

"Digi-Science" Video Production Competition for Hong Kong Secondary Schools 2023-2024

Students explored advanced science experiments and honed diverse skills by participating in the 'Digi-Science' Video Production Competition

To encourage students to incorporate testing into their science experiments and arouse their interest in testing and certification, the Hong Kong Council for Testing and Certification (HKCTC) has co-organised the 'Digi-Science' Video Production Competition with the Hong Kong Association for Science and Mathematics (HKASME) since 2016.

This year's theme, 'Sustainability in Daily Life,' prompted participating student teams to explore diverse scientific topics highly relevant to our everyday existence. They developed hypotheses, designed experiments, and employed tests and other methods to verify their theories. Each team was required to illustrate their experiment process and conclusion in a two-minute video, thereby enhancing their communication and organisation skills.

Four HKCTC members, namely Ms Gilly WONG, Dr Lesley LAM, Ir Dr Fanny TANG and Mr Robert LUI, joined hands with the judges from HKASME to assess the competition entries. They expressed amazement at the students' ability to delve into advanced scientific topics. Dr Lam noted, "the videos showcased their dedication to researching topics and conducting literature reviews. Furthermore, the students meticulously followed procedures, from formulating hypotheses, conducting investigations to validating their theories. The competition encouraged students to cultivate this rigorous approach and logical thinking, extending beyond mere problem-solving. It also deepened their understanding on the importance of testing."

Mr Lui praised the students' presentation and editing skills. "They excelled at conveying



Dr Leslie LAM (Left) and Mr Robert LUI (Right) served as judges and presented awards to the winning teams on behalf of the Council.

complex experiments through concise two-minute videos that are both informative and accessible to laypeople," he said. "Many videos even incorporated music and comedic elements, making them truly captivating."

Senior Secondary Division Champion: Shun Lee Catholic Secondary School

Title of Video: Red Dye Makes You Die

Team members: So Cheuk Hang, Feng Yuk Wa, and Pak Yuet Ching

Food safety is essential for sustainability. The team researched tests for food safety and identified the Marquis Test and the Biuret Test as effective methods for detecting Rhodamine B, a carcinogenic substance that can cause food poisoning if ingested in large quantities.

"These two experiments are qualitative tests which aimed to identify specific components (functional groups of the molecule) within the samples using these tests. For instance, the Marquis Test detects alkaloids, while the Biuret Test detects amine groups. Based on this, we inferred the possible presence of Rhodamine B in the samples and proceeded to conduct quantitative tests to determine the exact concentration," the team members noted.

During the tests, the team encountered difficulties in obtaining clean results, which led them to explore alternatives. Through trial and error, the team eventually identified samples and experiments that produced substantial results. "Patience and caution were indispensable in testing," they added.

The judges were impressed by the use of comedic moments in their video. "We incorporated popular memes from social media to capture the interest of young viewers," the team noted. "Our humorous approach aimed to engage the audience and draw their attention to the potential hazard of Rhodamine B and other food safety issues."



Shun Lee Catholic Secondary School (from left): Pak Yuet Ching, So Cheuk Hang and Feng Yuk Wa

Junior Secondary Division Champion: St. Paul Convent School

Title of Video: HydroPreserve+

Team members: Chan Yin Yu, Jocelyn Ho Man Sheung, and Keung Yat Kiu

Driven by commitment to sustainability, the team embarked on a project to address water conservation during planting. Being passionate about organic farming, they explored ways to produce hydrogel that optimises water retention for plants. Originally, the team chose agar as the basic ingredient but after numerous tests on agar, but they found that it did not meet their expectations.



St. Paul Convent School (from left): Keung Yat Kiu, Jocelyn Ho Man Sheung and Chan Yin Yu

"We made reference to other similar precedent studies and identified sodium alginate as the key ingredient for our hydrogel. Extracted from algae, sodium alginate is natural, non-neurotoxic, non-carcinogenic and biodegradable, which is an ideal sustainable solution."

The team repeatedly tested and measured the absorbency of sodium alginate hydrogel. To replicate a natural environment for enhancing viability of the result, they buried the samples in the soil collected from the garden for seven days and conducted daily measurements down to two decimal places at the exact same time to observe changes. Meanwhile, the team maintained a control sample for comparison.

By skilfully editing their video, the team gave a lively presentation. Filming on location outside the school lab enriched the visual elements and captivated the audience. The project served as an excellent training that fostered the right attitude toward testing and experiments. "Despite various challenges, our passion sustained the experiments, and through trial and error, we achieved our goal, proving that sodium alginate hydrogel is perfect for sustainable planting," noted the team members.



Video by the team from St. Paul Convent School (Junior Secondary Division) was named the "Most Popular Video".

List of Winners of "Digi-Science" Video Production Competition for Hong Kong Secondary Schools 2023-24

Senior Secondary Division		Junior Secondary Division	
Champion	Shun Lee Catholic Secondary School	Champion	St. Paul's Convent School
First Runner-up	CNEC Lau Wing Sang Secondary School	First Runner-up	PLK Choi Kai Yau School
Second Runner-up	St. Paul's Convent School	Second Runner-up	PLK Choi Kai Yau School
Merit	STFA Leung Kau Kui College	Merit	Christian Alliance S. C. Chan Memorial College
	Cheung Sha Wan Catholic Secondary School		Buddhist Sin Tak College

Winning Works of "Digi-Science" Video Production Competition for Hong Kong Secondary Schools 2023-24:

