LCQ13: Science subject in primary schools

Following is a question by Professor the Hon William Wong and a written reply by the Secretary for Education, Dr Choi Yuk-lin, in the Legislative Council today (November 29):

Question:

The Chief Executive announced in the 2023 Policy Address that a subject on science would be introduced in primary schools and a one-off grant of $350,000 would be provided to each publicly-funded primary school to upgrade its facilities and equipment. However, there are views pointing out that as there is no science major in the primary education degree programmes offered by the Education University of Hong Kong, and many primary schools currently may not have teachers with science or technology degrees, there may be a transitional period in the future when primary school teachers teaching the science subject do not have a background in the relevant subjects. In this connection, will the Government inform this Council:

(1) whether it has discussed with various universities the provision of undergraduate programmes on science subjects for the training of primary school science teachers;

(2) whether, in addition to the aforesaid one-off grant, the Government will consider providing annual subsidies to primary schools in respect of the science subject, so as to enhance equipment and procure the necessary teaching materials;

(3) given that according to the information from the Education Bureau (EDB), the EDB will set up a "Training Base for Primary Science Teachers" and provide the relevant teachers with a 15-hour programme "Certificate in Professional Training on Primary Science Curriculum Leadership", or a 30-hour programme "Certificate in Professional Training for Primary Science Teachers", whether the EDB will extend the target participants of these two certificate programmes to include teaching assistants, and provide annual training for science teachers;

(4) whether it will create the post of science and technology teaching assistant for the science subject to assist primary school science teachers in conducting effective teaching and learning activities;

(5) whether it will consider setting up district "innovation and technology education centres" in various districts to provide teaching venues for schools for the science subject, courses requiring special equipment for students, and in-service training venues for teachers; and

(6) whether it will consider collaborating with various universities and

tertiary institutions in the production of teaching materials for the science subject in primary schools?

Reply:

President,

Echoing the national strategy of "invigorating the country through science and education", the Government further steps up the promotion of STEAM (i.e. Science, Technology, Engineering, the Arts and Mathematics) education and has announced in the 2023 Policy Address the introduction of a subject on science in primary schools with implementation scheduled to start from the 2025/26 school year. The rationale of the Primary Science curriculum is "Explore with Curiosity, Learn through Applying, Innovate for Tomorrow", with the aims to foster students' curiosity as well as strengthen their scientific literacy, creative thinking and problem-solving skills from an early age through diversified and interesting "hands-on and minds-on" inquiry activities. The Education Bureau (EDB) is proactively carrying out the relevant preparation work to assist schools in preparing for the implementation of the curriculum.

The EDB will provide schools with a series of support measures related to the Primary Science curriculum, including professional training for teachers, learning and teaching resources, and resources support, to assist teachers in the transition from the relevant curriculum of the prevailing General Studies to the new curriculum.

Our reply to the various parts of the question raised by Professor the Hon William Wong is as follows:

(1) and (3) A professional teaching force is key to the effective implementation of Primary Science. To equip teachers to plan and teach the newly introduced Primary Science curriculum, the EDB will strengthen in-service and pre-service training for teachers and enhance schools' flexibility in employment.

On in-service training, the EDB will arrange systematic training for serving teachers with sufficient professional training places provided. We will set up the "Training Base for Primary Science Teachers" to provide a series of training programmes in collaboration with tertiary institutions, professional bodies and innovation and technology (I&T) institutes. The said programmes include the 15-hour intensive training for Primary Science panel heads or STEAM co-ordinators covering curriculum interpretation, curriculum planning and assessment mode, and the 30-hour programme for all Primary Science teachers covering elective courses such as inquiry activities on light, sound and electricity as well as science practical assessment. Teachers who have completed a specified number of training hours will be issued a certificate. As the manpower arrangements for teaching and non-teaching staff of each school are based on the school-based circumstances, schools should make deployment according to their actual situations. The EDB has no plan to provide training for non-teaching staff (such as teaching

assistants).

For the pre-service training, the EDB has been maintaining close communication with three teacher education universities (the Education University of Hong Kong, the University of Hong Kong and the Chinese University of Hong Kong) under established mechanism so as to exchange views on contents and enhance the arrangements of teacher education programmes in response to the renewal of the secondary and primary education curricula, the latest development of education policy, as well as social and technological developments. The EDB will consider strengthening the pre-service and in-service teacher trainings for Primary Science in the 2025/26 to 2027/28 Triennium Planning Exercise for the University Grants Committee-funded universities.

In addition, taking into consideration the keen demand from primary schools for teachers with expertise in STEAM-related subjects, the EDB provides employment flexibility for aided primary schools (including special schools with a primary section) on a pilot basis from 2022. The schools can employ holders of a bachelor's degree in STEAM-related subjects but without teacher training in primary education (including those only with teacher training in secondary education) as STEAM teachers as regular teachers paid under the Salaries Grant from the 2022/23 to 2024/25 school years on a pilot basis for three years. The above-mentioned pilot scheme provides flexibility for schools to attract more professionals in the science field to join the primary school teaching force and teach science subject or STEAM-related curricula.

(2) and (4) To help schools kick-start Primary Science, the EDB will disburse a one-off grant of $350,000 to each publicly funded primary school before the end of March 2024. The grant could be used for developing or procuring learning and teaching resources, carrying out minor renovations or purchasing furniture, supporting teachers' professional development, etc. We note that publicly-funded schools are in general financially healthy and robust. On implementation of Primary Science, apart from the one-off grant, schools should continue to make good use of the various grants provided by the EDB, including the recurrent subvention under the Expanded/Operating Expenses Block Grant and relevant subject resources, to promote the development of science education at the primary level, such as enhancing equipment and procuring relevant teaching materials as necessary.

The EDB will continue to maintain communication with the school sector to review the use of the one-off grant on Primary Science and the actual need. We will also explore the need to provide recurrent grant for schools to procure additional equipment or recruit additional supporting staff in the long run, taking into account relevant factors including the financial position of the Government, resource utilisation priority and schools' development needs.

(5) and (6) The EDB will assist schools in promoting science/STEAM education, and provide them with equipment and venue support through enhancing various resource centres and school-based support services. Schools are also

encouraged to make good use of the STEAM-related education centre set up by the EDB in Lok Fu for students to conduct I&T-related projects. On the other hand, the EDB invites schools to become STEAM education resource hubs through the Quality Education Fund Thematic Networks to provide professional support (including equipment and venue support for science and technology activities) for schools in the same district and in other districts. In addition, the EDB also collaborates with various tertiary institutions and professional bodies to develop science/STEAM-related teaching materials to facilitate learning and teaching.

The EDB will continue to adopt diversified strategies to support the implementation of science education in primary schools, with a view to stimulating students' creativity and potential in science from an early age.