1. Introduction

1.1 Project Background:

Brief Introduction:

The Dang District in Gujarat, India is where SIGHT aiming for. The team tried to tackle the prevalence of anemia among the villagers. We have contacted some local NGOs and learning centers to facilitate our educational project.

We have identified the problems as below. According to the facts, we've also designed a curriculum for the local students, aging 10-15. The curriculum includes 3 classes with different topics (Healthy diet, Anemia, Hygiene practice), and 3 cooking workshops that enable them to be aware of their condition and make changes accordingly.

The Dang District - Economic Activity and migration:

The tribal communities of the Dang District account for 90 % of the inhabitants. Their main economic activity is agriculture: seasonal, mostly rainfed crops like Ragi, formerly their main staple food along with white rice. The lack of long-term consistency forces the community to migrate to far sugar canes for a period of 4 to 8 months annually.

The Dang District - Dietary Habits and Anemia:

These communities follow a mostly vegetarian diet, relying on their home-grown products and using white rice as the main staple. Here you can see the percentage of some produce's consumption by tribe: vegetables, although local are rarely consumed by Dang families, and

Food	Tribe			
	Bhil	Konkani	Varli	Total
Cereals				
Jowar	0	1	0	1
	.0%	1.7%	.0%	.4%
Rice	146	57	19	222
	96.7%	96.6%	100.0%	96.9%
Nagli	5	1	0	6
	3.3%	1.7%	.0%	2.6%
Pulses				
Tur	83	27	8	118
	55.0%	45.8%	42.1%	51.5%
Adad	6	2	0	8
	4.0%	3.4%	.0%	3.5%
Dal	47	30	11	88
	31.1%	50.8%	57.9%	38.4%
	53.0%	25.4%	42.1%	45.0%
Eggs	35	17	4	56
	23.2%	28.8%	21.1%	24.5%
Meat	0	1	0	1
	.0%	1.7%	.0%	.4%
Fish	2	0	0	2
	1.3%	.0%	.0%	.9%
Total households	151	59	19	229
	100.0%	100.0%	100.0%	100.0%
	1.3%	1.7%	.0%	1.3%
Karela	1	0	0	1
	.7%	.0%	.0%	.4%
Non-vegetarian food				
Chicken	80	15	8	103

onions take the lead by 6.6% within the Bhil tribe. Chicken and eggs are the most consumed animal products.

The prevalence of anaemia is very high mostly among children and women , over 70 %.

High prevalence of anemia in Dangs District

Age Group	Rural	Total
Kids (6-59 months)	74.7%	74.1%
Women (14-49 years old)	72.5%	72.2%
Pregnant Women	65.7%	66.5%
Non-Pregnant Women	72.9%	72.6%
Men	43.7%	41.7%

Retrieved from: Ministry of Health and Family Welfare, Government of India. (2015-16) National Family Health Survey (NFHS-4).

1.2 Plans for the Summer:

Prototyping - community center SSPEHTC:

To figure out the potential flaws in our project and make it even more feasible, we plan to test out our program this summer by dividing it into separate sections. We will seek cooperation with a local community center (SSPEHTC) in HK via our member Lisa's connection.

Community center facebook page: https://www.facebook.com/SSPEHTC/

Material Revision - Local, culturally appropriate narratives:

Our team has been connecting with Mr. Rajesh Bhat over the last few months. We have been updating him (approximately) bi-weekly. The plan this summer is to continuously work on our materials according to the feedback received from the local partner(s). We aim to make it not only most effective in terms of learning experience, but also fitting for the local context.

Recipe/food-making sessions feedback:

In this summer, it is essential to reach out to as many people from similar cultures like that of Dang District as we can (potentially some of our Indian friends) for gaining an understanding of local appetites. We can start with students on campus, of other universities or even Indian organizations in Hong Kong if needed. We aim to make the recipes closer to what the locals find to be tasty.

1. Summer Deliverables - Course Review

Improvement from Spring Semester:

The main concern after the spring semester was the lack of relatability of curriculum contents to targeted users, which in this case were the children attending Swapath's learning centers in Dang District. While they have received certain degrees of education from both school and learning center, certain concepts are still relatively hard to be grasped by their current knowledge level, potentially not intriguing them enough to engage in the learning activities prepared. For instance, they are less likely to understand that human blood consists of different types of blood cells that have different functions, and having a deficiency in either one of them would cause certain diseases to appear. This case could be challenging to deal with because first, we need to create an imaginable picture of how the concept works for it to be understandable. One idea is to bring a microscope there and show directly to the student what blood consists of. However, due to the uncertainty of the terrain and distance of our destination, such a solution is not ideal. Hence, we came up with illustrations (e.g. stories, pictures, and interactive activities) from which students may understand better. Instead of bombarding the students with facts and data (still given, but not as a priority), we divert our focus a little bit into something more down to earth, so they can be performed directly and be practical.

As for increasing the readability of teaching guidelines for the teachers, we change certain wordings into something more general to minimize any misunderstandings. Especially translations need to be done by Mr. Rajesh which by using complex words could delay the overall process. We also put some colors in the guidelines to emphasize certain parts that need to be focused on.

Healthy Diet:

The opening part of the healthy diet class is supposed to bring up the conversation of diet these students have on a daily basis for it to become the benchmark for something to compare to (favorite food, food frequently eaten, name of crops, etc.) with what has to come during the lesson. The mode of teaching is an interactive game where each student has to participate in. With simple punishment, we hope it can further help to break the ice, mainly between our team with the students because they might be not used to the new class setup.

After the opening game, there is a Q&A session to show some consequences of having an unbalanced diet. We are aware that students might not yet understand what healthy diet means, that is why we will first introduce a case story to give them the rough picture so that they can understand better yet still think for themselves first. The short story is followed by the actual questions verbally given out to students by the teacher.

The third activity is the actual pre-assessment where the teachers will later know students' knowledge of nutrition in different foods. Pre-assessment is done in groups where students are

assigned to match different crops with nutrients they contain. Up until this point, the students will have not received the main information, but will have been stimulated to gain interest on the topic and will be aware of the underlying condition of the problem they are experiencing.

The teaching section will be the longest one and most of the activity will be led by the teacher through lecture-style teaching. Although it might be boring, we put a story at the beginning which can be referred back throughout the section so that it is not full theory delivery, and also some questions in the middle of the lecture to allow students to express whatever is going on in their mind during the teaching. A poster will also be provided so it will ease the delivery of teachings and let them remember certain information after the class. The main content of the teaching material is the definition and function of each nutrient related to anemia, proper nutrition intake, sources of different nutrients, the relation between diet and anemia, and other nutrients that may help or worsen iron deficiency anemia. There are a lot of topics, but one of the most important ones is put in the beginning with heavy influence from the story to make sure that they understand our focus first.

After the teaching section, there is another Q&A session from which students can relate the theories they have just learned into real-life examples. The last activity will be an introduction to SIGHT's recipes to familiarize themselves with before the actual cooking workshops.

Anemia:

In the summer, we've finalized the anemia course by studying some guidelines and textbooks that're available online. That includes the knowledge about anemia and the posters/ illustrations regarding the topic. We also removed the nail-color-detection section in the anemia course since the application is not available yet.

The class will start with a Q&A review about "healthy diet" from the previous class, making sure students remember them correctly to minimize confusion if some aspects are referred back during the lesson.

Next, there is an opening section to test their basic knowledge about anemia in general and later followed by an introduction to body mechanics. Here, it is not expected for students to answer correctly as they probably have not received any in-depth knowledge regarding the disease. Before starting the actual lesson, the students need to understand the concept of body mechanics, especially the circulation system (types of blood and their functions). We've also made subtle changes to the 2 illustrations of "Red blood cell".

The teaching section begins with storytelling picturing two students having a conversation about anemia with their teacher. This story is important to the overall teaching section:

1. Point out different symptoms that are experienced by the characters with posters
2. Illustrate the causes with posters.

3. Show them the statistics of anemia in Dang District, presenting the prevalence which hopefully could attract more of their interest.
4. Show them prevention and treatment of anemia, for them to reduce the severity in Dang District.
5. Show different types of anemia including sickle cell anemia. It's important to do so because there are some different underlying conditions, such as the causes, symptoms, and treatments.

To let them train on what they have just learned, they will be divided into groups of two to have a case study together through a roleplay between the two students. This is to train their critical thinking when facing real-life situations which hopefully can encourage them to do the same with people around them.

Finally, the class will end with the socialization of the already-existing programs provided by the government and other organizations (e.g. PATH). This will help them to realize possible alternatives to deal with anemia.

Hygiene Practice:

The lesson starts with a review which later can be divided into two subsections: a game and Q&A. The game is where students are encouraged to recall some information they had previously learned from other lessons. This does not challenge their knowledge at all but as a means of bringing up the spirit and excitement for the coming lesson. The Q&A session, on the other hand, is more direct as the teacher will ask questions like 'What do you remember from the anemia lesson?', 'What causes anemia?', and such.

After the warm-up, there is an introduction beginning with a case story in form of roleplay between teaching assistants to show a story of someone who experiences consequences from having poor hygiene practice. The storytelling is followed by conversations where students are asked to link the connection of the character from the story with themselves and/or people around them. This will help them to relate with those characters who somewhat reflect serious consequences that may occur due to poor hygiene lifestyle.

The teaching section will again be delivered through a lecture-style class with a break in between, dividing the two main topics: 'parasitic infestation' and 'prevention and treatments'. For part one, students will be told about the sources of parasites through questions and will be complemented with a diagram and add more detailed information. Then, they will be shown some symptoms shown in a poster and how parasitic infestation is related to anemia. For the second part, straightforward information on prevention and treatments will be given with the help of some illustrations.

To properly initiate a clean habit, the lesson will have a closing activity of handwashing demonstration where students will later perform directly for themselves. This matter is simple but important to bring up because many people overlook it and not doing it properly.

Market Visit:

In order to solidify and visualise the essential learnings from the first day and provide them an opportunity of hands-on experience, we arranged a visit to the local market in the morning on Day two. Students will be brought to any local market nearby and be guided to walk through the market to get familiar with the venue. Tasks which are written on a paper guideline will be distributed to groups. They should know how to identify the nutritious food and the ingredient choice for healthy dieting. Details are to be confirmed by the co-partner who runs this program since the venue and expected travel time would be different every time for different targeted audiences. Due to the safety concern under pandemic we were not able to test out this activity. However, each group would be followed and monitored by at least one adult. Thus the management of time would be the main concern while carrying out this activity.

Thanks to the similar cause of Anemia and malnutrition, which is nutrition deficiency, we firmly believe that Market visit activity has high potential to be adapted to the project in Sri Lanka. On top of that, the little geographical and cultural difference between the two countries would make the planning transferable and feasible.

Treasure Hunt:

Concerning the relatively young age of our targeted audience, we designed a Treasure Hunt activity on Day three. It serves as a final revision and examination of all the courses conducted during the camp. The aim of the hunt is to encourage students to exhibit an act of spreading influence in the community based on what they have learnt.

After discussion, we agreed that this activity may not be suitable to carry on in the Sri Lanka project. This is due to the low feasibility of the activity as lots of local manpower are required to cooperate. In addition, the activity itself would not help in addressing the issue if we do not conduct courses in the new project.

2. Summer Deliverables - Test Results

Ice-breaking Games Test Result:

The team has tested the games during the freshmen welcome session in Taiwan. Knowing that there will be language barriers, we mainly focused on the feasibility, the level of engagement and enjoyment.

1. ✓ Number adding game (with playing cards): Prepare 3 decks of playing cards (or any card variations with small numbers printed on). Every player gets two cards. When the game begins, each player has to actively move around to find one other player to 'battle'. During a 'battle', both players play down their card on the count of 3. When both cards are shown, the players have to shout out the summation of the two numbers presented. The fastest person takes the both playing cards and both move on to find the next persons. At the end of the game, the person with the highest numbers of cards at hand wins.

2. ✓ Bingo with information (ice breaker): The teacher writes 9 questions in total in a 3x3 bingo table (with each cell being a square). Students have to answer 9 questions we ask and write the answers on their papers. Find people with matching information. The first person who finds enough matches to form 3 lines wins. Limit for how many blanks a person can sign one's paper to ensure variety.

3. ✓ Lining up with eyes closed: teacher calls out an 'order', and the kids are expected to line up according to the 'order' with their eyes closed. An order can be anything that allows students to logically line up. For instance, "line up according to your birthday, the oldest goes in the very front", or "line up according to how far your home is from this current venue".
    a. Line up with 2 or 3 teams: calls out an instruction and each team has to line up with the order that is aligned with the instruction. The first team that manages to form a line that fits the instruction wins

4. ✓ High speed train: host calls out a category, and the players have to start calling out nouns that fall under that category along with a tempo, one after another. the first person who messes up the tempo or runs out of ideas losses. (examples of categories: crops, types of nutritions, colors, types of weather…)

5. ✓ The wind is blowing:
   Preparation: exactly as many chairs are there are students, or alternatively, using ropes or chalks to create squares (where the players will be sitting in) as many as the number of students.

   Description: We kick off the day with a game called strong wind blowing. The host starts by calling out, "The wind is blowing!" The students follow by asking, "what does it blow?" The host responses, "Blows – the person with (*call out an accessory/ a feature*)." And the students that belong to that category/own that accessory have to stand up and switch seats with other students who have also stood up. The host now has to try stealing a seat for him/herself. The last person standing after the 'wind'

becomes the next host. The game ends at the 10 min mark or when the students have the energy to start the class.

The teacher is suggested to encourage the students to call out categories learned from the previous lessons. For instance, the hosts can say, “blows – the person who loves to eat papaya (/substitute with other healthy food).”

6. ✓ Spaghetti marshmallow challenge
   Materials per group: 20 pieces of spaghetti, 1 marshmallow, 1 yard of string, 1 yard of tape
   Description: Within 30 mins try and build a tower as high as possible, while putting the marshmallow on the very top. Tip: test out the balance with the marshmallow on top from time to time.

7. ✓ Draw pictures and pass down:
   We name out a thing/ character (ex: Pikachu, elephant) and tell the first person. 4-5 people stand in line and pass down their drawings 1 by 1. The last person will have to guess the right answer from what we gave to the first person.
   Materials: 4-5 whiteboards and markers for each group. List of animals /characters

Community centre trial class result:

We have arranged a physical test on the food course in a community centre at Sham Shui Po East Happy Teens Club. Total of nine participants had joined. Including six grade nine students and a teacher from Wong Tai Shan Memorial College, a social worker, and a kitchen helper. Joshua, Karen and Lisa are the representatives of the project team. This trial run is set to simulate a food course on cooking parantha during the camp. The team first explained on the recipe. Then the teenagers are divided into three goods with three set of ingredients, and started cooking under our step-by-step instructions. The overall result is satisfactory. All participants can finish cooking with good taste. But there are two significant issues that are to be improved.

1. The first one is time management. The trail class is aimed to be finished within one hour according to the timetable of the camp. However, eventually the class hold more than one and a half hours. This might due to the inefficiency in teaching, as well as the fact that the teens are not familiar with cooking. Nevertheless, we believe that this situation is less likely to happen when we carry out the class during the camp. Since during the class we would have only two teacher, all the other team members from both food team and education team would be the role of teaching assistance to help with ensuring the progress. In addition, all of our members is advised to be famililer with the recipe in order to make it smooth.

2. The second one is that we received a lot of external help from the school teacher and the kitchen helper. Since we lack experience in teaching and cooking. The school teacher helped a lot in maintaining a good order in class while the kitchen helper helped a lot with the cooking of the teens. Therefore we cannot fully simulate the effectiveness of teaching solely by our own. However, this is acceptable as there would be local teacher and translated helping us during the actual camp. This somehow proven that we should seek help from local team in order for the camp to run smoothly.

3. Food team research result on nutrition and recipes

Nutritional information about iron:

Iron is important in constructing hemoglobin cells, one of the main components of red blood cells, that enables red blood cells to carry oxygen around the body. Without sufficient iron intake over a long time, patients might have a high chance towards iron-deficiency anemia.

There are two types of iron: heme iron and nonheme iron. The former is mostly found in blood and muscle, presented in animal foods like red meats, fish, and poultry. While the latter is mostly found in vegetables, beans, and nuts.

By definition, it refers to the proportion of a drug or other substance which enters the circulation when introduced into the body and so is able to have an active effect. Basically, how well our bodies absorb the nutrients.

The bioavailability of heme iron is around 20 – 35% while non-heme iron lies between 2 – 20%. Heme iron is much easier to absorb by our body than non-heme iron, as heme iron will combine to heme protein that allows the body to absorb with a quicker pace, while non-heme iron will not combine with a heme protein.

Daily recommended intake of iron for 9 – 13 years old (the age of our service target of the project) for both genders is 8 mg (without including the reduction after considering the bioavailability of iron)

Vitamin C, also called ascorbic acid, enhances the absorption of iron with no upper limit. It bonds with iron to become more stable and easier to be absorbed. For instance, 100 mg of vitamin C could improve the iron absorption rate by 4.14 times

The absorption rate is only enhanced when vitamin C and iron are taken at the same time. If taken separately, the enhancing effect will decrease over time. The effect works best during the morning , and worst at night. This enhancing effect works best with iron in food, but not as good with other forms of iron (rust, or iron in soil).

It is also known that the bioavailability of non-heme iron increases when consumed together with heme iron, but the exact enhancing rate will need further verification.

For the inhibitors of iron, oxalic acid, found in most vegetables like spinach, soybean and maize, inhibits the absorption. By boiling the vegetables and discarding the water afterwards could help reduce the inhibiting effect.

Phytic acid, found in grains, legumes, nuts and seeds, is another inhibitor of iron consumption. The inhibiting effect could be reduced by soaking or fermenting them.

The following list contains common local food in the Dangs district with its iron content.
There might be inaccuracy of the value due to different ways of testing, please verify before using the numbers.

• High Iron (>5mg)	Medium (1-5mg)	Low (>0-1mg)	None (x)
Black gram 5.02 P	Chickpeas 2.89 P	White Rice 0.14 G	Pigeon peas P
Green gram 6.7 P	Lentils 3.33 P	Maize 0.45 G	
Niger seed 15.3 P	Ragi 3.9 P	Sweet potato 0.6 V	
Pearl Millet 8.0 G	Sorghum grain 3.36 P	Ginger 0.6 S	
Sesame 7.78 P	Psyllium Husk 4.9 G	Tomato 0.27 V	
Ground nuts (-) N	Peanuts 4.58 N	Bamboo shoot 0.5 V	
Custard apple 70? F	Chestnuts 1.7 N	Mango 0.16 F	
Black pepper 9.7 S	Jaggery 3.0 S	Taro/Colocasia 0.55 V	
	Indian jujube 1.7 F	Eggplant 0.25 V	
	Potato 1.9 - 3.2 V	Papaya 0.25 F	
	Garlic 1.7 S	Mung beans 0.91 P	
	Coriander leaves 1.77 V	Onion 0.21 V	
	Red chili 1.03 S		
	Spinach 2.71 V		

P – Peas, Beans & Seeds / G – Grains / F – Fruits / S – Spices % Seasoning / N – Nuts / V – Vegetables

Community consumption pattern:

Every society has a distinct food consumption pattern usually determined by its socio-economic condition and cultural and religious beliefs. The food consumption pattern of the tribals in the study area consists of cereals, pulses, vegetables and non-vegetarian items. Mainly cereals and pulses are consumed. Cereals include nagli (millet), rice and jowar and pulses include tur and adad.

During lunch time, among cereals, nagli is preferred more followed by rice and jowar and among pulses adad is preferred more than tur. Consumption of Jowar is reported by about 11 percent of the total households, all belonging to the Bhil community. Use of adad is much more preferred by Varlis and none of them reported use of adad. Consumption of vegetables was reported by about 20 percent of the total households and relatively, it seemed prominent among Bhils and very low among Varlis. Consumption of chicken and eggs at lunch time was mentioned by a minimal 6 percent of the total households, mainly belonging to the Bhil community. No Varli household reported use of chicken and eggs for lunch.

Rice and tur are the most preferred cereal and pulse for dinner. Use of vegetables in dinner is reported by about 14 percent of the households. Chicken and eggs are reported as main non-vegetarian food items prepared for dinner. Other non-vegetarian items consumed in dinner were reportedly, fish and meat. However, non-vegetarian food is not taken on a regular basis but once a week.

Consumption of morning tea was reported by about 48 percent of the households. Tea-drinking is found more common among Varli followed by Konkani and Bhil households.

Other studies have also revealed similar findings. A study of 187 Bhil households of Dangs district undertaken to understand their food consumption pattern found that rice was consumed more commonly followed by ragi (millet) which was consumed more commonly by poorer households. Their food pattern also included meat, poultry and fish . Another important observation made by several studies is that food consumed by tribal populations is nutritionally deficient . Some studies have also found nutritional status of adult tribals in a critical state .

Food	Tribe			
	Bhil	Konkani	Varli	Total
Cereals				
Jowar	24	0	0	24
	15.9%	.0%	.0%	10.5%
Rice	48	6	2	56
	31.8%	10.2%	10.5%	24.5%
Nagli	79	53	17	149
	52.3%	89.8%	89.5%	65.1%
Pulses				
Tur	39	11	0	50
	25.8%	18.6%	.0%	21.8%
Adad	69	33	15	117
	45.7%	55.9%	78.9%	51.1%
Dal	27	13	4	44
	17.9%	22.0%	21.1%	19.2%
Vegetables				
Potato	5	1	1	7
	3.3%	1.7%	5.3%	3.1%
Cabbage	2	0	0	2
	1.3%	.0%	.0%	.9%
Onion	4	0	0	4
	2.6%	.0%	.0%	1.7%
Brinjal	2	0	0	2
	1.3%	.0%	.0%	.9%
Papdi	22	1	0	23
	14.6%	1.7%	.0%	10.0%
Tarkya	3	0	0	3
	2.0%	.0%	.0%	1.3%
Guvar	4	0	0	4
	2.6%	.0%	.0%	1.7%
Non-vegetarian food				
Chicken	6	0	0	6
	4.0%	.0%	.0%	2.6%
Eggs	7	1	0	8
	4.6%	1.7%	.0%	3.5%
Total households	151	59	19	229
	100.0%	100.0%	100.0%	100.0%

Table: Food Consumption Pattern, Lunch

Food	Tribe			
	Bhil	Konkani	Varli	Total
Cereals				
Jowar	0	1	0	1
	.0%	1.7%	.0%	.4%
Rice	148	57	19	222
	98.7%	98.6%	100.0%	98.9%
Nagli	1	1	0	2
	0.7%	1.7%	.0%	0.9%
Pulses				
Tur	83	27	8	118
	55.0%	45.8%	42.1%	51.5%
Adad	6	2	0	8
	4.0%	3.4%	.0%	3.5%
Dal	47	30	11	88
	31.1%	50.8%	57.9%	38.4%
Vegetables				
Potato	8	0	1	9
	5.3%	.0%	5.3%	3.9%
Onion	10	0	0	10
	6.8%	.0%	5.3%	4.8%
Brinjal	2	0	0	2
	1.3%	.0%	.0%	.9%
Papdi	1	1	0	2
	.7%	1.7%	.0%	.9%
Tarkya	3	0	0	3
	2.0%	.0%	.0%	1.3%
Guvar	2	1	0	3
	1.3%	1.7%	.0%	1.3%
Karela	1	0	0	1
	.7%	.0%	.0%	.4%
Non-vegetarian food				
Chicken	80	15	8	103
	53.0%	25.4%	42.1%	45.0%
Eggs	35	17	4	56
	23.2%	28.8%	21.1%	24.5%
Meat	0	1	0	1
	.0%	1.7%	.0%	.4%
Fish	2	0	0	2
	1.3%	.0%	.0%	.9%
Total households	151	59	19	229
	100.0%	100.0%	100.0%	100.0%

Currently, three recipes, chikki (a peanut snack), parantha (a bread that meant to be thin and crispy, but not in our edition) and dhuli mung dal (a soup/sauce-like that they eat with maize, bread or rice), each for snacks, breakfast and lunch respectively, are modified based on traditional Indian recipes. It is recommended to design more alternatives or research on more recipes for the workshops.
***Dinner recipes are decided not to include as the absorption rate of iron is the lowest at night

Recipe information:

Chikki (portion for 2-3 people):
Bioavailability of the recipe: 11%
Total iron content of the recipe: 11.4 mg (bioavailability included: 1.254 mg)

Ingredients:
- Peanuts (150 g)
- Jaggery (150 g)
- A bowl of water (about the same as the jaggery)
 Only enough for 2 people if the kids want to eat more
 Adjust the amount of ingredients at a 1:1:1 ratio for more people in the session

Preparation before the cooking workshop begins:
- Make sure all the ingredients and utensils are ready 30 minutes before the session start
- Make sure that the session facilitator (if any) understand the flow of the session
- Prepare questions to talk with the kids during the long cooking time or any waiting time
(Have you ever tried Chikki before? What does it taste like? / Have you ever tried cooking Chikki yourself? / Do you like sweets? / What food do you like the best?)

Cooking steps:
1. Remove the skin of the peanuts.

(fry it for 4-5 minutes first, it would be easier to take off)
(ask the kids to help in this session, more interactive, ask them to be careful of the heat)

2. Crunch the peanuts to smaller pieces. Fry the peanuts until it turns golden and give some sounds, make sure there is no skin remaining. Place them into a container.

(do not crunch the peanuts too small, the biggest size would be half a piece)
(ask the kids to help to crunch the peanuts only)

3. Melt the jaggery with water on a pan (powder form: 1:1.5; solid form: 1:1), keep the fire low and keep stirring throughout. Wait until the jaggery melts completely, it will take at most 10 minutes until it becomes liquid.
4. Add the peanut in and keep stirring. When the jaggery boils and becomes sticky in texture, turn off the fire. Quickly place it on to an oiled plate, spread the jaggery-peanut mixture evenly.

(It would be even better to place it in smaller portions, like biscuit size, it will set faster and is easier to handle, but that will need a bigger, flat container)

5. Wait for it to set under room temperature, cut it into mouthful pieces before serving.

Remarks:
- Remind the kids to be careful as this involve fire and hot food
- The food is super sweet, remember to drink water when eating it
- Even though it is a portion of 3, it can serve more, please confirm with the kids how much do they want to eat before the cooking (50 g is about the size of a hand of an adult)

ingredient	**iron content(mg/100g)**	**vitamin C (mg/100g)**	**Total iron content**
peanuts	4.6mg	0	6.9mg
jaggery	3mg	0	4.5mg

Parantha (portion of 2-3):
Bioavailability of the recipe: 11.32%
Total vitamin C content: 13.5 mg
Total iron content of the recipe: 13.06 mg (Bioavailability and enhancing effect included: 2.31 mg)

Ingredients:
- 1 Potato
- Mung Bean Powder (about 40 mg)
- Spinach (about 70 mg)
- An Egg
- Half an Onion
- Salt, Black Pepper & Oil
- Ragi Flour (about 40 mg)
- Cumin Seeds

* May replace ragi flour with wheat flour

Steps:

1. Cook and peel the potato. Crush it completely
2. Finely chop the spinach and onion, mix it with the potato
3. Add wheat flour, mung bean flour, egg, salt, black pepper, oil and cumin seeds, mix everything together well.
4. Preheat the pan and add sufficient oil in it

5. Pick up and put a handful of the mixed ingredients on the pan. Flatten it and wait until it is cooked. Remember to check if there is enough oil in the pan

Cooking Reminders:

- Check constantly the wetness of the dough, add a little oil if needed
- Use a low to medium flame (or heat) to fry
- Flip it after you slightly cook one side first
- Add oil before you fry your next piece

It is good to add something you like into the parantha to make it special. Dip ketchup or other sauce you like when you have it

Ingredients	Iron Content(mg/100g)	Vitamin C (mg/100g)
Urad dal flour(black lentils)/ Masoor dal flour(red lentils)	8.5	1.7
Rajgira flour/ ragi flour	7.6	0
Spinach	2.71	28.1
Onion	0.21	7.4
Oil	/	/
Cumin seeds	66.36	7.7
Salt	0.2	0
Chili powder	17.3	0.7

Dhali mung dal (portion for 3):
Bioavailability of the recipe: 10.20%
Total vitamin C content: 32 mg
Total iron content of the recipe: 7.09 mg (Bioavailability and enhancing effect included: 1.68 mg)

1. Soak the black lentils for 15 minutes and drain.
2. Cook it on a pan with chopped garlic, turmeric powder, red chilies, salt, and 2.5 cups of water for 5 minutes
3. Fry finely chopped onion in oil until the onion turns golden brown
4. Add cumin seeds and cook it for a few seconds
5. Add chopped/pureed tomatoes. Cook until tomatoes are done, and mixture leaves the sides of the pan
6. Add garam masala and garnish it with finely chopped coriander leaves

Ingredient	Iron content (mg/100g)	Vitamin C (mg/100g)
Urad dal (black lentils)/ Masoor dal (red lentils)	8.5	1.7
Tomato	0.27	22.8
Onion	0.21	7.4
Garlic	1.7	24.8
Coriander leaves	1.77	27.0
Cumin seeds	66.36	7.7
Turmeric	40.0	/

4. Suggestions & next steps

By far, all of our effort was made based on the cultural and geographical context of Dang District in Gujarat, India. Moving onwards, in order to adapt to the environment with our new partner in Sri Lanka, some appropriate changes in our plans have to be modified.

Curriculum:

Generally the content is directly adaptable. While some of the graphics which include cultural implications (e.g. clothing, gadgets and crop types) will need some slight changes after conducting a groundwork cultural exchange. Three key issues will need the most research work: details of the local diets, local anemia situation, and the students' preliminary understanding of the anemia disease in the target region will need the most research work. Apart from online search, we will also have to stay closely in touch with the local community - through the English-speaking students in the institute.

Activities:

Unfortunately, the details of our treasure hunt activity and market visit may not be able to proceed as planned. However, we believe the ideas can be adapted with suitable adjustments.

The goal of market visit is for the students to apply their learning in the lessons to real-life situations. The most direct way of adaptation would be to find a new nearby market, and plan the detailed logistics of the event accordingly; otherwise, we can also investigate how the local students are most in touch with picking ingredients.

In the treasure hunt, we aim to familiarize the students with spreading their knowledge to the people around them. In the case that the local partner does not live in a small village where it is both safe and friendly towards such an interactive activity, we will adjust treasure hunt into a different form: whether to make it somewhat internal (sharing within the class or leaving it as a

task to be done when they get home), or to transform into something completely different and out of the box - while still keeping the focus that is to encourage the spread of information.

Apart from the activities, we have also done quite some testing. By far, none of our trial lessons has been really India-focused. Rather we have lots of trial runs to improve the logistics by having participants from Hong Kong and Taiwan. These will continue to be valuable and moving on, we will have to also connect with the local Sri Lankan community to understand more local context. We plan to achieve this by arranging information sessions with the local teachers, as well as direct communication with the local students to understand their current level of understanding.

All in all, we are able to adapt most of our current efforts with the new partner. However, there is a strong need for adjustments based on the ground situation in Sri Lanka. Apart from research, we plan to implement such changes with the help of our new partners - the organization, the local English-speaking students as well as the local teachers - to push the new project to the greatest potential possible, and to make a real impact on the overall wellness of our partnered institute and community.