

Science Education

➤ *Position*

Science is the study of phenomena and events around us through systematic observation and experimentation. Science education cultivates students' curiosity about the world and enhances scientific thinking. Through the enquiry process, students will develop scientific knowledge and skills to help them evaluate the impacts of scientific and technological development. This will prepare students to participate in public discourse in science-related issues and enable them to become life-long learners in science and technology.

➤ *Direction*

- The emphasis of science education is to enhance students' scientific thinking through progressive learning activities that involve planning, measuring, observing, analysing data, designing and evaluating procedures, and examining evidence. Learning science will enable our students to lead a fulfilling and responsible life by encouraging them to learn independently, deal with new situations, reason critically, think creatively, make wise decisions and solve problems.
- Through science activities, students should develop an interest in science and thus they will be motivated to become active learners in science. Students should also develop an understanding of science, technology and society (STS). They should be able to make informed decisions based on evidence.
- Students with high ability or a strong interest in science need more challenging learning programmes. These programmes should stretch the students' science capabilities and offer opportunities for students to develop their potential to the full.

➤ *We hope that from now to 2005-06*

<i>Our Students</i>	<i>Our Teachers</i>
Primary 1 – Primary 3	
Please refer to the section on General Studies for Primary Schools	Please refer to the section on General Studies for Primary Schools

Primary 4 – Primary 6	
Please refer to the section on General Studies for Primary Schools	Please refer to the section on General Studies for Primary Schools
Secondary 1 – Secondary 3	
<ul style="list-style-type: none"> • will design and carry out scientific investigations • will show an interest in exploring contemporary science and related issues • will demonstrate fundamental scientific knowledge, creativity, basic communication and critical thinking skills in science and technology learning activities 	<ul style="list-style-type: none"> • make use of the core and extension parts of the science curriculum to design a school-based curriculum • arrange more scientific investigations and problem - solving activities • create an open atmosphere for discussion and infuse process and thinking skills into science lessons • be aware of new developments in science and encourage students to explore these developments
Secondary 4 and above	
<ul style="list-style-type: none"> • will apply their scientific knowledge and critical thinking skills in making informed decisions • will evaluate evidence and make use of critiques and arguments derived from science during discussions • will demonstrate concern about the impacts of science and technology on society 	<ul style="list-style-type: none"> • arrange more scientific investigations and learning activities on science, technology and society • will be more open to ideas and accept multiple solutions in discussions about scientific issues • will keep abreast with frontier developments in science and provide support to students in exploring these developments • will explore learning opportunities for students with talent or a strong interest in science

➤ *Major Issues of Concern*

- Better coordination among the science subjects is needed so as to avoid overloading the curriculum with contents and activities. The science curriculum framework and a new series of associated curriculum guides will be designed with this in mind.
- Success in science education will need the continual and persistent support of science educators and scientists of the tertiary institutions. They can play an active part in the process of curriculum development and teacher training in the areas of pedagogy and knowledge update. The scientists may also serve as mentors for students in science project learning.
- In response to public calls for a stronger connection between curriculum and assessment, we shall link assessment more firmly to learning in science. Various means of assessment will be explored and try-outs will be conducted to gather experience in assessing students' science performance.
- Public discourse in science and popular science activities will provide an active science-learning environment for students and thus, in the end, promote public understanding of science. Public debate on scientific issues, lectures by eminent scientists and science exhibitions will encourage students to continue learning in science.

➤ *KLA Exemplars are available in the folder of Exemplars of Curriculum Development in Schools and the curriculum bank (<http://cd.ed.gov.hk>).*

- Inspiring an inquiring mind (written in English)

This is a learning activity designed to inspire a spirit of enquiry in students and enhance their capability in scientific investigation. The activity involves an exploration of the concept of density. Students challenge and complement each other's ideas as well as defending their own, as they propose hypotheses and design experiments. The approach employed is open and will enhance the development of higher order thinking skills and creativity in the students.

- Primary science project competition (written in Chinese)

During the competition, students apply their scientific knowledge to designing toy trains which work on the principle of magnetism. In the process, students develop an interest in science and a basic understanding of scientific concepts. At the same time, their creativity, communication, collaboration and problem-solving skills are enhanced.

The Science Education KLA Curriculum Guide will be published in 2002.