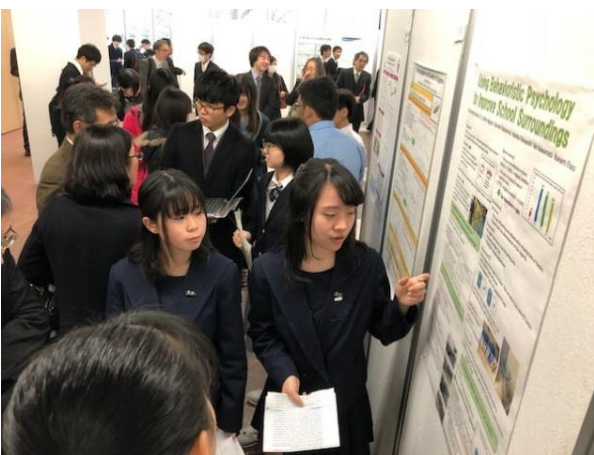
# Science Fair \_ Outstanding Award

## Oral Presentation

The Salt Tolerance of Convolvulaceous Plants on the Beach
Finding a new generalized formula for the area calculation of any regular star polygon
A Piano Lesson For The Hearing-impaired
The water quality survey of Tama River in winter 2018

## Poster Presentation

Shock Absorption Materials
Study on thermal properties of different pavement materials
ARIJO: location-specific data crowdsourcing web application as a curriculum supplement
To remove bacteria-Comparison of the common liquids sterilization
A Preliminary Study of the Frog Ecology and Habitat Characteristics of Tamalakao Medicinal Botanical Garden in Beinan Township, Taitung County
Natural Mosquito Repellent of Camphor Trees
The Analysis of the Deinsectization in Pumpkin Seeds
Simulating the Best Electricity-Generating Condition of Piezoelectric Generator



## List of Presentation

### Oral Presentation

Title	School Name
The Generalization of Frieze Patterns in Geometry and Arithmetic	Taipei Senior High School
What can we do to be happy?	Kanagawa Prefectural Hiratsuka Secondary School
Application of Chess Robot in Home Care and Prevention of Dementia	Taipei Municipal Lishan Senior High School
The analysis of the antioxidant capacity of Cruciferae and its seedlings.	The Affiliated Senior High School of National Chi-Nan University
The Salt Tolerance of Convolvulaceous Plants on the Beach	Yokohama Municipal Yokohama Science Frontier High School
The memory in planarians	Kanagawa Prefectural Tama Senior High School
The study of buffon's needle and estimation of migration distanced	National Taitung Girls' Senior High School
Finding a new generalized formula for the area calculation of any regular star polygon	Bunkyo Gakuin University Girls' Senior High School
A Piano Lesson For The Hearing-impaired	Taipei Municipal Nei-Hu Vocational High School
Bioethanol Production from Cellulose Using Mushrooms	Kanagawa Prefectural Atsugi High School
New Method for Measuring the Temperature of Normal Cells and Cancer Cells by Micro-Scale Temperature Probe	Taipei Municipal Yong chun Senior High School
The Preparation of Dye Sensitized Solar Cell (DSSC) from TiO <sub>2</sub> and Natural Fruits and Vegetables Extracts	I-Shou International School
The water quality survey of Tama River in winter 2018	Caritas Senior High School
The use of Convex Lens as Primary Concentrator for Multi Junction Solar Cells (MJSC)	Philippine Science High School Western Visayas Campus
Dancing Robot	Tokyo Metropolitan Toyama Senior High School
Challenge to the brand new telecommunication technology in 2030, with Maria	Kanagawa Prefectural Yokosuka Senior High School

### Poster Presentation 1<sup>st</sup> Term-Competition Section-

Title	School name
The Minimal Surface of The Regular Tetrahedron	Notre Dame Seishin Gakuen Seishin Girls' High School

Knot Dart Master	Taipei Municipal Yong chun Senior High School
Wild Imagination-Wireless Charging	Guoguang Laboratory School, National Sun Yat-sen University
Remote Intelligent Temperature Control Device	Taipei Municipal Yong chun Senior High School
Electric Float	Taipei Municipal Nei-Hu Vocational High School
The research on the correlation between gaming videos about competitive games and the comments of the viewers	Taipei Municipal Yong chun Senior High School
Discussion of Reaction Fatigue to Sound and Light Stimuli	Taipei Municipal Yong chun Senior High School
Shock Absorption Materials	Kanagawa Prefectural Atsugi High School
The Study of Biological Porous Materials and Three-Dimensional Shapes on Sound Absorption	Taipei Municipal Dazhi High School
How The Shadow Grows	Kanagawa Prefectural Atsugi High School
Construction and Analysis of Touch Projection System for Body Learning	National Nanke International Experimental High School
Usability of plant pigments	Kanagawa Prefectural Hiratsuka Secondary School
The Enhancement of The Charge Transfer of Metal Organic Framework by Adding PEDOT Tube Polymer	The Affiliated High School of National Chengchi University
New Moon in Different Cultural Callenders	Kaohsiung Municipal Siaogang Senior High School
To Examine Whether Peanut Shells Improve Soil Enviornment	Kanagawa Prefectural Atsugi High School
Discussion on the Correlation between Time Teenagers Spend on the Social Media and the Level of Their Psychological Stress.	Taipei Municipal Yong chun Senior High School
Stop the Spread of Desertification by Agar and Konjak	Kanagawa Prefectural Atsugi High School
Designing and Testing Multi-Directional Isolated Platform for Buildings	Taipei Municipal Yang Ming Senior High School
Study on thermal properties of different pavement materials	National Taitung Girls' Senior High School
The Propagation and Growth of Euglena	Tokyo Metropolitan Toyama Senior High School

Using Behavioristic Psychology to Improve Our School Surroundings	Kanagawa Prefectural Atsugi High School
Identification of color pigments in <i>Mimachlamys nobilis</i> 's shell	Bunkyo Gakuin University Girls' Senior High School
The discussion of meteors in anomalous size in Qing dynasty	National Taitung Girls' Senior High School
Can Banana Peel Clean Dirty Water	Kanagawa Prefectural Atsugi High School
The earth capacity	Kanagawa Prefectural Hiratsuka Secondary School
The garden in the sky — Investigating the corresponding parameters of Spirograph	Taipei Municipal Yong chun Senior High School
Mathematical Analysis of mass-infection	Seiko Gakuin High School
Multi-Screen Controlling System Software	Taipei Municipal Yong chun Senior High School
ARIJO: location-specific data crowdsourcing web application as a curriculum supplement	Philippine Science High School Western Visayas Campus
A Novel Scoring System for the Gun Shoot of Emulated War Games	Taipei Municipal Nei-Hu Vocational High School
The study of mohr's method by microscale chemical experiments	Caritas Senior High School
Root Vegetables Hydroponics	Kanagawa Prefectural Atsugi High School
The study on the bulking value of puffs.	The Affiliated Senior High School of National Chi-Nan University
Purify Dirty Water by Charcoal	Tokyo Metropolitan Toyama Senior High School
How to Make Safe Food Coloring	Kanagawa Prefectural Hakuyo Senior High School
Searching for the Answer of $0^0$	Tokyo Metropolitan Toyama Senior High School
Discuss the number of juggling sequence by using matrix method	Taipei Municipal Yang Ming Senior High School
Development of Lightweight AI	Kanagawa Prefectural Atsugi High School
Multifunctional Wisdom Watering Machine	Taipei Municipal Yong chun Senior High School
Reinforcement Learning: Superior game agents with Ensemble methods	Seiko Gakuin High School

**Poster Presentation 2<sup>nd</sup> Term-Competition Section-**

Title	School name
WiFi indoor localization self-driving cars based on machine learning	Taipei Municipal Nei-Hu Vocational High School
Implementation of Wireless Power System Research	Guoguang Laboratory School, National Sun Yat-sen University
Non-Rocket Spacelaunch	Kanagawa Prefectural Hiratsuka Secondary School
A Pneumatic silicone assistive device in patients with hand weakness	Taipei Municipal Nei-Hu Vocational High School
Luban lock with 3D structure circuit for innovative applications	Taipei Municipal Nei-Hu Vocational High School
The improving incline motion experiment and teaching research : simple IR-sensor device combined with smartphone App	Taipei Municipal Nei-Hu Vocational High School
If Resources are cut off, How can we make Electricity?	Tokyo Metropolitan Toyama Senior High School
Study on whether cactuses absorb electromagnetic waves	Guoguang Laboratory School, National Sun Yat-sen University
Bacteria in Crickets' Enteric Capability of Decomposing Tires	Guoguang Laboratory School, National Sun Yat-sen University
The differences of growth by the color of the light	Kanagawa Prefectural Atsugi High School
To remove bacteria-Comparison of the common liquids sterilization	Guoguang Laboratory School, National Sun Yat-sen University
Effect of Antioxidant on Regeneration Rate of Aeolosoma Viride	The Affiliated High School of National Chengchi University
A Preliminary Study of the Frog Ecology and Habitat Characteristics of Tamalakao Medicinal Botanical Garden in Beinan Township, Taitung County	National Taitung Girls' Senior High School
A Study on the Ingredients Antrodia Camphorata 4AAQ the Effect on the Mitochondria which in the Retinal Pigment Epithelium cells	Taipei Municipal Yong chun Senior High School
Alternative turning response of Sow bugs	Kanagawa Prefectural Hiratsuka Secondary School
The Inhibition Functions of Allium sativum to Botryospheararia dothidea	Taipei Municipal Yang Ming Senior High School
Effects of the temperature and storage time on the content of nitrate nitrogen and protein in the spinach .	Kaohsiung Municipal Rueisiang High School
Research and development Inhibitors of HDAC2 for the	Taipei Municipal Yong chun Senior



treatment of Alzheimer's disease	High School
The Study of Different Evolution of Enterovirus 71 in Taiwan	Taipei Municipal Dazhi High School
Natural Mosquito Repellent of Camphor Trees	Yokohama Municipal Yokohama Science Frontier High School
Power Management System By Identification and BLE Indoor Localization	Taipei Municipal Nei-Hu Vocational High School
Using infrared camera with automated resource classification of recycling robot	Taipei Municipal Nei-Hu Vocational High School
Research the Mechanics of Golf By Swing Robot	Taipei Municipal Nei-Hu Vocational High School
DIY electric karting car	Taipei Municipal Yong chun Senior High School
The Study of Using Unsupervised Algorithm on the Computer Game of the Contract Bridge	Taipei Municipal Nei-Hu Vocational High School
Ether bond effects of ammonium and phosphonium ionic liquid	Kanagawa Prefectural Yokosuka Senior High School
The Carbide Made from Plants Facilitates Hydrogen Production through Water Splitting	National Experimental High School at Central Taiwan Science Park
Ratio of Combination Quantity of White Vaseline in the Biomass Fuel	Tokyo Metropolitan Toyama Senior High School
The Analysis of the Deinfestation in Pumpkin Seeds	National Experimental High School at Central Taiwan Science Park
Making Powder Cosmetics from Vegetables	Kanagawa Prefectural Atsugi High School
Combine technique from MPPT and AI hydroelectric	Taipei Municipal Nei-Hu Vocational High School
A color drawing machine that can be applied to large surfaces	Taipei Municipal Nei-Hu Vocational High School
Wisdom table tennis robot	Taipei Municipal Nei-Hu Vocational High School
The micro-warning device for the structure losing of building	Taipei Municipal Nei-Hu Vocational High School
Simulating the Best Electricity-Generating Condition of Piezoelectric Generator	National Experimental High School at Central Taiwan Science Park

**Poster Presentation 2<sup>nd</sup> Term-Standard Section-**

Search for new cancer therapies ~Part2~	Kanagawa Prefectural Yokosuka Senior High School
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Can We Make Bioethanol by Using Microorganisms in the Soil?	Tokyo Metropolitan Toyama Senior High School
The study of planarians with multiple eyes	Hosei univ. girls' high school
Ability of Decomposition of Cullulose The Mushrooms Have	Kanagawa Prefectural Atsugi High School
Attraction of Ants by Avocado	Kanagawa Prefectural Atsugi High School
Ability of Water Purification of Rhizophora mucronata	Kanagawa Prefectural Atsugi High School
How to increase Japanese littleneck, Asari clam? ~ Difference in its population and habitat environment in Yokohama and Chiba~	Kanagawa Prefectural Yokosuka Senior High School
Paradise Lost in Kuzukawa River: Prologue to the plant succession in Myriophyllum aquaticum area.	Kojo High School
Living fossils around us – American cockroach's (Periplaneta americana) formations and behavior	National Taitung Girls' Senior High School
Estate-grown chocolate in Taiwan	National Taitung Girls' Senior High School

#### Poster Presentation 3<sup>rd</sup> Term-Standard Section-

Title	School name
The Regularity of Movement of Freshwater Ostracods	Tokyo Metropolitan Toyama Senior High School
The effect of pH on Protoplast Flow	Tokyo Metropolitan Toyama Senior High School
Suggestion Which Increases Production by Artificial Light	Yokohama Municipal Yokohama Science Frontier High School
A story of power generation with shells	Azabu University High School
The qualitative and quantitative measure of metal-ion with ion-exchange membrane based on microscale chemical experiments	Caritas Senior High School
The study of crystal growth using alum	Caritas Senior High School
The method of making bismuth metal crystals big and beautiful	Chuo University Yokohama High School
Supercooling state	Chuo University Yokohama High School
Bioethanol Production from Garbage	Kanagawa Prefectural Atsugi High School

Synthesis of Polyurethane Using Agar	Kanagawa Prefectural Atsugi High School
Make the sweet potatoes delicious	Kanagawa prefectural Seishou high school
How to make bismuth crystales	Kanagawa Prefectural Zama High School
The Characteristic of the Lime	Tokyo Metropolitan Toyama Senior High School
Looking for ideal Moisturizing Ingredients	Tokyo Metropolitan Toyama Senior High School
Analysis of Catechins Contained in Green Tea	Yokohama Municipal Yokohama Science Frontier High School
Visualization of Objects Classification Model	Seiko Gakuin High School
Earth Science In Australia	Tokyo Metropolitan Toyama Senior High School
The observation of Earthlight	Tokyo Metropolitan Toyama Senior High School
Study of seismic control structures	Kanagawa prefectural Seishou high school
Study on cockroach-repelling effect of aroma oil.	Kanagawa prefectural Hiratsuka Konan High school
A mutualism between Spotted jelly and Zooxanthella	Kanagawa Prefectural Ikuta Senior High School
Are the characteristics of early-blooming morning glory inherited?	Kanagawa Prefectural Ikuta Senior High School
Study of the plankton in Hirose river and Biotope	Kanagawa Prefectural Ikuta Senior High School
How to Remove Blood Stains Effectively:Researching its Relation with Time and Chemicals	Kanagawa Prefectural Sagamihara High School
Smart home appliances modeling and simulation using LEGO® MINDSTORMS®	Kanagawa Prefectural Kawasaki High School of Science and Technology
Reduction of PM2.5 particle emission by electrostatic precipitator	Kanagawa Prefectural Kawasaki High School of Science and Technology
How can a house become strong against earthquakes	Kanagawa Prefectural Ikuta Senior High School
How Can We Preserve River Environmental?-Researching the Sakaigawa River-	Kanagawa Prefectural Sagamihara High School

How to make Paper Airplane that Flies the Farthest In the World	Kanagawa Prefectural Sagamihara High School
An investigation of magnetic nanofluid	Kanagawa Prefectural Ikuta Senior High School
Pulse jet engine	Kanagawa Prefectural Ikuta Senior High School
Study of linear motor	Kanagawa Prefectural Ikuta Senior High School
Study on air cannon	Kanagawa Prefectural Ikuta Senior High School
Water Quality survey of Enokida River which is being developed	Kanagawa Prefectural Atsugi West high school
Research of practical application of the capsule using a hydrogel and divalent iron ion	Kanagawa Prefecture Hiratsuka agricultural high school Hasse branch school
Tournaments of efect	Kanagawa prefectural Seishou high school
The Earth is Not Perfectly Round	Tokyo Metropolitan Toyama Senior High School
Verification of Weather Lore	Tokyo Metropolitan Toyama Senior High School
Preventing Boundary Layer Separation by Vortex generators	Tokyo Metropolitan Toyama Senior High School
Mathematical Analysis of Shuffling Cards	Seiko Gakuin High School
Geometry of Shell Spiral Curves	Seiko Gakuin High School
The state of shot rubber	Kanagawa prefectural Seishou high school
Do You Want to Have Hot Hamburgers and Cold Coffee at Home?	Tokyo Metropolitan Toyama Senior High School