

Mathematics and Science Research Library for Youth (MASRLY) Establishment plan

We want to establish a facility just like a compact **lab** or a **library**.
Our goal is to provide a environment to **discuss about mathematics
and science** for the children to experience the mysteries of nature, and
to educate **brilliant human resources** to the society.
We hope that Okinawa will be an outstanding “**Science City**” in the
world one day, and we want **your support**, and **your cooperation** for
the success of this educational project.

NPO Mathematics and Technology Promotion “MathMathGood”

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(NPO Establishment Date : Nov. 11th, 2014)

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1. Purpose of Establishment

【Article of the purpose】

In 2011, there was a terrible **disaster** in Japan. **Poverty, plague, war, and terrorism** are global challenges.

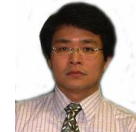
We all know that the problems of **overpopulation, food shortage, and energy crisis** lie in front of us. However, today, we see resources wasted, science rejected, and religious zealotry amplified. These are like **steps backwards!** For this, the **fundamental solution** would be **reconsidering our true point of living**, to make the best choice to **serve the society**. And to fulfill a beautiful future, I would want to **put my dreams in the hands of the next generation** by teaching them **highly advanced mathematics and technology**.

Through an **assemblage of some of the best and brightest**, perhaps, we will find **the geniuses** who will redeem our world. Hopefully, in the very near future.

We propose the establishment of **Mathematics and Science Research Library for Youth (MASRLY)**.

【Personal history】

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職歴

- ***** 沖縄科学技術大学院大学 (2010年1月21日～現在に至る)
電子顕微鏡スペシャリスト 生体系・材料系試料の観察と研究
クライオ電顕とクライオ FIB による3D イメージ構築の研究
FIB(FEI HELIOS NANOLAB 650), AFM(Agilent 5500)
<http://www.oist.jp/press-room/news/2012/8/5/interrogating-elusive-membrane-proteins>
<http://www.oist.jp/slide/sasaki-mary-and-microscope>
- ***** 名古屋大学エコトピア研究所超高压電子顕微鏡施設 (2008年8月～2010年1月20日)
電子顕微鏡技術者 超高压電子顕微鏡を用いた研究、学生へ電顕教育
金属・セラミックス・生体類試料の観察と研究
Ultra-High Voltage Electron Microscopy (1MeV Hitachi / H-1250ST)
Cs-Corrector Ultra-High Electron Microscopy (JEM-2100F)
<http://hvem.nagoya-microscopy.jp/>
- ***** http://www.tech.nagoya-u.ac.jp/event/h21/Vol05/hon_secur/OBUN-2.pdf
- ***** (株)三井化学分析センター (2008年4月～2008年8月)
電子顕微鏡技術者 ポリマー材料、電気デバイスなどの試料の分析
透過型電子顕微鏡(2200FS)+オメガ分光装置
Ultra High Resolution TEM(JEOL JEM-2200FS - Ω filter)
<http://www.mcanac.co.jp/company/index.html>
- ***** 独立行政法人 物質・材料研究機構 若手国際研究拠点 (1995年4月～2008年3月)
外国人研究者への研究支援
透過型電子顕微鏡による材料系材料と生体系材料の材料作製と観察と分析
Ultra High Resolution TEM(JEOL JEM-2100F, 2000FXII),
Ultra High Resolution SEM(Hitachi S-4800),
Microtome (LEICA EM-UC6), AFM(HITACHI E-sweep)
http://www.nims.jp/loys/formericy5/01about/pdf/04-05_melting_11.pdf

学歴

- ***** 筑波大学数理物質科学研究科数学専攻 博士課程後期 (2006年4月～)
- ***** 国立筑波大学第一学群自然科学類物理学科 (1991年4月～1995年3月)

言語

- ***** 日本語(流暢)、中国語(流暢)、英語(会話レベル)

2. About Mathematics and Science Research Library for Youth (Plan)

- NAME** : **Mathematics and Science Research Library for Youth MASRLY**
- LOCATION** : **Okinawa, Japan**
- TEL/FAX** : **TEL : 080-3000-0432**
- DIRECTOR** : **Toshio Sasaki**
- PROPOSER** : **NPO Mathematics and Technology Promotion “MathMathGood”**
- ESTABLISHMENT DATE** : **October 1st, 2018**
- ESTIMATED INITIAL INVESTMENTS** : **\$5399900.00**
- ESTIMATED YEARLY COSTS** : **\$739900.00**
- TARGET** : **Any young people that is interested in Science and Mathematics**
- STAFFS** : **Research fellow(Full-time teacher) 3 + Office worker 1 + Part-timer 5**
- URL** : **<http://mathgenius.com/>**
- E-MAIL** : **math@mathgenius.com**

3. Goals

Mathematics and Science could enhance our national affluence.

However, children in Japan who want to study these subjects are only decreasing.

We also know that children these days immerse in VRs created by smartphones.

It seems they have lost goals of their own life.

So I would like to motivate these children by telling them how much **interesting** and **mysterious** mathematics and science would be.

I just hope we will find **the geniuses** who will redeem our world in the future.

- ① Construct a **pavilion** for learning **math** and **science** technically.
- ② Display various **books** written about **math** and **science**, and install **electron microscopes** and **telescopes**.
- ③ Open the pavilion after school times, and offer the environment for everyone including **members** and also **money donors**.
- ④ Resident staffs **specialized** in **math** and **science**.
- ⑤ Hold several **lecture meetings** about math and science periodically.

- ① Tell children how much interesting would **math** and **science** be by a straightforward manner.
- ② Educate **science specialized human resources**.
- ③ Participate in various International Science Olympics such as **IMO**.
- ④ Invite **good** mathematicians, and scientists to our **conferences**.

1. Our Philosophy and Aim

【Our Philosophy】

The MathMathGood association will **not discriminate** by **nationality or whether a child is rich or poor**. We will help young people improve their mathematical capacity by teaching **high level mathematics** and then educate using **advanced technology**. Our goal is create innovation in areas such as **“infinite energy”, “artificial intelligence”, “micro machines”**. Through education of gifted children our dream is to **eliminate starvation, poverty, disease, and war to build a prosperous and peaceful future**.

【Our Aim】

The knowledge about science has had not changed much from the **past 50 years**. There are no big discoveries that might be able to solve the problems down below such as Einstein’s theory of relativity. But if only we could understand mathematics and science fully, we might solve these problems.

① **Energy crisis**

Consumption are rising each year, and it’s obvious that the earth’s natural resources would dry up.

② **Over population**

The population of the world reached 7 billion. It’s increasing at the rate of 2.47 people every second.

③ **Food crisis**

Countries in Africa still suffer of severe food shortage, and 40000 to 50000 people are dying every day.

④ **Poverty**

All the poorest among the world take place 20 % of the whole population. (June 3rd , 2013)

⑤ **Plague**

Children dying because of curable diseases exceeds 100 million. It’s about 30000 people each day.

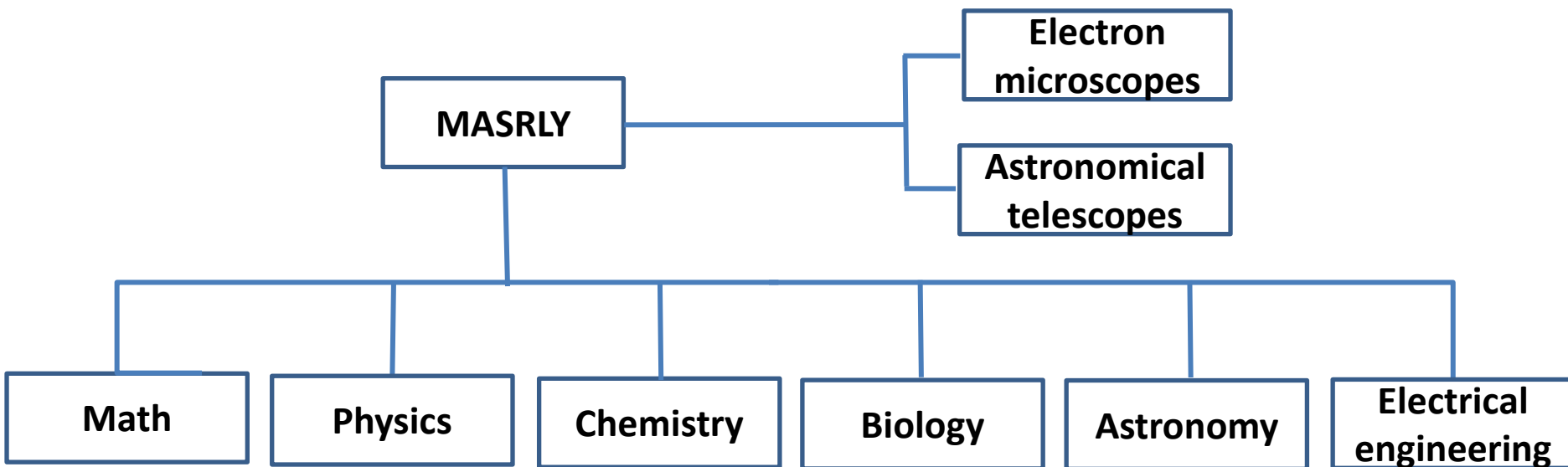
⑥ **Conflict issues**

The number of war is estimated more then 40. People who live in the area exceeds 230 million, and this suggests that approximately 30% of the world’s population is influenced by the conflict.

2. History of Establishment

Date	Outline
Sep. 8 th , 2013	Started piano recitals at a nursing home “Ayanasunomori” http://ayanasunomori.com/
Sep. 26 th , 2013	Interviewed an education facility “Amerasian in Okinawa” about the establishment of a work shop ”MATH LAB” http://amerasianschool.com/
Oct. 21 st , 2013	Applied for a “Citizen project System” held by Ginowan City to propose IT educations for children
Dec. 22 nd , 2013	Started a workshop “MATH LAB” at Ginowan City library and at GIFEA mebuki
Nov. 11 th , 2014	Established NPO Mathematics and Technology Promotion “MathMathGood”
May 5 th , 2015	Held a lecture meeting “Welcome to the wonderland of mathematics! “ at Ginowan City library
Aug. 4 th , 2015	Held a lecture meeting “Welcome to the wonderland of mathematics! “ at Okinawa prefectural library
October 2016	Be awarded the Prudential Spirit of Community award (SOC)
Nov. 24 th , 2016	Be carried our activity contents at Ryukyu Shinpo newspaper
Apr. 13 th , 2017	Held a lecture meeting “Welcome to the wonderland of mathematics! “ at Naha City medical association
Apr. 30 th , 2017	Be introduced the MATH LAB workshop at Ryukyu RBC TV program

3. Facilities



【External cooperation system】

- Subsidies from public organizations
- Cooperating with private enterprises and financial institutions
- Contributions
- Cooperating with elementary, junior high, and high schools
- Cooperating with municipalities

Structure	Personnel	Form
Youth	Okinawa	Free participation
Instructor	3	Full-time
Office worker	1	Full-time
Part-timer	5	Part-time

1. Finding and educating young people

【Scouting human resources】

- **Rubik cubes** ($3 \times 3 \times 3$, $5 \times 5 \times 5$, $7 \times 7 \times 7$)
- **Puzzle rings**
- **Cast puzzles** and Hanoi's tower
- Utilize **IMO** textbooks as teaching materials
- Scout for people to extract the children's **potentials** at the **utmost level**
- **3d puzzles**
- Conduct IQ examinations such as **MENSA**
- **Chess, Go, Shogi**
- **Memorization tests** (1D, 2D, 3D)
- Cooperate with experts and of **mathematics**

【Educating methods】

- **Mathematics** : **Moscow mathematical Olympiads 1960-1993**
: **Moscow mathematical Olympiads 1993-1999**
: **Moscow mathematical Olympiads 2000-2005**
- **Physics** : **The Feynman Lectures on Physics, Modern physics** etc.
- **Chemistry** : **Stryer's biochemistry, The ELEMENTS** etc.
- **Biology** : **Molecular biology of THE CELL, The Origin of Species** etc.
- **Astronomy** : **Exoplanets, Cosmos, Hyperspace: A Scientific Odyssey** etc.
- **Engineering** : **CONCRETE MATHEMATICS, Cellular Automata** etc.
- Acquire **instantaneous abilities**
- Educate children using **international Olympics textbooks** and attend several **competitions**.

【Inviting outstanding scientists, mathematicians】

- Invite **Grigori Perelman, Terence Tao, mathematicians** from Russia, and from America.
- Periodically invite mathematician for **lecture meetings** and **discussions**.

2. Environmental development of teaching and learning

【 Environmental development for mathematics 】

Just like what an ancient mathematician Pythagorus said, 「 **all is numbers** 」 it's possible to explain **any phenomenon** by using only **mathematics**. We will provide a **remote** and a **quiet environment** for the children to **think about mathematics closely**.

- Prepare a **IT environment** for **simulating** various **mathematical problems**
- Most people consider math as calculations, but it's a group of **wonderful concepts**
A new concept could **change the world fundamentally**
- Support attitudes to consider things in a different way
- Prepare a **magnetic blackboard** to write down doubts and ideas

【 Environmental development of teaching and learning 】

- Installing **science libraries**: **Display books** about **science** and **exchange information with instructors**
- Installing **microscopes (TEM)**: Install devices for **clarify the phenomenon** in the **microscopic world**
- Installing **telescopes**: Install devices to answer questions by **exploring the vast universe**



3. Future perspectives

【An educational program using artificial satellites】

An educational program using **satellite systems** and **solar panels**. Its language could be **translated** into **various types of languages** used in countries. If there is some **sun light**, anyone could take this program for **free** even without electricity and the network . It equips **transmission devices**.

【Establishment of school corporation】

Establish a school corporation that is capable of motivating brilliant children to **learn mathematics** and **science**. It would have a **long period stable schedules** from **1st to 12th grade levels** for steadily educating **brilliant human resources**.

【Solve the mysteries of the universe using mathematics】

- If we could break the **codes of gene information**, we will be able to understand the **natures of life**, the **cause of diseases**.
- It will be possible to answer questions such as the **mysteries** of the **cosmos** and the **nature**.

1. Subjects and Approaches

【Approach】

【Subject 1】

How to invite children willing to learn science to MASRLY?

- Open the pavilion **after school times**
- Use **free buses** for children at long distances
- Hold **activity briefing sessions** for parents periodically
- Cooperate with **elementary, junior high, and high schools**
- Hold activities such as **computer simulations** and **scientific experiments**
- Experience the **mysteries of the universe and the nature** using devices like **telescopes** and **electron microscopes**.
- Provide a **tranquil environment for thinking** by themselves

【Subject 2】

How to assess the progress of this project?

- It is important to evaluate by using scores, but it is more important to provide an **tranquil environment** and **earnest teachers** for the children to display their abilities at the **utmost level**.
- Evaluations by **publishing papers** and **patents**
 - **Cooperation** and **contributions** with **municipalities, NPOs** by doing **welfares, nature preservation activities**.
 - Aim for the **children to enter any universities** they want to go.
 - Introduce the **grads** to the sponsor like **corporations**.

2. Schedules

Date	Outline
May 1 st , 2017	Advertise the project widely to the world , and collect support from various organizations, corporations, patrons
Jan. 8 th , 2018	Staff recruitments 【Finding and educating young people】
Apr. 1 st , 2018	Launch facility purchases and constructions, device installations 【Environmental development of teaching and learning】
Apr. 15 th , 2018	Hold lecture meetings at elementary, junior high, and high schools 【Finding and educating young people】
Oct. 1 st , 2018	Open Mathematics and Science Research Library for Youth (MASRLY) 【Environmental development of teaching and learning】
Oct. 14 th , 2018	Hold lecture meetings about mathematics and science 【Finding and educating young people】

3. Profits and Contributions

Because of the **declining birth rate**, **young people learning** technology is **decreasing** every year in the world's society. This project is likely to efficiently **aid the people** all around the globe. Just the **same as raising a tree**, it might take 5 to 15 years for this project to complete, but we hope for **some of the best and the brightest would improve our world**.

【Social contributions by geniuses】 (Excerpted from Wikipedia)

Albert Einstein Intelligence 160~190 (Estimation)

Because of the proposal of the general theory of relativity and special relativity, he is the most famous physicist in the 20th century. Also he is called the father of modern physics.

Steven Hawking Intelligence 160

A British theoretical physicist. He was diagnosed with ALS: (amyotrophic lateral sclerosis) when he was 21. He is known as a physicist who uses a wheelchair. He has proven the existence of singular points, that it would make a collapse in the general theory of relativity, and presented a quantum theory of gravity that connects quantum mechanics and general relativity.

Grigori Perelman Intelligence 300 (Estimated)

In 1982, he won the gold medal at the IMO when he was the aged 16. The record for the youngest winner at that time. In 1994, he solved the Cheeger-Gromoll Soul theorem. In 2003, He solved the William Thurston geometrization conjecture and Poincare conjecture. He was awarded the Fields Medal and the Millennium Prize in 2006 and 2010, but he declined.

Ramanujan Intelligence More than 300 1887-1920

He developed many equations and theorems, such as τ function, taxi number, and the equation of π . There was without having a formal math education from a university. He could not explain how to solve those equations he proposed, Still now, some of the equations are unsolved.

1. Initial Investments

Contents	Estimated cost (\$100)
Land purchase	5500
Facility construction	15500
IT environment (Computer)	600
Transmission electron microscope and peripheral equipment	15000
Scanning electron microscope and peripheral equipment	9000
Astronomical telescope	1000
Scanning Probe Microscope (SPM)	Future plan
3D printer	Future plan
Circuit assembly device	Future plan
Machine shop	Future plan



1. Initial Investments

Contents	Estimated cost (\$100)
Optical microscope etc.	Future plan
Manipulator system	Future plan
Processor and synthesizer	Future plan
Piezoelectric sensor	Future plan
Optical lens maker	Future plan
Nanoimprint lithography	Future plan
Educational satellite program	Future plan
Total	46600



2. Yearly Costs

Contents	Estimated cost (\$100)
Estate (Geological preservation)	120
Estate (Environmental arrangement)	120
Buildings (Maintenance)	360
Buildings (Security Management)	360
Devices (Repair)	250
Devices (Maintenance)	100
IT environment (Maintenance)	120
IT environment (Updates)	60
IT environment (Communications)	60
Total	1550

3. Staffs

Contents	Expenses each person (\$100)	Personnel	Estimated cost (\$100)
Instructors (Personnel expenses)	800	3	2400
Instructors (Medical, health insurances)	200	3	600
Office workers (Personnel expenses)	500	1	500
Office workers (Medical, health insurances)	125	1	125
Security guard (External requests)	120	1	120
Part-timer (Personnel expenses etc.)	120	5	600
Total			4345

4. Others

Contents	Estimated cost (\$100)
Patent applying & yearly costs	240
Guest invitation & rewards (lecture meetings, presentations, seminars etc.)	240
Activities (Welfares, nature preservation activities, cooperation with NPOs etc.)	60
Travel expenses (Costs for business trips etc.)	60
Consumable supplies and miscellaneous expenses	24
Utility and water costs	60
Ad rate	24
Expenses for businesslike processing	36
Expenses for external cooperation (Tax accountants, lawyers, laborers, management consultants etc.)	60
Employee training	60
Books	400
Long distance free buses (\$500/once × 4 × 12months)	240
Total	1504

5. Financing (1)

【2018 INCOME】

TOTAL \$590000

Funding methods	Estimated cost (\$100)
Medical personnel (50 people)	600
Donation from corporations (85 units)	5100
Subsidies from public organizations (5 units)	100
Subsidies from foundations (5 units)	100
Deficit fund	Estimated cost (\$100)
Other	46599

【2018 FUND USAGE】

TOTAL \$584900

Initial only	Estimated cost (\$100)
Initial investments	46600
Yearly costs	Estimated cost (\$100)
Yearly costs	1550
Personnel	4345
Others	1504
Total	5849

5. Financing (2)

【 2018 INCOME 】

TOTAL \$740000

Funding methods	Estimated cost (\$100)
Medical personnel (50 people)	600
Donation from corporations (110 units)	6600
Subsidies from public organizations (5 units)	100
Subsidies from foundations (5 units)	100
Deficit fund	Estimated cost (\$100)
Others	46599

【 2018 FUND USAGE 】

TOTAL \$5399900

Initial only	Estimated cost (\$100)
Initial investments	46600
Yearly costs	Estimated cost (\$100)
Yearly costs	1550
Personnel	4345
Others	1504
Total	7399