

Christian Alliance Cheng Wing Gee College
Program Plan 2008 /2009
INTEGRATED SCIENCE

I. AIMS

Science education

1. fosters curiosity and directs students to channel that curiosity in productive ways;
2. provides learning experiences through which students acquire scientific literacy;
3. develops the necessary scientific knowledge and understanding, process skills, values and attitudes, for their personal development, for participating actively in a dynamically changing society, and for contributing towards a scientific and technological world.
4. allows students to recognize the usefulness and limitations of science and the interconnections between science, technology and society
5. help to consolidate the foundation of the students in science subjects.

II. SITUATIONAL ANALYSIS

A. Strengths

1. The subject-teachers have been positive and constructive in developing ideas to suit students' needs and channel students' curiosity in productive ways.
2. The laboratory technician has been highly supportive in trying out new experimental ideas.
3. The laboratory is well equipped with IT facilities to enhance students' interactive learning.
4. The sufficient provision of laboratory apparatus enables students to have first-hand experience in performing scientific investigations.

B. Weaknesses

1. Students are generally weak in making theme connections and transferring skills learnt across contexts and subjects.
2. Some F.1 students who have indulged in traditional learning pattern may not be confident enough to engage themselves in the process of investigation.
3. Some F.1 students who are not yet fully compatible with EMI teaching may have difficulties in reading the text materials and expressing themselves in English.

III. MAJOR CONCERNS 2008-09

Subject Focus	Address to School 08-09 Major Concern**
1. Students should be able to understand the meaning of the basic technical terms of the subject in English. Students are expected to be able to learn, read, express, discuss and present their understanding and ideas of scientific knowledge and thinking in English.	1 & 2
2. Students should be able to show interest in exploring contemporary science and related issues	2
3. Students should be able to demonstrate the mastery of scientific language, logic and concepts through the process of researching and analyzing information, organizing and presenting ideas and making judgements from arguments, so as to improve the student's 9 generic skills advocated in the Learning to Learn document: Collaboration Skills, Communication Skills, Creativity, Critical Thinking Skills, Information Technology Skills, Numeracy Skills, Problem-solving Skills, Self-management Skills, and Study Skills.	1, 2 & 3.3
4 In order to match the expectation of the NSS development, the students are exposed to the investigative and inquiry approach for the studies of science.	3.3

IV. OPERATIONAL STRATEGIES

Task	Description	Expected Outcomes	Success Criteria/ Evaluation Method	Time Scale	Resources Required/ Budget	In-charge
Focus 1:						
1. English Enrichment Program	Native English Tutor, Ms. Katie, will teach the pronunciation and memorization of the technical terms.	Students become familiar with the technical terms and vocabulary of the subject for better learning of the subject.	Over 70% students can be able to familiar with the technical terms and vocabulary of the subject.	Sept. – Oct (two lessons per class in the first term)	Native English Tutor, Ms. Katie	HSS
Focus 2:						
1 Visit & Lecture	(1) Visit to the universities labs, Science Museum, Space Museum etc. (2) Speech by some universities professors	Students are exposed more to the contemporary science and are more interested in the studies	Over 70% students enjoy the programme	Sept. – May	Gifts for the guest speakers	HSS

2. Challenging corner	Make good use of the notice board in the corridor	Display interesting science articles/ objects or questions collected by students	Students show interest in gathering in formations Over 70% students had tried to posted science articles/ objects or questions	Sept. – May (every two cycle)	Poster paper, Color-pen	ALL
Focus 3:						
1. Science Kiosk	The Science kiosk also provides the students with situations to develop their science processing skills through personal investigation. Offer students opportunities to carry out experiments and demonstrate knowledge and understanding in relation to some phenomena, facts and concepts in science as well as some application of science in society	Students develop science process skills through first-hand investigation	Students show interest in demonstration and complete the assigned tasks Over 70% students enjoy the programme and 70% students communicate effectively in English	Nov. – May	A movable trolley Library/ Internet services Science articles extracted from various sources	HSS
Focus 4						
1. Science Fair	Collaborate with Bio., Chem. and Phy. for the whole school	Students explore and develop based on their own interests, skills and abilities in Science	F.1 &2 students as helpers. Over 70% students enjoy the programme	Sept. – Dec.	With the help of Science Society, IT support, Reference materials	HSS

Others						
1. Reading to learn	Provide students science-related newspaper clippings with reflective questions	Students acquire broaden knowledge and cultivate good reading habits	Students show interest in reading them and complete the assigned tasks. Over 70% students can be able to share at least once in the class	For F.1 students, they should finish the assigned task during P6 to F1 summer (Aug.) Sept. – May	Up-to-date newspaper clippings	HSS
	Make good use of the library	Display interesting science articles/ objects collected from various sources	Students show interest in reading them and are ready to make contribution All F.1 &2 students at least borrow one book from the library throughout the whole year	Sept. – May	Science articles extracted from various sources, Newspaper cuttings, Science magazines	FORM-CO.
	Assign extended reading tasks for selected topics	Students acquire prior knowledge about the topic Students develop ability in extracting relevant information and organizing it for presentation	Students participate actively and constructively in the brain-storming session as well as the group and class discussions. Over 70% students participate actively in sharing sessions and complete the assign tasks	During P6 to F1 summer (Aug.) Sept. – May	Library/ Internet services Science articles extracted from various sources	ALL
2. IT in interactive learning & teaching	Facilitate the use of e-platform for performing on-line assessments	Students assess their learning independently in an informal setting at their own pace	Students conduct the assessments regularly	Oct. – June	IT support	HSS
	Offer students opportunities to carry out practical work using modern IT tools	Students grasp abstract scientific concepts as well as practical skills in an effective way	Students perform better in practical works and concept check exercises Over 70% students can perform the practical work properly	Oct. – June	Related IT tools and software	HSS

3.	Project learning	Mini-scale project with hands-on activities for F.1 students	Students design and make artefact for particular purposes	Students give reflective output showing development of communication, creativity, critical thinking and problem-solving skills Models were made. Over 70% students show improvement in the above skills	Nov. – April	IT support, AC coordination, Reference materials \$2,500	FORM-CO.
		Cross-curricular with HE on the topic: acid and alkaline for F.2 students	Students develop science process skills through first-hand investigation		Nov. – April		FORM-CO.
		Collaborative science project (with computer, visual art, D&T) for F.2 students	Students design a creative toy by using the technique learnt in A&D, D&T.		Nov. – April		FORM-CO.
4.	Integrating moral and civic education	Carry out debate/ role-play activities on controversial science-related issues of personal and public concern	Students learn to view the same issue with different perspectives and are open to ideas	Students show tolerance and respect towards different opinions, viewpoints and value systems	Sept. – June	Internet articles, Science magazines, Newspaper cuttings, Gov't documents	ALL
			Students come to know Christian's point of view	Students bare Christian value			
		Integrate case-study decision making exercises on issues related to community, local and global environments	Students learn to collect evidence to support or disprove claims	Students make informed and responsible judgements based on scientific evidence	Sept. – June		ALL
			Students evaluate the effects of own activities on the surroundings	Students commit to healthy lifestyles, and environmental- friendly practices			
5.	EMI policy	Offer bridging programme for F.1 students	Students learn some basic science terminology	Students will finish the given booklet, and familiar with the lab. rules and the technical terms and vocabulary of the subject. All students can finish the assignment properly	During P6 to F1 summer (Aug.)	Textbooks, Reference books, Science dictionary	HSS
				Over 70% students can recall what they had learnt	Sept.		
		Self study	Students learn to pre-study before the lessons	Students will finish the self learning journal	During P6 to F1 summer (Aug.)		ALL
				Over 70% can develop a habit on self learning.	Sept. – June		
Group discussion and oral presentation	Students take turn to lead group discussion and give presentation	Over 70% students have confident in communicate effectively in English	Sept. – June				
6.	Catering for learning difference	Arrange more scientific investigations and problem solving activities; followed by oral presentation	Students are given opportunities to design experiments to inquire into physical phenomena and an open atmosphere for infusing process and thinking skills	Students apply science to solve daily life problem Over 80% students enjoy the programme Students communicate effectively in English	Sept. – June	Activity book, Experiment books	ALL
		Apply concept map at various stages	Students develop ability in transferring knowledge/ skill learnt	Students make learning connections more readily. All students can make their own concept map	Sept. – June	Poster paper, Color-pen	ALL
		Develop a portfolio science learning culture	Students collect evidence of learning in various dimensions	Students give a continuous record of output showing growth of learning	Sept. – June	Record files	HSS
		Provides challenging exercises and activities for students with a strong interest and high ability to upgrading high achievers	Students take up challenges for the pursuit of an intense personal interest	Over 70% students value their achievements and become intrinsically motivated	Sept. – June	Reference materials	ALL
		Conduct after-school consolidation class for improving low achievers	Students get extra help to identify and clarify misconceptions	Over 80% students make good progress and show greater motivation and more confidence in their learning.	After UT, 1 st term exam and 2 nd term exam	AC coordination, Sci. Soc.	HSS

7.	Staff development	Experience sharing among teachers	Enhance team building Give support	Setting up a framework of learning dimensions and sharing of teaching materials	Before each chapter & after class visitation	Teachers' time, Reference materials	ALL
		Meeting regularly with new teachers					ALL
		Keep record of staff training	Each panel member attends at least one seminar/ workshop/ course a year	Teachers introduce innovative ideas to their teaching	After the seminar	Training calendar	ALL
		Seminar sharing	Each panel member attends at least one seminar/ workshop/ course a year	Teachers introduce innovative ideas to their colleague	After the seminar	Training calendar	ALL
		Enhance collaborative teaching	Join preparation of one topic and peer lesson observation	Setting up a framework of learning dimensions and sharing of teaching materials	Before each chapter	Teachers' time, Reference materials	ALL
8.	Assessment policy	Carry out assessment on a regular and continuous basis	Students are given one concept-check exercise on each chapter and revision quiz on each topic	Students' misconceptions and misunderstandings can be identified and clarified promptly Over 80% students can get a pass	Sept. – June	Supp. Ex. books, Reference book, Question bank, e-class	ALL
			Students are being assessed in daily practical work through observation	Over 70% students take immediate feedback as advice for improvement		Observation checklist	ALL
		Conduct practical tests for skills assessment	Students are involved in one practical test and one outcome-based assessment each year	Over 70% students equip with essential practical skills and commit in safe laboratory practices	1 st term exam and 2 nd term exam	F.4 student helpers, Laboratory apparatus	FORM-CO.
		Carry out student's self assessment on each topic	Students are engaged in self assessments, one at the engage stage and one at the evaluate stage on each topic	Over 70% students bare a stronger sense in monitoring their own learning progress	Sept. – June		ALL
		Incorporate self- and peer- assessment in project work	Students evaluate their own and the others work by making reference to pre-set criteria	Over 70% students become stronger in self-reflecting and judging abilities	After the project & at the end of the 2nd term	A list of assessment criteria	HSS
9..	Extra-curricular activities	Arrange off-campus educational visits (e.g. field trip)	Students gain first-hand experience in observation and performing simple investigation	Students' classroom learning experience are supplemented through the visits Over 70% students enjoy the programme	Sept. – June	EAC coordination Additional grant Sci Soc. Funding from LCD	HSS
		Planting competitions					
10.	Administration	Subject panel duty	Planning, budgeting, filing and conduct meeting, etc	Get paper work done properly All documents can be submitted on or before the deadline.	Sept. – June	Related documents	HSS

V TEAM MEMBERS (2008-2009)

1. Mrs. Choo Ho So Sheung (HSS) [Head]
2. Mrs. Yim Lo Mei Yee (LMY)
3. Mr. Leung Chun Kit (LCK)
4. Mr. Lau Chi Shing (LCS)