Ref: (21) in EDB/CSD/SC/821/17

14 November 2023

Education Bureau Circular No. 18/2023

Introduction of Primary Science and a Series of Related Support Measures

[Note: This circular should be read by-

(a) Supervisors/Heads of all Government Schools, Aided Schools (including Special Schools), Caput Schools, Private Schools, and Schools under the Direct Subsidy Schemes – for action; and

(b) Heads of Sections – for information.]

Summary

The purpose of this circular is to announce the captioned curriculum framework (provisional draft) developed by the Curriculum Development Council (CDC) Ad Hoc Committee for the Development of the Science (Primary 1 – 6) Curriculum and a series of related support measures, curriculum briefing sessions, and school questionnaire survey.

Background

2. In order to align with stepping up the promotion of STEAM education and innovation and technology (I&T) learning for all in primary and secondary schools, the Education Bureau (EDB) has been implementing various measures and strategies, including optimising school curricula, enhancing teacher training, providing resources support, etc. to assist schools in strengthening the promotion of science and I&T learning for all and nurturing talent.

3. The 2023 Policy Address delivered by the Chief Executive last month, to tie in with the further stepping up of the promotion of STEAM education, among others, proposed to introduce a subject on science in primary schools to strengthen students' scientific and creative thinking, with implementation scheduled to start from the 2025/26 school year. EDB is proactively carrying out the relevant preparation work to assist schools in preparing for the implementation of the curriculum.

4. Science Education is one of the eight Key Learning Areas in the Hong Kong school curriculum. It helps students develop scientific literacy with a solid foundation in scientific knowledge. With the rapid development of science and I&T, as well as the continuous social development, the ways students live and study have also undergone transformations. In line with the ongoing renewal of the school curriculum and promotion of STEAM education, science education at the primary level also needs to keep abreast of the times to ensure that the curriculum can meet students' needs and social development, better preparing them for future opportunities and challenges.

5. The Curriculum Development Council Committee on Science Education set up the "Ad Hoc Committee for the Development of Science (Primary 1 – 6) Curriculum" (the Ad Hoc Committee) for reviewing the current science education at the primary level and developing the curriculum of Primary Science. The Ad Hoc Committee submitted to the Curriculum Development Council Committee on Science Education in October 2023 the Science (Primary 1 – 6) Curriculum Framework (Provisional Draft) and the proposal to start consultation, which were accepted.

Details

6. Starting from the 2025/26 school year, all primary schools in Hong Kong need to implement the Primary Science curriculum at Primary 1 and Primary 4, and progressively extend it to other levels. Schools, which are adequately prepared, can also pilot the content of the Primary Science curriculum in the 2024/25 school year.

7. EDB will provide a series of support measures to schools and teachers, including: a "one-off grant" of HK$350,000 for each primary school; Certificate in Professional Training for Primary Science Teachers (30 hours), Certificate in Professional Training on Primary Science Curriculum Leadership (15 hours), Primary Science Education Learning Circle; learning and teaching resources on scientific inquiry activities, Primary Science Online Learning Platform, and the "Safety Handbook for Primary Science", to assist schools in implementing the Primary Science curriculum.

Curriculum Emphasis and Content of Primary Science

8. "Explore with Curiosity, Learn through Applying, Innovate for Tomorrow" is the rationale of the Primary Science curriculum. The curriculum puts emphasis on fostering students' curiosity, imagination, and desire for knowledge about the world and their surroundings, developing their science process skills and building up their basic scientific knowledge and concepts by engaging them in "hands-on and minds-on" scientific inquiry activities. These help cultivate students' interest and abilities in science, as well as instill positive values and attitudes towards science and technology from an early age, thereby building a solid foundation for further learning at the secondary level. In addition, the curriculum also focuses on linking science and technology to daily lives and incorporating I&T related topics, so as to encourage students to apply scientific knowledge and skills, and basic engineering thinking to solve problems in daily lives for enhancing scientific and creative thinking.

9. The Science (Primary 1 – 6) Curriculum Framework (Provisional Draft) includes four learning strands: "Life and Environment", "Matter, Energy and Change", "Earth and Space" and "Science, Technology, Engineering and Society", with a total of 15 themes, in which the depth and breadth of learning content that students need to master at different levels at the primary stage are clearly outlined. The curriculum framework provides specific suggestions for learning and teaching activities for each topic, including corresponding scientific inquiry activities and design & make activities, for teachers to duly introduce in the teaching process.

One-off Grant on Primary Science

10. To support schools' implementation of Primary Science, EDB will provide each publicly-funded primary school with the "one-off grant" of HK$350,000, which could be used for purchasing learning and teaching resources, upgrading facilities and equipment, supporting teachers' professional development, etc., to kick-start the subject in the school. The "one-off grant" is expected to be released before the end of March 2024. Details will be provided in a separate circular memorandum in due course.

The ambit of the "one-off grant" includes:

- procurement of relevant learning and teaching resources (such as scientific inquiry activity kits, related application programmes);
- purchasing teaching aids and equipment related to the science subject;

- carrying out minor renovations or purchasing furniture to optimise existing General Studies room / classroom facilities (such as purchasing movable tables and chairs, installing additional sockets, installing sinks, etc.);
- as teacher relief grant to allow current teachers to participate in science or STEAM-related training; and
- recruiting teaching assistant(s) to assist teachers in the preparation work for the introduction of Primary Science.

Professional Training for In-service Teachers

11. Teachers' professional capacity is the key to the effective implementation of curriculum development. In line with the curriculum focus of Primary Science, EDB will set up the "Training Base for Primary Science Teachers" to provide diversified and comprehensive training for teachers. For the curriculum implementation starting from the 2025/26 school year, we will reserve enough places to ensure that each school has an adequate number of subject panel heads and teachers who have completed systematic training to teach the subject. The training programmes will be launched in early 2024, and participants who complete the designated programmes will be issued a certificate as a recognition. Details will be provided in a separate circular memorandum in due course. Arrangements for the professional training are as follows:

(a) **Certificate in Professional Training for Primary Science Teachers (30 hours):** This training is for all primary science teachers. It covers different themes, including practical teaching of scientific inquiry activities and practical assessment, with a focus on enhancing scientific knowledge and pedagogies. Teachers may choose to complete a series of designated teacher training courses provided by EDB, totaling 30 hours, to obtain the "Certificate in Professional Training for Primary Science Teachers (30 hours)".

(b) **Certificate in Professional Training on Primary Science Curriculum Leadership (15 hours):** This training is for aspiring subject panel heads or level coordinators. Its content covers curriculum leadership, curriculum interpretation, curriculum planning, safety guidelines, etc., with a focus on enhancing teachers' capabilities in science curriculum leadership and management. Teachers who have obtained the "Certificate in Professional Training for Primary Science Teachers (30 hours)" can further complete the

aforementioned leadership training courses to receive the "Certificate in Professional Training on Primary Science Curriculum Leadership (15 hours)".

(c) **Setting up of the Primary Science Education Learning Circle:** Networking events, including experience sharing sessions, open lessons, workshops, visits, etc., will be organised regularly to strengthen professional exchanges among Primary Science teachers.

Curriculum Resources

12. In line with the promotion of the Primary Science curriculum, EDB will launch various curriculum resources starting from the 2023/24 school year, including:

(a) **Learning and teaching resources on scientific inquiry activities**: In line with the content of the newly introduced Primary Science curriculum, EDB will provide 30 sets of learning and teaching resources on scientific inquiry activities to assist teachers in leading students to conduct the activities during classroom instruction. These resources will be released in a stepwise manner, starting from the 2023/24 academic year.

(b) **Primary Science Online Learning Platform:** The setting up of the "Primary Science Online Learning Platform" will combine e-learning strategies to provide learning and teaching resources, including virtual experiments and self-learning materials, with the aim of enhancing students' interest in learning science. These resources will progressively be released, starting from the 2023/24 academic year.

(c) **"Safety Handbook for Primary Science":** EDB will provide relevant principles of safety consideration and safety guidelines for scientific inquiry activities at the primary level for teachers' reference. The safety handbook will be announced in a separate circular memorandum in early 2024.

Curriculum Briefing Sessions

13. To let schools understand the content of the Science (Primary 1 – 6) Curriculum Framework (Provisional Draft), and the series of measures to support schools' implementation of Primary Science, as well as continue to gather stakeholders' views, the Science Education Section of EDB, together with the Kindergarten and Primary

Section, will hold four curriculum briefing sessions on "Primary Science" and "Primary Humanities" from November to December 2023. We suggest that each primary school can arrange the school head and two relevant teaching staff members to attend the curriculum briefing sessions (CSD020230589). For details of the briefing sessions, please visit the EDB Training Calendar System (tcs.edb.gov.hk). Details about the introduction of Primary Humanities will be announced in a separate circular (EDB Circular No. 20/2023).

School Questionnaire Survey

14. EDB is going to collect schools' views on the implementation of the Science (Primary 1 – 6) curriculum, in particular schools' readiness and needs for support, which will serve as reference for the Curriculum Support Division. Please refer to the attached documents: "Science (Primary 1 – 6) Curriculum Framework (Provisional Draft)" (Chinese version only) (Annex 1) and "Science (Primary 1 – 6) Curriculum School Questionnaire Survey" (Chinese version, English version available upon request) (Annex 2). These documents have also been uploaded to the Primary Science webpage of the Science Section, EDB:
https://www.edb.gov.hk/en/curriculum-development/kla/science-edu/primary-science.html

"Science (Primary 1 – 6) Curriculum Framework (Provisional Draft)" (Chinese version only)	**"Science (Primary 1 – 6) Curriculum School Questionnaire Survey"** (Chinese version, English version available upon request)
https://www.edb.gov.hk/en/curriculum-development/kla/science-edu/primary-science.html	

15. School heads or their representatives (such as Vice-principal, Prefect of Studies, STEAM Coordinator, General Studies subject panel head) are requested to complete the questionnaire and return the completed PDF e-questionnaire to the Science Education Section, Curriculum Support Division, EDB via the EDB School Messaging Module on or before 18 December 2023.

Enquiry

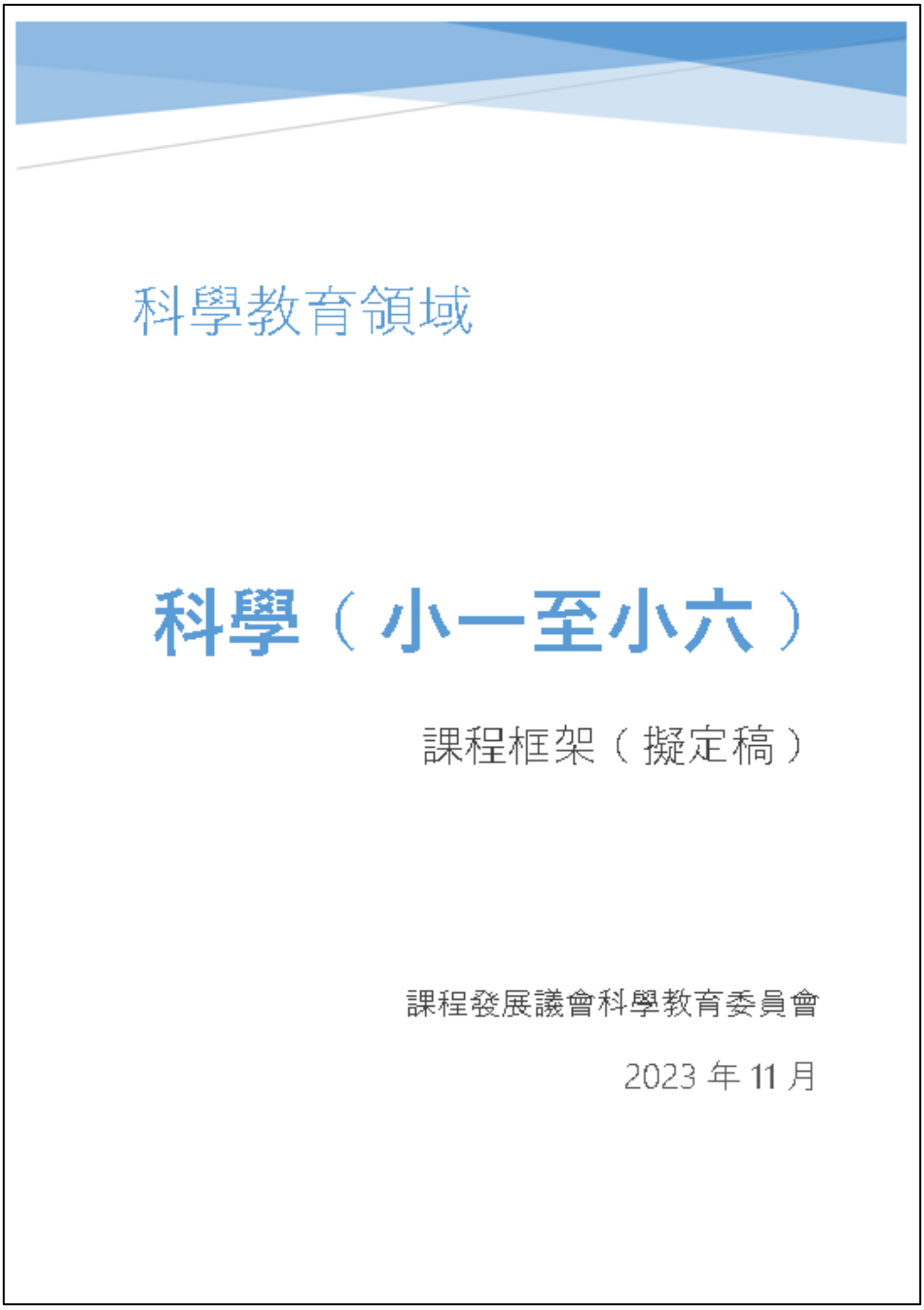
16. For enquiries, please contact Dr. CHEUNG Kam-wah, Thomas at 3698 3522 of the Science Education Section, Curriculum Support Division, EDB.

Dr William LAM
for Secretary for Education

Annex 1

Science (Primary 1 – 6) Curriculum Framework (Provisional Draft)
(Chinese version only)

The document can be downloaded from the following website: https://www.edb.gov.hk/en/curriculum-development/kla/science-edu/primary-science.html	



Annex 2

Science Education Key Learning Area
Science (Primary 1 – 6) Curriculum
School Questionnaire Survey

Purpose

The purpose of this questionnaire is to collect schools' views on the implementation of the Science (Primary 1 – 6) curriculum, including the curriculum framework (provisional draft) and related support measures.

Background

2. Science Education is one of the eight Key Learning Areas in the Hong Kong school curriculum. It helps students develop scientific literacy with a solid foundation in scientific knowledge. With the rapid development of science and I&T, as well as the continuous social development, the ways students live and study have also undergone transformations. In line with the ongoing renewal of the school curriculum and promotion of STEAM education, science education at the primary level also needs to keep abreast of the times to ensure that the curriculum can meet students' needs and social development, better preparing them for future opportunities and challenges.

3. The Curriculum Development Council Committee on Science Education set up the "Ad Hoc Committee for the Development of Science (Primary 1 – 6) Curriculum" (the Ad Hoc Committee) for reviewing the current science education at the primary level and developing the curriculum of Primary Science. The Ad Hoc Committee made reference to the science-related parts in General Studies for Primary Schools, took into account the local, national and international trends in science/STEAM education, and fully considered the future development needs of Hong Kong students in formulating the content of the Primary Science curriculum. Throughout the process, the Ad Hoc Committee had also made reference to the views collected by the EDB from different stakeholders via multiple channels, including school visits and focus group interviews, and the teaching experience gained from the Pilot Scheme on "Enhancing Science and Technology Learning at Upper Primary Level" implemented in the 2022/23 school year. The Ad Hoc Committee submitted to the Curriculum Development Council Committee on Science Education in October 2023 the Science (Primary 1 – 6) Curriculum Framework (Provisional Draft) and the proposal to start consultation, which were accepted.

Questionnaire and Curriculum Document

4. This questionnaire and the attached "Science (Primary 1 – 6) Curriculum Framework (Provisional Draft)" (Annex 1) (Chinese version only) can be downloaded from the following Primary Science webpage of the Science Education Section, EDB: https://www.edb.gov.hk/en/curriculum-development/kla/science-edu/primary-science.html

Completion of the Questionnaire

5. Each school should return **ONE** PDF e-questionnaire (Chinese version, English version available upon request) which should be completed by the School Head or his/her representative (such as Vice-principal, Prefect of Studies, STEAM Coordinator and General Studies subject panel head). The information provided by the school is only used by the CDC and EDB to review Science (Primary 1 – 6) Curriculum as a whole. We will handle the information in a confidential manner and will not disclose the information of individual schools.

Deadline

6. Schools should return the completed PDF e-questionnaire to the Science Education Section, Curriculum Support Division, EDB **via the EDB School Messaging Module on or before 18 December 2023**.

7. For enquiries, please contact Dr. CHEUNG Kam-wah, Thomas at 3698 3522 of the Science Education Section, Curriculum Support Division, EDB.

（Continued on next page）

科學教育學習領域：
科學（小一至小六）課程
學校問卷調查

填寫問卷前，請先閱讀隨附的《小學科學科課程框架（擬定稿）》（附件一）。
請回答下列問題，以表達對課程的意見。

每所學校只需填寫及遞交一份問卷。本問卷為**可填寫的PDF格式**，請在PDF電子問卷中**輸入資料**，並於2023年12月18日（星期一）或之前，透過教育局**「學校通訊模組」（SMM）**將完成的問卷交回教育局科學教育組。

如有查詢，請與教育局科學教育組聯絡。
（經辦人：張錦華博士；電話號碼： 3698 3522；電郵地址：cdosc53@edb.gov.hk）

甲部：學校資料

學校編號：	
學校名稱：	
校長姓名：	

乙部：問卷
請在本電子問卷勾選適當的方格「☐」加上「✓」，並在適當位置提供意見。

請在以下題(1)至(4)表達貴校對課程框架（擬定稿）的意見。

1 貴校是否認同小學科學課程的以下課程理念？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	探新求知： 培養學生的好奇心和探究的精神	☐	☐	☐	☐	☐
（ii）	樂學活用： 以「學生為本」，提供機會讓學生愉快地學習科學，並學以致用	☐	☐	☐	☐	☐

（iii）	創造未來： 將創造性思維融入科學學習，為未來作好準備	☐	☐	☐	☐	☐

2 貴校是否認同小學科學課程的以下課程宗旨？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	培養對科學的好奇心和興趣	☐	☐	☐	☐	☐
（ii）	發展科學探究和解決問題的能力	☐	☐	☐	☐	☐
（iii）	掌握基本科學知識、科學過程技能及共通能力	☐	☐	☐	☐	☐
（iv）	發展綜合和應用科學和相關範疇的知識與技能的能力	☐	☐	☐	☐	☐
（v）	初步認識科學本質	☐	☐	☐	☐	☐
（vi）	運用基本的科學語言來溝通與科學相關的意念	☐	☐	☐	☐	☐
（vii）	基於數據、邏輯，對探究的問題作出合理分析和推理，並提出個人的見解	☐	☐	☐	☐	☐
（viii）	發展初步工程思維和實踐能力	☐	☐	☐	☐	☐
（ix）	認識科學對社會、倫理、環境和科技所帶來的影響，並培養負責任的公民態度，致力促進個人和社區健康	☐	☐	☐	☐	☐
（x）	培養自主學習的能力，成為科學的終身學習者，以促進個人發展	☐	☐	☐	☐	☐
（xi）	為在中學階段持續深化科學學習，以及將來投身科學事業作準備	☐	☐	☐	☐	☐

3 貴校是否認同小學科學課程的以下設計原則？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	培養學生對科學的好奇心和學習興趣	☐	☐	☐	☐	☐
（ii）	連繫學生日常生活經驗	☐	☐	☐	☐	☐
（iii）	結合課堂內外的學習經歷	☐	☐	☐	☐	☐
（iv）	強調「動手動腦」的重要性，培養學生科學探究和解決問題的能力	☐	☐	☐	☐	☐
（v）	清晰指出學生於小學階段所需掌握的科學學習內容，以銜接初中階段的科學學習	☐	☐	☐	☐	☐
（vi）	提供具體的科學學與教活動建議，包括科學探究、工程與設計等活動	☐	☐	☐	☐	☐
（vii）	培養學生正確的科學態度和價值觀	☐	☐	☐	☐	☐

4a) 就範疇一「生命與環境」，貴校是否認同以下的敘述？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	學習內容的要點具體清晰	☐	☐	☐	☐	☐
（ii）	學習內容深淺適中	☐	☐	☐	☐	☐
（iii）	學與教活動建議與學習內容配合	☐	☐	☐	☐	☐
（iv）	學與教活動建議切實可行	☐	☐	☐	☐	☐

其他意見／建議：_____

_____

4b) 就範疇二「物質、能量和變化」，貴校是否認同以下的敘述？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	學習內容的要點具體清晰	☐	☐	☐	☐	☐
（ii）	學習內容深淺適中	☐	☐	☐	☐	☐
（iii）	學與教活動建議與學習內容配合	☐	☐	☐	☐	☐
（iv）	學與教活動建議切實可行	☐	☐	☐	☐	☐

其他意見／建議：_____

_____

4c) 就範疇三「地球與太空」，貴校是否認同以下的敘述？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	學習內容的要點具體清晰	☐	☐	☐	☐	☐
（ii）	學習內容深淺適中	☐	☐	☐	☐	☐
（iii）	學與教活動建議與學習內容配合	☐	☐	☐	☐	☐
（iv）	學與教活動建議切實可行	☐	☐	☐	☐	☐

其他意見／建議：_____

_____

4d) 就範疇四「科學、科技、工程與社會」，貴校是否同意以下的敘述？

		非常認同	認同	不認同	非常不認同	沒有意見
（i）	學習內容的要點具體清晰	☐	☐	☐	☐	☐
（ii）	學習內容深淺適中	☐	☐	☐	☐	☐
（iii）	學與教活動建議與學習內容配合	☐	☐	☐	☐	☐
（iv）	學與教活動建議切實可行	☐	☐	☐	☐	☐

其他意見／建議：_____

_____

（後頁續）

請在以下題(5)至(12)表達貴校對以下支援措施的意見。

[註：
教育局會為學校和教師提供一系列的支援措施，協助學校推行小學科學課程，包括：

- 每所小學35萬的「一筆過津貼」；
- 小學科學教師專業培訓證書課程（30小時）、小學科學課程領導專業培訓證書課程（15小時）、小學科學教育學習圈；
- 科學探究活動學與教資源、小學科學網上學習平台、《小學科學科安全手冊》]

5. 貴校預計在推行小學科學課程時，會在哪方面遇到挑戰？（可選多於一項）

- ☐ 分配充足的課時給本課程
- ☐ 物色具課程領導能力的科主任人選
- ☐ 安排已接受充足培訓的教師任教
- ☐ 讓教師清楚了解課程各範疇的教學重點
- ☐ 具備足夠的學與教資源
- ☐ 安排合適的空間進行科學探究活動
- ☐ 其他（請註明）：_____

6. 貴校預計會將「一筆過津貼」主要用於下列哪些用途？（可選多於一項）

- ☐ 採購相關的學與教資源（如科學探究活動教學資源、相關應用程式）
- ☐ 添置與科學科相關的教具，以及教學輔助設備
- ☐ 用以進行簡單工程或購置傢具，優化現有常識／課室設施
- ☐ 作為代課津貼，讓現職教師參與科學或STEAM相關的培訓
- ☐ 聘請專職教學助理，協助教師籌備開設小學科學科的工作
- ☐ 其他（請註明）：_____

7. 貴校預計會安排多少位教師參加由教育局舉辦與本課程相關的專業發展課程？
為小學科學**課程領導**而設的課程：人數為 _____ 位
為小學科學**教師**而設的課程（包括課程領導人員）：人數為 _____ 位

8. 貴校認為教師最需要下列哪方面**專業培訓**？（可選多於一項）

- ☐ 課程領導與規劃的培訓
- ☐ 課程詮釋的培訓
- ☐ 知識增益的培訓
- ☐ 學與教策略的培訓
- ☐ 關於學習評估的培訓
- ☐ 專業交流學習圈

9. 承上題8，貴校認為教師在知識增益及學與教策略方面，最需要涵蓋下列哪範疇的**教師專業發展課程**？（可選擇多於一項）

- ☐ 範疇一：生命與環境，請說明課題：

  _____

- ☐ 範疇二：物質、能量和變化，請說明課題：

  _____

- ☐ 範疇三：地球與太空，請說明課題：

  _____

- ☐ 範疇四：科學、科技、工程與社會，請說明課題：

  _____

10. 貴校認為教師最需要下列哪些學與教資源？（可選多於一項）

- ☐ 科學探究活動的教學設計及活動工作紙
- ☐ 供學生自學的資源（如網上自學課程、自學影片）
- ☐ 科學探究活動的安全指引
- ☐ 其他（請註明）：_____

11. 承上題10，貴校認為教師最需要教育局提供下列哪範疇的學與教資源？（可選擇多於一項）

☐ 範疇一：生命與環境，請說明課題：

_____

☐ 範疇二：物質、能量和變化，請說明課題：

_____

☐ 範疇三：地球與太空，請說明課題：

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☐ 範疇四：科學、科技、工程與社會，請說明課題：

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12. 教育局建議全港小學於2025/26學年，在小一及小四級開始推行小學科學科課程。如學校準備充足，亦可於2024/25學年試行小學科學科課程的內容。

貴校會否於2024/25學年，試行本課程內容／教學活動？

☐ 會
☐ 不會

其他意見

13. 貴校對科學（小一至小六）課程的其他意見或建議：

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請於 **2023 年 12 月 18 日（星期一）或之前**，**透過教育局「學校通訊模組」（SMM）**將完成的問卷交回教育局科學教育組。

– 完 –

感謝貴校的意見！