

23rd International Elementz Fair 2022

Reflection by RGS Year 4 students Woon Yun Xi Clarice, Wang Xinning and Veronica Shen

“Organised by Anderson Serangoon Junior College, the annual International Elementz Fair is a platform for upper secondary and junior college students to showcase their primary and secondary scientific research in the Science Research category, and prototypes which can contribute to the betterment of society in the Innovation category. Due to COVID-19 restrictions, the 23rd International Elementz Fair was entirely held online.

We participated in the Science Research category. Our project, titled “Effect of Human Disturbance on Plant Diversity”, sought to investigate the effect of trampling (specifically, cycling) on biodiversity.

In the course of our research, we conducted fieldwork at a bicycle trail in the Dairy Farm Nature Quarry using the Daubenmire sampling method and applied the Simpson’s and Shannon diversity indices, as well as species abundance for data analysis. We subsequently generated graphs for trend analysis on the relationship between diversity and intensity of disturbance. Making use of the molecular biology apparatus kindly provided by the school, we performed DNA barcoding to identify the various plant species in our chosen site.

After meticulous planning and fine-tuning of our presentation slides with feedback from our teacher-mentor Dr Jeffrey Lee, we presented our project and engaged in a question-and-answer segment with three judges from different universities and organisations. This final judging took place on 19 April 2022.

We are overjoyed to have been presented the Gold Award as recognition of our efforts in this long yet fulfilling journey.

The Elementz Fair was certainly a stimulating and inspiring experience for us. We had started off with a simple enjoyment of Biology, but this project gave us so much more — valuable exposure to scientific research and real-world exploration, as well as opportunities for developing problem-solving skills as we dealt with setbacks along the way. The challenges we faced include time constraints, limited availability of apparatus, as well as the existence of environmental elements that could influence our results but remained out of our control, which forced us to revise our research focus a few times. Research was decidedly challenging as we often came across foreign terminology and concepts beyond our current knowledge while reviewing existing literature.

When we faced these difficulties, we sought to overcome them and eventually cultivated our teamwork, resilience and adaptability. This brought us to deepen our understanding on our research topic and allowed us to hone our analytical and information-processing abilities, which include valuable skills such as software usage, report-writing and presentation skills. Looking back, we see now that we have indeed grown throughout this journey, progressing from a simple, tentative interest in research to being able to use lab apparatus with confidence and present our project findings with assurance.

In conclusion, Elementz has truly been an enriching and memorable opportunity. We have learned so much and are deeply grateful to our teammates and all who have made this possible. We especially wish to thank our teacher-mentor Dr Jeffrey Lee, as well as the school lab manager Ms Wong Su Zhen, for their patient guidance and constant support throughout our research project.”