

STOPPED AT IMMIGRATION!
MEHENDI AND MISTAKES

EARCOS JOURNAL

THE IMPACT OF COMMERCIAL FISHING

TEA TIME WITH TANISHKA

The Dolphins of Taiji

PROOF! $1 + 1 = 2$

HABITATS AND DEFORESTATION

TAKE THE RISK

TANGCO

AN INTERVIEW WITH RENA KAWASAKI

Rena Kawasaki is a decorated student from the SOIS community, whom we can all learn something from. From years prior, she was always engaged in the community, and striving to always do what she could to create a positive impact. She started groups like Earth Guardians and was part of the student council, to name a few of her achievements.

Rena has continued to impress us with being a selected winner of the RISE scholarship, and, as of recent news, winning the International Children’s Peace Prize award.

For Rena’s RISE project, she hosted discussions between the youth and their local political representatives, in order to lower negative perceptions Japanese youths have towards politics and politicians. Rena also developed a digital platform, Polichat, that allowed the youth to ask politicians questions.

To get a closer insight on the steps Rena took to attain such achievements, I conducted an interview with her. This interview was conducted shortly after Rena won the RISE scholarship, and went over how Rena won the scholarship, as well as her advice.

Can you introduce yourself and what you achieved?

Hi! My name is Rena Kawasaki, I am in 12th Grade, and I received this life-long scholarship run by Rhodes Trust and Schmidt Future, called the RISE scholarship. I received this scholarship through my work in political activism.

Where did you get the idea or motivation to start/embark on this project?

I’ve done a lot of extracurricular activities outside of school that some people might not think about. Like, I was the CFO of this company, Euglena, and also started Earth Guardians Japan when I was in 10th grade. I was always really curious about a lot of different social issues. But I think what hit me the most was when I saw, on Japanese TV, a lot of corrupt politicians. And that impacted me into thinking,

“Why don’t a lot of people talk about this?”. So I wanted to make sure that even in my small community, it wasn’t going to be taboo. That’s why I did this project called, “Let’s Talk to a Politician,” where I invited local politicians to talk to highschool students in the Osaka area.

What were the steps you took to achieve this?

First, I went through a lot of research. I talked to people in my youth community network who I knew held political events before, and made them check my proposals. I also did a lot of research about what the youth really thought about politics, through surveys and personal hearings. After this, we created the proposals, and invited politicians through Facebook to see if they had any interest in participating in this youth collaboration event.

What advice would you give to students who may also want to take on big projects like you?

So, I know that OIS doesn’t necessarily have a big community when it comes to outside projects, but I think there are a lot of benefits when it comes to doing these types of projects that will actually involve a larger community, because you can connect it to what you’re sort of learning in class (global issues). But for the advice I want to give, don’t consider what has been done before. For my project, though there were not necessarily any impacts within the community, RISE found the benefits of it in the long term. So I wouldn’t consider what people think would look good in a resume. If you’re genuinely interested, and have a passion for a subject, I think if you use a little bit of your creative and organizational IB skills, anyone can make an impactful project. Take the risk.

RENA IS A PRIME EXAMPLE OF WHAT STUDENTS ARE CAPABLE OF. WHETHER YOUR AMBITIONS OR PROJECTS BE BIG OR SMALL, WITH THE RIGHT PLANNING, PERSEVERANCE, AND DEDICATION, ANY ONE OF US IS MORE THAN CAPABLE OF ACHIEVING GREAT THINGS.

TAKE AWAY



TAKE THE RISK

Chiharu Nagasaka

TANGO

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TANGO

Grab a cup of tea, take a seat, take a deep breath, and enjoy Part 4 of 'Tea Time with Tanishka' (a.k.a the column on TANGO that I use as an excuse to talk about my favorite quotes). 私の好きな格言をひたすら分析して、みんなの励みになったらいいな~のコーナーです! では第4弾楽しんでください~!

Don't dig up in doubt what you planted in faith

"I want a good grade", "I've studied hard and I know I can do well". These are phrases that we say in faith, hoping that things will go well, and believing in our own potential.

"I don't think I'm ready for this", "Why did I think I could do this?". These are things we say in doubt. Even the things that we had convinced ourselves we were ready for, we end up going back and saying, "Oh, maybe I was stupid to think I was capable of that". That's not true. The only reason we feel that way is because we're digging up in doubt, the hopes and dreams that we planted with faith. Just like when we plant seeds hoping to see flowers grow, we need to have hope that things will work out eventually and that we'll see our 'flower' as long as we don't let our anxieties make us believe that the seeds we planted were useless.

怒らないことで怒りに勝ち
信じることで不安に勝ち
比べないことで自分に勝つ

人間誰もイラっとする時ってありますよね。不安になってどうしようもないような時や、人と比べすぎて「自分なんか」と悔しい思いをしてしまう時もあります。その時、あなたはどのようにしていますか。イラっとしたらそれを言葉や行動で表現していますか。それとも、心の中で抑えていますか。私は上の言葉を初めて読んだときに、「なんで怒らないことで怒りに勝つんだろう。怒りに勝つって何?」と思いました。怒らないことで怒りに勝つと言うのは、怒りという感情よりも自分の忍耐力を強く保つということであり、結果として心や体を汚す感情を無くすということなのかなと思いました。不安も同じ理屈で、「どうしよう、どうしよう」と思っている自分よりも「どうにかなる」、「きつと大丈夫」と思っている自分を信じたら心や体を汚す感情はなくなりますね。不安をなくすことができなければ、少なくとも不安に勝つことはみんなできるということですね。最後はほとんどの人が一度は経験したことのある他者との比較。他人と比べているのに「自分に勝つ」とはどういうことでしょうか。あなたはテストの点数や課外活動などで、友達よりうまくいったから喜んだこと、またはうまくいかなかったから悔しかったことはありませんか。□持ちはすごくわかります、しかし、毎日会うような人々はあなたのことを他者と比較して評価していません。あなたが他人と比較をし、感情的になったからと言って、他の誰かのあなたに対する考え方はほとんど変わらないのが現実です。それなら、人と比べるより、過去の自分の比べたほうが良いのではありませんか。「人と比べないことで、過去の自分に「勝つ」と書き換え、みなさんもやりたいことに一生懸命取り組んでみてはどうですか。

Tea
Time
With
Tanishka

Tanishka Murthy
ムルティタニシカ

Image Provided by Tango Production Staff



Thank you very much for waiting. Your call is very important to us. We are experiencing heavier than normal call volumes at this time. Please wait on the line and an operator will be able to address your needs shortly. Your call is very important to us...

....you feel the pain,

*Hey, Jude, refrain,
Don't carry the world upon your shoulders.
For well you know that it's a fool
Who plays it cool
By making his world a little colder.*

Da da da da da da da da....

Thank you very much for waiting. Your call is very important to us. We are experiencing heavier than normal call volumes at this time. Please wait on the line and an operator will be able to address your needs shortly. Your call is very important to us...

*Hey, Jude, don't let me down,
You have found her, now go and get her.
Remember to let her into your heart,
Then you can start to make it better.*

*So let it out and let it in, hey Jude, begin,
You're waiting for someone....*

Thank you very much for waiting. Your call is very important to us. We are experiencing heavier than normal call volumes at this time. Please wait on the line and an operator will be able to address your needs shortly. Your call is very important to us...

*.....to perform with.
And don't you know that it's just you, hey Jude you'll do,
The movement you need is on your shoulder.*

*Da da da da da da da da.
Hey, Jude, don't make it bad,
Take a sad song and make it better....*

Thank you very much for waiting. Your call is very important to us. We are experiencing heavier than normal call volumes at this time. Please wait on the line and an operator will be able to address your needs shortly. Your call is very important to us...

*Remember to let her under your skin,
Then you begin to make it better
Better, better, better, better ohhh!
Hey Jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ...*

Thank you very much for waiting. Your call is very important to us. We are experiencing heavier than normal call volumes at this time. Please wait on the line and an operator will be able to address your needs shortly. Your call is very important to us...

*....nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
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Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude
Nah, ... na, na, nananana ... nananana, hey jude.....*

SUNK

WY G A L E A E

When an amount of money has been spent and cannot be retrieved, the money is said to be "sunk" and lost forever. "Let bygones be bygones", "No use crying over spilled milk". Just two of the numerous phrases that are used to convey the simple logic, "What's done is done".

By: Lee Jun Foo

COST

In life, we often ignore the advice of economists and follow our irrational minds. The sunk-cost fallacy is no exception. We begin with a simple example. Imagine a man, about forty-six years old. No, let's make him thirty-six. And we'll call him Daniel Algernon. Daniel Algernon is from New Zealand, and he loves the game of rugby. One day he decides to join the recreational rugby club in his neighborhood, a foolish choice as he'll come to realize. The membership fee to the club is 100,000 yen a year. Mr. Algernon decides to pay the fee and join. For the first month, Mr. Algernon is happy, he feels revitalized, he feels young again. Then comes the injury. Mr. Algernon is tackled brutally and injures his collarbone. Initially, he continues to play, but his condition worsens each time. He is advised to rest, but Mr. Algernon decides to continue, declaring his love for the game of rugby. In economics terms, Mr. Algernon's utility of playing rugby is positive.

"What is sunk cost fallacy?"

for the game is not sufficient enough for him to come to a session of rugby that does not cost him any money. Mr. Algernon continues to reject Mr. Stafstrom's propositions until it angers Mr. Stafstrom. Mr. Stafstrom grabs Mr. Algernon by his collar, shouting, "Why won't you play rugby with me? You call yourself a rugby fan!"

One weekend, Mr. Stafstrom, Mr. Algernon's friend, invites him to play rugby at his club. Mr. Algernon declines. We slowly come to realize that his utility of playing rugby is in fact, negative. Because his love

"Decisions are made based on what was lost in the past"

time, effort or money put into it, regardless of the value of the payout."

Of course, Mr. Algernon is not the only victim of such a fallacy. Mr. Algernon's reasoning behind his decisions can be explained using economics. When a purchase is made that does not yield any utility or benefit to the consumer, the consumer feels as though they made a loss on that purchase. Mr. Algernon paid 100,000 yen for the membership and refuses to skip out on any practices until he maximizes the benefits of the membership.

The sunk cost fallacies only expose what is one of the many flaws in the assumptions of economics that humans are rational decision makers. We follow through on our decisions because of the feeling of guilt and regret if we don't. Decisions are made based on what was lost in the past, not what is to be gained in the present and possibly the future.

To which Mr. Algernon replies, "I am a victim of the sunk-cost fallacy."

"What's the sunk cost fallacy?" Mr. Stafstrom asks, puzzled.

"The sunk cost fallacy is that humans are likely to follow through with our actions if there has already been considerable



TANISHKA MURTHY

STOPPED AT IMMIGRATION!

*'He who
travels has
stories to tell'
- Irish Proverb*

As many of us experienced during the pandemic, my family and I had been unable to visit our family in India for around 3 years. So, when my mom and I suddenly decided that we would go back to India over the summer, I was ecstatic.

I got to see my family after so long, eat all my favorite sweets, and, as always, shed a few tears as we returned back to Japan. Something that had become somewhat a ritual whenever I would go back was getting 'Mehendi' done in the last few days. It makes me feel like I'm taking a piece of India back with me and helps me feel connected with my family and the memories that we made.

You can see in the picture that these beautiful designs cover almost the entirety of my hands. The dye stays for around 2 weeks, slowly fading into a light shade of orange.

Now here's where the real story begins. You see, I got this mehendi done 2 days before I left India. Meaning that when I was traveling it was slowly getting darker (the heat from your hands makes it get darker in the first few days).

Let me ask you this; if you're over 16 years old and you get to immigration at Kansai International Airport, what's something they always make you do?

Finger Prints. They always take

your fingerprints.

And my finger prints? Well, thanks to the dye from the mehendi, they were non-existent.

The machine couldn't read them and here began a somewhat traumatizing 45 minutes of my life. Person after person came up to me, interrogating me about what this was on my hands, why I had it, why it wouldn't come off with soap. They took me to the bathroom to try to wash it off even after I repeatedly told them it wouldn't come off.

Scared that I wouldn't be let back into the country, I behaved and did everything they told me to do. But internally here's what I was thinking:

First thought: I've had mehendi every year of my life on the way back to Japan. Why was this never an issue before?

The answer to this one was quite simple. They only require fingerprints above the age of 16 and the last time I traveled abroad, I was 15.

Second thought: I can't be the first person to ever come into the country with this right?

I'm sure I wasn't. What did they do before? Why was this such a big deal to them? Why didn't they have a proper procedure? Questions I feel I may never get an answer to.

Third thought: If I didn't speak perfect Japanese and couldn't convey what the mehendi actually

was, would I have gotten out of this situation in the same way?

Probably not. As sad as it is, immigration especially can be a place where an individual's perception of you can determine the amount of rights you have at that moment. I was lucky that I spoke Japanese. That's all.

Fourth thought: An immigration officer said to me, "Are you trying to hide something you did back there (India)?" It's his job to doubt people in those situations so I understood his concern. But was this actually appropriate?

Almost every person I've told this story to said no. They've argued that as immigration officers, they should have at least a minimum amount of cultural understanding, and looking back at that moment, I kind of agree. Yes, it may be their job, but isn't there protocol on how to proceed with unexpected situations like these? Was it ethical for him to doubt me based on his lack of knowledge?

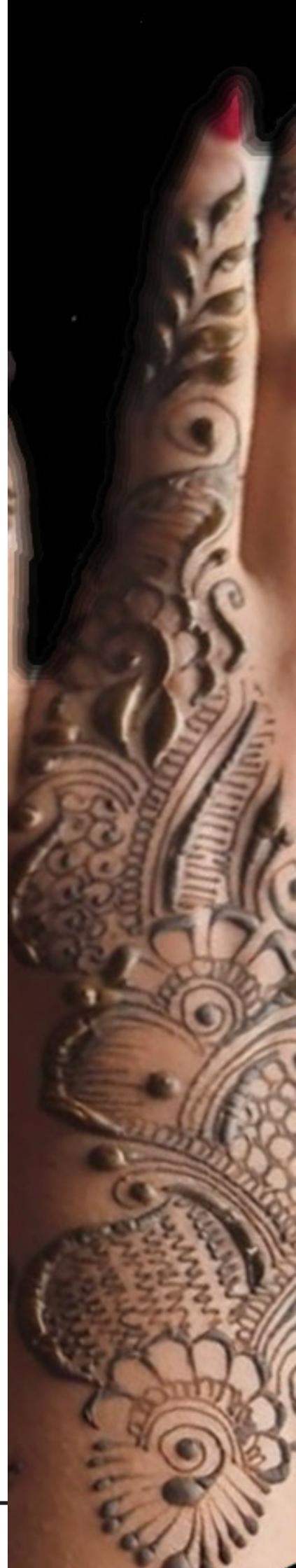
At the end of the day (which ended up being around 11pm thanks to the 'lovely' people I encountered), I was let out of immigration with just a photo. Still scared that something else would happen, I proceeded cautiously out of the gate.

As frustrated, scared and confused as I was, it really was a learning experience for me. Never let the mehendi cover your finger tips while traveling. Never.

As for everyone reading this, tell me what you thought about the story. Did I miss something? Maybe the immigration officer did nothing wrong? Or Maybe I had every right to be as frustrated as I was?

Ah, the things we learn when we travel.

**SCARED THAT I
WOULDN'T BE
LET BACK INTO
THE COUNTRY, I
BEHAVED AND DID
EVERYTHING THEY
TOLD ME TO DO.
BUT INTERNALLY
HERE'S WHAT I
WAS THINKING:**



Fish is a very popular food to eat these days, especially because it is known as a healthy alternative to red meats. Due to the increased use of social media, many people are influenced into trying to have physiques that are almost unattainable. Pressure from negative comments about your figure from creators who have slim bodies can really impact your mindset on how you want your body to be. Dieting is a result of pressure to be as skinny as possible, therefore, many people test different healthy options that aid in becoming slimmer. I have seen loads of different recipes that include fish as a key ingredient for dieting and it is one of many frequently used foods for cooking. Dieting is only one of many reasons fish is so popular. As the human population increases, we require more food to support the lives of the people. Commercial fishing is a very big industry, with around 60,000 vessels in total, making up about two percent of the global fleet which is responsible for more than 50 percent of the global catch (Global Fishing Watch). In commercial fishing, large batches of fish are caught and sold solely for profit which is leading to a whole variety of problems because these companies do not take the environment into consideration which eventually harms the ocean environment because they carelessly catch fish. The methods used have been

and have negatively affected the fish population. The high demand for fish meat only fuels commercial fisheries to continue mass catching with their big nets and destructive methods.

The Greenpeace organization has compiled twenty-two different marine species that are on the "seafood Red-list" because of the declining population of those species. Many of the species on this list are familiar to me because they are almost always sold in markets and grocery stores here in Japan. Some of these species include; albacore tuna, atlantic cod, atlantic salmon,

AS OF 2020...MORE THAN NINETY SPECIES OF MARINE FISHES IN EUROPE ALONE WERE ON THE VERGE OF EXTINCTION.

atlantic sea scallop, bigeye tuna, bluefin tuna, red snapper, swordfish, yellowfin tuna, and tropical shrimp (Greenpeace). You may be familiar with a lot of these species as well because of the popularity of these species across the globe. Commercial fisheries use all types of nets, all of which are large in size, allowing them to catch a large amount of fish at once. Longlines, purse seine nets, and bottom trawling are some methods used to catch a large amount of fish all at

once. Each of these methods mentioned above have a significant negative impact on the ocean environment. Bottom trawling is a strategy used to catch organisms living on the ocean floor, dragging the nets across the ocean floor leads to bycatching and destroying coral, sponges, rocky spaces which fish use as living areas (Hays). The destruction of coral reefs is one of many causes that are currently threatening the coral reef ecosystems, along with ocean acidification, pollution, and sedimentation. So why is the destruction of coral reefs a bad thing? Coral reefs support a variety of marine life,

allowing a space to house and allow fish to nurse their young. The structure of coral reefs also buffers shorelines against "97 percent of the energy of waves, storms, and floods, preventing loss of life, property damage, and erosion," (US Department of Commerce). The use of the methods outlined above to catch life on the seafloor have been destroying marine life, and it will only get worse as the demand for fish and other organisms increase.

As many companies only

focus on profit rather than the consequences of catching too many marine species, they tend to use large nets with small spaces to capture more fish at once. As a result of this method, bycatch is very common in the fishing industry. Some of these marine organisms can be turtles, other types of fish, sharks, and whales (NOAA Fisheries). The industries often do not release the species bycaught leading them to suffocate in the boats. With this in mind, bycatch makes up 40.4 percent of global marine catch (Davies et al.). Large ships that are used for commercial fishing often stay in the ocean for six months, storing fish caught into large freezer compartments to ensure they do not spoil (Peta). The amount of bycatch because of people's "need" in the commercial fishing industry to make profit has severely impacted ocean ecosystems. As of 2020, according

to a report published by the International Union for Conservation of Nature (IUCN), more than ninety species of marine fishes in Europe alone were on the verge of extinction as a result of overfishing, a factor that commercial fishing plays a large role in. The use of nets as a means to capture a large number of fish has devastating effects on the ocean's food web, causing instability in the food web due to rapid depletion of the ocean's marine animals. Did you know

THE IMPACT OF COMMERCIAL FISHING

that the use of nets also causes pollution? Well, it sadly does! A popular material used for nets is nylon, which is a plastic that is usually hard to rip, especially in the form of a net. Many of the nets used for commercial fishing use nylon nets. Ghost nets, which is used as a term to describe abandoned nets drifting away in the ocean, is a problem that is polluting the waters. Due to many of these ghost nets being nylon, they do not decompose for a very long time which means that it lingers in the waters for ages. This is a large issue because marine life has been affected by it due to the possibility of being trapped in these nets and because of the plastic material of these nets, it can injure the skin and kill marine life as it either chokes them or leads to starvation (Plastic Soup Foundation).

Marine life and the ocean ecosystem are both very important in our lives. They provide food to survive and store carbon in the ocean. Also, the phytoplankton in the ocean also supplies 80% of the Earth's oxygen but due to the warming of the ocean, some scientists believe that the number of phytoplankton has declined by 40% (National Geographic Society). This comes to show that we are currently damaging our planet in many of the ways we interact with them. Commercial fishing is only one of many problems contributing to the destruction of our planet. The industry does not care for the planet and it is hard to deny, they're harming the Earth's ocean with their methods and damaging the food web. How far are we going to go till there is nothing left to destroy?

By: Claire Kitamura



EARCOS Journal

By Tamami Ono

Child Doctor Project was founded as part of the fundraising and awareness-raising initiatives to support Child Doctor Japan – an NPO dedicated to providing free, quality healthcare to children living in the slums of Nairobi, Kenya, through the distribution of ‘medical vouchers’ sponsored by individual supporters in Japan. What makes Child Doctor particularly unique is its system of support; the interaction between the supporter (called Doctor) and the Child in Kenya does not simply end with donations, but continues through the online letter-writing program that creates a deep emotional connection between the two. To facilitate their communication, Child Doctor asks for volunteer translators to translate the exchanged letters, from English to Japanese and vice versa. My involvement with Child Doctor began when I first became a volunteer translator in 2020, and later a Doctor of an eight-year-old girl named Angel.

In the hope of promoting the work of Child Doctor at school, I started the Child Doctor Project in October 2021, which began with the fundraising activity of creating handmade bracelets with my friends (woven with hundreds of beads in customizable designs) and selling them in front of the cafeteria every Friday lunchtime. Thanks to the warm support from our school community, we were able to raise a



total of over 120,000 JPY through the bracelet sales, all of which were donated to Child Doctor Japan to 1) cover the dialysis cost of one child, 2) purchase fire extinguishers for the residents of the slums, 3) become a Doctor as a school for two children – Dwayne and Abraham, and the rest dedicated to enhancing the healthy lives of the local children supported by Child Doctor.

While the main objective of this project was to broaden the support for people living in the slums of Kenya, I also hoped to paint a broader picture of their life, and provide more nuanced, authentic narratives beyond the often misleadingly-simple media stories that portray negative, reductionist images of people in poverty. I figured one way to make such a difference was to enter their lifeworlds and see their lived experiences from their own perspectives. So last December, I was inspired to host a live event on ZOOM to connect my school community with the people in the Nairobi slum. It included an interview with a 14-year-old student named Grace, and a virtual visit to the community she lives in, through which we saw how people were going about their lives in real-time. Virtually walking through the streets of the slum, we saw people living

*...IT WAS A
PROFOUNDLY
INSPIRATIONAL
AND MOVING
EVENT...*

without running water and reliable electricity supplies to their houses, which demonstrated the hardships imposed by limited infrastructure and public services. Though, as much as it was informative of such challenges, it was a profoundly inspirational and moving event, for it presented people as active rather than passive actors in their daily lives. We were also able to make a genuine human connection with humor and friendship; at the end of the interview, with Grace leading, we all sang together a verse of 'If You're Happy and You Know it'. Such an interaction provided an insight into the reality of their narrative by making them the center of their own story, making visible their challenges, resilience, hope, and individual happiness through an unfiltered experience.

Anyone with bilingual/multilingual skills in Japanese and English is welcome to become an online volunteer to translate the letters for Child Doctor – or even a Doctor to support a child. It is my sincere hope that this project will establish a long-lasting bridge between our international community and those in Kenya, build a more balanced picture of their lives, and serve as a stepping stone to bring us all together in our common humanity. Please feel free to reach out to me at tamamio0443@gmail.com with any questions. Asante!



Habitats and Deforestation

by Claire Kitamura

The destruction of the forest has devastating effects on both the environment and ecosystems. Our species has been responsible for many of the negative things happening to us in our time and our future because of our desire to industrialize and become more advanced. The forests across the world have been cut down because of the need for profit and the demands of the rising population. The increasing rates of deforestation is currently worsening global warming as there is less carbon dioxide being stored in the trees; the carbon dioxide stays in the atmosphere making it an abundant Greenhouse gas. Deforestation also has effects on different environmental cycles, including the water cycle and the carbon cycle. The cutting down of forest coverage results in a decreased amount of precipitation in the atmosphere. Precipitation leads to changes in river flow and water volume (Amazon Aid Foundation). It also provides people with a water supply but without precipitation, it can lead to droughts and warmer temperatures which then creates a drier climate. The forests and trees are very important in living as organisms greatly depend on them to survive. They provide habitats for animals, the air we breathe, prevent erosion, etc. Which is why deforestation is a large problem that we need to tackle before the world becomes worse. Habitats in areas like forests and the woods are being destroyed with the increase in deforestation around the world. The most well known instance of deforestation is in the Amazon forest where people are using a variety of methods to chop down the forest to provide area for farming and agriculture.

Slash and burn is one method of deforesting at a significant rate where people start fires in the forest to burn down a large area of land successfully while also providing the area with a temporary “nutrient-rich layer” used to fertilize the crops (Ecologic). This temporary nutrient-rich layer only lasts for a maximum of three years before the nutrients are fully used up (Humintech). After the nutrients are no longer available, farmers often abandon the piece of land and move onto the next because it is now degraded. Making more area is then achieved by clearing out more land. This is happening all over the world, resulting in major loss of habitats. Since 2022, the rate of deforestation currently is 160,000 square kilometers per year which relates, approximately to a 1 percent loss of original forest habitat each year (Adopt an Animal Kits). The tropical rainforest is home to a wide variety of different species, many of which we know because of movies and kids shows. Some of many species that are endangered due to deforestation in different locations include; Orangutans, Sumatran rhinos, Chimpanzees, Mountain gorillas, Giant Pandas, Pygmy sloth, Monarch butterfly, Borean pygmy elephant and Big cats such as jaguars and leopards (McCoy). The main industries that drive deforestation around the world are the cattle, urbanization, palm oil, and soy industries (WWF). Rainforests in particular, have a very high species density, covering over 2 percent of the Earth’s surface and houses nearly 50 percent of all animal and plant species (Greentumble).

One specific species which had been affected by deforestation is the jaguar, specifically in Brazil, in which the jaguar is considered the national animal by many despite there being no official national animal. The jaguars live in the Amazon rainforest as they thrive more in areas that have large cover areas to stalk their prey, like in the trees, grasses, and bushes. But with the ongoing deforestation of the Amazon rainforest, jaguars are one of many species that are being severely threatened as a result of the loss of habitat. In an analysis published in June, between 2016 and 2019, approximately 1,422 jaguars were either killed or forced out of the places that they inhabited due to the forest fires and deforestation taking place in the Amazon (Bourscheit). Around 355 animals are also affected by

the forest fires and deforestation in the Amazonian rainforest each year according to Bourscheit. The number of jaguars in the rainforest is not only being reduced because of deforestation, their numbers are being depleted because of animal trafficking and hunting. And according to Humberto de Aguiar Júnior, a federal prosecutor, “environmental crimes generally have low sentences in Brazil,” which shows that the Brazilian



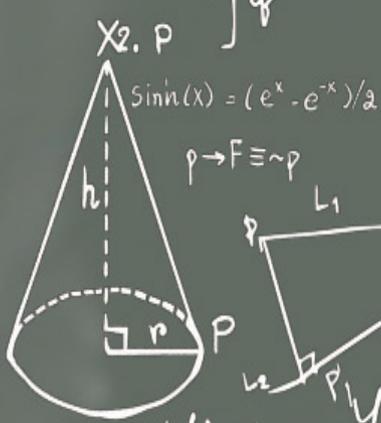
government did not care enough about the environment enough to create harsher punishments for those endangering important species of the rainforest. The estimates published in Conservation Science and Practice, says that 79,000 jaguars live in the Amazon. While it is also estimated that in the past two decades, the population declined from 20 percent to 25 percent (Plaucheur and Souza). However, protected areas in areas around the Amazon have been established over the years to tackle the problem of deforestation and habitat loss. The Amazon Region Protected Areas (ARPA) which was created in 2002 was a partnership between the Brazilian government, the World Wildlife Fund (WWF), German Development Bank, World Bank, Global Environment Facility, and Brazilian Biodiversity Fund. This program aims to increase the amount of protected areas across the Amazon. And according to the WWF, 25.3 million hectares of parks and reserves were created in the Amazon by 2008 with the Tumucumaque Mountains National Park being one of the world’s largest national parks. Since 2011, 44 percent of the Amazon was covered by protected areas,



yet, the protected areas are poorly managed and face encroachment (Butler). This shows that despite the efforts of creating protected areas to combat the problem of deforestation in Brazil, the problem could not be fully solved due the inability for people to follow certain regulations and efforts. This is shown by the deforestation rates in the Amazon between August of 2020 to July 2021 hitting the highest annual level in 15 years with 5,110 square miles being deforested, according to Andrew Moore. Deforestation is causing many problems to ecosystems and other organisms and despite being long distances away from significant areas of deforestation, individuals can start by planting more trees, recycling paper and cardboard and not using palm oil.

$$\operatorname{arccoth}(z) = 1/2 \ln((z+1)/(z-1))$$

$$1. P \rightarrow q \} \sim \exists x \exists y [p(x,y)] \equiv \forall x \forall y [\sim p(x,y)]$$



$$p \vee F \equiv p \quad p \vee T \equiv T$$

$$a^m \times a^n = a^{m+n}$$

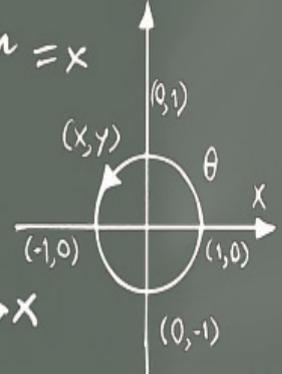
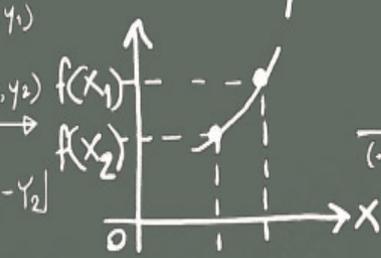
$$\sqrt{A} = y_i * 2^{\exp}$$

$$(x_1, y_1) \rightarrow (x_2, y_2)$$

$$(a^m)^n = a^{m \times n}$$

$$Me = L + I$$

$$d = |x_1 - x_2| \quad y^{1/n} = x$$



$$y_{i+1} = y_i + x_n(b - a y_i)$$

$$\sec(-x) = \sec(x)$$

$$\tanh(x) = \sinh(x)/\cosh(x) = (e^x - e^{-x})/(e^x + e^{-x}) \quad \operatorname{coth}^2(x) - \operatorname{csch}^2(x) = 1 \quad \tan(-x) = -\tan(x)$$

PROVING

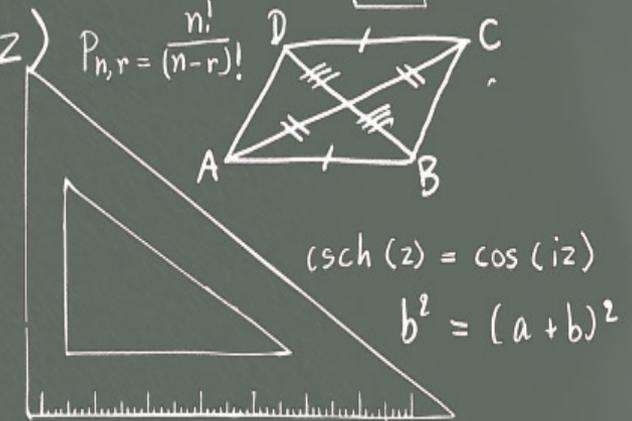
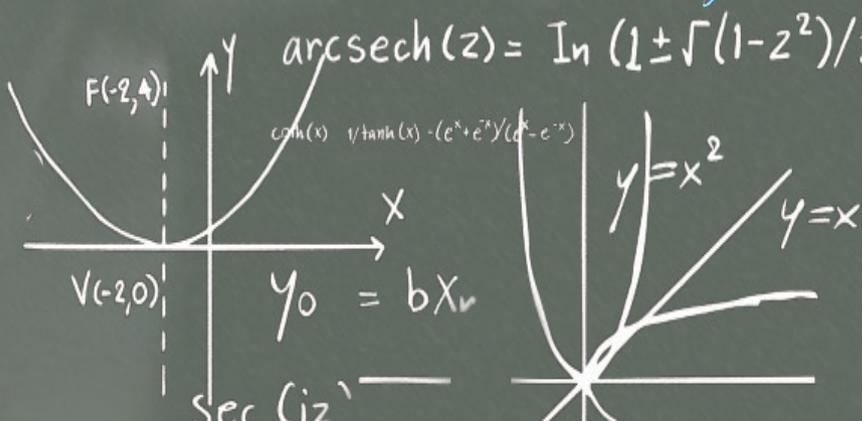
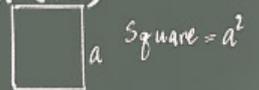
1+1=2

Tadayoshi Kamegai

$$\operatorname{arccsch}(z) = \ln(1 + \sqrt{1+z^2})/z$$

$$(a \times b)^n = a^n \times b^n \sim \forall x [p(x)] \equiv \exists x [\sim p(x)]$$

$$\tanh(z) = -i \tan(iz)$$



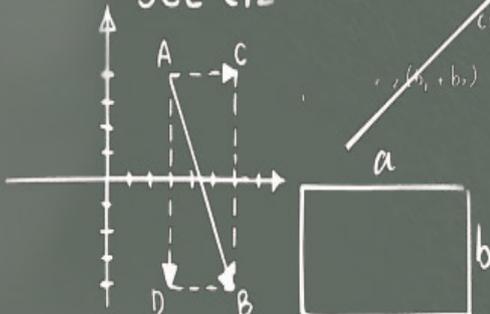
$$\sec(iz)$$

$$\operatorname{csch}(x) = 1/\sinh(x) = 2/(e^x - e^{-x})$$

$$x = y^2$$

$$\sim \exists x [p(x)] \equiv \forall x [\sim p(x)] \quad \sin(-x) = -\sin(x)$$

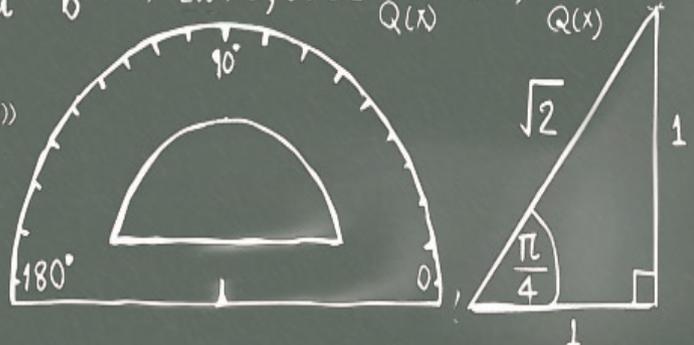
$$(ab)^m = a^m b^m \quad [a > 0, b > 0] \quad \frac{P(x)}{Q(x)} = G(x) + \frac{R(x)}{Q(x)}$$



$$\operatorname{arctanh}(z) = 1/2 \ln((1+z)/(1-z))$$

$$y_{i+1} = y_i + (x_n/2)(a - y_i^2)$$

$$x_{n+1} = (x_n/2)(3 - ax_n^2)$$



Proving the most basic equation can be hard. In fact, it is hard. To get to the simple definition we have today, it took us until the 19th century until a set of axioms known as the Peano Postulates was introduced.

As a simple explanation on why proving $1+1=2$ is hard, imagine trying to define the word 'the'. It gets to a point where something seems too simple that it is difficult to explain. But in this article, I thought it would be interesting if I went over the axioms that prove that $1+1=2$.

See, asking why $1+1=2$ is actually really important when it comes to understanding math. Mathematics is based on fundamental definitions known as axioms. Yet throughout our standard education, we aren't taught what those definitions are, even though it is at the core of this field.

Let's go back to our equation. We can notice that there are three main components to this. The numbers, 1 and 2, which are what we often refer to as natural numbers, the addition symbol, and the equals symbol. To truly understand what this equation implies, we need to define all three of these symbols. Notably, equality, natural numbers, and addition.

Let's start with this equals symbol. Equality. There are 3 properties that this symbol holds.

First, the reflexive property. For any quantity a , $a=a$.

Next, we have the symmetric property. For any two quantities a and b , if $a=b$, then $b=a$.

Finally, we have the transitive property. For any quantities a , b , and c , if $a=b$, and $b=c$, then $a=c$.

These points are pretty obvious for someone that knows basic arithmetic, but it is important that we define these properties, because we will need to use this later.

Moving on, we need to define natural numbers.

#1: 0 exists.

We start by defining a number that exists in this set of natural numbers.

#2: Every number has some succeeding number

For instance, we know that the succeeding number of 0 is 1, the succeeding number of 1 is 2, and so on. For today's purpose, let's define the successor of some number a , to be defined as $S(a)$, short for successor.

#3: No number a , succeeds to 0. That is, $S(a) = 0$ is false.

When showing $1+1=2$, we don't need to consider the existence of negative numbers, so we will make sure to state that there exists no number whose succeeding is 0. Else we will have a sequence of numbers which loop in circles

#4: different numbers have different successors

In other words, no two numbers have the same successor. If they do, then they must be the same number.

#5: If 0 has some property that some number a also has, and $S(a)$ has

that property, then all natural numbers have the same property.

Essentially, this is a foundational idea to what we commonly refer to as induction, But in simpler terms, all this is saying is that, if 0 is in some set, then for every natural number n in the same set, $S(n)$ is also in that set.

Now that we have defined natural numbers, we finally move on to defining addition. This is actually the simplest of all three.

For every number that satisfies our above axioms, define the following:

$$a+0 = a$$

This is a very simple statement. It essentially means that in addition, any number, plus zero, is that same number. And this is why we defined the existence of zero. What this does is, it simplifies our equation by removing the 'plus' operation. But, there is no 0, in $1+1$. So, we need to add another definition that can create 0 without complicating the equation.

$$a+S(b) = S(a+b)$$

This second property attempts to create 0, by making a number closer to 0 inside itself. In this case, b is closer to 0 than $S(b)$, so we can then see if the first rule can be used to take the addition operator away from this equation.

Finally, let's give a name for these numbers. Let's say $S(0) = 1$, and $S(S(0)) = 2$

Now, we are done with our definitions, and can now prove that $1+1=2$.

Let's start with $1+1$. By our definition, we can rewrite this as, $S(0) + S(0)$. Let's consider $a = S(0)$, and $b=0$. Then, using our second property of addition, this is equal to, $S(S(0) + 0)$. Using our first property of addition, $S(0) + 0 = S(0)$, so this equation simplifies to $S(S(0))$, which if we look at our definition, is equal to 2. Therefore, using our definition of equality, we can see

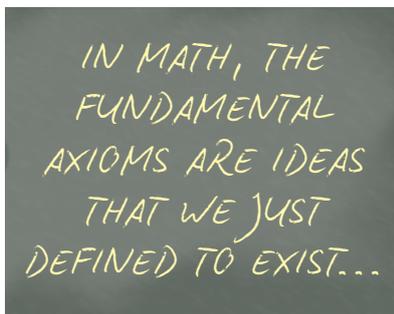
that $1+1$ is equal to 2. And so, our proof is therefore complete.

But actually, now that we have proven $1+1=2$, we can prove other simple additions, as long as we define each number, in terms of $S(a)$.

Here's the interesting point to note about what we have defined. When we gave a name for each number, we chose that $S(0) = 1$, and $S(S(0)) = 2$. But, if we were to define $S(0) = 2$, and $S(S(0)) = 1$, then $2 + 2$ would have been equal to 1.

And, that's what I want everyone to take from this article. We went over defining properties of equality, natural numbers, and addition, to prove that $1+1=2$, but in the end, all of these definitions are something that we chose. In math, the fundamental axioms are ideas that we just defined to exist, like the concept of infinity, to align mathematics to be used to solve a problem. And in this article, we looked at a set of definitions to show how $1+1$ equals 2, but in the end, that's all based on the specific definitions that we have created.

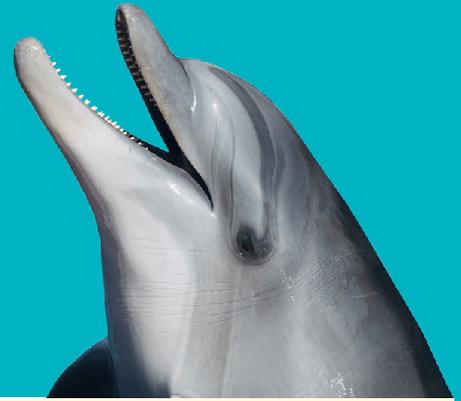
I've actually created a video covering the same topic for a 3b1b competition, so if anyone wants to see a more visual approach to this question, feel free to visit this link: <https://youtu.be/VkM321DsZAg>



IN MATH, THE
FUNDAMENTAL
AXIOMS ARE IDEAS
THAT WE JUST
DEFINED TO EXIST...

The Dolphins of Taiji

By Claire Kitamura



Japan is rightly known for its amazing cuisine, trendy locations, and anime, but some aspects of Japan are often overlooked when they involve some of the negative impacts of traditions in this society. Japanese culture is as diverse as many other countries across the world. All cultures have their own issues that need to be addressed. However, the tradition of killing dolphins in Taiji is the main focus of this article. Taiji is a town in the prefecture of Wakayama. It is located near the ocean which provides an abundance of fish and other living organisms popularly eaten. This is the reason for the popularity of fishing in the area.

Despite their cute appearance, dolphins are very important in the food web as they are one of the top predators of the ocean. They regulate populations of other oceanic organisms, maintaining a balance in the ocean's ecosystem. As a consequence, over a period of time, overexploitation of dolphins may have effects on ecosystems, similar to the situation with shark hunting as both are apex predators. Some people in Japan still consume dolphin meat which is proven to

be dangerous for human health. As we should know, levels of mercury in marine organisms increase as we go up trophic levels due to bioaccumulation. Dolphins, since they are in trophic level 4, can have very high mercury levels and if humans consume dolphin meat, this mercury will be stored in us for weeks or months which is why it is so dangerous. High amounts of mercury can lead to a series of health problems in both children and adults as they can damage the nervous system in adults and lead to impairment in neurological development in children (Rice et al.).

Balance

Over the years, media coverage regarding the slaughter of the dolphins in Taiji has sparked mass outrage across the globe. A documentary called *The Cove* from 2009 played a significant role in informing the world of the situation. It highlights the attitudes of the people contributing to the killings of the dolphins. They forcibly prevent people from videotaping and uncovering the brutal and inhumane ways of slaughtering the dolphins. After I had



Slaughtering the dolphins. After I had watched similar videos on the killings of these dolphins, I was appalled and disgusted by these fishermen. One of the main reasons as to why the events sparked major outrage was because of the methods of slaughter recorded on camera. A Japanese research paper discussed the decision to shift from slitting the dolphins throat to severing their spinal cord to make their death more humane, further claiming that the newer method enables death to be faster. However, footage displaying the same method showed dolphins dying for around five to six minutes (Macdonald). A video on youtube titled "Dolphins of Taiji" by Martyn Stewart shows the method of stabbing the dolphins vertebrae to paralyze the dolphin before inserting a wooden plug into the hole to prevent blood going into the water. None of these methods could be regarded as humane and no trace of empathy is visible through these methods. In order to lure the dolphins into the cove, the fishermen bang an object connected to the boat which then vibrates in the water disrupting echolocation (a method dolphins use to hunt and navigate). The pod of dolphins are then trapped by nets and boats into a specific area away from the public eye. The dolphins are either sold to marine parks and aquariums or killed to be eaten. As people find out more about the exploitation of dolphins and the methods of the fishermen's actions, many have protested, trying to shut down the hunt. Despite these protests to free the dolphins in Taiji, the fishermen are not stopping their acts, they have a dolphin-hunting season every year for fishermen to capture and/or kill the dolphins.

Although the annual Taiji Drive Hunt is still active every year, the number of dolphins slaughtered and captured have decreased over the years. In the 2000/01 season, approximately 3000 dolphins had been slaughtered with around 90 dolphins captured, however, in 2021/22, approximately 498 dolphins were slaughtered and 68 dolphins were captured (Dolphin Project). There have been many incidents where non-targeted species have been killed during these hunts, including whales. One whale drowned: because the people had tied the tail to the boat while the head was underwater for around twenty minutes, thrashing around as it struggled to breathe while the fishermen laughed (Barry). The treatment of the whale and the methods of slaughtering the dolphins shows the careless mindset towards these animals and the disregard they have for living organisms that are not human.

The views of the fishermen and Wakayama prefecture for why they slaughter dolphins every year has brought a new perspective to the table. "The town (Taiji) has a 400-year tradition of whaling, and has flourished over the years thanks to whaling and dolphin fishery" (Wakayama Prefecture). Though this may be true for whaling, dolphin hunting began in the 1960s which makes it relatively modern, the high-tech boats are often equipped with sonar

DOLPHINS ARE VERY IMPORTANT IN THE FOOD WEB

and radar technology with GPS making it a lot easier to find the dolphins ("Actions for Dolphins"). Even if it had been a traditional practice, many years ago, boats had not been motorized which would have made it harder for fishermen to catch the number of dolphins like they have been doing recently. "Like beef, pork, and chicken, whale and dolphin meat is commonly eaten...fishing them to meet the demand is not different in nature from other economic activities" (Wakayama Prefecture). This is true. Many people do eat chicken, beef, and pork on a regular basis because it is socially accepted but animals not commonly eaten that are seen as companions tend to spark outrage when people eat them. Where do we draw the line between friend and food? What do you think of these reasons? Do you think they should continue killing and eating dolphins?

One thing that really stood out for me throughout the researching phase of this article is the thought that most of the people who do consume dolphins are from the older generation; many younger people do not eat dolphins

anymore. As time goes on, the older generation will pass away and as a result, the frequency of dolphin hunting in Taiji could decrease because there will be less demand for dolphins. People have their own preferences of what they want to eat. Since we cannot prevent the consumption of meat, as it is our choice to eat what we can, industries should feel more empathetic towards the animals they kill for meat. The methods by which the people use to get the meat should be used in such a way that does not cause pain for the animal because if we were to put ourselves in their shoes, we would not want to be killed in a way that causes excruciating pain, or even killed at all.

RAGE

CHILDREN OF THE CROSSING,
FEEL MY WRATH.
MY RAGE WRITHES
WITHOUT CLOSE INSIGHT.
TILL MY BONES, THEY RUPTURE,
I SENSE MY DARKENED SOUL;
AS MY MIND BREAKS,
AND THE GALE WITHIN . . .
DO I FEEL MY LIGHT,
BEGIN TO DIM.

Time
does not
Forgive

I feel spring shift and autumn surge.
Children become unconceived,
and the elderly get ever livelier.

Time presumably reversed,
back to the good ways of old.
How may we miss those before,
how we may miss those to come.

Meanwhile, the babies die.
Children are without a future.
Winter's storms catch up and,
we re-die to again live our mistakes.

Benjamin Jackson

THE SCHOOL FESTIVAL 2022

Grade 7/8H+ Group Poem in Iambic Pentameter with rhyming couplets.

Prepared for a long time, so we were tired,
However, the result was so inspired,

Etsuetsu

We're smiling but beneath it all I too,
Am lonely for the school is split in two,

Mei

We sold bags from Afganistan to aid
The people over there who've been betrayed,
All with colorful strings and tiny beads
The kids donating coins to serve their needs.

Kiho

We did our best to lure our parents here
Threw some balloons but they sped off in fear,

Kento

Our booth had such a large crowd coming in,
Entire groups left the room with such a grin.

Rio

Our box of prizes started running short
So we all shared some signs we should abort,

Shusuke

I'm on the field, the goal to get some snacks
The shining water fight is super fun
I run across hoping no one attacks
Safe at the booth to score the prize I won.

Taiki

The field was full of people's shrieks of joy,
With water bombs the children can enjoy,

But leaving trash behind to be picked up,
There goes our fun, now in a paper cup,

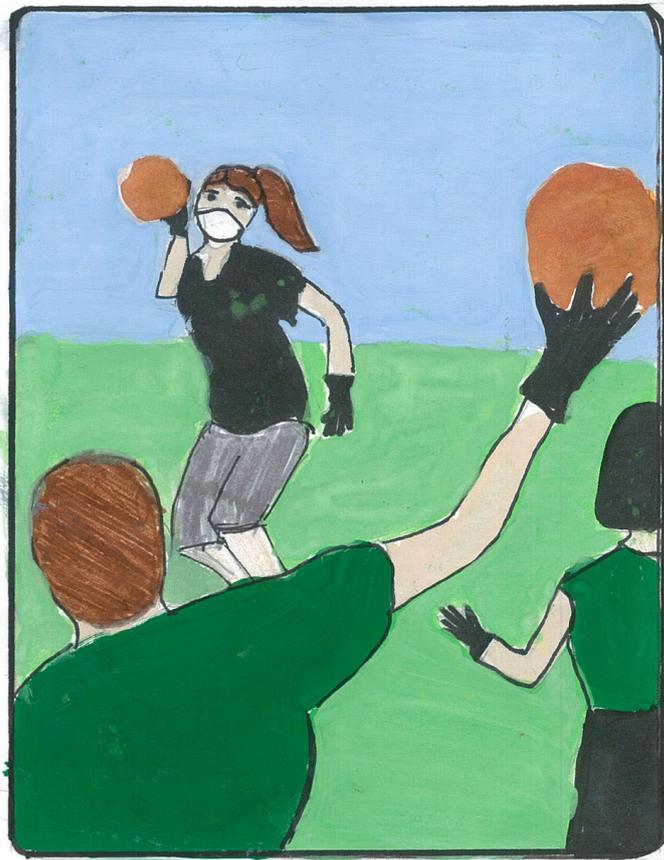
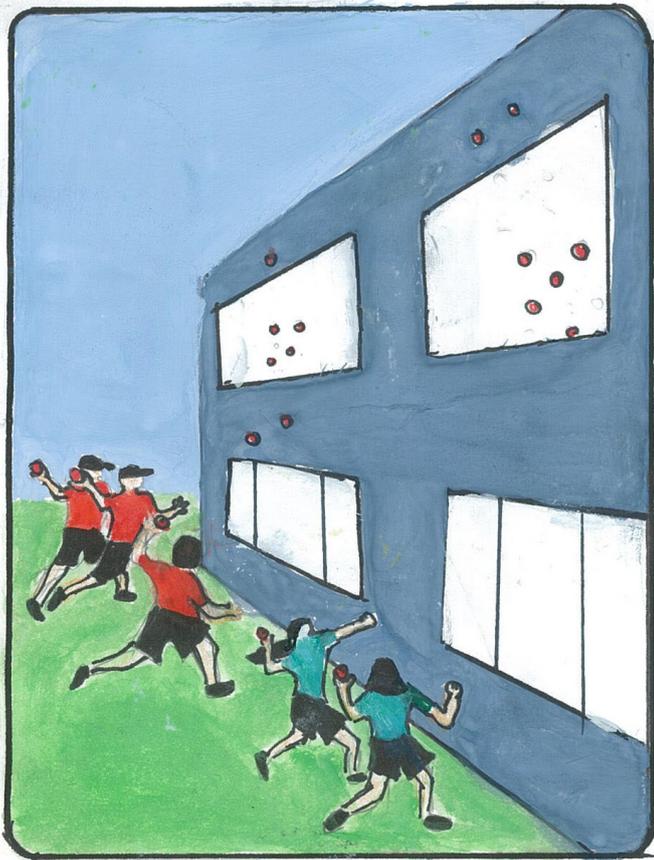
Miku

Oh no! The field is full of trash now so,
We have to clean the mess. Get bags! Let's go!

Kento

It was our first event and it was fun!
We kids were happy and so was the sun.

Lisa



SOIS Sports Day-2022

