23rd International Elementz Fair 2022
Reflection by RGS Year 4 students Ong Crystal, Lileath Tang Yong Hui and Gauri Lather

"The 23rd International Elementz Fair is an annual event that aims to provide a platform for upper secondary and junior college students to showcase their primary and secondary scientific research, and prototypes which can contribute to the betterment of society. It is a key event in the inaugural three-day S.T.E.A.M. Conference held from 19 to 21 April 2022. The S.T.E.A.M. Conference aims to allow students to appreciate the integration of Science, Technology, Engineering, Arts and Mathematics through talks, workshops and learning journeys. The 23rd International Elementz Fair was held online due to the COVID-19 situation.

Our team, consisting of our team leader Ong Crystal, Gauri Lather, and Lileah Tang embarked on this journey together. We brainstormed many project ideas and settled on studying the promotion of native plant species into urbanised areas through green corridors, seeing that it was not a topic that was researched before.

Our research included multiple rounds of fieldwork where we had to go to various green corridors in Singapore to collect plant samples. We were also given the opportunity to use the resources and equipment in the RGS Research Lab to study the plant samples.

Through our research, we were able to make interesting findings, one main conclusion being that green corridors increase the diversity and abundance of plants within green areas, but they may not actually help to introduce native plants into urbanised areas. We wanted to enter our project for the Singapore Science and Engineering Fair (SSEF). Hence, we also furthered our research by conducting literature reviews to find out whether we should eradicate non-native plants from the green corridors, seeing that they were dominating the green corridors.

Our Elementz journey has definitely been an enriching and fun experience. We started by creating our presentation deck, which consisted of a short brief of our project (it was used for the shortlisting of teams). When we were shortlisted, we had to modify our presentation deck and prepare a presentation of our project. On the final judging day, we had the opportunity to have our project judged by Dr Chow Chee Lap, a Senior Research Scientist at Nanyang Technological University, and Dr Fang Xiaoqin, an Assistant Director at the National University of Singapore School of Computing. We were also required to undergo a five-minute question-and-answer session where we got to share with the judges more about our project. In the end, our team attained the Gold award!

Through the process of preparing for and competing in the competition, we have deepened our research skills and become more confident in our project. The entire process was definitely not an easy one and we relied on each other to work hard to achieve what we wanted to. There were times when we experienced mental blocks and were clueless as to how to proceed, but whenever that happened, we knew we had each other and our project mentor, Dr Jeffery Lee, to support us. We have learnt many new experimental techniques such as using DNA barcoding to sequence plant DNA, using Polymerase Chain Reaction (PCR)

to amplify our DNA samples, carrying our gel electrophoresis on our PCR products, and many other things that we may not have been able to do in class.

We are thoroughly grateful for this invaluable opportunity to be able to extend our love for Biology and be given this chance to research more about a topic that we were interested in. We have really grown as young researchers through this competition, and all of this would not have been possible without a few people. Our team would like to thank our research mentor, Dr Jeffery Lee for his invaluable guidance throughout our research and for providing us with feedback and validation. We would also like to thank the lab manager, Ms Wong Su Zhen for always being willing to help us whenever we were unsure about how to use a piece of lab equipment, or had any doubts about the experimental protocols.

All in all, we are thoroughly grateful for this enriching experience that allowed us to deepen our love for Biology and further our passion for scientific research. To everyone, do not be afraid to try to step out of your comfort zone and chase your dreams, you never know where it may lead!”