

Cat 4 Resource Development

Group 4-008

Project Demeter

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ABSTRACT

Project Demeter is a creative and sustainable resource package aimed at informing, assisting, and educating Hwa Chong students about urban farming, such that they can adopt the habit of urban farming on their own, and play their part in creating a sustainable living. Given the “30 by 30” plan, the project aims to help Singapore achieve this by educating teenagers on urban farming. The resource package consists of 3 primary resources— namely, a website, an Instagram page, and online workshops. The resource package provides easy access to information through interactive online platforms.

1. INTRODUCTION

1.1 Rationale

In 2019, Singapore decided to reduce its dependence on food imports with its “30 by 30” (*Chang Ai-Lien, The Straits Times 2019, Line 5*) vision, whereby 30% of Singapore’s nutritional needs will be produced locally by 2030. Singapore currently imports over 90% of its food supply, making it especially sensitive to any changes in the global agricultural landscape. Major importers include Malaysia, Brazil, and Australia. In order to produce our own food locally, we would have to grow them ourselves with the limited natural resources we have. This thus shows the importance of Singaporeans knowing how to make use of the space they have to grow their own food. As adults in the near future, current teenagers would need to have knowledge on urban farming. As such, Project Demeter aims to raise awareness of the importance of urban farming and encourage more teenagers to pick up the habits of urban farming with the free space they have at home. With resources and awareness about urban farming from our project, more teenagers will be informed and come forward to practice the habit of urban farming.

1.2 Objectives

The objectives of Project Demeter are to raise awareness and increase people's knowledge about urban farming as well as increase their accessibility to urban farming resources. We hope to enable more people to have a deeper understanding of what urban farming is, how it is carried out, and why it is so important to have knowledge on urban farming for the future generations. Through the package's resources, we hope to inspire more people to start urban farming. There are some online resources on urban farming. What we aim to do is to promote them through online platforms, make them more understandable and accessible, as well as provide interaction with the target audience, something that current online resources lack. We can consolidate the information and put them in simpler terms and place them in more relevant and accessible online platforms that people will view for example, our website and Instagram.

1.3 Target Audience

The target audience is all high school students from Hwa Chong Institution.

1.4 Resources

The resources includes a website, an Instagram page, and a workshop.



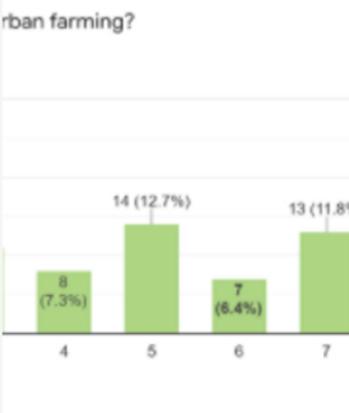
[Home](#) [Introduction](#) [Tips](#)

Project Demeter

Urban farming



Website Home Page



Reasoning

Why did we create this project?

Urban farming is not a topic that everyone is educated on and they might not realise the aims and importance of urban farming, therefore Project Demeter will create websites and social media to educate youths on urban farming and to create awareness on this topic. Our website will provide youths with background knowledge as well as tips on how to start urban farming and how to thrive in growing their own urban plants



URBAN FARMING

What is urban farming?

Urban farming is the practice of cultivating, processing and distributing of plants in the form of vegetables in urban areas and urban farms supply food to about 700 million city dwellers, consisting one quarter of the world's urban population.

Website Introduction Page



3. Vegetables

long beans, spinach, lettuce, kai lan, bok choy, ladies finger

These are tropical plants that are suitable to be grown in Singapore and they require little space to grow especially in small Singapore houses.

They are easy vegetables to be grown for first timers and require little care other than daily watering and sunlight.

Website Tips Page

1) Plant: Kang Kong

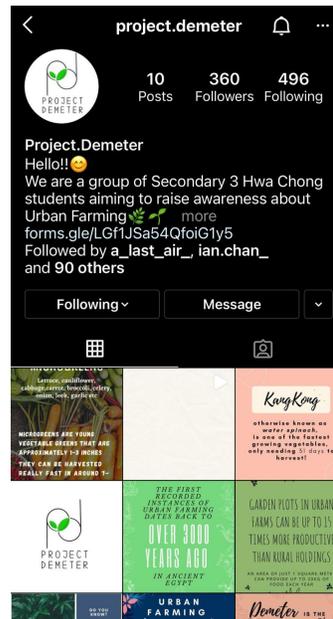
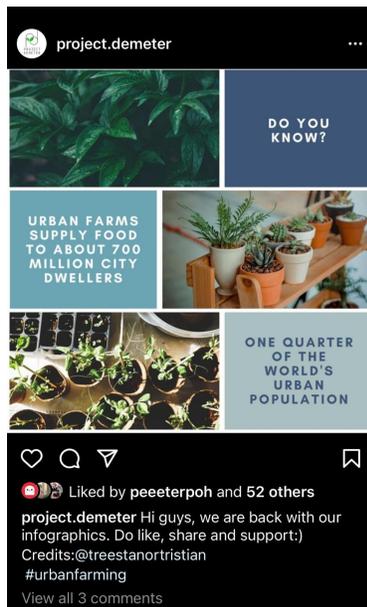
Step by step guide on how to plant a Kang Kong + explanation

1. Pre-soak the Kang Kong seeds for 12 hours to accelerate the growth of the plant (Do not soak it too long or it will become mushy and not germinate well)
2. Afterwards, dig up a 1 cm hole in the soil and insert a Kang Kong seed (Planting depth is important for healthy germination)
3. Ensure that the seeds are spread out by at least 2 cm (Prevent overcrowding of seeds and ensuring healthy growth of leaves)
4. Place the pot of seeds near to a window or a bright area where the seeds obtain at least 6 hours of sunlight daily (Kang Kong thrives with optimum sunlight and a humid temperature of 25-29 degree celsius which is perfect to grow in Singapore's humid temperature)
5. Ensure that the soil is moist when seeds are germinating
6. After the seeds have germinated, ensure the plant receives plenty of water a day
7. Within 60 days, the Kang Kong can be harvested by cutting off the top leaves, leaving 2 leaf nodes in the soil for it to grow and be harvested in another 2-3 weeks (Faster method of growing more Kang Kong instead of replanting new seedlings)

Website Guide Page

Link to website: <https://191421x.wixsite.com/website/project>

Instagram Page



Our Instagram page contains facts and interesting infographics about urban farming that our members have designed. These infographics are aimed at educating and raising awareness about urban farming to the students scrolling through Instagram. We post factual information about urban farming to spark students' interests and curiosity in urban farming in order to engage them. We also post some details about the various types of vegetables they can plant and some examples of them.

Learning journey

We planned to collaborate with a formal association, GWS living art, and bring interested students on learning journeys to see their facilities. However, the pandemic's restrictions did not allow us to do so, hence the idea of a learning journey was abandoned.

Workshop

We planned on having a workshop where we provided interested students with resources needed for Urban Farming, including Kangkong seeds and planting soil. We then sent out an application form on social media looking for interested participants. However, to our dismay, the pandemic's restrictions forbade us from intermingling with

other classes, hence we only managed to get participants from our class. An online communication group with our enthusiastic volunteers/participants was then created. We passed the materials on to the participants, gave them detailed step-by-step instructions on how to grow the Kangkong, and requested them to send us updates on their plants' growth process. In addition, our group had tested out the growth by planting one of our own previously and took pictures of the Kangkong's growth. We sent them a video of the compilation of the Kangkong's growing process for reference on when the plant would be ready for harvest. When the plant reached the date for harvest, the participants were informed and taught how to harvest the Kangkong. We collected photos of the participants' end products and surveyed their learning through the workshop.

2. MARKET REVIEW

Firstly, most online resources about urban farming only provide information on crops that can be grown in rather advanced facilities like strawberries. Not only that, most websites do not have enough information like tips for growing and things to bear in mind when growing your vegetables at home. Our website instead gives people a clear understanding of how to grow the plant. For example, our website provides a time-lapse video of a Kangkong plant that we grew on our own and pictures showing the progress that students should observe when growing their vegetables. We also provide tips on growing vegetables and which crop can be grown and harvested easily and quickly in Singapore's humid climate. Therefore, our website will consolidate all the necessary information students will require for growing their healthy vegetables and give a more in depth explanation to students as compared to existing resources.

2. Strawberries



Photo: Shutterstock

[Example of websites only containing pictures or suggestions on which crops can be grown, without providing detailed steps on how they can be grown at home]

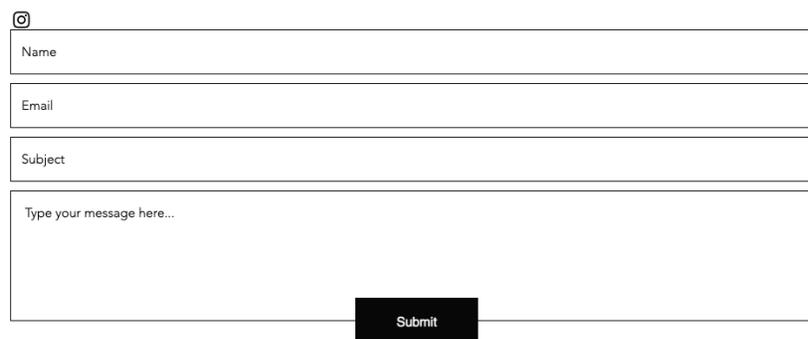
(Image retrieved from:

<https://earth911.com/home-garden/urban-farming-10-crops-you-can-grow-at-home/>)

Secondly, our Instagram page consists of many infographics which are not very wordy but contain insightful information on urban farming which can educate and spark students' interest in urban farming. Certain websites on urban farming can be wordy and contain profound knowledge that beginners to urban farming may not be able to comprehend easily. Our website caters to beginners at urban farming and is worded with easily understood language. Therefore, our website is easy to read and understood by teenagers compared to other complicated sources available.

Thirdly, our website contains a forum box at the bottom of the home page, which is not commonly seen in most informative websites. Our website doubles up as a forum for students to express their concerns and doubts during their urban farming process, allowing us to clarify their doubts with the answers that can assist them in a better learning experience.

Questions on urban farming



☒

Name

Email

Subject

Type your message here...

Submit

3. METHODOLOGY

3.1 Needs Analysis

A needs analysis was created to ascertain the relevance of this project. A survey was sent out, asking 84 participants to rate their knowledge of urban farming from 1 to 10 and whether they would be interested in our new resources that would help them. The survey showed 76.2% of the respondents indicated that their understanding of urban farming was from 1 to 5 (Fig. 1), while only 23.8% of the people said that they have an understanding of around 6 to 7 which is not very thorough too (Fig. 1). These results indicate that many students fall under our target audience, which means our project can help a more significant number of students. Our survey also showed that 78.6% (Fig. 2) of the respondents would be interested to learn more about urban farming as well as

how to carry it out, confirming the relevance of our project. Not only that, but 67.9% (Fig. 3) of the respondents also indicated that they would be interested in talks or learning journeys, showing how our resources can attract our target audience. This survey analysis would be used later to determine which resources took priority and should be focused more.

3.2 Survey Results

How much do you know about urban farming?

84 responses

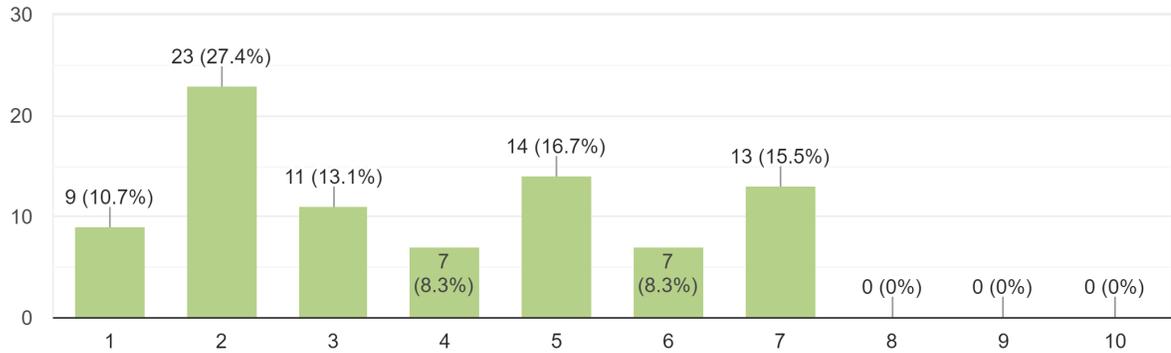


Fig.1

Would you be interested to learn more about the different types of urban farming, the importance of urban farming as well as how one can start urban farming from home?

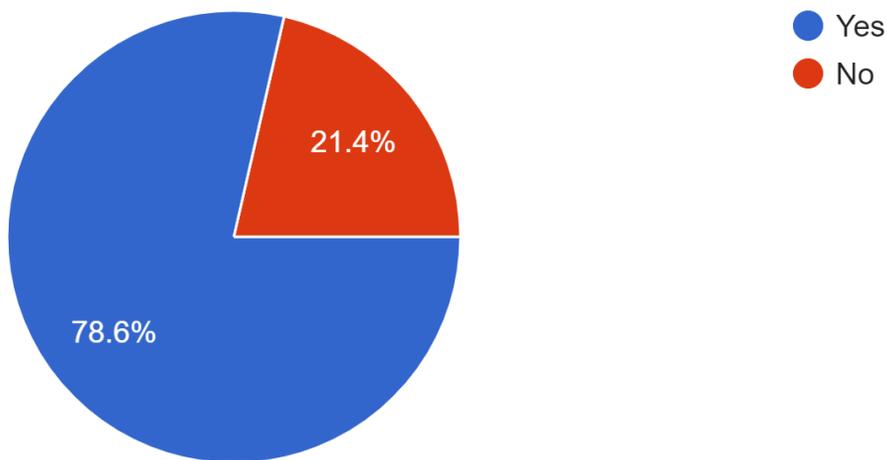


Fig.2

Would you be interested in joining talks held by professionals and/or participating in learning journeys on the theme of urban farming in the near future?

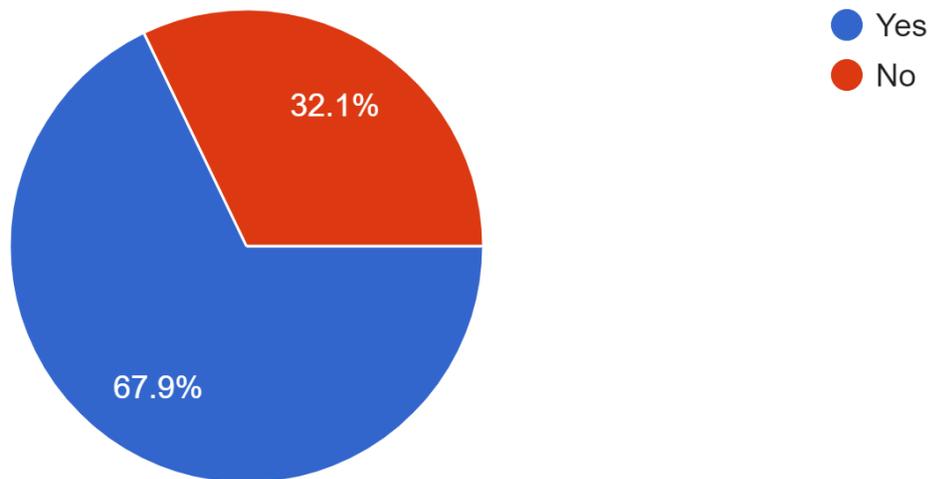


Fig.3

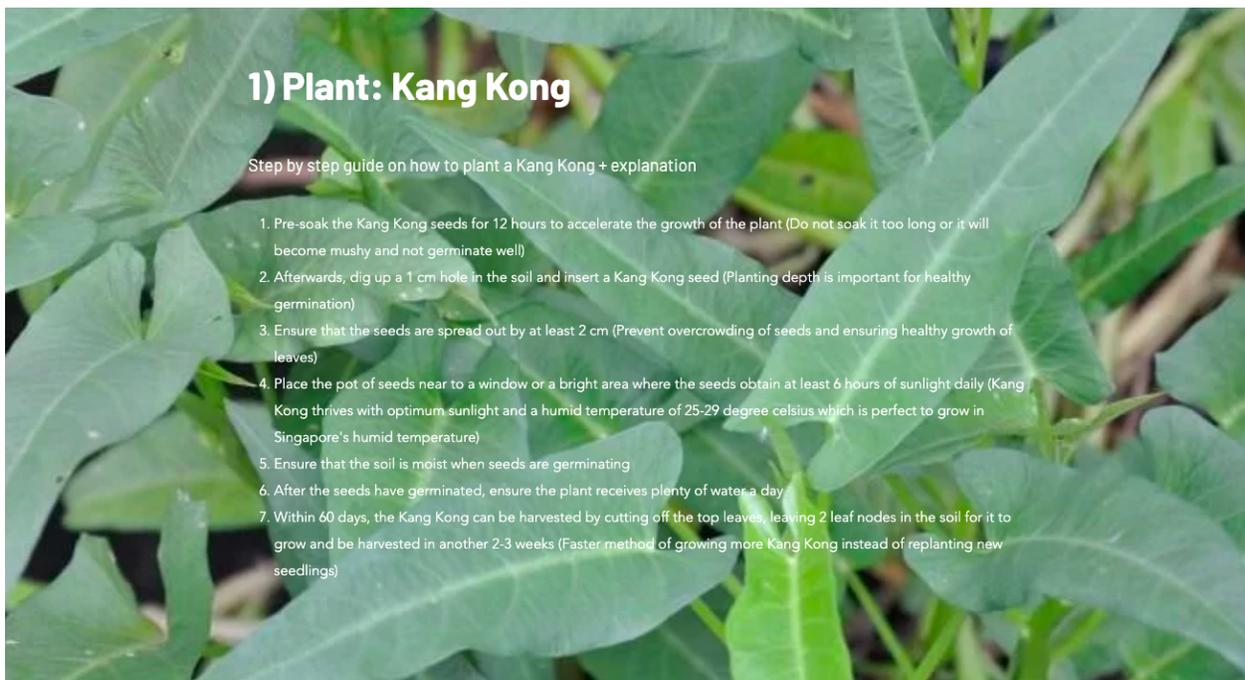
3.3 Development of Resources

Initially, we intended to collaborate with organisations and companies like GWS living art to carry out workshops and trips to urban farms for students to grasp a deeper understanding of urban farming, however, these ideas were called off due to the restrictions of Covid-19, and the CEO of the company, Mr. Zac Toh was too busy due to personal reasons. We subsequently decided to collaborate with ComCrop and hold an online interview with them but we were unable to do it due to time constraints.

Currently, we have created an Instagram account to raise awareness on urban farming and to communicate with students about the details of our workshops. We also created a website to provide students with basic information about urban farming and step-by-step instructions that include explanations on how to carry out urban farming at home. As for our workshop, Kangkong seeds and soil were distributed to several students interested in urban farming, as explained previously, and made to follow our 5-step pamphlet on how to urban farm at home. The results of the participants cooking their Kangkong were collected.



Downloadable PDF: 5-steps to grow a Kang kong guide for students to refer



Detailed steps + explanation on how to grow a Kang kong

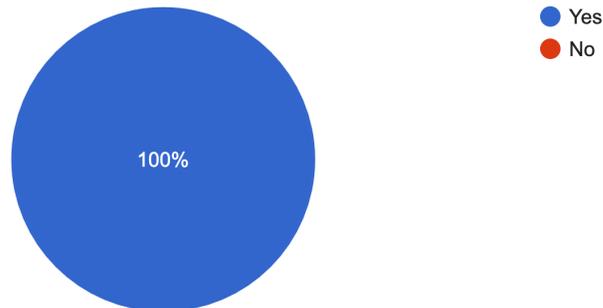
3.4 Pilot test

We tested our urban farming kit on the 5 high school students who attended our workshop.

Students referred to the 5-step on how to urban farm pamphlet that is available on the website to grow healthy and green plants at the comfort of their homes. A large proportion of them successfully carried out urban farming under the reference to our website and end products of them utilising them in dishes were submitted to us. We received positive reactions and feedback on our workshop on urban farming as shown in the survey conducted below

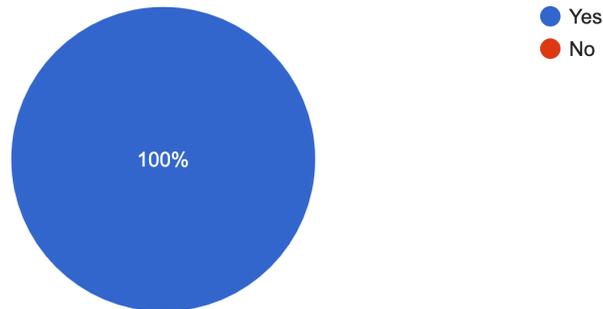
Did this activity further deepen ur interests in urban farming

3 responses



Was the website informative about urban farming?

3 responses



All the students found this activity enjoyable and engaging as well, however, some expressed their thoughts on adding more varieties of crops for them to experiment as well, as seen in the comment by one student, “Perhaps in the future, there could be a wider variety of plants provided which would provide a much more comprehensive and fun urban farming experience!”

4. OUTCOME & DISCUSSION

The feedback we received from our classmates was generally positive as they could understand the steps very easily and were able to successfully grow their kang kong. We were told that it could be made simpler if we had a video of us planting the Kang kong and harvesting it, which prompted us to film a video. We phrased our language in the steps for planting to make it easier to understand for others. Several concerns on the reasoning behind steps for planting a Kang kong were raised, thus we added a detailed explanation in our website for students to better understand how to carry out urban farming.

5. CONCLUSION

In a nutshell, from the feedback given by the students who reviewed our product, our product has met its objectives which were to enable more people to have a deeper understanding of what urban farming is, how it is carried out, and why it is so important. However, there are a few areas on our product that we can improve on such as a demonstration of the planting and harvesting steps. Overall, there was more positive feedback than negative feedback which shows that our product has accomplished our objective and can do better after improving it according to the comments that were given. We made a video for the students to understand how to plant and harvest following their comment on how much easier it would be to understand the steps. In addition to learning what we can do to improve our product, we also learned about the importance of teamwork and coordination to be able to make this project work a success.

6. REFERENCES

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