

令和3年度
地域との協働による高等学校教育改革推進事業
【グローバル型】
英語発表成果報告書

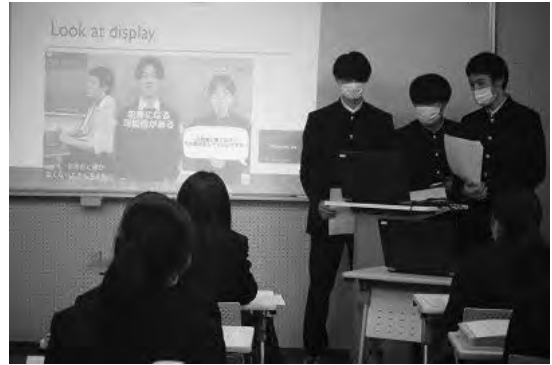


令和4年3月
山形県立山形東高等学校

Yamato Singapore Online Presentation(2022.1.28.Fri.) 共催:(株)JTB



オープニングセレモニーでの校長先生の英語挨拶



英語発表会の様子



国際交流の様子



生徒より御礼の言葉



シンガポールのエピソードを交えての小野主任の英語挨拶



シンガポール英語発表会受賞チームの記念写真(1~3位)



シンガポールとのオンライン交流のバーチャルツアー集合写真

Preface

Our school has incorporated inquiry-based learning into the curriculum. The aim of this study is to improve the students' attitude toward tackling global and local problems, as well as their academic knowledge and skills. For this purpose, the students set up a theme they are interested in, and have been engaged in their project to solve the problem for about one year. This book is a collection of research summaries of the projects. It contains 17 projects on a wide range of topics by 56 students in total.

It goes without saying that the ability to communicate in English is essential when you tackle global issues cooperating with people from different countries. In order to improve communicative competence, you need to have as many opportunities as possible to use English in real-life situations. Therefore, we planned a trip to Singapore in order to provide the students with a chance to make presentation on their projects in English to teachers and university students. However, the trip to Singapore was cancelled because of the pandemic of COVID-19. In compensation for this, we held International Exchange Seminar inviting 11 Assistant Language Teachers and Coordinators for International Relations to our school on January 13. We also had Singapore Online Seminar on January 28. In the seminars, the students made presentations, answered questions by English speakers, and discussed various topics. Some students had difficulty communicating in English at first but all the students made remarkable progress through these experiences. I expect they will be of great help for their future career.

Lastly I would like to express great thanks to those who supported the students in working on their projects and those who participated in the seminars.



Principal
Sugai Hidehiko

The Principal made a speech in English

Yamato Internatnional Exchange Seminar(2022.1.13.Thu.) & Yamato Singapore Online Presentation(2022.1.28.Fri.)

No 受賞	班 No	1 1 分野	テーマ English title	page	リーダー	メンバー2	メンバー3	メンバー4	メンバー5	メンバー6	メンバー7
1	A3	地域振興	山形ハッカを県内に広めよう (高橋班) Let's make Yamagata Hakka famous	1~ 4	2634 高橋咲彩	2237 丸子実桜	2211 小松優子	2228 豊原万葉	2323 千塚花凜	2328 深瀬智紗都	
2 2位	A11	地域振興	BON VOYAGE YAMAGATA Bon Voyage Yamagata	5~ 8	2632 鈴木心	2528 荒木瑠璃華	2530 鏡梓太	2629 木島悠那			
3	B1	暮らし改善	プラスチックの海ができた今 On Using Plastic	9~ 10	2526 安達文葉	2527 阿部葉々子					
4	B3	暮らし改善	錯視で「立体」交差点 Optical Illusion at a Three-dimensional Intersection	11~ 12	2628 小木曾洗太	2631 齋藤世界	2532 四釜寛大				
5	C2	防災減災	避難所RPG~高校生と“考える”を学ぶワークショップ~ Shelter Role-Playing Game~workshop for high school students to"think"~	13~ 14	2533 渋谷真由香	2627 梅津知咲					
6	D9	ものづくり	生活を豊かにする道具作り Creating tools to enrich our lives	15~ 17	2539 渡邊裕士	2223 高橋瑞奈					
7	E1	国際関連	ボードゲームで世界を知ろう Let's know global issues through board games	18~ 19	2117 佐藤美羽	2232 保科咲紀	2336 渡辺乾太	2534 鈴木志歩	2630 木村瑠那		
8 1位	E2	国際関連	私たちの代替肉の利用法 Possibility of Alternative Meat	20~ 22	2636 野口凌	2204 井上海	2226 田中大翔	2529 大沼俊介	2531 工藤英太		
9	E6	国際関連	教育のリサイクル Cycle of Education - To facilitate education in Thai slums.	23~ 27	2635 田中葵	2537 水井葉々子					
10 3位	F10	人文 (教育)	高校生が自信をもって発言するために Making wonderful active classes ~to speak confidently~	29~ 31	2638 村田明穂	2538 村山紗弥	2640 渡辺成哉				
11	F15	人文 (宗教)	昔話から見た国民性の比較 Comparison between folk tales and national characteristics	32~ 34	2639 吉田千咲	2419 瀧田琴莉					
12	F18	人文 (社会科学)	LGBTQ教育を通して、すべての人が生きやすい社会へ Hello Gender ~To raise awareness of gender differences~	35~ 38	2536 松山季咲	2535 高橋由那	2633 高嶋薫	2637 原田南			

※受賞は2022.1.28.のYamato Singapore Online Presentationの順位

※ 国際探究科生徒

以下は、コロンビアビジネススクールVenture for All Program、つくばサイエンスエッジ等の英語発表

No 受賞	班 No	1 1 分野	テーマ English title	page	リーダー	メンバー2	メンバー3	メンバー4	メンバー5	メンバー6	メンバー7
1	A1	地域振興	さくらんぼを利用した山形の魅力発信 Spreading the attraction of Yamagata using cherries	39~ 40	2138 三浦こはる	2205 角口碧					
2	D8	ものづくり	守ります あなたの自転車 Protect your Bicycle!! With sound!!	41~ 42	2510 後藤颯太	2615 工藤重成	2624 矢口翔和				
3	G5	化学	イオン交換樹脂を用いた新たなクリーンエネルギーの開発 Development of electric power source using ion exchange resin embedded in agar membrane	39~ 42	2317 佐々木惟	2222 高橋浩太	2307 小野聖	2320 鈴木凱敏	2331 松田直也	2411 木村達也	2430 布施拓吾
4	K9	物理	防振システム改革 A vibration-proof system with magnetic force	47~ 48	2625 渡部知哉						
5	K12	物理	生ごみ処理を兼ねた微生物発電 Microbial Fuel Cell for Home Use	49~ 50	2612 齋藤佳奈	2621 長谷川優之介	2524 吉田瑞基				

A3

Let's make Yamagata Hakka famous

2-6-34 Takahashi Saya 2-2-11 Komatsu Yuko 2-3-23 Chiba Karin
2-2-37 Maruko Mio 2-2-28 Toyohara Kazuha 2-3-28 Fukase Chisato

1

Hakka??

2

3

“Hakka”

Japanese peppermint

4

Flowering points is :

Western

Japan

tips of stalks

Axils
The point of divergence between the upper side of a leaf and the stem from which it springs.

5

Which scent is stronger?

Western

50~60%

<

Japan

65~85%

6

“Yamagata-hakka”

Japanese peppermint from Yamagata prefecture

7

History

Hakka Yamagata

8

2,000 years ago

Last 19 C.

China Japan Hokkaido Yamagata

Export to London

9

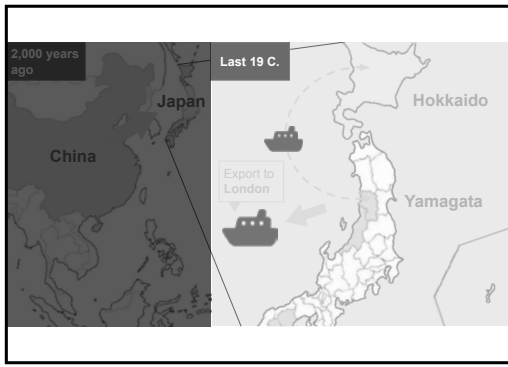
2,000 years ago

Last 19 C.

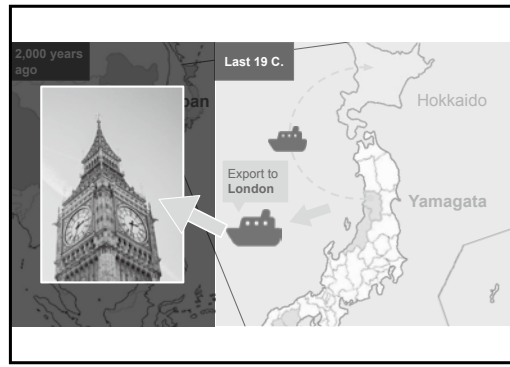
China Japan Hokkaido Yamagata

Export to London

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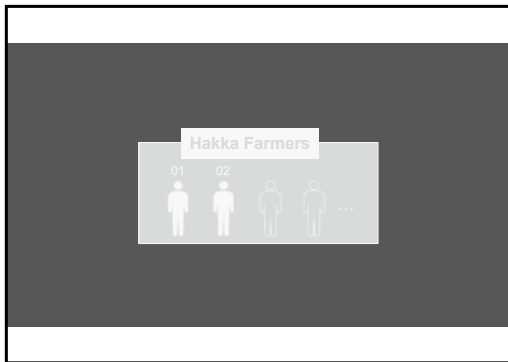
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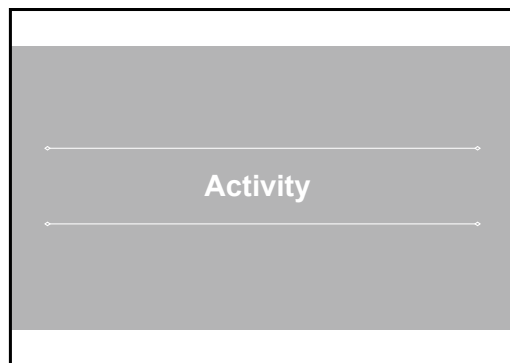
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18



19



20

Activity

- 1 Understanding about *hakka*
- 2 Publicity activity
- 3 Sales of collaborative product

21

Activity

- 1 Understanding about *hakka*
- 2 Publicity activity
- 3 Sales of collaborative product

22

1. Understanding about *hakka*

23

Activity

- 1 Understanding about *hakka*
- 2 Publicity activity
- 3 Sales of collaborative product

24

2. Publicity activity

25

We gave out 300 *hakka* bouquets

26

2. look-back

- Communication
- Telling history enough
- Cause Time management

27

Activity

- 1 Understanding about *hakka*
- 2 Publicity activity with THEATER SIDE CAFE SLOW JAM
- 3 Sales of collaborative product

28

2. Publicity activity

29

3. Collaborative menu

30

3. Collaborative menu

Lemon Hakka Cookies

Dried hakka

Dried lemon peels

33

31

3. Collaborative menu

Butterfly pea tea with hakka flavor

Lime

Lemon grass

Dried hakka

Butterfly pea

34

32

3. Number of units sold

× 123 packs = × 492

× 33 cups

35

33

3. Customer questionnaire result

Q Do you want to buy hakka product again?

Age Group	Percentage
over 50s	10.0%
30-40s	40.0%
10s	46.7%
20s	3.3%

Response	Percentage
Yes	96.7%
No	3.3%

36

34

Future prospects

37

35

New Goal

People incorporate Yamagata-hakka into daily life.

History	Product development
<p>We become history rooted in yamagata</p> <p>Pass down history</p> <p>Telling history of hakka</p>	<p>What we can do now is creating an opportunity.</p> <p>Proposing how to use hakka as food</p>

38

36

The hidden attraction

Yamagata hakka

39

37

WORKS CITED

- ▶ "[Species of mentha] Hakka no syurui (in Japanese)," Kitami Hakka Tsusho Co., Ltd. Web. 2 Feb. 2022.
- ▶ "[History of hakka in Japan and in the world] Nihon to sekai hakka shi (in Japanese)," Kitami Hakka Tsusho Co., Ltd. Web. 2 Feb. 2022.

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38

Acknowledgements

Takadama hakka sousou no kai [高嶺薄荷爽草の会]

Takadama elementary school (in Tendo City)

Montedio Yamagata Co., Ltd.

Moss Yamagata Co., Ltd.

THEATER SIDE CAFE SLOW JAM

Shikama en Co., Ltd.

41

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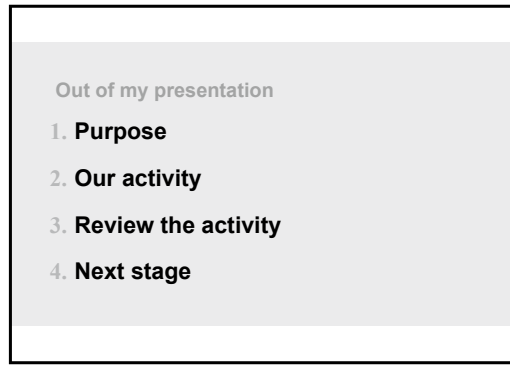
Thank you for listening!

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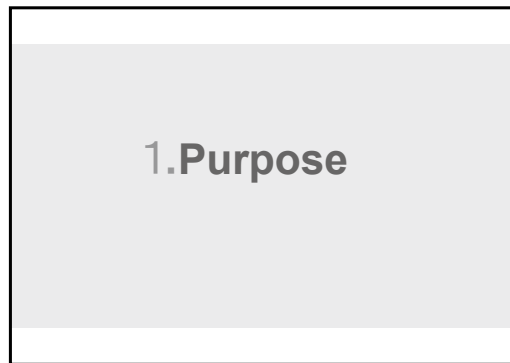
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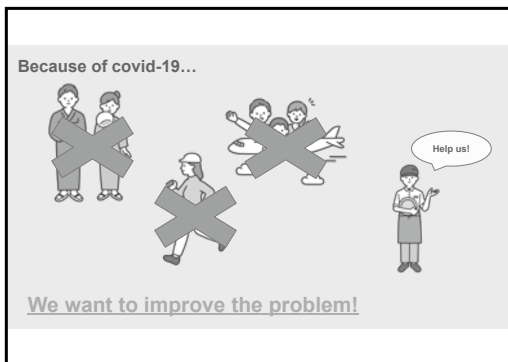
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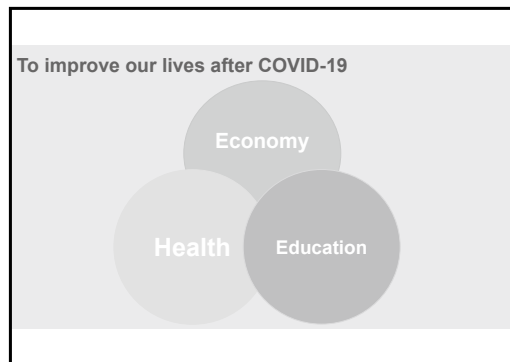
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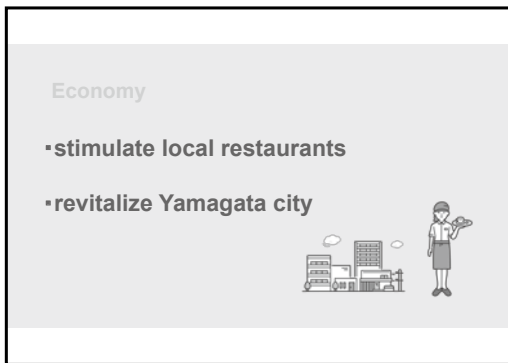
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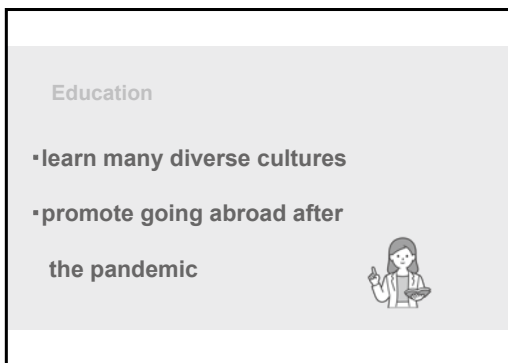
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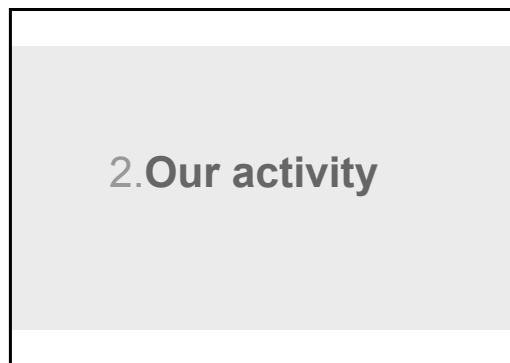
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9



10

To achieve these purpose...

World Travel Walk Rally@YAMAGATA!!!!



11

Why is walk rally & travel abroad?

Walk rally

1. Get exercises → Get rid of stress
2. Alternative to events called off due to COVID19
3. involve whole city


Precedent

- Daisen in Tottori
- Shinagawa in Tokyo


12

Travel abroad

1. We can't go travel even in Japan
2. Alternative to amusements
3. We feel like we are traveling!



90% people want to travel



13

World Travel Walk Rally @ Yamagata "0"

date
November 1-7

place
6 restaurants in Yamagata(Japan) Thailand China India Italy


subject
High school students in Yamagata

14

Concrete process

- ① Apply on Google
- ② Walk around 3 points and answer quiz
- ③ Eat special dish

15




16

Quiz


- ① To learn about world cultures
- ② original quiz Depending on restaurants' country

What is the most popular vehicle for transportation in India?



A. Rickshaw



What is behavior which you should not do in Thailand?



A. Stroke head

17

Classic Cafe

18

金竜

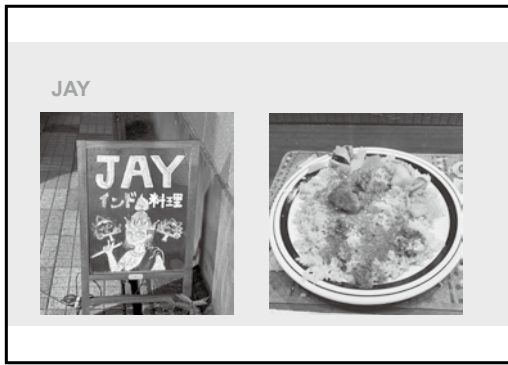



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フラム




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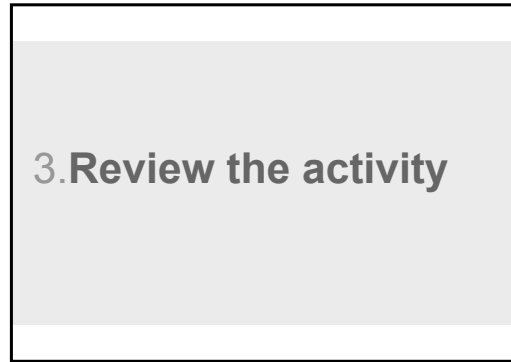
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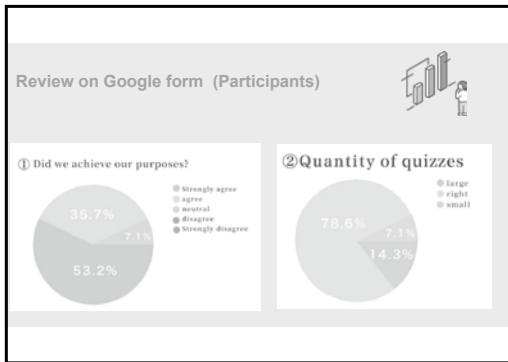
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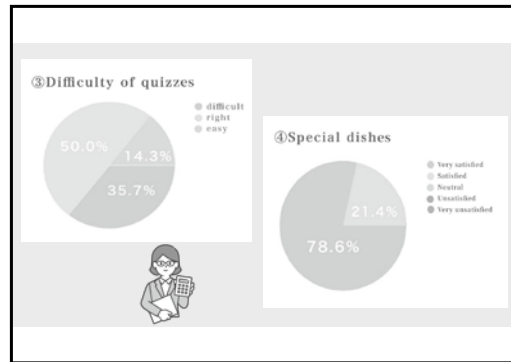
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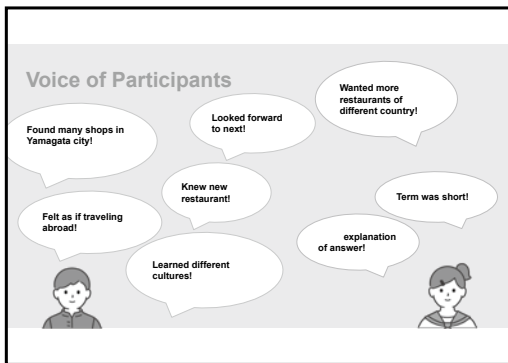
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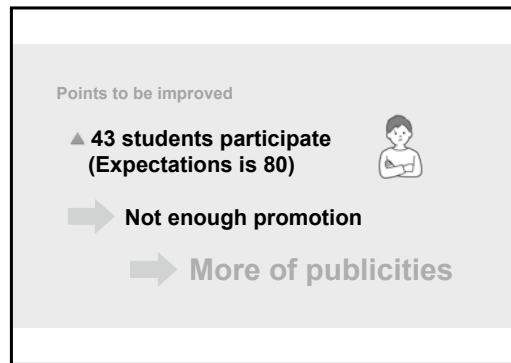
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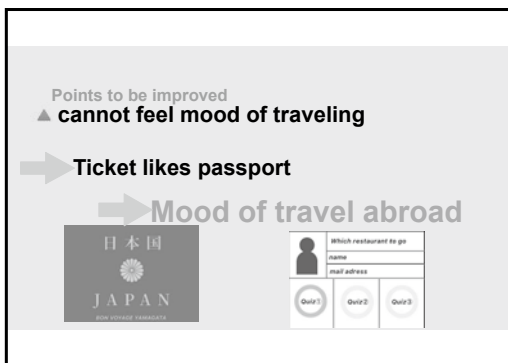
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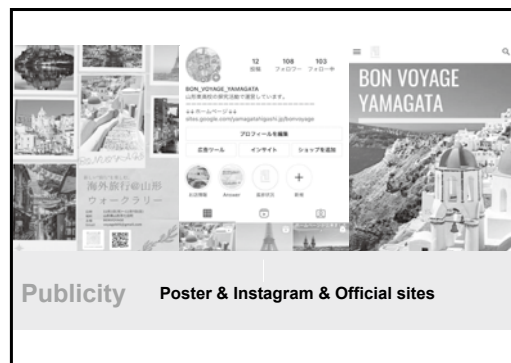
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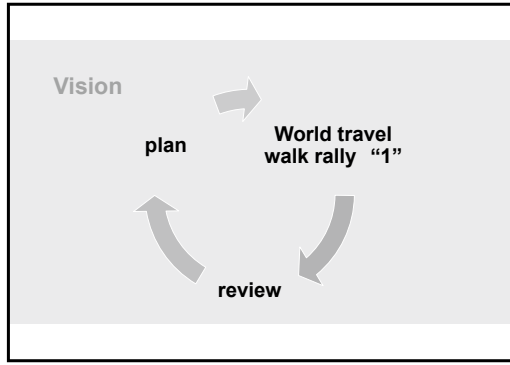
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30

4.Next Stage

31



32

World Travel Walk Rally @ Yamagata "1"

date
March-April(1month)

place
15 restaurants

contents
•quiz •special dishes

33

Thank you for listening!!

Official sites

Instagram

34

①Apply on google

What we have to write ?

- Your name
- Your mail address
- Which restaurants do you want to go

35

②Walk around 3 points and answer quiz

- Read the QR code
- Answer the 3 quiz
- Get special dish ticket

Noncontact!!

36

Discount & Special

37

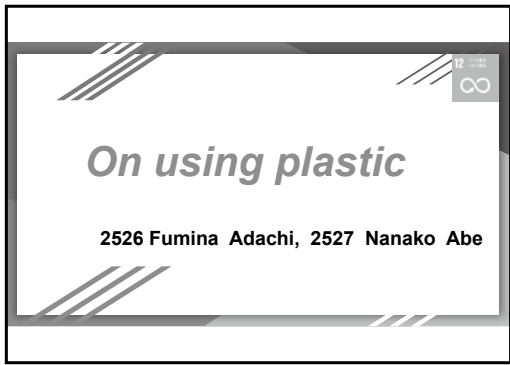
③go to the restaurant

Show this to waitress

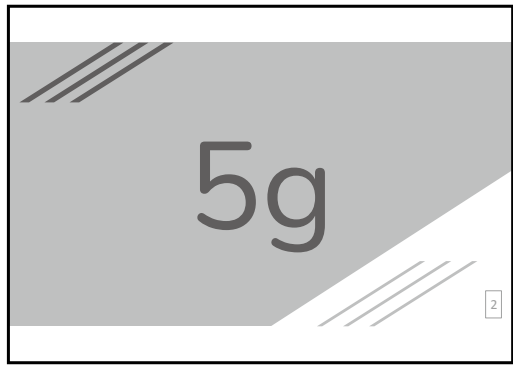
お食事券 フラム

お食事券 ジャイ

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1



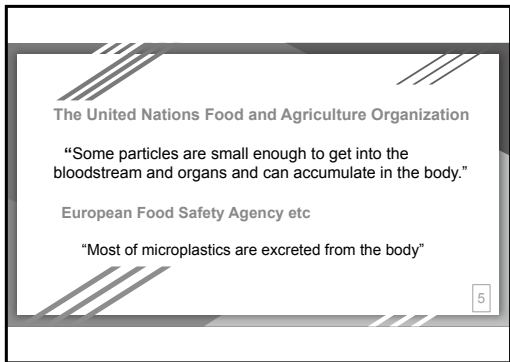
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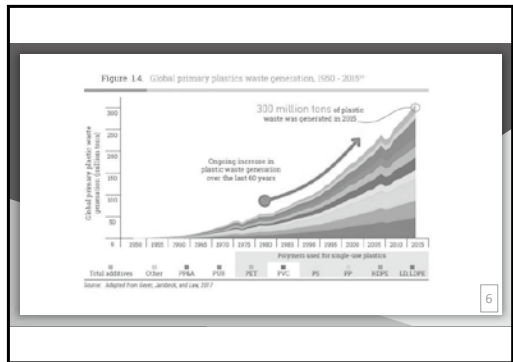
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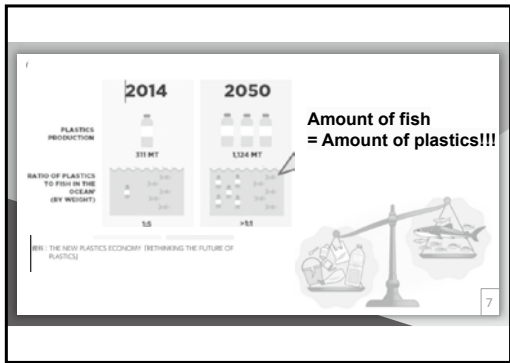
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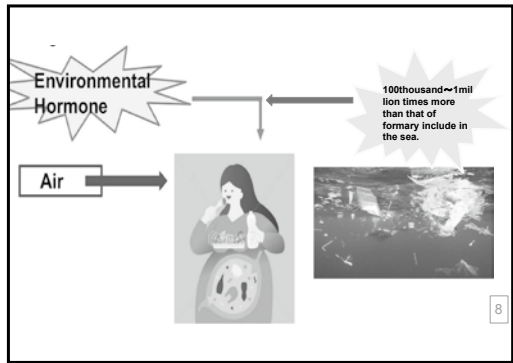
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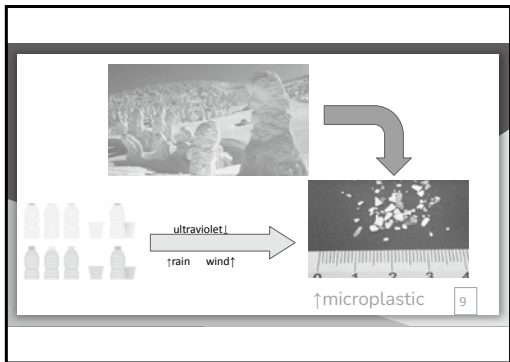
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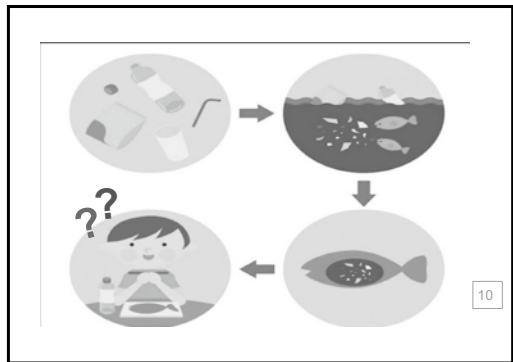
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9



10

First,

Considering the danger of plastic, we try to make new forms of containers which can reduce plastics.




However, it was difficult to think about the idea of the alternative from the beginning.

11

11

Short-term goal: To raise awareness of the plastic waste problem

Ultimate goal: To reduce plastic products



12

12

Our Activities

1. Interviewing Kao which work on reducing plastics.
2. Creating an account on Instagram, starting a YouTube channel.
3. Other

13

13

1. Interviewing Kao which work on reducing plastics.

- They prepare to take the lead in protecting environment as a model.
- They developed containers which are environmental friendly.
- Advice
It's effective to use SNS or newspapers in order to inform people of plastic problems.


14

14

2. Creating an account on Instagram and starting a Youtube channel.

We will...

- Post some information about plastic on Instagram.
- Post some animation about plastic on YouTube.



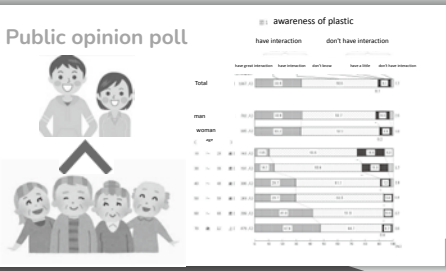
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Public opinion poll

■ awareness of plastic


have interaction don't have interaction



16

16

Pictures



17

17

3. Other

Try to make connection with Yamagata Newspaper company to get adults know information about plastic.

18

18

References

[/storage/emulated/0/Download/large_x45-42G0HWewfZWOMkGip87A11_Yj35x8la-nQ_Qs4A.jpg](#)

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<https://yopurelifestudies.jp/>

https://www3.shk.or.jp/news/special/news_seminar/ijijij17

19

19



20

20


OPTICAL ILLUSION AT A THREE-DIMENSIONAL INTERSECTION

2628 OGISO KOUTA
2632 SAITOU SEKAI
2532 SHIKAMA KANTA

1

today's menu

1. optical illusion
2. three dimensional intersection
3. casual driving
4. create stop mark
5. bicycle
6. Big news
7. future outlook



2



What is an "optical illusion?"

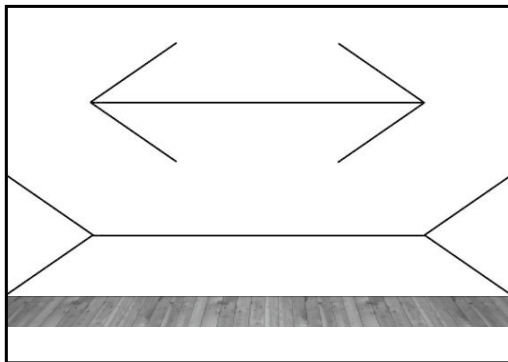
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What is an optical illusion?

Psychological phenomena that are different from the actual ones viewed with the eyes.

➡example

4



5

Three-dimensional intersection

It does not actually make the intersection three-dimensional.

Make the stop mark three-dimensional!

6

Causes of traffic accident

The most common is

Casual driving

➡Image

7

What is casual driving?

Lack of concentration and attention

➡Image

8



9

Create stop mark!!!

The photo is next ➡

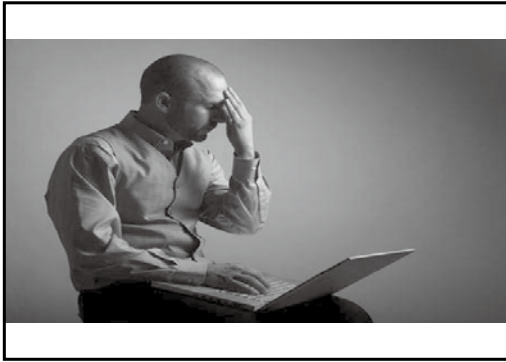
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11

Difficult to realize...

12



13

We looked at the bicycle

BAD riding of a bicycle is causing a traffic accident.

Example →

14

Example

- Riding on the right side
- There are many rows
- Riding on the sidewalk
- Wearing earphones

etc.

15

Cycling advocacy

- promote cycling
- support of cycling
- safety and convenience of cyclist

we want to create a bicycle-only road

16

Big news!!!!

Actually, we started to run TikTok to spread the concept of cycling advocacy!!

17

Look at display

18

great!


19

Future outlook

Spread the concept of cycling advocacy much more people!!!

20

C2



Shelter Role-Playing Game


~workshop for high school students to “think”~

Yamagata East Senior High School
Shibuya Mayuka
Umetsu Chisa,

1

I.Our goal

encourage high school students to think deeply



2

I.Our goal -motivation


Thought experiment
an activity of thinking about the problem which has different choices

3

I.Our goal -motivation

Making thought experiments

advice



4

I.Our goal

What we really wanted to do

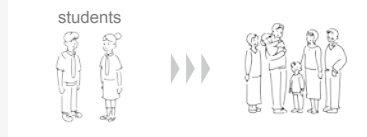
To think deeply and help others to do so

5

2.Activity

— role-play —

students



→ best way to achieve our goal

6


2.Activity

Program of the workshop

7

2.Activity -program


1.Self-introduction and icebreaker



8

2.Activity -program

2.Discussion



Divide relief goods into the people who escaped from dangerous places


9

2.Activity -program

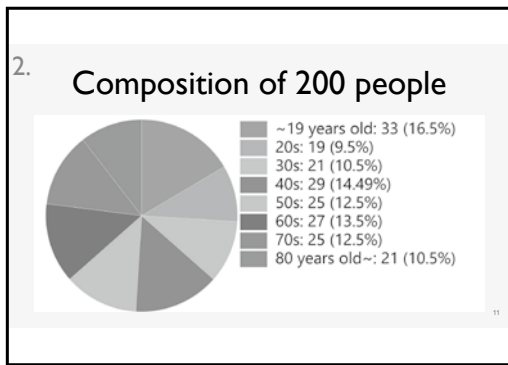
Situation of the shelter

- 600 portable toilets
- 135 blankets
- 200 people

You play a staff.



10



11

2.Activity -program

Important points of view

age special conditions

12

2.Activity -program

3.Presentation and Q&A

Show & Ask

↓

Understand others' thoughts

13

2.Activity -workshops

Oct.9

2 students from other school joined us.

14

2.Activity -workshops

Reflection points Oct.9

<ul style="list-style-type: none"> ○Different ideas ○could think more deeply →achieve our goal 	<ul style="list-style-type: none"> △ few participants △Difficult to understand
---	--

15

2.Activity -workshops

Oct.29

Tankyu class

↓

more students

a data of Yamagata City

↓

reality

16

2.Activity -workshops

Oct.29

5 students joined us.

17

2.Activity -workshops

Reflection point Oct.29

- Lively discussion
- imagine others' views
- achieve our goal
- △Details

18

2.Activity -convention

My Project Award 2021


19

The final workshop

Feb.11(Fri)

online

20

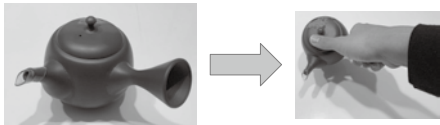
D9 

Creating tools to enrich our lives

by 2-5 39 Watanabe Ryoji 2-2 23 Takahashi Runa

1

Let's pour some tea!



2

But what if you're left-handed?



3

More convenient tools!

4

Target


Create convenient household goods

And finally commercialize

5

Impetus

Inconveniences in daily lives



Solve problems with useful goods

6

Activities to date

- 1 Research at 100-yen stores
- 2 Planning ideas and drawing blueprints
- 3 Receiving advice from professors
- 4 Creating a "Dirty Prototype"

7

1 Research at 100-yen stores

Subject

Trends in useful goods

8

1 Research at 100-yen stores

Result

Household goods

9

1 Research at 100-yen stores

For example...



10

1 Research at 100-yen stores

11

2 Planning ideas and drawing blueprints

A large number of ideas

Their blueprints

12

2 Planning ideas and drawing blueprints

PT 1 blackboard eraser PT 2 brush PT 3 shoes

13

2 Planning ideas and drawing blueprints

PT 4 dustpan PT 5 shelf PT 6 curtain clips PT 7 clothespin

14

2 Planning ideas and drawing blueprints

PT 8 pot lid PT 9 rice scoop PT 10 storage box

15

3 Receiving advice from professors

Tohoku Art & Design University

16

3 Receiving advice from professors

What should we do?

17

3 Receiving advice from professors

Advice from professors

Create what you want to create.

18

3 Receiving advice from professors

Advice from professors

Improve existing products.

19

4 Creating a "Dirty Prototype"

"Dirty Prototype"?

What's that?

20

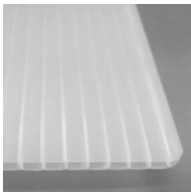
4 Creating a "Dirty Prototype"

Prototype
cheap materials
check its size and function

21

4 Creating a "Dirty Prototype"

Plastic cardboard



22


4 Creating a "Dirty Prototype"

We'll show you! →

23

4 Creating a "Dirty Prototype"

A teapot
(Japanese style)



24

4 Creating a "Dirty Prototype"

Left hand or Right hand

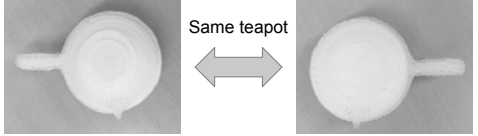
↓

Easy to use

25

4 Creating a "Dirty Prototype"

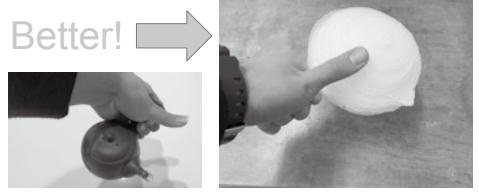
Handle can be rotated



26

4 Creating a "Dirty Prototype"

Better! →

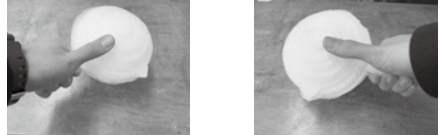


27

4 Creating a "Dirty Prototype"

Regardless of dominant hand

Left Right



28

Future activities

- improvement of teapot

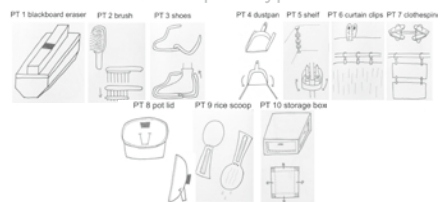
Material as product?

The product name?

29

Future activities

- More prototypes



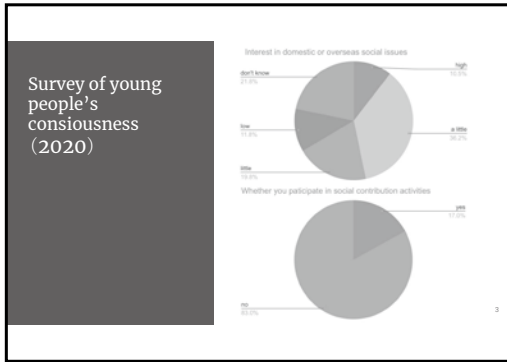
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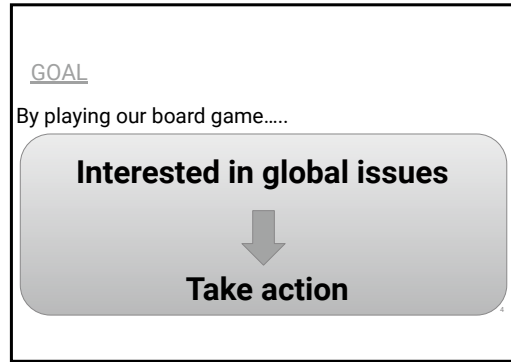
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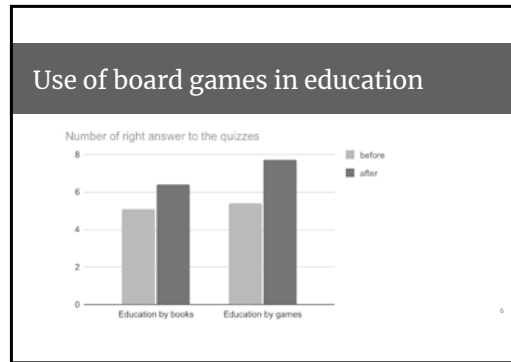
3



4

1. Enjoy learning
2. Put yourself in someone else's shoes
3. Generate rich interactions

5



6

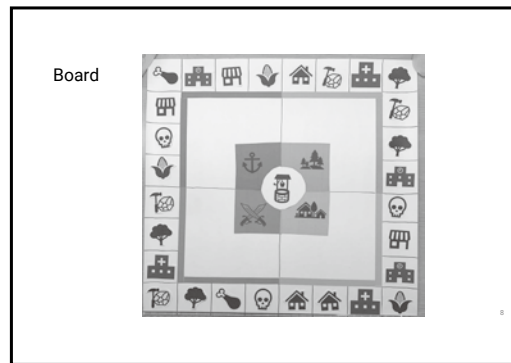
About our board games

What to do in the game

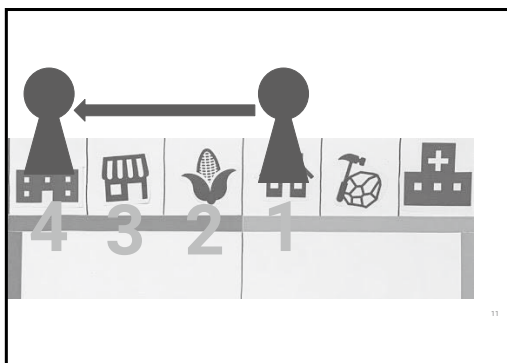
- Collect materials and build constructions
- Achieve personal goals
- Meet the conditions and prevent disasters

➔ Get a score

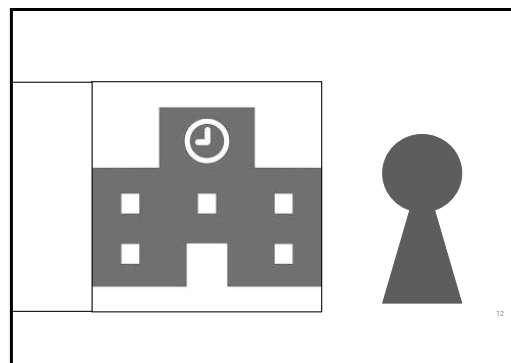
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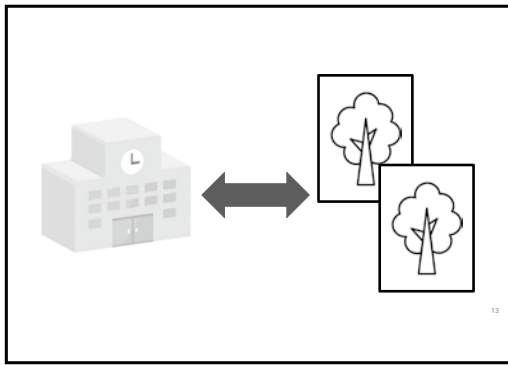
8



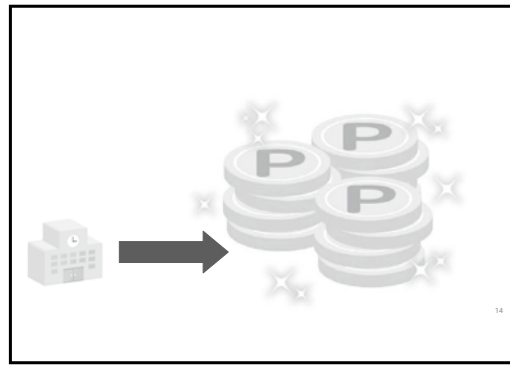
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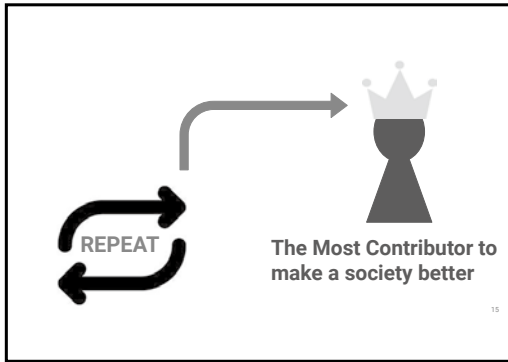
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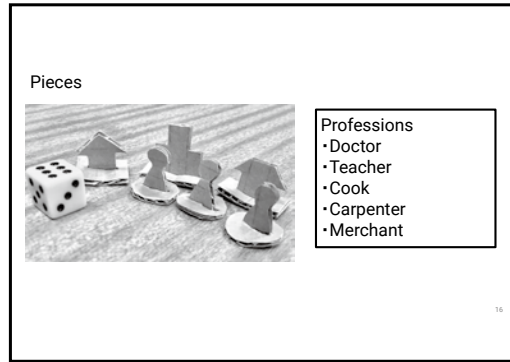
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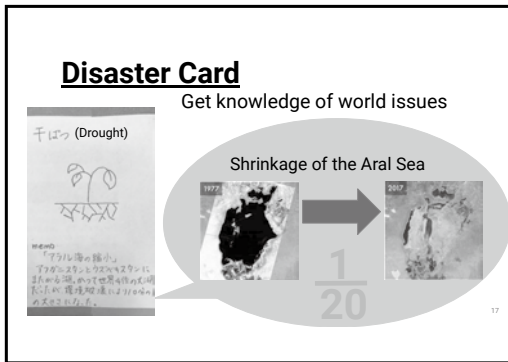
12



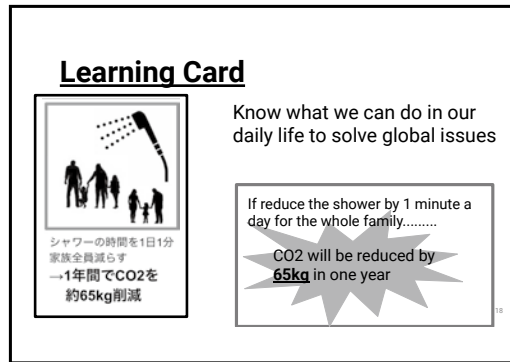
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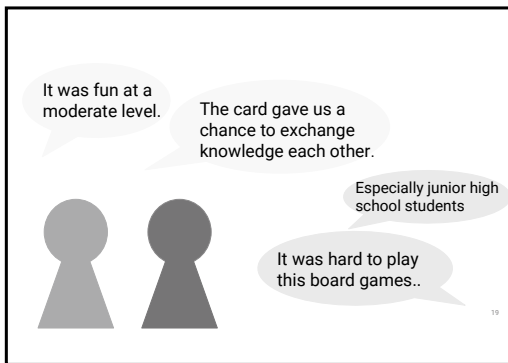
14



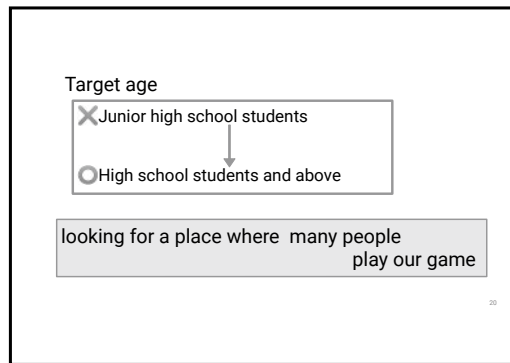
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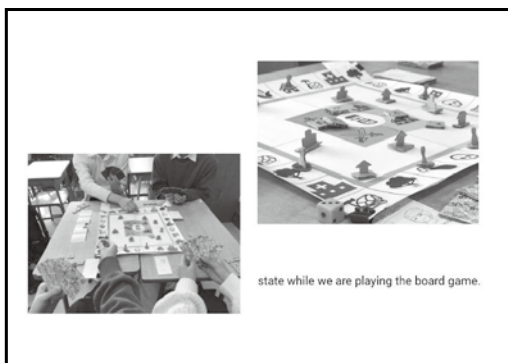
16



17



18



19



20

E2

1

Possibility of Alternative meat

Member
 Noguchi Ryo Onuma Shunsuke
 Kudo Sota Tanaka Hiroto
 Inoue Kai

1

2

Table of contents

1. Goal
2. Situation
3. Activity
4. Future Perspective

2

3

Let's Start!

3

4

1. Goal

4

5

1. Make Inclusive Society

Non Japanese people in particular!

5

6

2,Find how to use alternative meat

6

7

2. Situation

7

8

1,Increase of non Japanese

The number of non Japanese people is increasing (7712 in Yamagata)

Each person is

8

9

What happen?

○Differences make problems
 (Ex:difference of food in shelters)

➔We need to make inclusive society!

9

10

2,Problems of making meat

土地資源利用 (m)

動物由来肉	24.2
培養肉	0.24

飼料1%を生産するに必要な水量

- 牛 1kg: 飼料1kg × GRC 必要量 11kg
- 豚 1kg: 飼料1kg × GRC 必要量 7kg
- 鶏 1kg: 飼料1kg × GRC 必要量 4kg

1 飼料をくぐるには、大量の動物が必要になります。

10

11

To produce Meat

Lots of Time...

Lots of Water...

Lots of Land...

Lots of

11

How to solve these problem?

12

YES!!

Alternative meat!

12

13

What is alternative meat ?

It is meat made from vegetable materials.

13

14

3. Activity

14

15

1. Meeting

We took meetings with...

- Mr.Oyama,professor of Kyoto university
- Mr.Ono,International cooperation promotion member
- Syokunotikara cooperation,in Sinjo
- Kunimotosyokai,company in Okinawa

15

16

2. Questionnaire

We took questionnaire in Evacuation drills held by Association for International Relations in Yamagata

16

17

What people are concerned about and what people prepare.

checking the evacuation method,time,place

Preparing food and water

Preparing daily neccesion

Red : ratio of Japanese Blue : ratio of non Japanese

17

18

3. First Cooking

18

19

So...

We contacted Shokunotikara cooperation in Sinjo.

19

20

4. Second Cooking

Pre-boiled seasoned

seasoned

beef

20



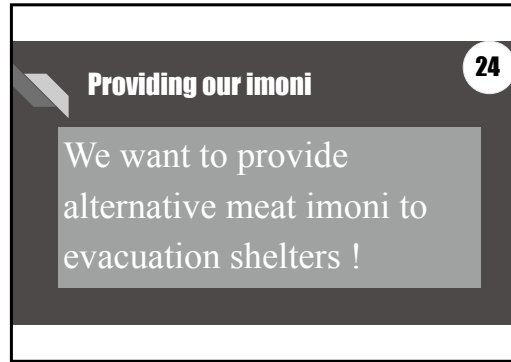
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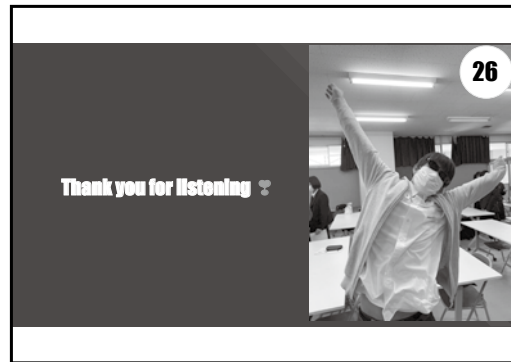
23



24



25



26




27

1 教育を
S.C.S

4 質の高い教育を
みんなに

【E6】Cycle of Education

2-6-35 Tanaka Aoi 2-5-37 Mizui Nanako



1

1

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- [1 Outline of our activities](#)
- [2 What is cycle of Education](#)
- [3 Our motive](#)
- [4 About Education Bank](#)
- [5 About making the booklet](#)

2

2

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- [3 Our motive](#)
- [4 About Education Bank](#)
- [5 About making the booklet](#)

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3

Outline of our activities

- [1 Education Bank](#)
- [2 Making the booklet about the current situation of poverty](#)

4

4

Outline of our activities

- [1 Education Bank](#)
- [2 Making the booklet about the current situation of poverty](#)

5

5

Outline of our activities

- [1 Education Bank](#)
- ⇒ support children's education and improve its quality

6

6

Outline of our activities

- [1 Education Bank](#)
- [2 Making the booklet about the current situation of poverty](#)

7

7

Outline of our activities

- [2 Making the booklet based on If the world were a village of 100 people](#)
- ⇒ improve student's awareness of poverty and spreading the understanding of poverty

8

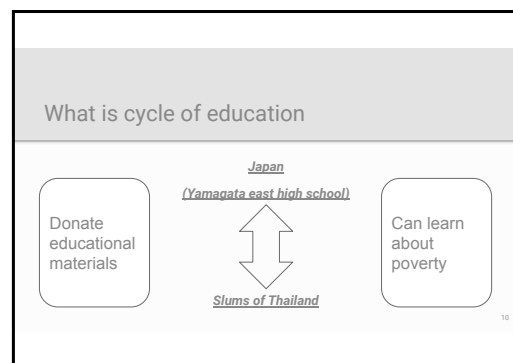
8

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Motive

- Senior's presentation
- Cross-cultural understanding

12


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- 5 [About making the booklet](#)

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Background of the slums


With the rapid industrialization of the 1960s people moved from rural areas to cities



14

Background of the slums


Did not necessarily have jobs
Can not pay rent even if they get a job because they were low wages



15

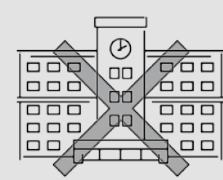
Background of the slums

Such people who had no place to live gathered and form a slum



16

no school



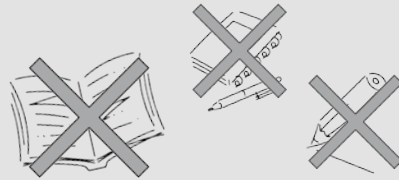
17

no teacher



18

no teaching materials



19


Children in slums cannot get a good education

20

We wanted to help them by learning this situation



21




22

What is Education Bank?

23

Education Bank


Target: Students in our school



24

Education Bank

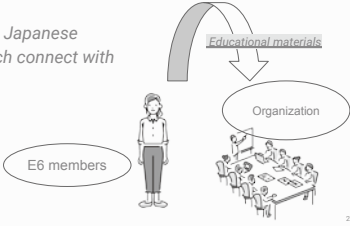
Set the box into which all the students can put educational materials they are not using anymore



25

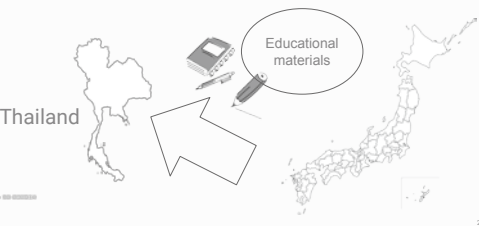
Education Bank

Donate them to a Japanese organization which connect with Thailand



26


Education Bank



27

Examples of goods

For example ...
Used pencils and erasers



28

Our goals

1 Education Bank

➔ support children's education and improve its quality

29

In fact

30

In fact


We were planning to carry out this activity after the winter vacation



31


In fact

We thought that students put in order their room things and found what they were using anymore during this period



32


In fact



The requirement period of the organization

33

In fact



The requirement period of the organization

34

In fact

~~Carry out Education Bank~~

▶ Determine just the form of activities and want junior students to take over our activity

35

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36

Awareness of poverty

We have knowledge of poverty



37

Awareness of poverty

On the other hand, We think poverty as other people's matter




38

Do you know this?

39

Do you know this?



40

If the world were a village of 100 people

Basic information

- Written by Kayoko Ikeda
- Published December 2001
- How many people in various situations exist by replacing the world population with 100 people

41

**75 people have a store of food.
There is a place to keep out the rain and dew.
But the other 25 people...
That's not the case.
17 of us cannot drink clean and safe water.**

42

**Out of a 100 people living in a village, 20 people are undernourished.
One of them is dying.
But 15 people are overweight.**

43

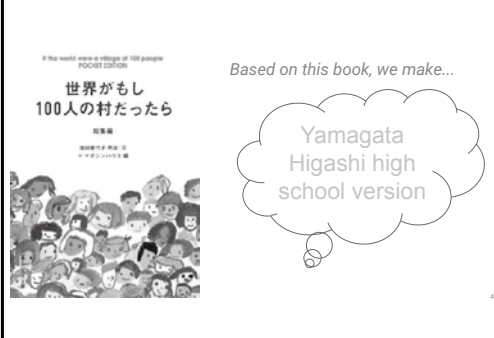
**One of the villagers received a college education.
2 people have a computer.
But 14 people can't read.**

44

What do you think?

45

Based on this book, we make...



46

We call it ...

If the world were Yamagata Higashi high school
⇒Yamatou version

If the world were a village of 100 people
⇒original version

47

If the world were Yamagata Higashi high school

Yamatou version is **club-based**.

Original version
replacing the world's population with 100 people

Yamato version
replacing the world's population with the number of club members

48

もし世界が山東だったら
If the world were Yamagata Higashi high school



E6 Cycle of Education
0635 Aoi Tanaka 0537 Nanako Mizui

49

For example

If you belong to soccer club
▶ read the various of soccer club

50



もし世界がサッカー部だったら
If the world were soccer club



51

51

世界には79億人の人がいますが、もしもそれを山形東高校のサッカー部の人数である30人に縮めるとどうなるのでしょうか。

30人のうち...

There are 7.9 billion people in the world, but what if we reduce it to 30 people that is the number of soccer club at Yamagata Higashi high school?

Out of 30 people ...

52

52

16人が男性です
 14人が女性です
 8人が子供(15歳以下)で
 19人が大人です
 そのうち3人がお年寄り(65歳以上)です



*16 are men.
 14 are women.
 8 are children (under 15 years of age)
 19 are adults.
 3 of them are senior citizens (65 years old or older).*

53

53

電気が利用出来る人は
 1990年は22人でしたが、
 現在では26人となりました
 学習に一番大きく影響するのは電気です。

*People who have access to electricity were 22 in 1990.
 But there are 26 now.
 The biggest influence on learning is electricity.*

54

54

Our goals

2 Making the booklet based on If the world were a village of 100 people

⇒ improve student's awareness of poverty and spreading the understanding of poverty


55

55


Thank you for listening!

56

56

F10 

Making wonderful active classes ~to speak confidently ~



0538 Murayama Saya
0638 Murata Akiho
0640 Watanabe Naruya

1

Contents


1. What is our project about ?
2. Research action
3. Experiment
4. Problems of Japanese education
5. Our ideas

2

What about?

Our hope
everyone to **get confidence** when we speak in front of classmates.

definition of active class
a class with lots of **confidence** and **opinions**




3

Why?

We have experiences
→we can't express what we **really think**

our thought

- we can't express well
- ↓
- we will not be satisfied
- ↓
- we will be afraid to express



4

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1. What is our project about ?
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Speaking class

- two times a week
- conversation in small groups or pairs
- speech our thoughts **in front of** our classmates

We often **hesitate** to speak in this class.

6

Causes

- Language (grammar,vocabulary)
- Japanese education (✖mistakes, be perfect)

speaking difficulty

in small group >> in front of many people

7

Questionnaire

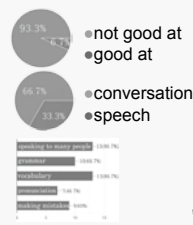
target person : 28 students
survey method : google form
period : 9/2~9/7
purpose : to find out their thought on speaking English

8

Result

Their weak points

- ①speaking English
- ②conversation in English
- ③grammer and vocabulary



9


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1. What is our project about ?
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Experiment

way: making two handouts
goal: to be able to speak English smoothly



11

Handouts ①

Useful expressions in conversation

Useful expressions in conversation

- for example to agree, to disagree, to change contents...

12

Handouts ②

Ways of thinking in English communication

- start with conclusion first
- use simple expressions

13

Feedback

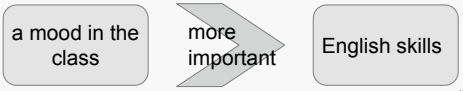
- ◎ easy to understand, good phrases
- ✗ difficult to use the thinking process in real situation

14

Problems

- the prints weren't effective for everyone.
- the way of feedback is not proper.

from experiment



15

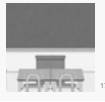
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1. What is our project about ?
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5. Our ideas

16

The problem of Japanese education

- Japanese culture
- The style of Japanese classes




17

Japanese culture

" the culture of shame "

(Ruth Benedict , 1946)



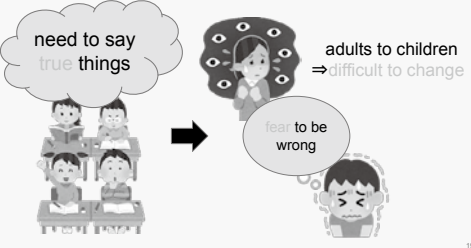
the culture of shame ⇒ prevent our self-expression
↓
prevents making active classes

18

need to say true things

adults to children ⇒ difficult to change

fear to be wrong



19

The style of Japanese classes

- ◎ a large amount of time to teach to get knowledge
- ✗ not focus on discussion
- ~~active mood~~

20


What is focused

[traditional] getting a lot of knowledge

[recently] +thinking skills

active learning

University entrance exams are changing as well



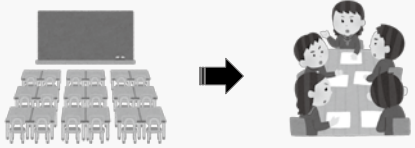
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① changing the layout of desks



o to take lessons

x to exchange ideas


o active learning

23

② reactions of teachers

Teachers should not deny the opinions too much

⇒ especially when there is no answer



24

③ the difficulty of the question

- appropriate hints
- question with a free answer

students don't need to find the right answer

more chance to express their original opinions

25

References

- 教育の方法-明日の学びを演出する- 山下政俊・湯銭恭正
- アクティブ・ラーニングの条件 堀祐嗣
- 国際言語としての英語 文化を超えた伝え合い 本名信行
- 日本語は世界一難しい言葉? 吉田智行
- <https://shukutoku.repo.nii.ac.jp>
- <https://english-club.jp>



26

Thank you for listening!

27

F15

4 QUALITY EDUCATION

Comparison between folk tales and national characteristics

2-4 Takita Kotori
2-6 Yoshida Chisa

1

background

2

• interest in tales
→ focus on folktales, which are handed down among people

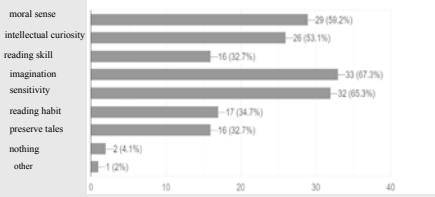
why folk tales?

① the first story that we read is folktale
② effect on children



3

Q. what is the positive effect from folk tales?




Effect	Count	Percentage
moral sense	29	(59.2%)
intellectual curiosity	28	(53.1%)
reading skill	16	(32.7%)
imagination	33	(67.3%)
sensitivity	32	(65.3%)
reading habit	17	(34.7%)
preserve tales	16	(32.7%)
nothing	2	(4.1%)
other	1	(2%)

4

purpose

5

know unique points
get interested in folk tales



↓

international understanding
protect traditional stories

6

way of comparison

7


use two countries to compare

1 Japan
2 Germany


use Grimm Fairy Tales which collected by Grimm brothers in 19 century

8

What Shinto is?



Japan
Shinto




Europe
Christianity

9

Shinto is.....

• Object of worship
→ All the deities

it is believed that a god exists for **everything**.



10

general thoughts about national characteristics

Japan
hardworking, politeness, kind

Germany
thrifty, respecting privacy, keeping to time and rules

(日本人の国民性 調査統計数理研究所、expatriot.in, Search of National Character/ Svetlana G. Ter-Minasova)

11

used books

Japan (34stories)



Germany (45stories)



12

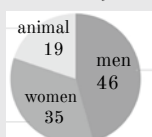
results

13

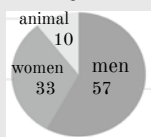
1.tendency

Main character's gender rate

Germany



Japan

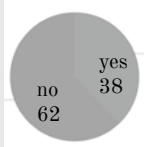


日本の昔話(徳田和夫), 1812完訳グリム童話より

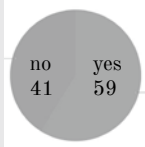
14

Whether animals appear

Germany



Japan



30x

15

2.detailed difference

compare Cinderella



Komenbuku - Awanbuku/Miyoko Matutani

there are similar stories in each country!

16

same point

- a girl is bullied by her stepmother and sister
- she meets prince or rich person
- she shows her identity (ex.shoes)
- she gets married and becomes happy

the story is almost same!

17

different point

● **Japan**
win her sister by waka, traditional Japanese poem
↓
become happy due to showing one's culture

18

■ **Germany**
there are more cruel scenes
↓
trenchant distinctions between right and wrong

19


conclusion

20

Japan...attach importance to **nature**
→kindness
Germany...attach importance to **God**
→keeping time and rules

21

it's difficult to judge from only folk tales.....
But folk tales have different point of view



22

new problem

23

Current picture books are changing!
how?
peaceful solution
EX. defeat enemy→discuss and make peace with

24

Reference
初版グリム童話 乾佑美子 訳
日本昔話ハンドブック 稲田浩二
グリム童話と日本昔話 比較民話の世界 高木昌史
日本の昔話 徳田和夫
「絵本の読み聞かせがその後の人生に及ぼす影響」浜崎隆司
幼児・児童の成長を支える「お話」の教育(I)

25

THANK YOU FOR LISTENING!!

26

F18

HELLO GENDER

5 ジェンダー平等を実現しよう

~To raise awareness of gender differences~

1

Question

Do you know this person?

2

Answer

transgender

Laurel Hubbard from New Zealand

weight-lifting player in TOKYO olympic

3

Table of contents

- 1.Motive
- 2.Goal
- 3.Way (1)The message (2)The specific content
- 4.Acknowledgments

4

1.Motive

5

last year...

change our school uniform!

seniors

→

lightbulb icon

want to know LGBTQ+ more!

we

6

What is LGBTQ+ ?

Lesbian...

Gay...

Bisexual...

transgender...

Questioning...

7

What is LGBTQ+ ?

Lesbian...
a woman who is sexually attracted to other women

8

What is LGBTQ+ ?

Gay...
a man who is sexually attracted to other man

9

What is LGBTQ+ ?

Bisexual...
a person who is sexually attracted to both men and women

10

What is **LGB Q+** ?

transgender...
a person who feel that they belong to the other sex , and not the sex they were born with , and who express this in their sexual behavior

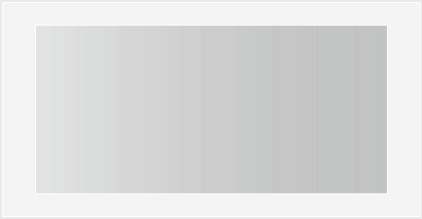
11

What is **LGB Q+** ?

Questioning...
a person who has questions about their own gender


12

Gender gradation



13

In Japan...




No understanding No education No law

14

2.Goal

15

《everyone can live as we are》




understanding foundation

16

3.Way


17

first plan
→teach to children face to face



18

But...




covid-19 school guideline

→couldn't put our plan

19


make our picture book



spread understanding of **LGBTQ+**

20



Target
 ★elementary school students
 especially...
 1st and 2nd grade



21

before **now**

only LGBTQ + People all are different.
 respect everyone's
 personalities




22

(1)The message

23

The message of our book

①respect their identity






24

The message of our books

②everyone has minorities

for example...



25

(2)The specific contents

26

The specific contents

①cherish what you like

ex:occupations , our belongings' colors
 and designs



27

The specific contents


②get along well with any person



28

The specific contents

③forms of families



29

The specific contents

④ various genders



30

☀️ **set more scenes in daily life
and propose our solutions**



31

31


☀️ **the advanced contents**
ex) LGBTQ+, the history,
gender education



32

32

☀️ **exhibit the book at an elementary school**



33

33

At work ...



34

34


to enjoy our book...

☀️ **colorful** ☀️ **cute**

☀️ **all handmade** ☀️ **simple words**

↓

fun book




35


35

4. Acknowledgments

Ikeda Hirono
a Yamagata university associate
professor



Inoue Satoko
a director of Satoko Ladies clinic



36


36

Thank you for listening !

37

37

Thank you for listening !



38

38

Spreading the attraction of Yamagata using cherries

Miura Koharu
Kadoguchi Aoi

1

Where is Yamagata?

2

About Our Hometown, YAMAGATA!!

- Festivals
- Snow
- Mountains
- Hot springs
- Food
- Crafts

3

Problem we want to resolve

• Prefectural Attractiveness Ranking

• 2020: **39th**
• 2021: **31st**
(out of 47)

→ In the future... **TOP 10 !!**

4

People's Recognition of Yamagata

• Questionnaire by Yamagata Mirai Labo

about **70%** of people outside Yamagata had the image of **cherries !!!**

5

Production of Cherries in Yamagata Prefecture

• Production of Cherries

produces **75%** of all the cherries in Japan!

6

How to solve the problem

~ From This Data ~

let cherries **make a buzz** >>> to promote our hometown!!

7

Original Web Shop

create **Web Shop plan**

☆ with the unique sensibility of high school students → originality

8

Our Shop name is...

Sakuranbox

9

Unique selling point ①

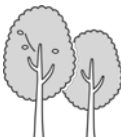
not only selling cherries, but also containing **everything related to cherries!!**

Existing sites(Amazon, Rakuten, Yahoo etc.) are **just selling products!**
+**Our strong desire** to convey the charm of Yamagata is included!!

10


Contents of Sakuranbox

- **Cherry products**
Including cherries that have been discarded due to some problems.
- **"Experiences"**
Cherry picking, tours, tree ownership
- **Interactive map**
Store information and photos of products



11


Image of Sakuranbox



12

Social Media Advertising

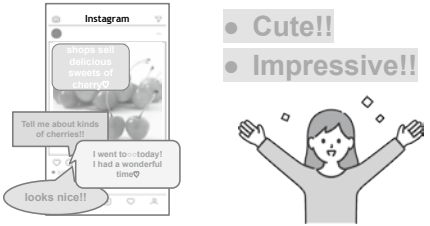
focusing on advertising using social media



- use **#Sakuranbox** to make information transmitted from both the webshop and the user
- **introduce** the shop → boost our sales
- **gain support** from people of the same age

13


Image of post



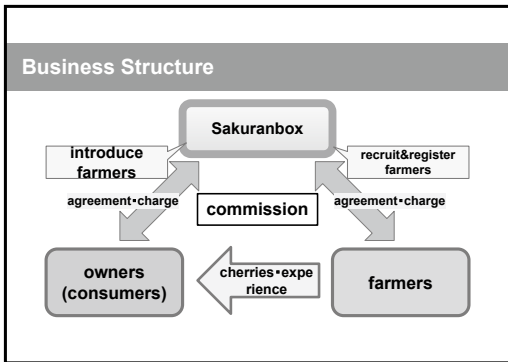
14

Business Structure

- buy and sell **products** to individuals
- connect **cherry farmers** and those who **want to become cherry tree owners**
- plan **tours** to earn commission



15



16

Breakdown of Sales and Expenses

項目	1900年	2000年	2010年	2020年	2030年	2040年
売上	¥1,000,000	¥1,000,000	¥1,000,000	¥1,000,000	¥1,000,000	¥1,000,000
売上(ネット)	¥800,000	¥800,000	¥800,000	¥800,000	¥800,000	¥800,000
売上(粗利)	¥600,000	¥600,000	¥600,000	¥600,000	¥600,000	¥600,000
売上(経費)	¥400,000	¥400,000	¥400,000	¥400,000	¥400,000	¥400,000
売上(利益)	¥200,000	¥200,000	¥200,000	¥200,000	¥200,000	¥200,000

17


Target and Market Scale

- target:
all people in Japan & inbound tourists
- market scale:
· food, beverages, and alcoholic beverages on the BtoC-EC market scale in the product sales field
>>> 1,691.9 billion yen

18

Target and Market Scale

- market scale:
· The amount of cherries produced (Yamagata70%)
>>> 36.2 billion yen



sufficient market for this business!

19

Summary

1. Use **cherries** to convey the charm of Yamagata
2. Target **all people in Japan and inbound tourists**
3. Create a web shop called **"Sakuranbox"**
4. Not only sell products, but also **"experiences"**
5. Use **social media** effectively
6. Aim for people to **actually visit Yamagata**


20

D8

Protect your Bicycle!!

♪With sound♪

5-10 Goto Sota
6-10 Kudo Shigenari
6-24 Yaguchi Towa

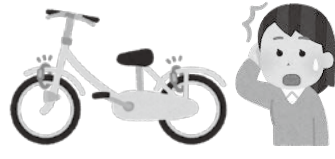


1

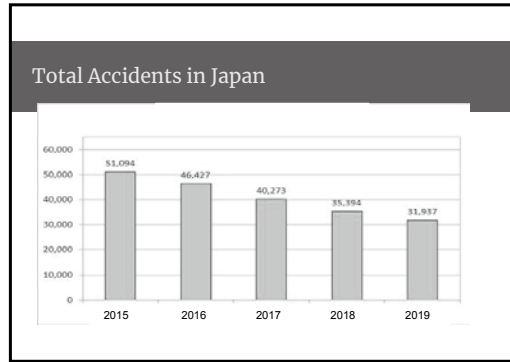
Cause & Background

2

OFTEN FORGET!



3



4

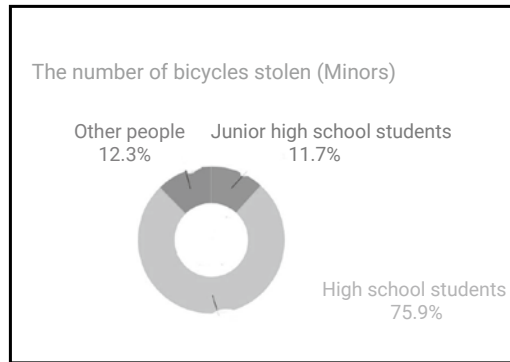
In 2019 in Japan

32000 bikes stolen ~~X~~ 70% ~~X~~ 20000 yen per unit

Unlocked bikes

500000000 yen in total !!!!!

5



6

SOLVE

discussion...




7


Experimental Method

1. AUTOMATIC LOCK


can't utilize usefully!



ALARM




8



micro:bit.

used in elementary schools



9

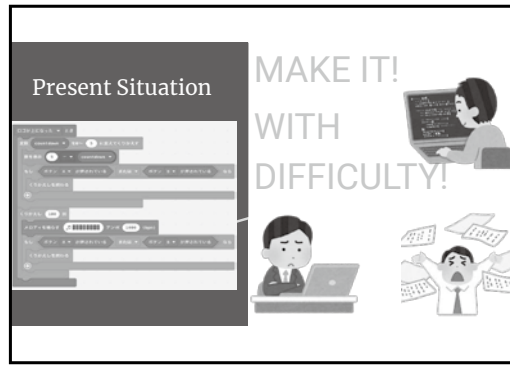
Image Of Finished Product (Running)



10



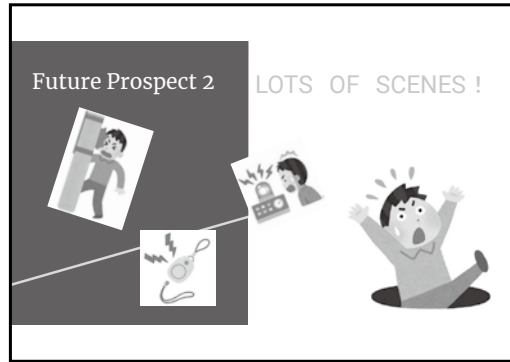
11



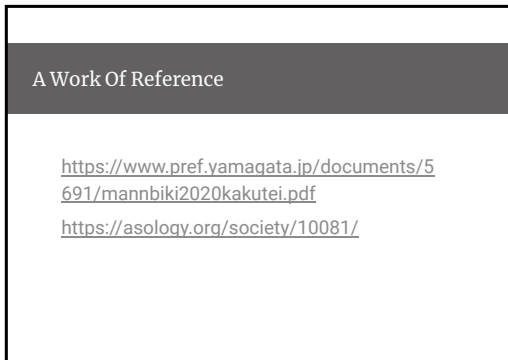
12



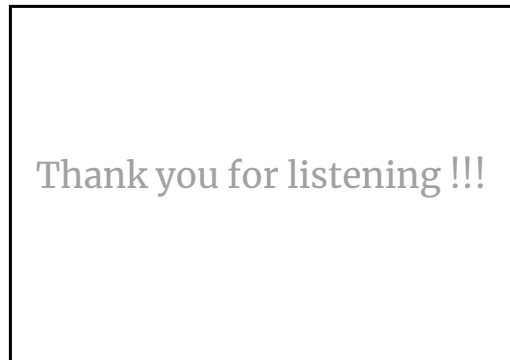
13



14



15



16

G5

Development of electric power source using ion exchange resins embedded in agar membrane

Yui Sasaki, Haruya Kimura, Hijiri Ono, Hiroki Huse, Kaito Suzuki, Kota Takahashi, Naoya Matsuda

1

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Characteristics

1. Increase of demand for clean energy in global warming

- Stabilize the supply of electricity by power source using ion exchange resins
- Doesn't produce CO₂
 - ➔ good for curbing global warming
- Using only ion exchange resins and agar
 - ➔ easy to create




4

Characteristics

2. Using hot springs

- New point of view of using lot of ions dissolving in water for power generation
- Effective utilization of hot springs or can appeal sightseeing spots



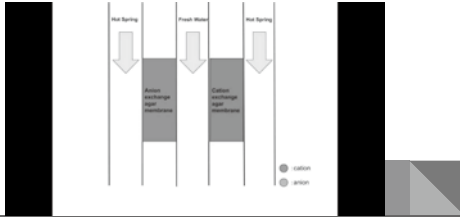
5

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Mechanism of power generation and prototype



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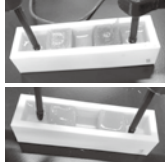
Experiment 1

Did an experiment 5 times each

1. ion exchange resin : 2.5 g NaCl : 2.5 mol/L
2. ion exchange resin : 2.5 g NaCl : 0.0 mol/L
3. ion exchange resin : 0.0 g NaCl : 2.5 mol/L
4. ion exchange resin : 0.0 g NaCl : 0.0 mol/L

Hypothesis

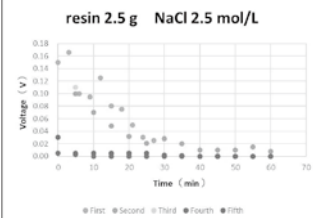

- 1 and 2 can generate electricity
- 3 and 4 can't generate electricity



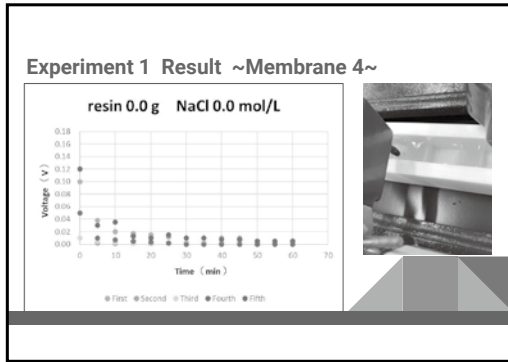
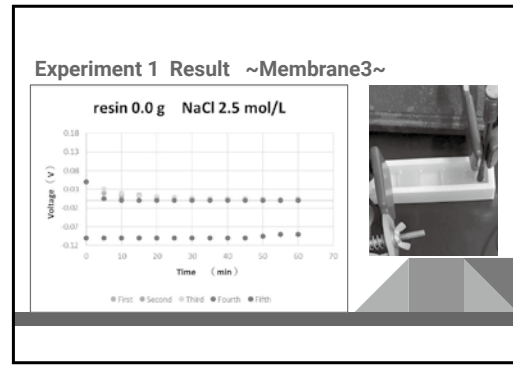
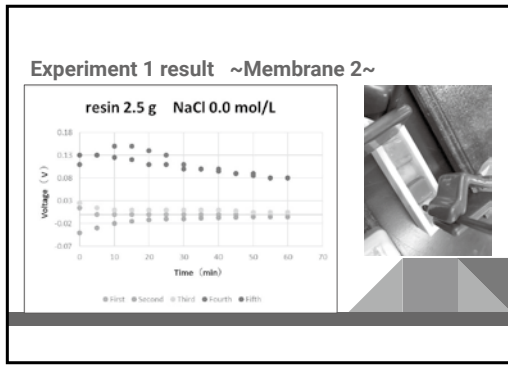
9

Experiment 1 Result ~Membrane 1~

resin 2.5 g NaCl 2.5 mol/L

10



Experiment 1 Results and Consideration

- Membrane 1 generated largest voltage of all membranes
- Membrane 4 also generated voltage

↓

- Condition of the cell may affect the ability of power generation
- Kinetic energy of ions may have turned to electrical energy

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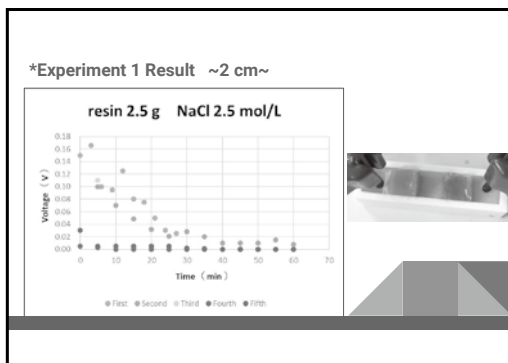
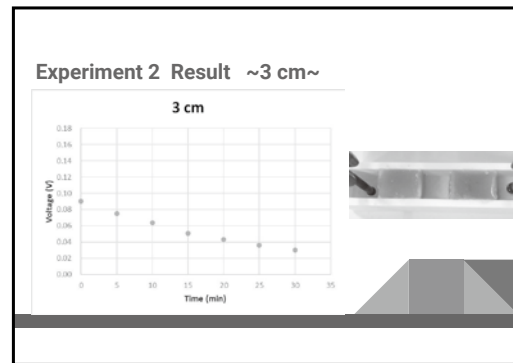
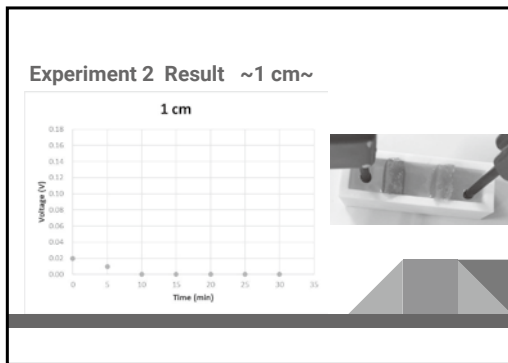
Experiment 2 ~Thickness of membranes~

- Changed thickness of the membrane
- 1 cm and 3 cm for 2 times
- Ingredient is same as membrane 1 in Experiment 1

Hypothesis

1 cm membrane will generate the most electricity

16



Experiment 2 Result and Consideration

- 3 cm membrane generated most voltage
- Voltage of 2 cm membrane in Experiment 1 is higher than 2 membranes which we tested this time

↓

- Density of ion exchange resin decreased
- ➡ made larger place for ions to go through
- Not enough tests

20

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Experiment 3 ~cells in series~

- We tested cell in 2 series and 3 series
- Ingredients are same as membrane 1 in Experiment 1

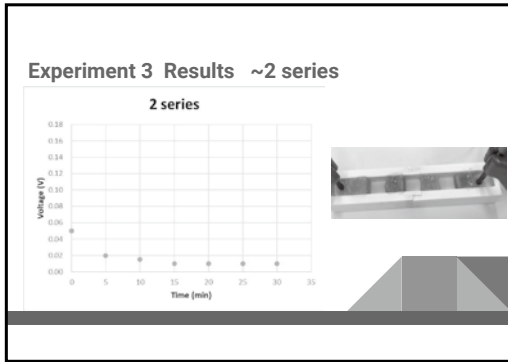
Salt water	Cation exchange agar membrane	Fresh water	Anion exchange agar membrane	Salt water	Cation exchange agar membrane	Fresh water	Anion exchange agar membrane	Salt water
------------	-------------------------------	-------------	------------------------------	------------	-------------------------------	-------------	------------------------------	------------

↑ Model of 2 series

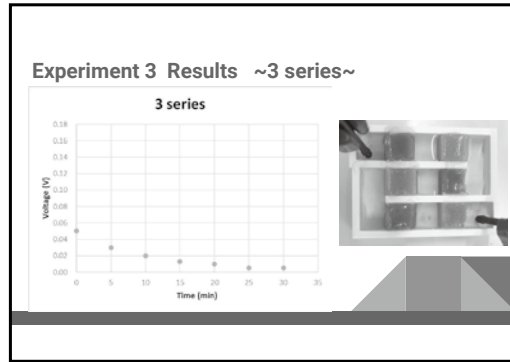
Hypothesis

3 series cell can generate most high voltage

22



23



24

Experiment 3 Results and Considerations

- Two generated about same voltage
- Less voltage than non-series membrane

↓

- Condition of membrane may be affected
- Not enough tests

25

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Conclusion

- Use ions that have color to see the movements of ions in discharging
- How to generate higher voltage
- Maintain the voltage
- Use hot spring in generating electricity

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Future

- ✗ produce CO₂
- ➔ contribute to curbing global warming

If we develop this cell into pool used in school (about 325 m³)...

↓

about 1.5 million volts
= about 975,000 dry batteries

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References

Schroeder, T., Guha, A., Lamoureux, A. et al. An electric-eel-inspired soft power source from stacked hydrogels. *Nature*. 2017;552 (7684):214–218.

環境省自然環境局自然環境整備課温泉地保護利用推進室,「温泉利用状況等について(温泉の保護と利用)」環境省,2021-03-15,<https://www.env.go.jp/nature/onsen/data/>(referred 2021-05-17)


ヤマハ発動機株式会社,「スクール25 図面データ」https://www.yamaha-motor.co.jp/pool/cad/pdf/25m_pool.pdf (referred 2022-01-29)



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Attention, please!

We are recruiting new members of taking over our research


If you were interested in our research, please contact Yui Sasaki, 2-3 2020096@yamaqatahigashi.jp

Google Chat is acceptable too!




33

Thank you to all the teachers who helped and guided us

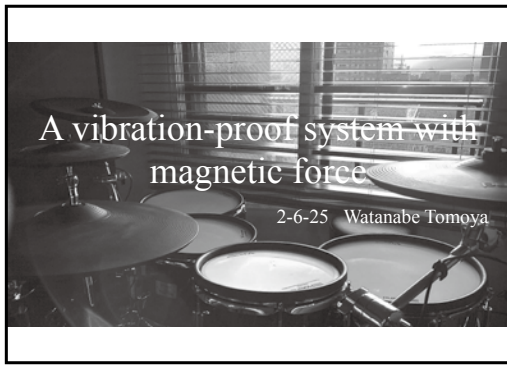


34

Thank you for listening



35



1

The purpose of this study is ...

The development of a vibration-proof system with magnetic repulsive forces.

2

Noise problems often happen in apartment buildings.

Our lives are often restricted to avoid noise problems.



3

<Present situation>

I can't practice musical instruments freely because they make vibration to the downstairs.

<Problem>

I can't improve my skills through practice at home.

4

How can we make more activities possible in such situation?

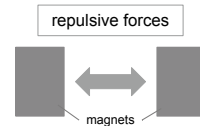
↓

I need to develop a system that can reduce the vibration better to solve the problem.

5

<The point of the idea>

Magnetic repulsive forces may be able to absorb vibration as a cushion.



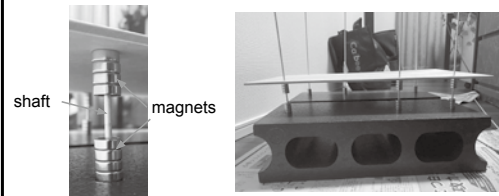
6

Method

1. I make a vibration-proof system with magnetic force.
2. I measure the vibration of musical instruments with the system.

7

1. I completed the vibration-proof system.



8

2. measurement of vibration

<method of measurement>

- vibrating objects... two kinds of foot pedal
- mesurement instrument... a smartphone application
- place... a floor of a rental studio

9

<Two kinds of foot pedal>

[a normal pedal]

< features >

- same structure as a real drum pedal
- make a lot of noise
- not available in apartment houses




10

[a quiet pedal]

< features >

- designed to reduce a lot of noise
- make little noise
- available in apartment houses



11


< conditions of measurement >

I measured vibration in four different situations

<shared condition>

- distance between a hit point and a smartphone
- intensity level of hits

a sound module



12

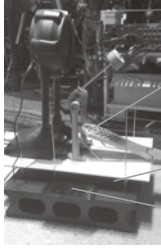
situation 1 and 2

situation condition	1	2
type of pedal	normal	normal
pedal position	on the system	on the system
magnets state	set	remove
measurement position	base of the system	base of the system
acceleration (m/s ²)	0.140~0.170	0.250~0.310

13

situation 1 and 2

situation 1

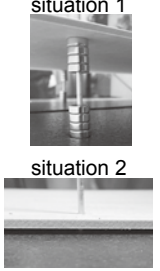


a normal pedal

the system

a smartphone

situation 2




14

situation 3 and 4

situation condition	3	4
type of pedal	normal	quiet
pedal position	on the system	on the floor
use of the system	with the system	without the system
measurement position	on the floor	on the floor
acceleration(m/s ²)	0.030~0.050	0.050~0.100

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situation 3




a quiet pedal

a normal pedal

the system

a smartphone

situation 4




16

Consideration

<situation 1 and 2>

The system with magnets was more effective in reducing vibration than the system without magnets.




Magnets repulsive forces can work as a cushion and reduce vibration.

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<situation 3 and 4>

Vibration of a normal pedal with the system was smaller than that of a quiet pedal.



The vibration-proof system with magnetic force can enable us to use noisy things in apartment houses

18


Future study plan

<improvement in the system>

- more compact and stable
- using a magnetism floating system

<more accurate measurement>

- material of the floor
- sensitivity of the pedal sensors



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Reference

The basic knowledge about the floor vibration of condominiums reno.mpl.co.jp

Thank you for listening.

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K12

Microbial Fuel Cell for Home Use

2-6 Saito Yoshimune Hasegawa Yunosuke 2-5 Yoshida Mizuki

1

Flow of presentation

- 1.How this study help our lives
- 2.What is Microbial Fuel Cell (MFC)
- 3.Motive
- 4.The way we make MFC
- 5.Experiments
- 6.Hypothesis
- 7.Results
- 8.Consideration
- 9.Future prospect
- 10.Acknowledgements

2

1.How this study helps our lives

Our study's goal is to generate electricity from food waste.

↓

If we can do it, we can make use of food waste and use landfill longer.

We make use of Microbial Fuel Cell(MFC).

3

2.What is Microbial Fuel Cell (MFC)

MFC is the generator that make use of **microbes** and **organic matters**.

fig.1 Operating major diagram of microbial fuel cell

4

3.Motive

One day,we learn about MFC and it's attraction.

Merit	Demerit
<ul style="list-style-type: none"> •Can decompose food waste •Can clean wastewater 	<ul style="list-style-type: none"> •Low and unsteady voltage

We conclude that it is difficult to use MFC on a large scale.

5

6

We think that we can make use of MFC on a small scale.

↓

We decided to invent original **MFC for home use.**

7

4.The way we make MFC

8

5.Experiments

We made two types of MFC. One has normal soil (MFC1), and the other has soil heated with pressure pan to kill the microbes (MFC2). We compared the voltage between MFC1 and MFC2.

9

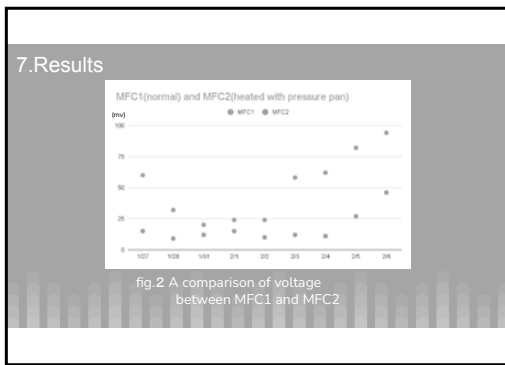
6.Hypothesis

We expected that voltage of MFC1 is higher than that of MFC2.

↓

Microbes generate electricity.

10



11

8.Consideration

From the result of latter, voltage difference between MFC1 and MFC2 has narrowed.

Therefore, it cannot be said that microbes produce electricity.

Coldness would kill microbes.

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9.Future prospect

To try putting food waste in MFC and continue to observation.

Repeat the same experiment again.

Raise the voltage and try to put our MFC to practical use

13

10.Acknowledgements

Thank you for your advice.

Mr. Nobuo Kaku
(Professor, Faculty of Agriculture, Yamagata University)

Yamagatahigashi High School teachers

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Thank you for listening!

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Yamato Internatnional Exchange Seminar(2022.1.13.Thu.)

開会式の様子



英語発表の様子



コミュニケーションプログラムの様子



令和3年度
地域との協働による高等学校教育改革推進事業【グローバル型】
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