

DIGI-SCIENCE VIDEO PRODUCTION COMPETITION FOR SECONDARY SCHOOL 2021

Video contest inspires students to approach innovative problem-solving with testing

The Hong Kong Council for Testing and Certification (HKCTC) co-organised the “Digi-Science Video Production Competition for Hong Kong Secondary School 2020-21” with the Hong Kong Association for Science and Mathematics Education. The theme of this year’s contest was “Testing Science in Daily Life – Healthcare and Hygiene”. The competition attracted dozens of entries for its Senior and Junior Divisions. Participating student teams were required to produce a two-minute video depicting their innovative testing experiments.

Senior Division Champion: Kowloon True Light School Project: Reduction of formaldehyde released from clothes



Kowloon True Light School: (from left) Tong Wing-ying, Nettie and Xu Pak-lam

The skin allergic reaction of a teacher’s newborn baby had prompted the Champion team of the Senior Division to test the amount of formaldehyde in clothes and to compare the effectiveness of different methods to reduce the release of formaldehyde from clothes. They explained that clothes might be treated with resins containing formaldehyde to enhance wrinkle resistance and prevent clothes from losing colour. Prolonged exposure to formaldehyde might cause an allergy attack. In compliance with the testing method specified in international standards, the team used water to extract formaldehyde from clothes and then measured the amount by spectrophotometry. It was found that some clothes in the retail market released excessive amounts of formaldehyde. After testing with different detergents and additives such as lemon juice and vinegar, they suggested that it was most effective to remove formaldehyde with baking soda or a specific detergent.

“The biggest challenge was to compress all the data and information into a two-minute video. In order to ensure accuracy, we had done numerous experiments and generated a lot of data. It was difficult to produce a video to present complex scientific concepts with layman language that

appeals to the audience,” the Champion team shared. “Under the COVID-19 pandemic, we did not attend school often. Besides the hands-on experiments, we made use of virtual meetings to complete the project.” By taking part in the contest, the team realised that not all tests that generate accurate results require costly materials. They also developed interest in learning and applying testing science.



Members of the HKCTC, (from left) Patrick Lee and Stephanie Lam

The HKCTC Members, Stephanie Lam and Patrick Lee, served as judges of the competition. All entries were assessed based on creativity of the experiment idea, the video quality and clarity of report presentation.

“The teams showed high awareness of current affairs. They demonstrated curiosity about matters in everyday life and ability in analysing issues from different perspectives,” Lam said. “In the light of the COVID-19 pandemic, students were interested in identifying topics relating to hygiene and healthcare in daily life and were able to apply their scientific knowledge to develop creative solutions.”

Echoing on Lam’s view, Lee was impressed by the high quality entries. “Contestants presented the core messages in a clear and accurate manner. To ensure that their tests complied with the established standards, they conducted a lot of research on the international standards and requirements.” Lee said. He was delighted to see that the teams had done repeated testing to ensure accuracy and reliability of the results.

The judges observed that the contest had enhanced students’ understanding of testing and certification, which plays an important role in ensuring the quality and safety of everyday products, therefore safeguarding consumers’ interest. Through this contest, students were motivated to uncover the truths behind some daily products.

Junior Division Champion: St Paul's Secondary School Project: COVID-19 vs bleach



St Paul's Secondary School: (from left) Cynthia Chim and Hayley Lam

Noting the increasing use of diluted bleach solution as a cleaning and disinfecting agent to guard against COVID-19, the Junior Division winning team developed tests to determine how exposure to light and heat would affect the effectiveness of the bleach solution. “We kept the diluted bleach solution at different temperatures and room conditions.

The amount of sodium hypochlorite in the bleach solution was tested afterwards. It was discovered that when the temperature of the bleach solution was higher or when it was exposed to light, the amount of sodium hypochlorite would be lower,” the team said. They eventually found out that for effective disinfection, bleach solution should be stored in a cool and shaded place. Also, recently produced bleach solution is more recommendable.

The team added that they had put extra time and effort in video shooting and editing. They simplified the scientific theories and used lively photos in the opening to engage the viewers. “This competition helped us understand the importance of testing and increased our interest in developing new testing methods for solving problems in everyday life. We also realised that meticulous testing is required in order to achieve accurate and reliable results,” said the team.

