

Guidelines on Conducting Science Lessons in Science Laboratories for the Prevention of Coronavirus Disease (COVID-19)

(This guideline will be timely updated in response to the latest recommendations of the Centre for Health Protection and released via the web page (What's New) of Science Education Key Learning Area of the EDB.)

In order to minimise the risk of contracting and spreading COVID-19, schools are advised to take the following precautionary measures for conducting science lessons in science laboratories (Science, Biology, Chemistry and Physics Laboratories). The Guidelines are prepared with reference to the Health Advice issued by the Centre for Health Protection (CHP) and handbook on “Safety in Science Laboratories” (EDB, 2013).

1. Precautionary Measures

- 1.1 Students should be reminded to maintain good personal hygiene, and avoid touching eyes, nose or mouth and sharing personal items. Students should also perform proper hand washing before and after lessons.
- 1.2 Schools should maximise the use of space in science laboratories to ensure a proper physical distance among students. For example, schools should keep the laboratory benches as far apart as applicable and arrange students to sit in a “face-to-back” setting.
- 1.3 If science laboratories are installed with island benches, teachers could make good use of the benches near the walls or windows to maintain a proper physical distance among students.
- 1.4 All windows of science laboratories should be opened during lessons. Use of fans (e.g. wall, circulating or exhaust fan) should be accompanied by means to increase outdoor air changes (e.g. maximising fresh air intake of air conditioners) at the same time. Minimise air blowing directly from one person (or group of people) to another.
- 1.5 If the air-conditioning system is used, ensure there is sufficient fresh air supply.
- 1.6 Teachers, students and staff should wear masks at all times during lessons.
- 1.7 Apparatus and experimental items should be cleaned and disinfected before and after use.
- 1.8 Science laboratories should be cleaned and disinfected regularly every day.
- 1.9 Liquid soap, disposable paper towels and lidded rubbish bins should be provided in science laboratories.
- 1.10 Alcohol-based disinfectants and handrub are flammable substances and may pose hazards when used in science laboratories. Liquid soap and water should be used instead for cleaning / disinfecting hands.
- 1.11 Students should be reminded to maintain a proper physical distance when queuing and entering or leaving science laboratories in order to minimise the risks involved with crowd gathering.

2. Recommendations for Learning and Teaching

2.1 Guiding Principles

- 2.1.1 The modes of teaching should be adjusted appropriately. For example, teachers could demonstrate experiments or show experimental videos. The entire process of experiments and the results could be displayed with the use of a projection system.
- 2.1.2 When group experiments are necessary, teachers should limit the number of students in a group as far as possible and avoid cross-group activities and reduce the sharing of experimental setup and equipment. Students should pay attention to their hand hygiene if they need to use shared experimental items.
- 2.1.3 Teachers should avoid having students engage in group discussions at a close distance from each other.
- 2.1.4 Teachers could consider allowing students to carry out experiments individually, provided that there is a proper physical distance among students.
- 2.1.5 Teachers should maintain a proper physical distance from students when offering individual guidance.
- 2.1.6 Proper Personal Protective Equipment (PPE), such as safety spectacles or goggles, protective gloves and laboratory coats, should be provided to students, taking into consideration the needs of individual experiments. PPE provided for students must be cleaned / disinfected before and after use.

2.2 Participation in Learning Activities

- 2.2.1 If students are feeling unwell, teacher should stop them from participating in learning activities and arrange them to rest in the medical room. Schools should inform their parents or guardians as soon as possible, and remind the students to seek medical treatment at once.
- 2.2.2 Experiments involving smelling, blowing, tasting or using human cheek cells should not be carried out in science laboratories.

3. Reference

- 3.1 Health Advice to Schools for the Prevention of COVID-19

<https://www.chp.gov.hk/en/features/102742.html>



- 3.2 Handbook on “Safety in Science Laboratories” (2013)

https://cd1.edb.hkedcity.net/cd/science/laboratory/safety/SafetyHandbook2013_English.pdf



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