

EDUCATION BUREAU CIRCULAR MEMORANDUM NO. 178/2025

From : Secretary for Education

To : Heads of Government, Aided (including special schools), Caput and Direct Subsidy Scheme Secondary Schools

Ref. : 1125-2015-8075-9030-00009

Date : 26 September 2025

Fostering Scientific Thinking – “Chemistry Practical Learning Portfolio Scheme (2025/26)”

Summary

This is to invite secondary schools to participate in the “Chemistry Practical Learning Portfolio Scheme (2025/26)” organised by the Education Bureau (EDB).

Background

2. A solid foundation in science and mathematics education is a key and prerequisite for nurturing innovation and technology talents. Thus, EDB actively promotes science education through multiple measures, such as ongoing curriculum updates, professional training for teachers, and meaningful learning experiences both inside and outside the classroom, with the aim of enhancing students’ scientific literacy. In Chemistry education, we also encourage schools to employ experiment-based tasks that are closely aligned with the curriculum and integrated with higher-order thinking. These tasks effectively consolidate students' conceptual understanding, enhance their investigative skills and scientific thinking, and develop their problem-solving abilities and creativity. This solid foundation of scientific knowledge and skills inspires and supports students' aspirations for advanced learning and development in science, technology, and related fields in the future, thereby contributing to Hong Kong's innovation and technological growth.

Details

3. The Chemistry Practical Learning Portfolio Scheme (2025/26) (hereinafter referred to as the Portfolio Scheme) is organised by the Science Education Section of EDB. It aims to foster

a stronger practical culture in secondary Chemistry education, encourage and recognise student participation in Chemistry practical activities and acknowledge the efforts of teachers and laboratory technicians in promoting practical learning. Details of the Portfolio Scheme are provided in **Appendix 1**.

4. The target participants of the Portfolio Scheme are Secondary 4 students studying Chemistry in government, aided (including special schools), caput or Direct Subsidy Scheme (DSS) secondary schools. Applications should be submitted on a school basis. Upon application, schools are required to submit to Science Education Section of EDB records and documents for at least 5 Chemistry practical activities conducted in Chemistry classes during the 2025/26 school year. To further enhance the learning and teaching, each practical activity should include one or more higher-order thinking questions to promote scientific reasoning or inquiry skills. Schools are encouraged to make use of digital tools (e.g. Generative AI), where appropriate, for designing these higher-order thinking questions to be incorporated in practical activities. For guidelines, please refer to the information sheet at <https://www.edb.gov.hk/portfolio-scheme>.



5. Each participating student will receive a personalised learning portfolio along with an digital certificate issued by EDB at the end of the school year. The portfolio will record the number and types of Chemistry practical activities completed and include recognition levels (Diamond, Gold, Silver, Bronze) based on the number of experiments completed, serving as a credible record of students' laboratory experience during their Chemistry studies. Students may include the portfolio and certificate in their Student Learning Profile (SLP)¹ and use them as supporting documents for future applications to science / STEAM-related programmes in further studies, where applicable.

6. To enable schools to have a better understanding of the Portfolio Scheme as well as the role and responsibilities of the participating schools' teachers, EDB will organise a briefing session for Chemistry panel heads and teachers of secondary schools to introduce the Portfolio Scheme and the role of the teacher-in-charge. For details, please refer to the information below:

¹ This Portfolio Scheme is being organised for the first time, with S4 as the pilot level. Science Education Section of EDB will review its implementation and effectiveness, with the aim of gradually extending it to S5 and S6 in the future.

**The Briefing Session of the “Chemistry Practical Learning Portfolio Scheme (2025/26)”
(Web-based) (New)**

(Course ID: CSD020250717)

Date: 13 October 2025 (Monday)

Time: 4:00 – 5:00 pm

Venue: Online session



7. Schools interested in joining the Portfolio Scheme should submit the completed school application form (**Appendix 2**) via email at cpssc@edb.gov.hk by **31 October 2025 (Friday)**. Each school needs to submit one application form only.

Enquiries

8. For enquiries, please contact Mr Michael CHAN (Tel: 3698 3453) or Ms NC TAM (Tel: 3698 3439) of the Science Education Section, Innovation Technology Education Division, EDB.

Dr William WL LAM
for Secretary for Education

c.c. Heads of Sections – for information

**Fostering Scientific Thinking –
“Chemistry Practical Learning Portfolio Scheme (2025/26)”**

Details of the Scheme

Introduction

The Chemistry Practical Learning Portfolio Scheme (2025/26) (hereinafter referred to as the Portfolio Scheme) is organised by the Science Education Section of Education Bureau (EDB). The Portfolio Scheme recognises and documents S4 students’ Chemistry learning by recording the number and types of practical activities completed by students during the 2025/26 school year, and acknowledges the efforts of Chemistry teachers and laboratory technicians in promoting practical learning. By launching this scheme, we aim to further promote practical activities, with a view to fostering students’ conceptual understanding of Chemistry and enhancing their scientific inquiry skills and problem-solving capabilities, thereby encouraging schools to provide more high-quality practical activities for their students.

Objectives

- To encourage and recognise student participation in Chemistry practical experiments;
- To highlight and acknowledge the efforts of Chemistry teachers and laboratory technicians in promoting practical learning;
- To strengthen students’ scientific inquiry and scientific thinking skills;
- To create a credible record of students’ laboratory experience to support future applications for science/STEAM-related programmes; and
- To foster a stronger practical culture in secondary Chemistry education.

Target participants and enrolment

- Eligible schools: All government, aided (including special schools), caput and Direct Subsidy Scheme (DSS) secondary schools offering S4 Chemistry.
- Eligible students: S4 students studying Chemistry (S4-6) Curriculum in local publicly-funded secondary schools.
- Application process: Schools should submit one application form on behalf of participating students.

Scheme details

(a) Recognition Levels

Each student will receive a personalised portfolio listing the experiments conducted in the 2025/26 school year, along with an EDB-issued digital certificate. Recognition levels are assigned based on the number of experiments completed:

Number of experiments	Recognition level
11 or more	Diamond
9 – 10	Gold
7 – 8	Silver
5 – 6	Bronze

Remark: Students must complete at least 5 experiments to qualify for a portfolio record.

(b) Experiment Requirements

For an experiment to be counted for the Portfolio Scheme, it should:

- (i) be conducted by students (individually or in groups) under teacher supervision, and related to Chemistry curriculum topics;
- (ii) involve clear objectives and experimental procedures distinct from other experiments conducted;
- (iii) not be conducted in the date same as any of those of submitted experiments within a class / subject group (i.e. no more than one experiment information submitted for a specific date for a class / subject group);
- (iv) include **at least two** of the following elements: data collection, observation recording, use of standard laboratory apparatus, data analysis (or calculation), and reasoning (or discussion) of results; and
- (v) include **at least one** higher-order thinking question to promote scientific reasoning or inquiry skills.

(c) Higher-Order Thinking Questions


To enhance the quality and effectiveness of Chemistry practical activities in supporting learning and teaching, each experiment must include one or more higher-order thinking questions. These questions are designed to move learning beyond rote memorisation and factual recall, and help foster scientific reasoning and inquiry skills. For guidelines, please refer to the information sheet at <https://www.edb.gov.hk/portfolio-scheme>.



(d) Recognition for Teachers and Laboratory Technicians

Certificates of Appreciation will be issued to participating schools to acknowledge the efforts of Chemistry teachers and laboratory technicians in supporting practical learning.

School participation process

Stage	Schools' submission / action	Reference
1. School Registration (Oct 2025)	Submit school application form	Appendix 2
2. Interim Experiment Record (Feb 2026)	Submit interim experiment list	Templates of interim experiment list, final experiment list and student attendance list are available at: https://www.edb.gov.hk/p ortfolio-scheme
3. Final Submission (Jun – Jul 2026)	Submit the following documents: (i) Final experiment list; (ii) One sample students' worksheet per experiment (with students' written answers and teacher's/student's marking); and (iii) Student attendance list	
4. Issuance of Certificates and Portfolios (Jul – Aug 2026)	Receive and distribute digital portfolios and certificates to students	

Remark: All documents will be submitted and received online.

The Chemistry Practical Learning Portfolio Scheme (2025/26)**School Application Form**

Please return the completed school application form on or before **31 October 2025 (Friday)** to Science Education Section, Education Bureau by email (Email address: cpssc@edb.gov.hk).

Name of School : _____

Responsible Teacher(s):

Name (English)	Name (Chinese)	Contact No.	Email address

Our school would like to nominate the S4 students to participate in the Chemistry Practical Learning Portfolio Scheme (2025/26):

(Please ☒ the boxes below)

- ☐ At least 5 Chemistry practical activities/experiments will be arranged for our S4 students who study Chemistry as an elective subject during the 2025/26 school year.
- ☐ We understand the requirements on the document submission (including an interim experiment list, a final experiment list, one students' worksheet per experiment, and a students' attendance list).

Remark: For the details and requirements of the Scheme, please refer to the **Appendix 1**.

Signature of School Head: _____

Name of School Head: _____

Date: _____

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