

# **CATEGORY 4: RESOURCE DEVELOPMENT**

**Group 4-91**

## **NATURE FUSION: PROJECT WRITTEN REPORT**

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## **ABSTRACT**

Project Nature Fusion consisted of a group of 4 students who had partnered with Sentosa Development Corporation to develop educational resources for Upper Primary and Lower Secondary students in Singapore. Project Nature Fusion had created a nature education package which included a tour of Sentosa's nature trails. The nature education package encompassed a script for tour guides, an online interactive map, a pamphlet and an online encyclopedia with information of biodiversity that could be found in Sentosa. Through the package, Project Nature Fusion hoped to provide meaning to the environment by sparking interest and facilitating ease of access to relevant information through the various platforms.

## **1 INTRODUCTION**

### **1.1 Rationale**

The rationale of Project Nature Fusion was that Singapore was an urbanised country and there was a clear lacking of awareness and appreciation of nature. This concern also extended to Sentosa as it was perceived as developed and modernised with tourist attractions. However, it was unknown to many that Sentosa had spots of nature as well. Hence, Project Nature Fusion aimed to raise awareness and knowledge of the nature in Sentosa, as a small step towards fostering appreciation for the environment and encouraging greater efforts for conservation and protection.

### **1.2 Objective**

The objective of Project Nature Fusion was to create a nature guide package for upper primary and lower secondary students to provide meaning to the environment and living organisms through a communication process that forged intellectual and emotional connections with nature with first hand experiences (Seefeldt & Galper, 2010).

### **1.3 Target Audience**

The target audience was upper primary and lower secondary students.

## 1.4 Resources

The resource created was a nature guide package that comprised of a tour guide script (Fig. 1.1), an online interactive map (Fig. 1.2), an encyclopedia (Fig. 1.3) and a pamphlet (Fig. 1.4).

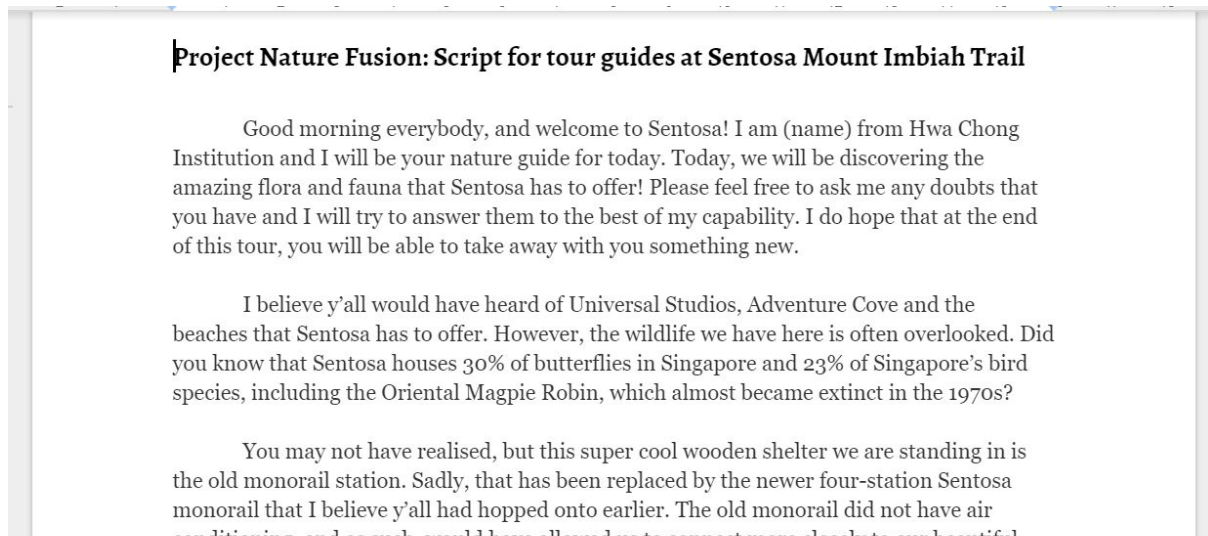


Fig. 1.1. A segment of the tour guide script document.

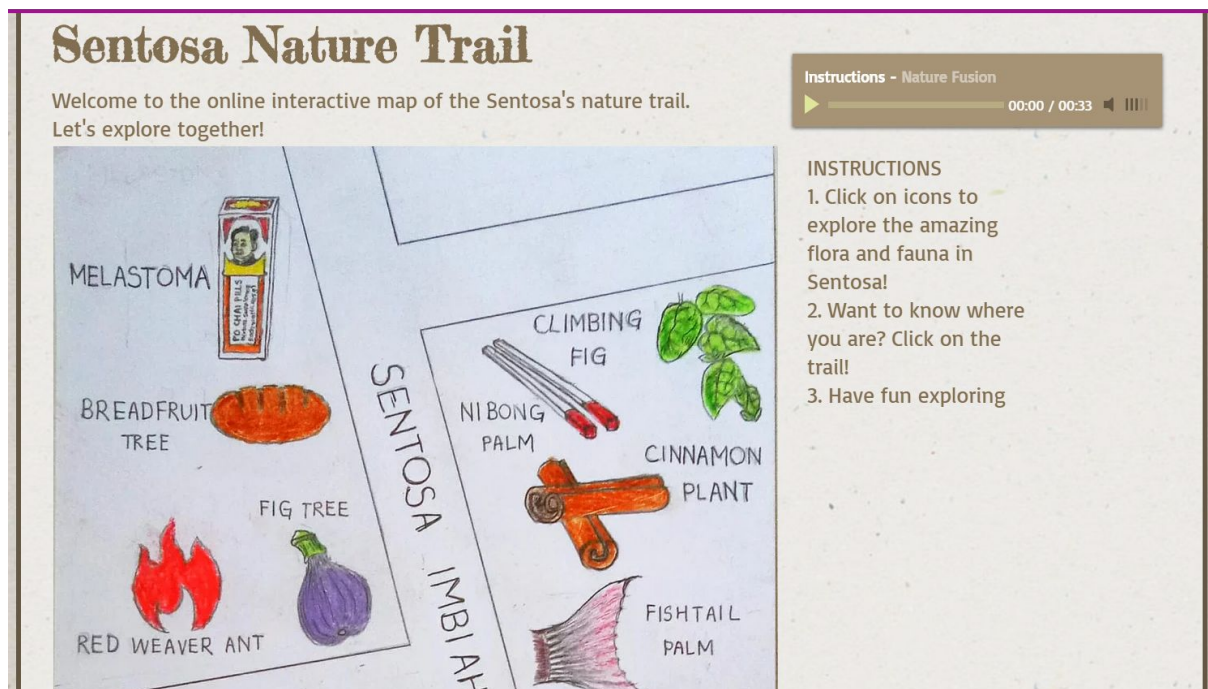


Fig. 1.2. A segment of the online interactive map, with audio guide on instructions of the online interactive map usage in the background.

Accessible at <https://projectnaturefusio.wixsite.com/naturefusion>.

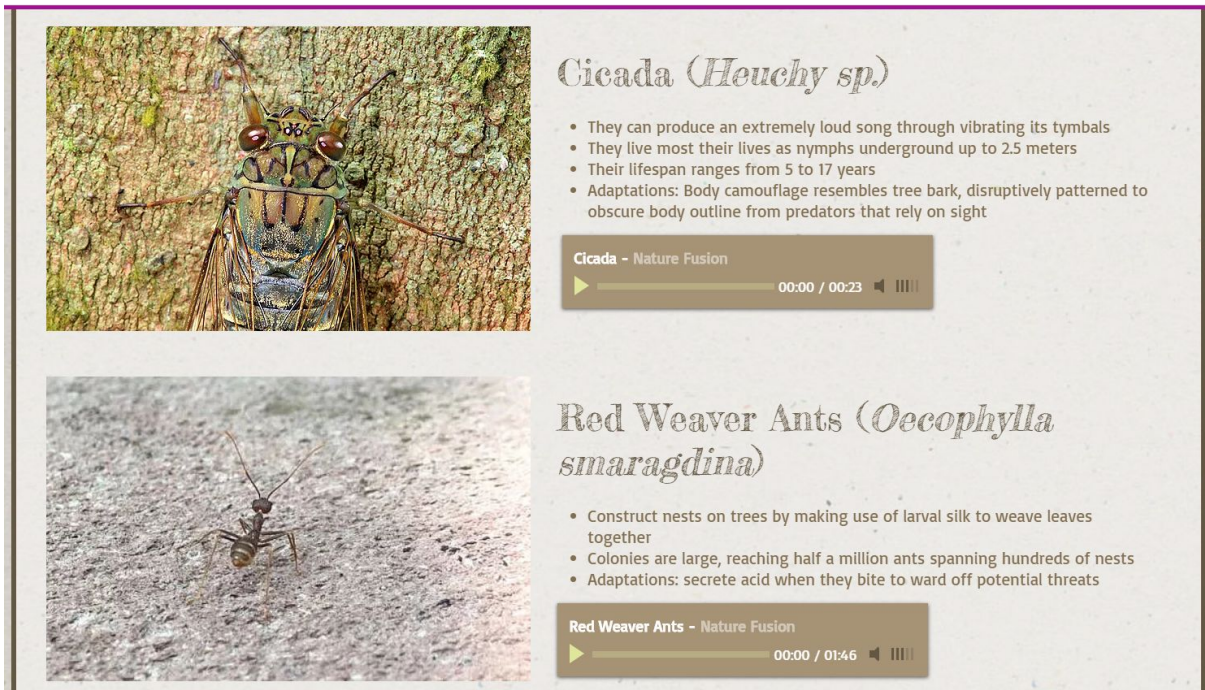


Fig. 1.3: A portion of the encyclopedia, as pictured.

Accessible at <https://projectnaturefusio.wixsite.com/naturefusion>.



Fig. 1.4: One of the two sides of the pamphlet shown.

## **2 REVIEW**

Project Nature Fusion had examined existing resources at Sentosa and identified several drawbacks. Firstly, the signboards at Sentosa Mount Imbiah Trail were physical in nature. As such, people would not have had access to the information if they were not physically there. In addition, the signboards were especially wordy, with large chunks of information that were difficult to digest and comprehend. Secondly, the nature journal provided by Sentosa was completely blank (Sentosa Development Corporation [SDC], 2018). Thus, visitors could not be expected to jot down notes and draw pictures if the knowledge was not accumulated in a cumulated bank.

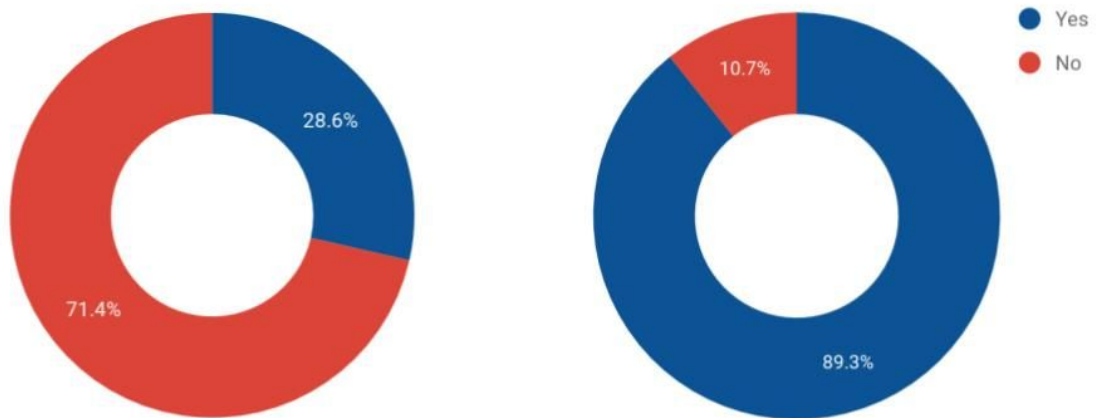
## **3 METHODOLOGY**

### **3.1 Needs Analysis**

A needs analysis was conducted to ascertain the relevance of the project. A survey was carried out on 30 upper primary and lower secondary students that had visited Sentosa to reaffirm the issue that there was a clear lacking of awareness and appreciation of the diverse flora and fauna in Sentosa. In addition, conversations with Sentosa Development Corporation's Senior Executive for Environmental Management Tammy Lim reflected her concern that spots of nature in Sentosa remained largely unknown. Hence, she was immensely supportive of the rationale of the project along with the idea of a nature education package.

### **3.2 Survey Results**

The survey results had reflected an evident lack of awareness and knowledge of the flora and fauna in Sentosa (Fig. 2.1). As such, all respondents had been strongly supportive of the idea of having a nature education package (Fig. 2.2).

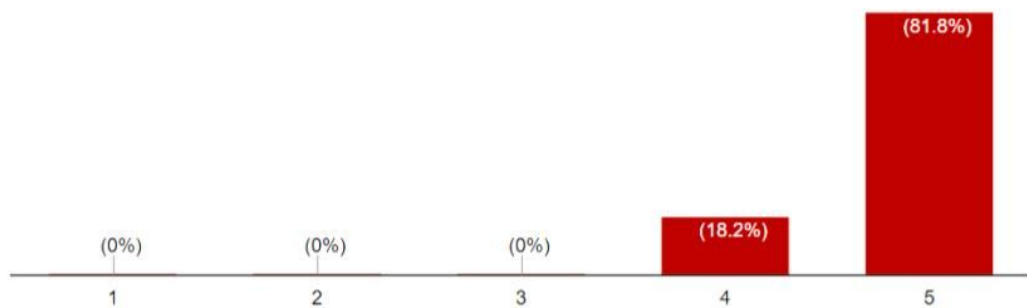


Were you aware that Sentosa has designated areas of diverse flora and fauna such as coastal forests and even coral reefs?

Do you find it difficult to differentiate the diverse flora and fauna?

**Fig. 2.1.** Pie charts showing respondents' evident lack of awareness and knowledge of the nature in Sentosa.

How useful would a nature education package be in providing you with information and guiding you around the area? (1 being the least helpful and 5 being the most helpful)



**Fig. 2.2.** Bar graphs highlighting the strong support of participants for a nature education package.

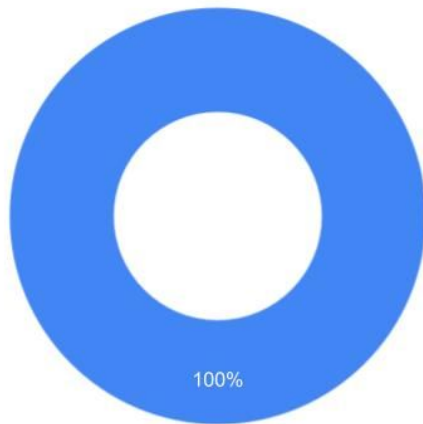
### **3.3 Development of Resources**

Existing programs were utilised in the creation of the resources. Canva, a free graphic design tool website was used in aiding the design of the pamphlet, along with QR codes for quick and convenient access. The creation of the website was done with Wix, a cloud-based web development platform. The project team underwent a 3 month weekly training session by Sentosa Development Corporation to become qualified nature guides and created an engaging and exciting script (SDC, 2018). The online interactive map was hand drawn and enhanced with icons, self-taken photographs and self-recorded audio files for each plant and animal. The photographs were also utilised for the encyclopedia and relevant information was factually checked with reputable sources (World Association of Zoos and Aquariums [WAZA], n.d.).

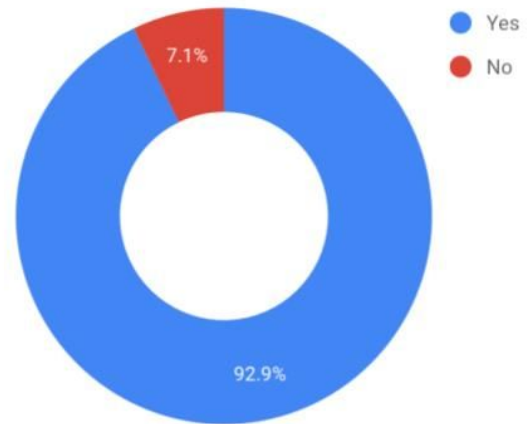
The resources were presented to Ms Tammy Lim for her feedback and necessary improvements had been made.

### **3.4 Pilot Test**

The first pilot test was conducted through the organisation of guided tours of the Sentosa Mount Imbiah Bridge for 30 upper primary and lower secondary students from the Chinese Development Assistance Council (CDAC). Through the tour, participants had the opportunity to use the resources. The response was overwhelmingly positive. Nevertheless, further improvements were suggested by participants during the feedback sessions and had been incorporated into the enhancement of the resources.

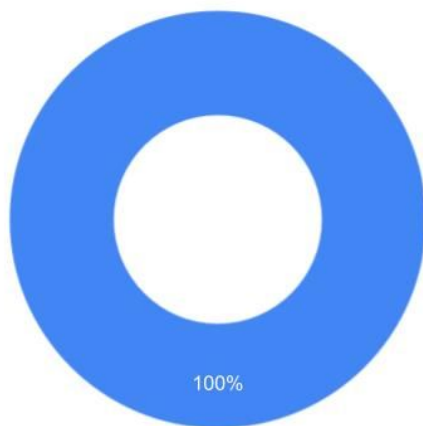


After this tour, are you now aware that Sentosa has designated areas of diverse flora and fauna?

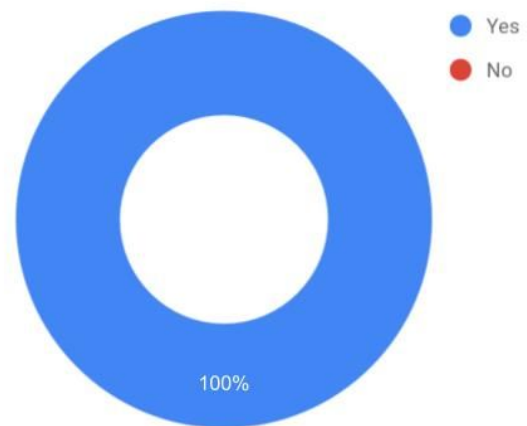


With the resources, are you able to differentiate the diverse flora and fauna independently?

**Fig. 3.1.** Pie charts reflecting participants had increased awareness and knowledge of the flora and fauna in Sentosa.



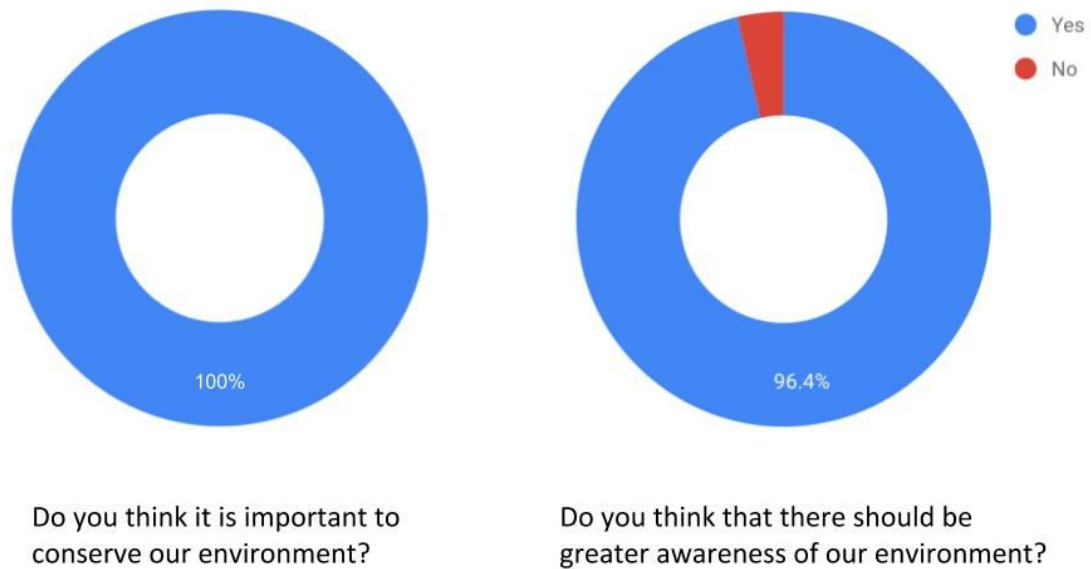
Was the tour interactive and meaningful?



Was the interactive map and encyclopedia informative and understandable?

**Fig. 3.2.** Pie charts showing participants had benefited from the nature tour and the resources.





**Fig. 3.3.** Pie charts highlighting participants had developed greater appreciation for the environment.

Respondents were now aware of Sentosa’s nature and majority now had the skills and knowledge to differentiate different plants and animals (Fig. 3.1). Respondents also felt that the tour was interactive and meaningful, and the interactive map and encyclopedia were informative and simple enough (Fig. 3.2). The products had proven to be effective in leaving a deep impression on participants, and they had developed a greater appreciation for the flora and fauna present in Singapore (Fig. 3.3).

#### **4 OUTCOME & DISCUSSION**

Although feedback was largely positive after the pilot test, there were further suggestions for improvement to the resources. Hence, various improvements had since been implemented. Firstly, audio guides were expanded to all plants and animals in the encyclopedia. In addition, the encyclopedia was made more engaging by the inclusion of symbols for plants which emphasised their respective unique and interesting features, thereby increasing the curiosity of users to learn more about them. Secondly, the online interactive map was revamped with larger icons for

enhanced readability, along with the addition of the project's own 360-degree images to the online interactive map, thereby allowing viewers to experience a tour of the trail in virtual reality, henceforth enhancing the viewer's experience and increasing their awareness of the trail. A short audio guide was also made to guide viewers on the navigation of the online interactive map.

However, it must be admitted that this project had its limitations. Firstly, the project was only limited to the nature in Sentosa and did not encompass the nature present in other parts of Singapore as a whole. As such, participants lacked exposure to other plants and animals outside Sentosa. Secondly, the resources were confined to a small target audience of upper primary and lower secondary students instead of reaching out to the general public. Thus, resources were likely to have a smaller impact on audiences outside the target group.

As such, potential further works could include the extension of the project's resources to other plants and animals in different parts of Singapore, and the inclusion of varied forms of resources to cater to various groups of target audiences. The resources could also serve as the backbone of a potential day camp event which could encompass an amazing race to allow participants to discover the various flora and fauna in Sentosa and Singapore. In addition, the resources could be used to conduct new sabbatical sessions in Hwa Chong Institution, and the project could be passed on to juniors for them to take on in an alternative form such as Service-Learning.

Nevertheless, the project had successfully achieved its final outcome of having cultivated greater awareness of and appreciation for the diverse nature of Singapore in participants.

## **5 CONCLUSION**

Nature Fusion had been a challenging project to undertake as it had required many months of rigorous work to attend training sessions, design the various resources, conduct nature tours, capture relevant photos and research for information along with confirmation of its authenticity, as well as consultation with Ms Tammy Lim and Dr Huang Xiaoqian for feedback on further improvement. Through this project, the group members had developed multiple life skills. Observation skills were vital in determining the drawbacks with current resources. Creativity was crucial during the designing of the products in making them unique and appealing to relevant audiences. Public speaking skills were also cultivated in the journey of becoming an engaging and exciting nature guide. Most importantly, passion, patience and perseverance served as the key elements that paved way for the successful completion of the project.

The project had truly allowed its members to develop greater awareness of and appreciation for nature not just in Sentosa, but in their everyday lives as well.

## **6 ACKNOWLEDGEMENTS**

The project members would like to express their heartfelt gratitude towards the following individuals, without whom the project would never have had been a success.

Ms Tammy Lim, Sentosa Development Corporation's Senior Executive for Environmental Management, for having kindly participated in discussions, trained the members in becoming a nature guide as well as provided invaluable insights for improvement,

Dr Huang Xiaoqian, Project Mentor, for having provided the invaluable partnership opportunity with Sentosa Development Corporation, patiently guided and given valuable feedback throughout the course of the project,

Ms Quah Lee Hwang, Resource Development Category Manager, as well as other Category 4 judges, for having provided valuable suggestions on improving the project,

Participants from the CDAC for having participated in the needs analysis and pilot test of the resources, and given invaluable feedback,

And all those who had helped Project Nature Fusion in one way or another.

## **7 REFERENCES**

Seefeldt, C., & Galper, A. (2010). *Experience and Education, Firsthand Experience*.

(Online). Available:

<https://www.education.com/reference/article/experience-education-firsthand/>.

Retrieved March 20, 2018.

Sentosa Development Corporation. (2018). *Sentosa Nature Ambassador Programme*. Singapore.

Sentosa Development Corporation. (2018). *Sentosa Nature Journal*. Singapore: Sentosa Development Corporation.

WAZA : World Association of Zoos and Aquariums. (n.d.). (Online). Available:

<http://www.waza.org/en/site/home>. Retrieved March 13, 2018.