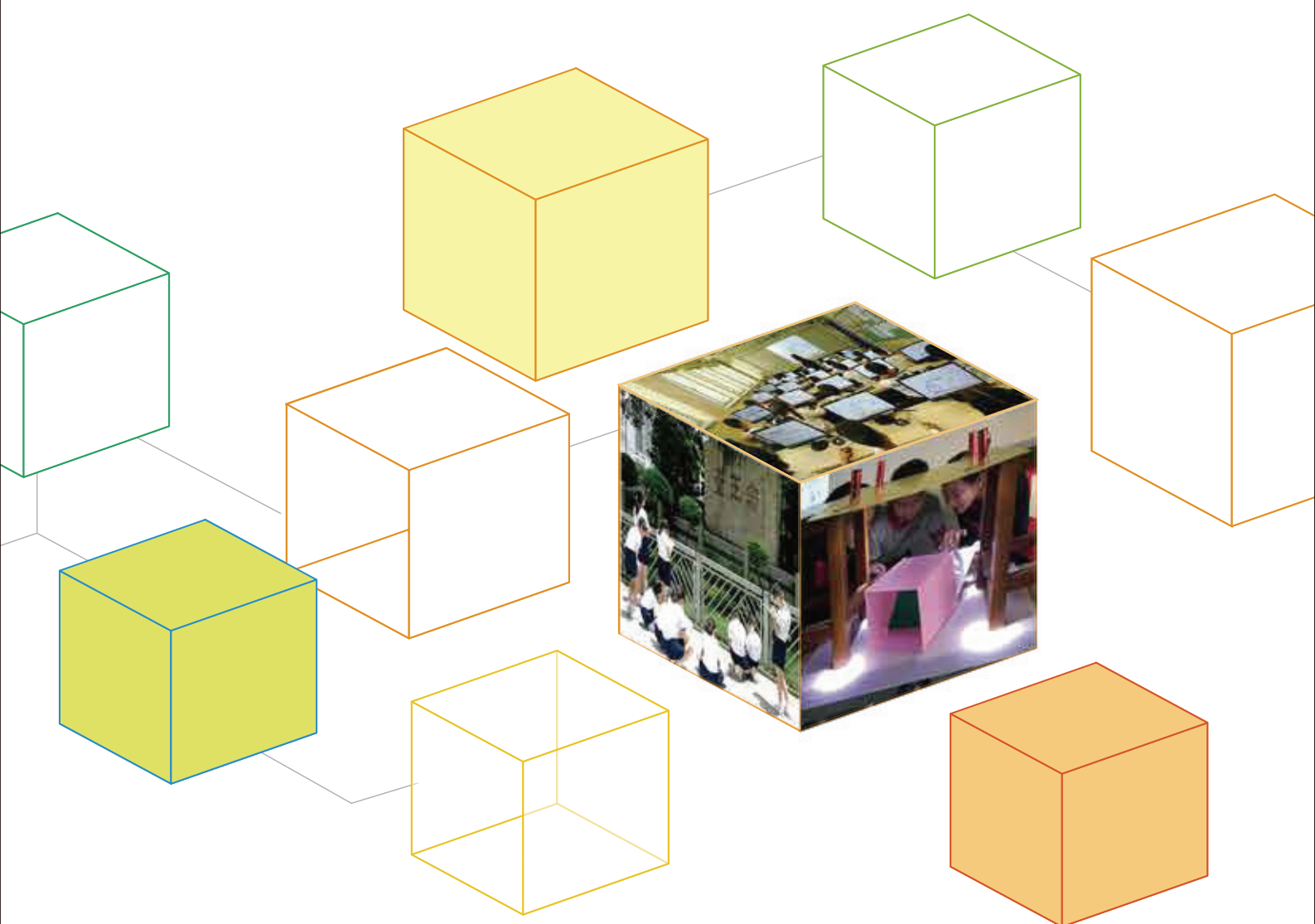


General Studies Curriculum Guide for Primary Schools (Primary 1 - Primary 6)



Prepared by
The Curriculum Development Council

Recommended for use in Schools by
The Education Bureau
HKSARG

2017

Preamble

The development of the Hong Kong school curriculum has advanced into a new phase of ongoing renewal and updating. It ushers in a new era for curriculum development to keep abreast of the macro and dynamic changes in various aspects in the local, regional and global landscapes in maintaining the competitiveness of Hong Kong. For the ultimate benefit of our students, schools are encouraged to sustain and deepen the accomplishments achieved since the Learning to Learn curriculum reform started in 2001, and to place new emphasis on future needs in curriculum development for achieving the overall aims and learning goals of the school curriculum.

The eight Key Learning Area (KLA) Curriculum Guides (Primary 1 - Secondary 6) and the General Studies (GS) for Primary Schools Curriculum Guide (Primary 1 - 6) have been updated and recommended by the Curriculum Development Council (CDC)¹ to support the ongoing renewal of the school curriculum at the primary and secondary levels.

In updating the KLA and GS Curriculum Guides, the respective KLA and Ad hoc committees under the CDC have taken into consideration the concerns, needs and suggestions of various key stakeholders including schools, principals, teachers, students and the public at large. A series of school briefing cum feedback collection sessions coupled with a territory-wide school survey were conducted between 2015 and 2017 to gauge schools' views on the major updates of the respective Curriculum Guides.

The *General Studies Curriculum Guide for Primary Schools (Primary 1 – Primary 6)* (2017) supersedes the 2011 version. It presents the updated curriculum framework which specifies GS's curriculum aims, learning targets and objectives, delineates the direction of ongoing curriculum development, and provides suggestions on curriculum planning, learning and teaching strategies, assessment, as well as useful learning and teaching resources. In addition, updated examples of effective learning, teaching and assessment practices are provided for schools' reference.

Schools are encouraged to take into consideration their contexts, needs and strengths when adopting recommendations of the curriculum guide to help students achieve learning goals of the school curriculum. Reference should also be made to the *Basic Education Curriculum Guide - To Sustain, Deepen and Focus on Learning to Learn (Primary 1 – 6)* (2014) and relevant KLA Curriculum Guides (2017) for a better understanding of the interface between various key stages and connections of different learning areas, and how effective learning, teaching and assessment can be achieved to deepen their holistic understanding of curriculum planning at the school, learning area and subject levels.

¹ The CDC is an advisory body offering recommendations to the Government on all matters relating to school curriculum development from kindergarten to secondary levels. Its membership includes heads of schools, teachers, parents, employers, academics from tertiary institutions, professionals from related fields or related bodies, representatives from the Hong Kong Examinations and Assessment Authority (HKEAA), and officers from the Education Bureau.



As curriculum development is a collaborative and ongoing process, the KLA and GS Curriculum Guides will be under regular review and updating in light of schools' implementation experiences as well as the changing needs of students and society.

Views and suggestions on the development of the General Studies and every learning field for Primary Schools Curriculum Guide are always welcome. These may be sent to:

Chief Curriculum Development Officer (Kindergarten and Primary)
Curriculum Development Institute
Education Bureau
13/F, Wu Chung House
213 Queen's Road East
Wanchai
Hong Kong
Fax: 3104 0542
E-mail: kpgs_cdi@edb.gov.hk

Key Messages

General Studies (GS)

- provides diversified learning experiences for students, so that they can gain a better understanding of themselves, society, the country and the world.
- arouses students' interests in learning, enables them to learn effectively and use generic skills to enquire issues related to science, technology and society.
- cultivates positive values and attitudes for healthy personal and social developments.

Existing Strengths

- schools develop school-based GS curriculum according to their strengths and students' needs.
- teachers generally agree that GS can help develop students' generic skills (e.g., communication, study and collaboration skills), and cultivate positive values and attitudes.
- enquiry-based learning is an important strategy in GS. Teachers are facilitators of learning, helping students learn how to learn.
- Owing to technological advancement, schools have sufficient equipment to promote e-learning.
- community resources can help promote life-wide learning.
- schools emphasise diversified assessments as a means to foster learning.

Direction of Curriculum Development

- to establish a culture of continual renewal of the school-based curriculum according to the GS curriculum framework, students' needs and interest, and societal changes.
- to strengthen the vertical continuity and lateral coherence of the GS curriculum, as well as the linkage to cross-curricular learning experiences.
- to achieve the aims of the GS curriculum through sustaining the Key Tasks in the curriculum reform, and effective use of learning and teaching strategies and resources.
- to formulate a GS assessment policy according to the assessment guidelines set out in the GS Curriculum Guide, to develop teachers' assessment literacy and to use the data or information collected to inform curriculum planning and refine learning and teaching strategies.

Principles of Implementation

- all primary schools implement the GS curriculum according to the suggestions of the GS Curriculum Guide.

- 
- develop school-based GS curriculum according to the GS curriculum framework and the strengths of schools.
 - make use of diversified learning and teaching strategies to provide students with different learning experiences.
 - enhance teachers' professional development and collaboration for the promotion of students' learning.

Curriculum Aims

The GS curriculum aims at enabling students to:

- maintain healthy personal development and become confident, rational and responsible citizens.
- recognise their roles and responsibilities as members of the family and society and show concern for the common good.
- develop a sense of national identity and be committed to contributing to the nation and the world.
- develop curiosity and interest in the natural world and technological world as well as understand the impact of science and technology on society.
- develop care and concern for the environment and practice green living.

Entitlement of Students

- all students learn GS from Primary 1 to Primary 6.
- students gain learning experiences of all core elements.
- students are provided with sufficient learning time for GS, which constitutes 12-15% of the total lesson time in the primary curriculum.

Central Curriculum

The GS curriculum, in the form of an open and flexible curriculum framework, sets out the learning targets and learning objectives for the development of students' construction of subject knowledge, as well as development of generic skills, positive values and attitudes under the following six strands:

- Health and Living
- People and Environment
- Science and Technology in Everyday Life
- Community and Citizenship
- National Identity and Chinese Culture
- Global Understanding and the Information Era

There should be a balanced coverage of the six strands. Students are entitled to the learning of Chinese history and culture in the strand "National Identity and Chinese Culture".

Central Curriculum and School-based Curriculum Adaption

Schools are encouraged to adapt the central curriculum in developing their school-based curriculum so as to achieve the learning targets and learning objectives set out in the GS Curriculum Guide. Measures may include:

- adjusting the learning objectives according to students' needs, interests and abilities
- establishing a teaching team while taking strengths of the school and teachers' professional knowledge and capabilities into consideration, organising learning contents to cover all core learning elements, adopting appropriate learning and teaching strategies and modes of assessment, and designing assignments and extended activities.

Learning and Teaching

- to develop new elements of ongoing renewal of the school curriculum, to promote STEM education and coding education, to deepen values education and enhance students' integrative use of generic skills and to improve learning through effective use of learning and teaching strategies.
- to adopt diversified teaching strategies such as enquiry-based learning and e-learning, to help students deepen their learning, and move towards self-directed learning.
- to develop positive values and attitudes, strengthen affective development and nurture a sense of national identity through discussing and analysing life events.
- to arouse students' interest in enquiry and construct knowledge through hands-on, minds-on and problem-solving activities, to encourage them to face challenges with perseverance and propose creative solutions.
- to make flexible use of textbooks, choose quality learning and teaching resources, and avoid confining learning to textbooks or written assignments.
- to make good use of community resources to enhance teachers' professionalism and open up opportunities for promoting life-wide learning.

Assessment

- to devise a school-based assessment policy and enhance teachers' assessment literacy.
- to use diversified assessment to reflect students' learning comprehensively.
- to help students understand themselves and improve their learning, and achieve self-directed learning through self-reflection and feedback from multiple stakeholders in different assessment tasks.



CONTENTS

Preamble	i
Key Messages	iii
Chapter 1 Introduction	1
1.1 Background	2
1.2 Positioning of GS in the School Curriculum	2
1.3 Rationale and Direction of Development	3
1.4 On-going Renewal of the School Curriculum – Focusing, Deepening and Sustaining	5
1.4.1 Developing STEM Education	5
1.4.2 Deepening Values Education	6
1.4.3 Sustaining the Development of Generic Skills	7
1.5 Development Strategies in the GS Curriculum	8
Chapter 2 Curriculum Framework	11
2.1 Aims	12
2.2 Learning Targets	13
2.3 Components of the GS Curriculum Framework	14
2.3.1 Strands	15
2.3.2 Generic Skills	15
2.3.3 Values and Attitudes	16
2.4 Learning Objectives	17
2.4.1 Core Learning Elements	18
2.4.2 Extended Learning Activities	18
2.5 The Thematic Approach	48
2.6 Life-wide Learning Activities	48
Chapter 3 Curriculum Planning, Management and Leadership	69
3.1 Central Curriculum and the Development of School-based Curriculum	70
3.1.1 Guiding Principles for School-based GS Curriculum Planning	70
3.2 Curriculum Planning, Implementation and Evaluation	72
3.2.1 Curriculum Planning Process	73
3.2.2 Use of Curriculum Resources	75
3.2.3 Curriculum Implementation and Monitoring	75
3.2.4 Curriculum Review	75
3.3 Curriculum Management and Leadership	76
3.3.1 Importance of Curriculum Leadership of GS	77
3.3.2 Developing Learning Communities and Sharing Resources	77
3.3.3 Professional Development of Teachers	78

3.4	Directions of Curriculum Planning	79
3.4.1	Development of STEM Education	79
3.4.2	e-Learning	89
3.4.3	Reading across the Curriculum	95
3.4.4	Project Learning	95
3.4.5	Values Education	101
3.5	Modes of Curriculum Planning	105
3.5.1	Lateral Coherence across Learning Strands	105
3.5.2	Devising Learning Themes with Unique School Contexts	106
3.5.3	Vertical Continuity of the Curricula in Consecutive Key Stages	108
3.6	Interfacing between Different Learning Stages	109
3.6.1	Interface between the Kindergarten and Primary Education Curricula	109
3.6.2	Interface between KS1 and KS2	110
3.6.3	Interface between Primary and Secondary Curricula	110
3.7	Flexible Arrangement of Curriculum Time	112
Chapter 4	Learning and Teaching	117
4.1	Guiding Principles	118
4.1.1	Providing Various Learning Opportunities	118
4.1.2	Stimulating Students' Learning Motivation	119
4.1.3	Catering for Learner Diversity	119
4.1.4	Developing Students' Self-directed Learning Abilities	120
4.1.5	Developing Students' Generic Skills and Cultivating their Positive Values and Attitudes	121
4.2	Learning and Teaching Strategies	122
4.2.1	Collaborative Learning	122
4.2.2	Adopting Life Events for Promoting Values Education	123
4.2.3	Scientific Investigations	126
4.2.4	Project Learning	129
4.2.5	Develop Computational Thinking through the Application of Coding	134
4.3	Reading across the Curriculum	137
4.3.1	Reading and Writing	137
4.3.2	News Discussion and Data Analysis	140
4.4	e-Learning	144
4.4.1	Facilitating Collaborative Learning with e-Learning	144
4.4.2	Effective Use of Multimedia for Learning and Teaching	145
4.5	Life-wide Learning	147
4.5.1	Service Learning	147
4.5.2	Museum Learning	148
4.5.3	Cross-boundary Learning	149



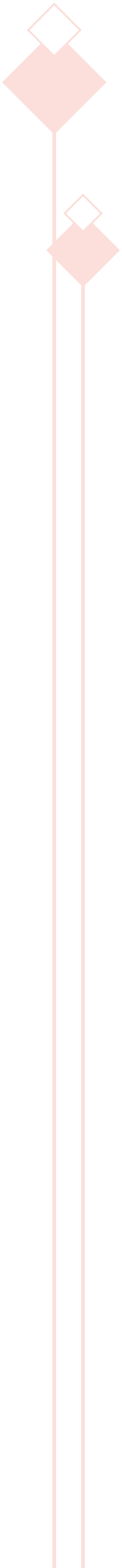
4.6	Assignments	150
Chapter 5	Assessment	153
5.1	Aims of Assessment	154
5.2	Modes of Assessment	155
5.2.1	Assessment of Learning	155
5.2.2	Assessment for Learning	156
5.2.3	Assessment as Learning	157
5.3	Summative Assessment	159
5.3.1	Planning of Summative Assessment	159
5.3.2	Questions Related to Current Issues	159
5.3.3	Using Summative Assessment to Provide Feedback on Classroom Teaching	161
5.4	Formative Assessment	162
5.4.1	Inquiry and Assessment Activities in STEM Education	162
5.4.2	Assessment of Project Learning	164
5.4.3	Assessment of Self-Management Skills	165
5.4.4	Self-assessment	168
5.5	Self-assessment and Self-directed Learning	169
5.5.1	Preparatory and Extended Learning	169
5.5.2	The Learning Portfolio	170
5.6	The Importance of Feedback in Learning and Assessment Practices	171
5.7	Schools' Assessment Policy	172
5.7.1	Planning and Co-ordinating Assessment Policies in GS	173
5.7.2	Assessment Literacy	174
5.7.3	Assessment Activities and Assignments	174
Chapter 6	Learning and Teaching Resources	179
6.1	Resources Management in Schools	180
6.1.1	Human Resource Planning	180
6.1.2	School-based Resources Bank Management	180
6.2	Facilities and Equipment in Schools	182
6.2.1	GS Room	182
6.2.2	School Library	183
6.2.3	Information Technology Facilities in Schools	183
6.3	Selection of Quality Learning and Teaching Resources	185
6.4	Printed Materials	186
6.5	Making Good Use of e-Learning Resources	186
6.5.1	Electronic Books	187
6.5.2	Educational Television Programmes	187
6.5.3	The Internet	188
6.5.4	EDB Learning and Teaching Resources Platform	188

6.6	Community Resources	189
Appendix		191
1	Example of Collaborative Problem Solving Skills	192
2	Examples of Holistic Thinking Skills	195
3	Example of Self-directed Learning - Time Management	197
Glossary		199
References		203
Membership of the Ad Hoc Committee on General Studies for Primary Schools		211



Chapter 1

Introduction



Introduction

1.1 Background

The General Studies (GS) curriculum was first introduced in response to the recommendations of Education Commission Report No. 4 and has been implemented since 1996. The GS Curriculum Guide published in 2002 was developed on the basis of the previous one and was revised in accordance with the curriculum reform. It aimed at guiding children towards a better understanding of themselves and the world around them, and the inter-dependence among people, things and the environment. The comprehensive curriculum helps develop students' to acquire basic knowledge and develop abilities, values and attitudes, fulfilling the aims of education. As scientific, technological and social developments in Hong Kong have been rapid, it is necessary to introduce an open and flexible curriculum framework that enables teachers to enhance their students' capabilities to learn how to learn so that they can meet and overcome challenges of the new century.

In response to societal changes and needs of schools, the Curriculum Development Council (CDC) updated and enriched the GS curriculum in 2011 to keep abreast of recent developments and allow students to learn how to learn through contents related to their daily life. The secondary and primary curricula have now entered a new era known as “Ongoing Renewal of the School Curriculum”. To help students face the challenges brought about by the rapid developments in the 21st century, and to sustain the vision of the 2001 curriculum reform, the school's GS curriculum should provide them with learning experiences that enable them to construct knowledge, develop a global perspective, and develop life-long learning capabilities, so that they can contribute to the knowledge-based economy and society nowadays. To this end, the CDC further updates and enriches the GS curriculum in 2017 to align with the **Basic Education Curriculum Guide – To Sustain, Deepen and Focus on Learning to Learn (Primary 1 – 6)** (BECG) published in 2014, and to serve as a reference for schools to further focus on the learning and teaching of GS for continuous improvement of students' learning effectiveness.

1.2 Positioning of GS in the School Curriculum

The GS curriculum provides diversified learning experiences for students to lay foundations for the Key Learning Areas (KLA) of Science Education (SE), Technology Education (TE) and Personal, Social and Humanities Education (PSHE), and to progressively develop their positive values, attitudes and generic skills. GS is expected to be a nurturing ground for students to develop thinking skills and a foundation for their whole-person development, cultivating in students care for their family, community, society, nation and the world, as well as love and respect for others and willingness to contribute for the common good. The GS curriculum will continue to be student-centered, and be renewed through focusing, deepening and sustaining in order to promote self-directed learning and whole-person development among students.

As recommended in the BECG (2014), 12-15% of total lesson time should be allocated to GS.

1.3 Rationale and Direction of Development

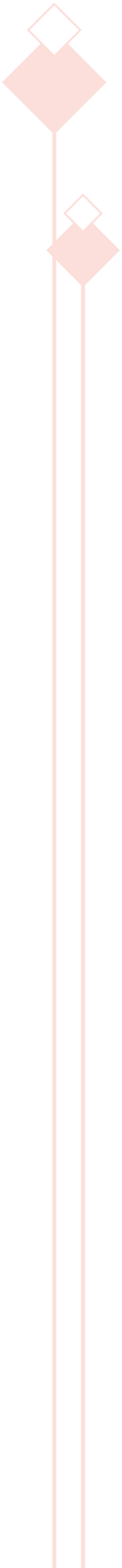
The GS curriculum is designed according to the notion that students' learning experiences should be connected, so that they can gain understanding of themselves, society and the world, and maintain healthy personal development to become confident, rational and responsible citizens, contributing to the family, the local community, the nation and the world. Directions of the ongoing development of the GS curriculum are as follows:

- ***Moving forward towards the objective of student-centred development***

Schools are encouraged to build on their existing strengths, and improve their learning and teaching strategies through student-centered learning approaches. These strategies include hands-on and minds-on exploratory activities that allow students to integrate and apply knowledge and skills, sustain their interests in science and technology as well as develop their creativity; a wide range of interactive learning activities that help students explore issues from multiple perspectives, care for the development of society and the nation, develop positive values and attitudes including treasuring lives, building resilience and self-improvement; encouraging good use of information technology (IT) and e-learning tools that improve learning and teaching effectiveness, facilitate students' self-directed learning and enhance their information literacy.

- ***Maintaining an open and flexible curriculum framework, strengthening the whole- school curriculum planning***

GS provides an open and flexible curriculum framework that enables students to gain basic understanding of the six strands through rich learning experiences, and gradually develops their generic skills and positive values. The GS curriculum further strengthens the lateral coherence of different strands and the vertical continuity of the learning themes at different key stages, helping schools to plan their whole-school curriculum so that the themes can better suit students' abilities, interests and learning needs. In addition, "strengthening the interface between GS and kindergarten curriculum as well as secondary curricula" is also an important aim of the GS curriculum.

- 
- ***Improving learning and teaching strategies, emphasising assessments literacy***

The GS curriculum renewal emphasises the necessity for teachers to illustrate sophisticated concepts with appropriate contents to suit the needs of students, to devise different learning and teaching strategies, and to facilitate student learning through the use of IT according to their abilities and levels. Teachers should employ diversified strategies and design assessment tasks that reflect students' learning effectiveness and performance from multiple perspectives, as well as facilitate self-directed learning.

In addition, teachers are advised to follow the above directions and emphases of the GS curriculum development to provide students with diversified learning experiences, and this includes:

- ***Expanding the learning space***

Schools should provide students with sufficient time for enquiry-based learning and life-wide learning activities, as well as learning to make use of electronic tools and platforms. In doing so, students play an active role in the search for knowledge and the construction of their own beyond lessons for the development of generic skills, values and attitudes that are essential for whole-person development. Appropriate use of community resources e.g. museums, facilities and activities provided by community organisations and other public and private bodies is encouraged, in order to widen students' scope of learning beyond the school setting.

- ***Integrating students' learning experiences***

Thematic and life-wide learning activities under the GS curriculum can strengthen the link between the contents of various strands, and connect lessons to students' real-life experiences. For instance, project learning could tie in with Reading across the Curriculum and visits to deepen learning; sharing of life events would allow students to understand that the Basic Law is relevant to their daily life. These activities meet the needs and interests of students, enhance personal and social developments of students, and strengthen the development of generic skills.

- ***Enhancing students' interest and curiosity in science and technology***

Schools should promote STEM education to strengthen students' integration and application of knowledge and skills in science and technology. In addition,

students' curiosity can be nurtured and their creative, innovative and problem-solving skills can be enhanced. Teachers are encouraged to provide students with diversified learning experiences, including project learning, e-learning, scientific investigation and the design of simple technological products so as to further develop students' computational thinking and self-learning skills.

- ***Emphasising students' affective development***

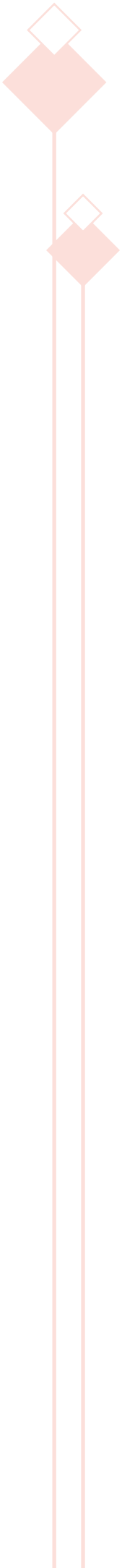
The GS curriculum emphasises learning elements related to affective development, including emotion management and healthy lifestyles, as well as the rule of law and national identity, helping students cultivate a sense of belonging to the local community, the country and the world. Values education can be promoted through news discussion, life events sharing, project learning and life-wide learning activities, as well as through meaningful learning experiences planned and implemented in the school-based curriculum.

1.4 On-going Renewal of the School Curriculum – Focusing, Deepening and Sustaining

The curriculum reform launched by the EDB in 2000 aimed to stimulate students' thinking and develop their capabilities to "Learning to Learn". Since the Learning to Learn curriculum reform was first implemented, there have been a lot of changes and challenges in our society and around the world, such as those related to economic, scientific, technological and social developments. Therefore, to maintain Hong Kong's competitive edge and better prepare our students for the various local and global changes taking place, it is necessary to reinforce the Learning to Learn curriculum reform, in order to sustain and deepen the accomplishments. In view of the on-going renewal of the school curriculum, the curriculum framework of GS remains open and flexible, with the following new emphases added:

1.4.1 Developing STEM Education

The GS curriculum has to be constantly improved to strengthen students' ability to integrate and apply their knowledge and skills. Schools may enhance curriculum planning to increase science and technology related core learning elements, and select mathematical concepts and skills that are suited to students' abilities to enrich learning and teaching activities regarding the application of science and technology in solving daily life problems. Students are provided with hands-on and minds-on learning opportunities to demonstrate their creativity and innovative capabilities. Relevant examples are provided in Chapter 3 "Curriculum Planning, Management and Leadership", Chapter 4 "Learning and Teaching" and Chapter 5 "Assessment".



1.4.2 Deepening Values Education

School should continue to adopt a whole-school approach in promoting the seven priority values and attitudes, namely “Perseverance”, “Respect for Others”, “Responsibility”, “National Identity”, “Commitment”, “Integrity” and “Care for Others” stated in the BECG (2014). When promoting values education and cultivating students’ positive values and attitudes, schools are encouraged to connect them with aspects including personal development, family, society, country and the world, and keep them in line with school’s mission and context. Values that are further enhanced in the updated GS curriculum include:

- ***Healthy lifestyle***

The GS curriculum continues to promote students’ healthy personal and social developments. Students will learn to show empathy for others, take care of themselves in everyday life, and develop good hygiene habits and manage their emotions, so that they will be able to deal with and manage stress with a positive attitude, and ask help from the others and maintain their mental health. Schools are advised to select suitable materials and customise them to meet the learning needs and abilities of students. Students will learn about everyday topics such as “life, aging, illness and death”, and to treasure and respect life. Schools should continue to promote “drug education” and “sex education” to help students master the appropriate ways of making friends and resisting temptations. In the face of climate change, schools should raise students’ environmental awareness through everyday topics related to the basic necessities of life (clothing, food, housing and transport), so that they would develop a healthy lifestyle and practice green living.

- ***Care and inclusion, respect for rule of law and willingness to make contributions to the common well-being***

Schools should help students understand the multi-cultural backgrounds of Hong Kong residents and the importance of obeying laws and order, as well as experience how residents live harmoniously and care for each other in this society. Through learning about the constitutional background of the Basic Law and “one country, two systems”, students would be inspired to learn about the relationship between the Central Authorities and the Hong Kong Special Administrative Region, and care about social affairs. The life experience of students and their participation in group discussion would help them understand the rights and responsibilities of Hong Kong residents, and become citizens that respect the rule of law.

- ***National identity and sense of belonging to the nation and the society***

The strand titled “National Identity and Chinese Culture” of the GS curriculum enhances students’ understanding of the development of Chinese culture, helps them appreciate the inheritance of history and culture, as well as develops their respect and care for the developments of the nation and Hong Kong. Building on students’ experiences in visiting museums and heritage in Hong Kong, teachers can help students understand the chronology of historical events of Hong Kong and the nation, as well as discover about important historical figures and their deeds, so as to help students understand their national identity and show concern for the development of the nation and society. Schools are expected to continue to make use of interesting stories or themes that are related to students’ everyday life or experience to facilitate student learning through Reading across the Curriculum, project learning and e-learning.

- ***Information Literacy***

Through project learning, enquiry learning and e-learning strategies, schools are expected to nurture students’ abilities and attitudes in using information effectively and ethically (which include understanding the world of information; applying information technology to process information and produce user-generated contents; learning to locate, evaluate, organise and present information to create new ideas; protecting their privacy and refraining from unethical use of information such as cyberbullying and infringing intellectual property rights). With regard to developing self-management skills, and personal health and safety, students will be able to give matters appropriate consideration and make suitable decisions (e.g. eye care, not indulging in web surfing).

1.4.3 Sustaining the Development of Generic Skills

Based on past experiences of implementing the curriculum reform and in response to dynamic changes in society and recent research, the nine generic skills are grouped under three clusters of related skills, namely basic skills, thinking skills and personal and social skills, for better integration, understanding and application. Please refer to Chapter 2.3.2 for details.

GS teachers are advised to build on their existing strengths. Apart from developing students’ communication, self-learning and collaboration skills in each key stage, as well as enhancing students’ critical thinking skills, they can also provide opportunities for students to integrate and apply the generic skills in presenting their learning outcomes.

1.5 Development Strategies in the GS Curriculum

Schools are encouraged to develop a culture of teamwork and update the curriculum according to the GS curriculum framework, the needs and interests of students as well as societal changes. In the whole-school curriculum planning, schools should strengthen the vertical continuity and lateral coherence of the GS curriculum, and the linkage among GS and other subjects as well as other learning experiences in school to achieve the curriculum aims of GS. Furthermore, with the various support measures from the EDB, tertiary institutions and other related organisations, schools can create space for learning and teaching of GS.

Since the implementation of the GS curriculum, schools have, to a certain extent, made achievements in the learning and teaching. They can build on their existing strengths and move towards the following goals:

• KS1 (Primary 1 - 3)

Our students will	Our teachers will
• develop a healthy lifestyle and self-management skills • be able to meet the requirements of everyday life, live in harmony with other people, and develop empathy • acquire the basic skills in using e-learning tools and respect intellectual property rights • develop a keen interest in observing the environment and actively participate in learning activities • have firsthand experiences and cultivate curiosity in both the natural and scientific worlds • develop investigative and enquiry skills to solve everyday problems	• strengthen personal and social life education by using a life event approach in order to help students practise care and inclusion, as well as respect others • avoid being textbook-bound in teaching, and provide diversified learning activities to keep students engaged in active enquiry • make use of e-learning strategies to promote IT for interactive learning • design hands-on and minds-on activities to arouse students' interest in the natural and scientific worlds • emphasise investigative and enquiry learning to help students solve everyday problems

• **KS2 (Primary 4 - 6)**

Our students will	Our teachers will
• participate actively in scientific investigation, master basic science process skills to solve everyday problems • participate actively in learning, be open-minded to receive feedback from different parties (e.g. teachers, peers and parents) and develop self-directed learning capabilities • live a healthy lifestyle; know how to get along with people and maintain a positive attitude by being caring and inclusive • show care for the development of the community and the nation, respect the rule of law, and be willing to contribute for the common good • develop information literacy, use information and information technology ethically and effectively	• Develop STEM education activities to help students apply and integrate knowledge and skills and fulfill their creative potential • adopt diversified learning and teaching strategies to help students engage in self-directed learning • cultivate in students with positive values and attitudes towards life including treasuring lives, building resilience, striving for self-improvement, helping them develop healthily and fostering their personal and social development • provide diversified learning resources and activities to cultivate students' sense of belonging and national identity • guide students to use e-learning tools for better learning and develop their information literacy

Schools should also formulate an overall GS assessment policy following the guidelines set out in the GS Curriculum Guide, and make use the data/information collected to analyse student learning, thereby developing effective learning and teaching strategies to enhance their learning.

Learning to Learn 2+ - The Hong Kong School Curriculum

A broad and balanced curriculum with diversification and specialisations (choices) for academic, professional and vocational development according to students' needs

Nurturing
lifelong & self-directed
learning capabilities

Multiple pathways

Fostering
whole-person development

SEVEN LEARNING GOALS

FIVE ESSENTIAL LEARNING EXPERIENCES

Moral and Civic Education Intellectual Development Community Service Physical and Aesthetic Development Career-related Experiences

Secondary 4-6

SS

Secondary 1-3

JS

Primary 1-6

P

Kindergarten 1-3

KG

Core Subjects
Chinese Language
English Language
Mathematics
Liberal Studies

Electives
20 Elective Subjects
Applied Learning
Other Languages

Other Learning Experiences
Moral and Civic Education
Aesthetic Development
Physical Development
Community Service
Career-related Experiences

Four Key Tasks: Towards major renewed emphases (MRE) at the JS level and beyond
STEM education & ITE, Values education (incl. MCE & Basic Law education), Language across the Curriculum (incl. reading), etc.

Chinese Language Education
Key Learning Area

English Language Education
Key Learning Area

Mathematics Education
Key Learning Area

Science Education
Key Learning Area

Technology Education
Key Learning Area

Personal, Social & Humanities Education
Key Learning Area

Arts Education
Key Learning Area

Physical Education
Key Learning Area

Values & attitudes, Skills and Knowledge

Language

Early Childhood Mathematics

Nature & Living

Self & Society

Arts & Creativity

Physical Fitness & Health

Values & attitudes
Seven priority values

- Perseverance
- Respect for Others
- Responsibility
- National Identity
- Commitment
- Integrity
- Care for Others

Generic skills
Basic Skills

- Communication Skills
- Mathematical Skills
- IT Skills

Thinking Skills

- Critical Thinking Skills
- Creativity
- Problem Solving Skills

Personal & Social Skills

- Self-management Skills
- Self-learning Skills
- Collaboration Skills

Life-wide Learning

Life-wide Learning



Chapter 2

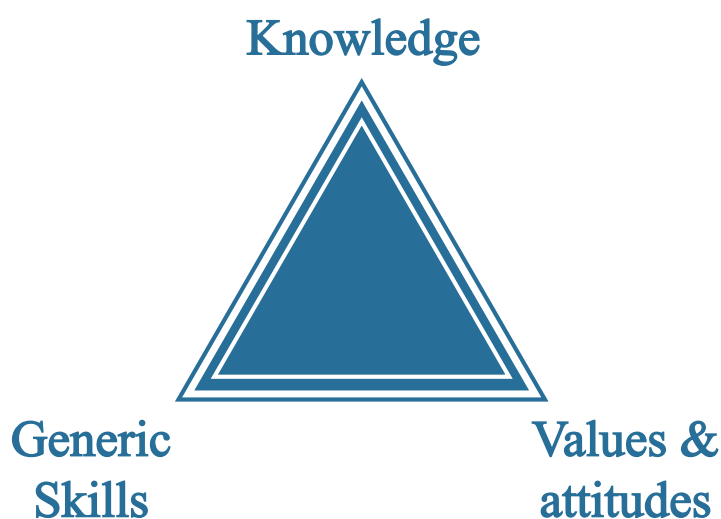
Curriculum Framework

Curriculum Framework

The curriculum framework for GS comprises a set of interconnected components namely:

- fundamental subject knowledge;
- generic skills; and
- positive values and attitudes.

The relationships among knowledge, generic skills, and values and attitudes are illustrated in the following diagram.



The framework sets out what students should know, value and be able to do at Key Stages 1 and 2. Schools and teachers can exercise their discretion and flexibly plan and develop different curriculum modes to meet their students' needs.

The learning contents of Personal, Social and Humanities Education (PSHE), Science Education (SE) and Technology Education (TE) Key Learning Areas (KLAs) is the continuation of the core learning elements in the six strands of GS, which can facilitate a smooth transition between the primary and secondary level. Cross-reference should be made to the Curriculum Guides of PSHE, SE and TE KLAs.

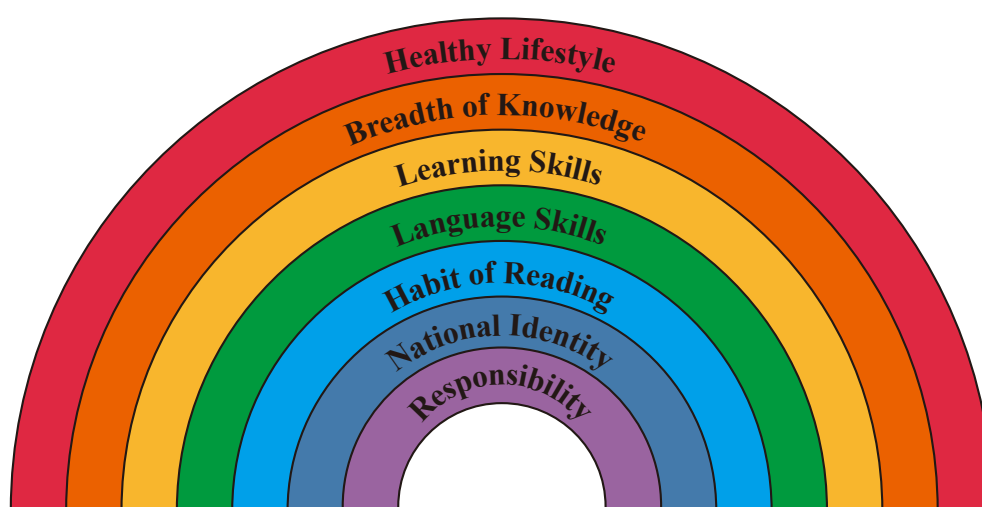
2.1 Aims

The GS curriculum aims to enable students to:

- maintain healthy personal development and become confident, rational and responsible citizens;
- recognise their roles and responsibilities as members of the family and society, and care about the common good;

- develop sense of national identity and be committed to contributing to the nation and the world;
- develop curiosity and interests in the natural and technological worlds as well as understand the impact of science and technology on society;
- develop care and concern for the environment and practice green living.

In the last decade, the Curriculum Development Council sets out the Seven Learning Goals in accordance with the aims of both Hong Kong education and the school curriculum, among which the basic understanding of subjects, development of generic skills, as well as cultivation of positive values are closely related to the curriculum aims of GS.



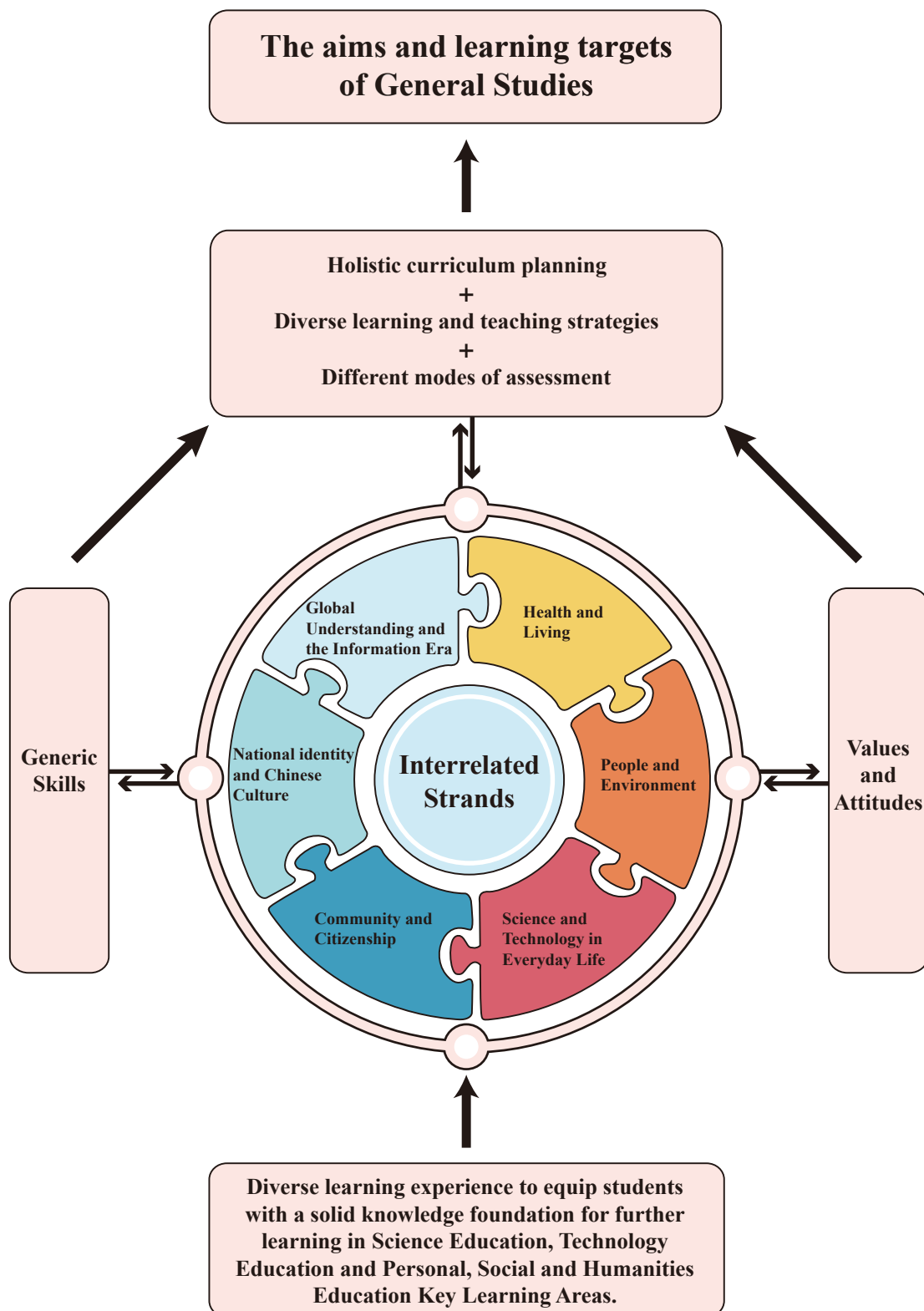
2.2 Learning Targets

Students are expected to:

- understand their growth and development, develop a healthy lifestyle and respect for themselves and others, and attach importance to harmonious interpersonal relationships;
- understand the development and changes of the community, and appreciate and respect multiculturalism of Hong Kong;
- develop care and concern for the well-being of their families, the community of Hong Kong, the nation and the world, and as a result understand their roles and responsibilities in their families, society and country, respect the rule of law and contribute for the common good;
- develop interest in exploring the scientific world and technological world, be able to integrate and apply science and technology knowledge and skills to solve everyday problems;
- understand the impact of science and technology on human society and the environment, and practise green living;

- develop capabilities of effective and ethical use of information and information technology, engaging in continual learning.

2.3 Components of the GS Curriculum Framework



2.3.1 Strands

Strands are used to organise the curriculum content. There are six strands in the GS curriculum, which provide students with diversified learning experiences that lay a solid knowledge foundation for their learning in SE, TE and PSHE KLAs. The six strands are:

- Health and Living
- People and Environment
- Science and Technology in Everyday Life
- Community and Citizenship
- National Identity and Chinese Culture
- Global Understanding and the Information Era

2.3.2 Generic Skills

Generic skills are the foundation of students' capabilities for leaning to learn. They can be developed through learning and teaching of different subjects or KLAs, and are transferable among learning contexts. In 2001, the CDC proposed nine generic skills to be developed through the implementation of the school curriculum. They are communication skills, IT skills, numeracy skills, self-management skills, study skills, collaboration skills, critical thinking skills, creativity and problem-solving skills.

Sustaining the Development of Generic Skills

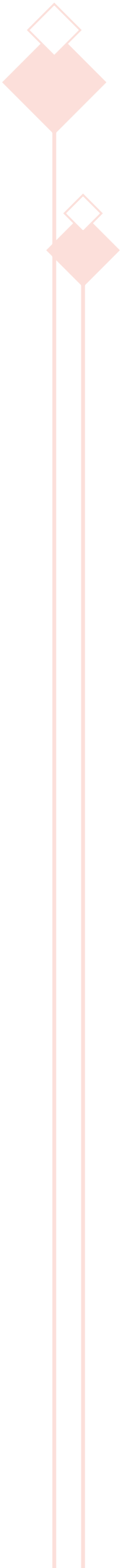
After consolidating experiences of curriculum implementation over years the nine generic skills are now grouped under three clusters, namely basic skills, thinking skills, and personal and social skills, so as to help teachers design meaningful context to facilitate students' application of these skills in a holistic manner.

Basic Skills	Thinking Skills	Personal and Social Skills
Communication Skills	Critical Thinking Skills	Self-management Skills
Mathematical Skills ¹	Creativity	Self-learning Skills ²
IT Skills	Problem Solving Skills	Collaboration Skills

Remarks:

¹ Numeracy Skills was used in Learning to Learn: Life-long Learning and Whole-person Development (2001), and

² Study Skills was used in Learning to Learn: Life-long Learning and Whole-person Development (2001).



The flexible GS curriculum framework provides learning space for students to develop generic skills to be applied in different learning strands. Schools should organise various generic skills in a meaningful way when conducting curriculum planning, so as to provide students with opportunities to integrate and apply these generic skills in daily life and showcase their learning outcomes. The following learning and teaching examples of collaborative problem-solving skills and holistic thinking skills explain how different generic skills can be integrated and applied effectively:

1. Collaborative problem solving skills

Collaborative Problem Solving skills refers to students' abilities to solve problems with synergised efforts through effective division of labour, as well as incorporation of information from multiple sources of knowledge, perspectives, and experiences in solving problems. Compared to individual problem solving, collaborative problem solving has distinct advantages because it enhances the creativity and quality of solutions through stimulation brought by the ideas of other group members. In the 21st century, it is particularly important for people with different perspectives and talents to solve problems with the effective use of communication technology.

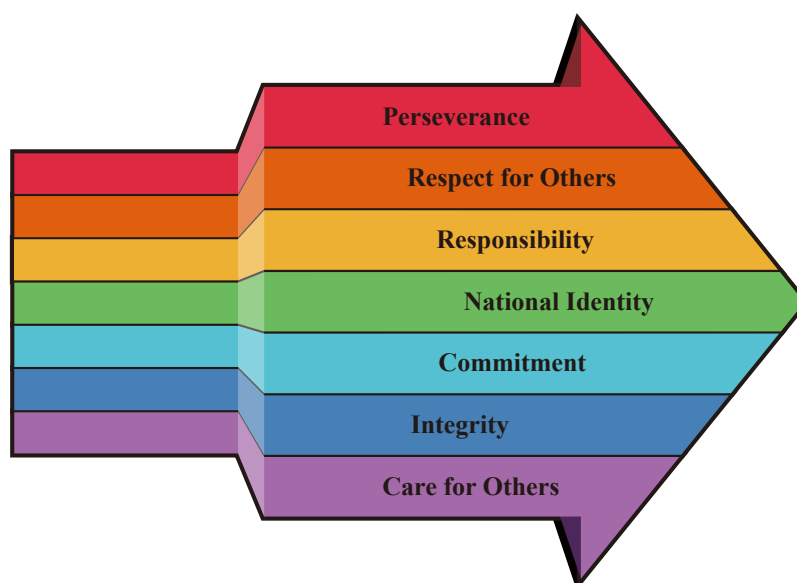
2. Holistic Thinking Skills

Critical thinking skills, creativity and problem solving skills are conventionally categorised as higher order thinking skills. These three skills can be combined and employed integratively as holistic thinking skills to deal with complex issues. Building upon students' learning experience, developing holistic thinking skills can guide them to deploy critical thinking skills to assess the validity of given information, creativity to explore possibilities, and problem solving skills to examine the feasibility of each alternative.

2.3.3 Values and Attitudes

Values are qualities that students should develop as well as principles behind their behaviour and decisions. Cultivating students' positive attitudes can help them cope with challenges and problems with an optimistic and positive mind, and approach people and events around with appreciation and acceptance.

Schools should adopt “perseverance”, “respect for others”, “responsibility”, “national identity”, “commitment”, “integrity”, and “care for others” as the seven priority values and attitudes.



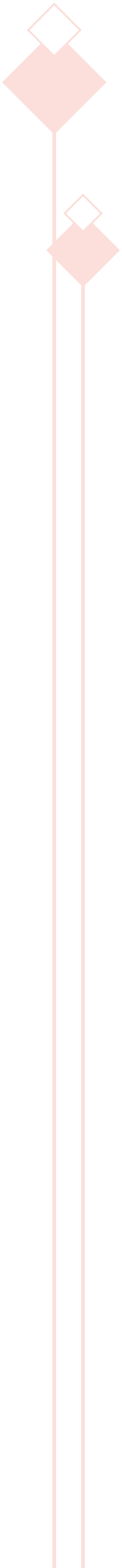
In GS, values education can be manifested in topics and activities of related strands. Schools can provide learning experiences for values education (such as sex education, health education, environmental education, human rights education and Basic Law education) through life events and analysis of current affairs to help students develop positive values and attitudes. Schools can also adopt different learning contexts to help students consider an issue from multiple perspectives, analysing it rationally and objectively, as well as developing humanistic qualities.

Values education and cultivation of positive attitudes have been incorporated in the relevant strands of the GS curriculum, which include:

- empathy and healthy lifestyles, treasuring life and rejecting temptations;
- valuing and caring about the natural environment, showing concern for and accepting responsibility for environmental conservation;
- perseverance, facing challenges and solving problems with integrity;
- care and inclusion, respect for the rule of law, willingness to contribute to the common good;
- national identity, caring about development of the country and society;
- effective and ethical use of information, enhancement of information literacy.

2.4 Learning Objectives

Learning objectives define more specifically what students are expected to learn in accordance with the broad learning targets for Key Stages 1 and 2. Therefore, the knowledge and understanding, as well as skills, values and attitudes to be developed are fully spelt out in each strand.



2.4.1 Core Learning Elements

The core learning elements of each of the six strands in GS are related to the learning contents of three Key Learning Areas, namely Personal, Social and Humanities Education, Science Education and Technology Education. They provide enriched learning experiences and a solid knowledge base for students' continual learning.

The core learning elements of the six strands constitute approximately 80% of the total lesson time for the GS curriculum. They suit the developmental needs of students. It may be more desirable for some students to concentrate on the core learning elements so that they are allowed more time to understand and develop generic skills as well as relevant values and attitudes.

2.4.2 Extended Learning Activities

Extended activities constitute approximately 20% of the total lesson time of the GS curriculum. Students can further pursue in-depth study of particular topics from the core learning elements. Schools may organise extended learning activities in various forms:

(1) Self-directed Learning Activities

Teachers can encourage students to read about relevant topics and complete extended assignments by self-study to further examine particular topics in greater depth. Self-directed learning can bring students challenges, allowing them to construct knowledge and consolidate learning through the experience, leading to a greater sense of achievement.

(2) Project Learning

Project learning should focus on meaningful, authentic and open-ended questions to enhance students' motivation to learn. Since there are no model answers, students can apply their prior knowledge to explore and solve problems under teachers' guidance. For curriculum planning as well as learning and teaching examples of project learning, please refer to Chapter 3.4.4 and Chapter 4.2.4.

(3) Science and Technology related Learning Activities

When designing science and technology related learning activities, schools may help students master science process skills and technology skills for solving problems in everyday life.

The suggested time allocation* of project learning and science and technology learning activities is as follows:

	Project learning	Science and Technology related Learning Activities
KS 1	Not less than 15 hours	Not less than 15 hours
KS 2	Not less than 20 hours	Not less than 20 hours

* The above suggested time allocation is applicable to subject based projects/ science and technology learning activities.

Cross-curricular projects/STEM education activities should be carried out during the flexible time, which accounts for 19%” of total lesson time in the primary school curriculum.

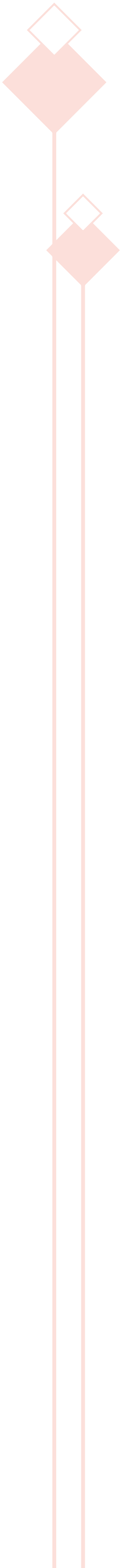
The learning objectives, core elements and proposed extension elements of the six strands are listed in the following tables.

Strand 1: Health and Living

This strand aims at arousing students' awareness of their growth and development, as well as helping them to develop a healthy lifestyle. Students are expected to have basic understanding of physical, psychological and social health, possess a positive attitude towards their personal growth and development, as well as develop self-management skills, so that they could make informed decisions related to their health and safety and care for and concern the community with empathy. Through life-wide learning opportunities, they should also be guided to carry out investigations on health-related issues.

	KS 1	KS 2
Knowledge and understanding	• to identify the different stages of growth and development • to recognise different body parts and organs • to understand that there are individual differences in growth and development • to know the importance of maintaining personal hygiene, environmental hygiene and safety, and ways of bringing them about • to recognise the importance of food to health • to recognise methods of cooking food and food processing • to understand one's own needs and interests and realise that personal emotions and behaviours may influence oneself and others • to understand the importance of family to an individual • to understand the harm of drug abuse	• to recognise functions of major systems and organs of our body • to know the physical and emotional changes which occur at puberty and ways to cope with them • to know the factors affecting one's health and safety • to know the ways to manage risks • to understand one's own needs, aspirations and strengths and ways to address one's weaknesses • to be aware of the positive or negative consequences of one's actions on oneself or others • to understand the effects of drug abuse on individual, the family and society • to recognise the importance of setting life goals

	KS 1	KS 2
	• to understand the importance of living with a positive attitude and treasure life	• to know the ways of making sensible consumer decisions • to understand the importance of personal and community health
Skills	• to develop healthy living and eating habits • to manage oneself in everyday life and to exercise self-discipline in managing personal hygiene, safety and emotions • to observe safety rules in everyday life • to take advice of elders to make decisions related to health • to use appropriate verbal or non-verbal ways to communicate with others and to express emotions • to plan how to make good use of one's time and money	• to be able to manage the changes on mental and physical health during puberty and practise a healthy lifestyle • to master the skills for managing emotions and rejecting temptation • to analyse one's health information and make informed decisions • to identify current issues concerning health and environmental hygiene, and carry out investigations into selected ones • to identify situations that expectations differ according to gender and understand how these expectations may influence one's choices and options • to express one's anxieties, excitements and uncertainties to family members, peers and elders, and to seek help from elders, counsellors or institutions when necessary • to enhance relationships with family members and peers while developing assertiveness skills



	KS 1	KS 2
		• to make sensible consumer choices
Values and attitudes	• to treasure and make efforts to stay healthy • to be positive towards healthy living, including eating habits, work, rest and physical exercise • to accept changes that occur as one grows and individual differences in growth and development • to treasure harmonious relationships with family members, peers and the others • to take a proper attitude in using medicine • avoid taking harmful substances and drugs	• to appreciate the uniqueness of individuals and respect for their strengths and weaknesses • to accept that individuals are different in their growth and development during puberty • to treasure one's own body • to accept sexual feelings and reactions, and show positive attitudes in dealing with them • to develop empathy and concern feelings of others • to reject inappropriate behaviours • to treasure and respect for life • to show commitment in participating in activities related to promotion / maintenance of community health

Core learning Elements

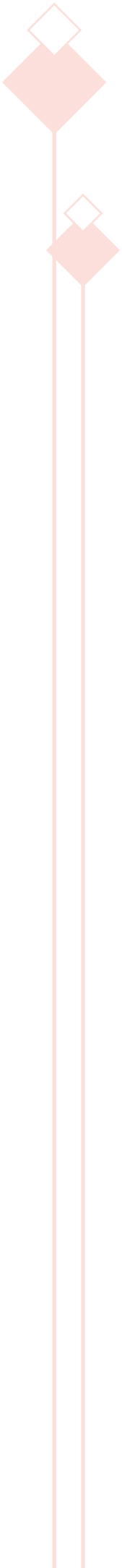
Key Stage One:

- different parts and organs of our body
- different stages and changes of human growth and development
- similarities and differences between boys and girls
- uniqueness of an individual (e.g. likes and dislikes, attributes and abilities, thoughts and feelings)
- planning daily schedule
- getting along with friends and family members
- the need to express feelings and emotions which would influence oneself and others

- decision-making in simple dilemmas
- conflict resolution skills in everyday life
- the importance of food, physical exercises and rest to health (e.g. balanced diet, regular exercise, proper posture, eye care)
- the importance of food hygiene and safety of processed food
- basic personal hygiene habits and environmental hygiene practices (e.g. proper hand-washing, no littering)
- personal safety (e.g. protecting our body, including the private parts)
- general safety issues in everyday life (e.g. home safety, sports safety)
- ways of seeking help when facing problems (e.g. health, safety)
- proper handling and use of medicine
- managing oneself in everyday life (e.g. personal hygiene, emotions, time and money)
- the harm of taking harmful substances (e.g. cigarettes, alcohol) and drugs

Key Stage Two:

- functions of major organs and systems of our body
- different stages and characteristics of one's growth
- physical, psychological and social changes of boys and girls during puberty
- individual differences in growth and development during puberty
- dealing with stress and frustration (e.g. peer pressure, harassment, study, emotions)
- gender roles and relationships
- sexual feelings and reactions, and ways to deal with them
- enhancing relationships and assertiveness skills (e.g. ways to express emotions, strengths and weaknesses of oneself or others)
- dealing with unfamiliar situations and challenges
- the strategies of managing and minimising risks in everyday life (e.g. safety, health, relationships)
- healthy lifestyles (e.g. regular daily schedule, do not indulge in Internet surfing, healthy diet)
- major causes of common diseases, their influences on health and prevention (e.g. communicable and non-communicable diseases)
- managing and using money
- problems and solutions related to environmental hygiene in Hong Kong
- the effects of drug abuse, substance abuse on individual, family and society
- say "NO" to gambling, drug abuse, smoking, drinking and sexual requests
- simple first-aid and safety in everyday life

- 
- people and organisations that provide assistance in first aid and prevent accidents and violence
 - activities related to promotion/ maintenance of community health

Suggestions for Extended Learning Activities

Depending on students' abilities and interests, as well as strengths of the school, teachers may consider providing more in-depth study on selected contents within the strand. For example:

When students learn about healthy diet in KS 1, they can find out what healthy food is through project learning, including studying food labels, and practising a healthy diet by designing a menu and preparing food for 'Healthy Picnic Day' and 'Healthy Christmas Party'.

In KS2, students might enquire into the social issues related to this strand through case study, e.g. gambling, compensated dating and overindulgence in online games. They can understand the causes of these problems and their impact on teenagers. Schools can also use external resources provided by relevant organisations to organise learning activities, such as visits, seminars and workshops, so that students can have a better understanding of these issues.

Strand 2: People and Environment

This strand aims at arousing students' concern for the environment and its sustainable development. Students are expected to acquire a basic understanding of the nature and the relationships between people and the environment, and be willing to bear the responsibility of environmental conservation. Through enquiry learning on the interdependence between living things and the environment, and influences of climate change on people, students can understand the importance of treasuring resources of the Earth, protecting the environment, and be willing to practise green living.

Learning Objectives

	KS 1	KS 2
Knowledge and understanding	- to recognise the basic needs, features and growth process of living things - to recognise the simple classification of living things - to recognise living things in different environments and the interdependence among living things - to identify the features of day and night and their influences on people's everyday life - to identify features of local weather and their influences on people's life - to know the features of our immediate environment - to understand the interaction between the natural environment and human activities in local community - to understand the need for energy saving	- to know the major process of the life cycle of living things - to know the biodiversity and classification of living things - to recognise the interdependence between living things and their environment - to know the characteristics of different climatic regions - to identify and describe climate and seasonal changes and their effects - to understand how people are affected by the natural environment and how they react to the limitations imposed by the natural environment - to recognise the Earth as a wealth of resources - to understand people's responsibility of environmental conservation, treasure and make good use of resources of the Earth

	KS 1	KS 2
		to understand the cost of consuming natural resources and the various ways to manage and use resources
Skills	- to make careful observation of our surroundings - to identify similarities and differences of living things and carry out simple classification - to observe features on maps and photographs - to draw pictorial maps to illustrate key features of our community - to plant or take care of small animals - to develop environmentally friendly living habits	- to classify living things according to their biological characteristics - to plan and carry out simple investigations related to environmental issues - to draw sketches/maps and other graphical representations to display information - to mark patterns on maps and other graphical representations - to report on patterns of energy use in the home, school and other places - to make good use of natural resources and practise green living
Values and attitudes	- to appreciate that there are similarities and differences among different types of living things - to appreciate the interdependence of living things in the natural environment - to cultivate a caring attitude towards animals and plants - to show concern for environmental conservation and make wise use of natural resources	- to appreciate the wonder of the nature and show interest in exploring our environment - to respect and care for living things and show concern for endangered species - to recognise the importance of environmental conservation, and to actively participate in it - to be open-minded and objective towards different views

	KS 1	KS 2
	• to show concern and take action in caring for and improving the environment	• to show concern for issues owing to climate change • to show concern for local and national environmental issues

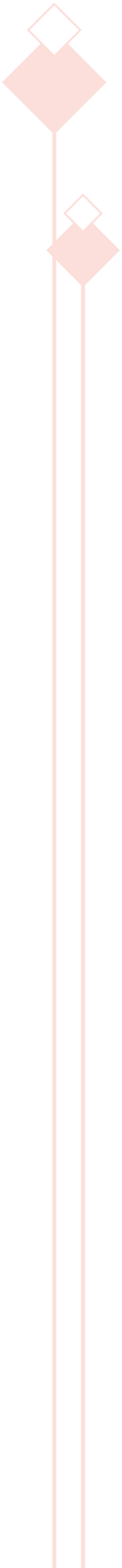
Core Learning Elements

Key Stage One:

- characteristics of living things
- the basic needs and growth processes of living things
- simple classification of living things (e.g. animals and plants, invertebrates and vertebrates, flowering and non-flowering plants)
- planting or taking care of small animals
- living things in different environments and the interdependence among living things
- features of day and night and how the pattern of day and night is related to everyday life
- climate and weather changes in Hong Kong and how they affect everyday life
- safety measures in activities under different weather conditions (e.g. equipment required, contingency plan)
- characteristics of our living environment
- how the natural environment in the community affects people's life
- care of the environment and ways of conserving resources (e.g. reduce electricity use, save water, reduce waste)
- develop environmentally friendly living habits in everyday life

Key Stage Two:

- cycles in the living world
- life cycles of living things
- biodiversity and classification of living things (e.g. amphibians, reptiles)
- interdependence and interaction between living things and the environment
- forms and functions of living things and their adaptation to the environment (e.g. camouflage of animals, needle leaf of plants)
- concern for endangered species
- life of living things in different climatic regions

- 
- effects of natural changes of the environment (e.g. climate change, natural hazards) on people and how people respond to these changes
 - individuals' responsibilities in environmental conservation
 - the Earth as a source of resources
 - renewable source of energy (e.g. wind energy) and non-renewable source of energy (e.g. natural gas)
 - some local and national environmental issues
 - make good use of resources and practise green living (e.g. waste reduction at source, saving energy)

Suggestions for Extended Learning Activities

Since the aims of this strand are to arouse students' concern for the environment and its sustainable development, it is desirable to provide students with authentic learning situations to enrich their learning experience. For example, teachers organise outdoor visits or ecotours (e.g. visit to Hong Kong Zoological and Botanical Gardens, Hong Kong Wetland Park, and country parks) for students to get in touch with the nature.

In KS1, students can choose a plant they are interested in for in-depth study. Through planting and carrying out simple experiments, students can investigate conditions for plant growth, such as the effects of light on plant growth.

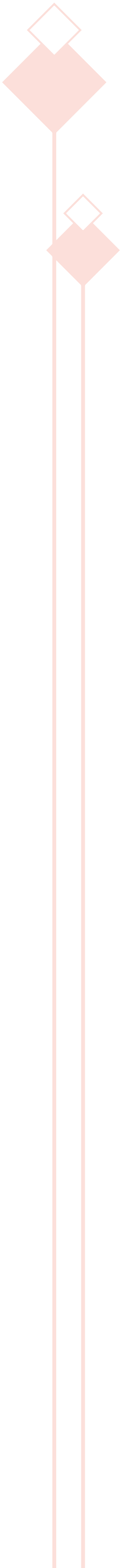
In KS2, students can choose an environmental issue that they are interested in and conduct project learning. They can play the role of different stakeholders and consider the issues from various perspectives. They can also debate on some environmental protection issues to develop their critical thinking skills. Furthermore, students can design and conduct scientific investigations to find out the ways to save natural resources, for example, designing water-efficient shower head and finding out the most energy-efficient light bulb. Through the learning process, students' problem solving skills and creativity can be developed.

Strand 3: Science and Technology in Everyday Life

This strand aims at arousing students' curiosity and interest in science and technology through hands-on and minds-on activities, and help them develop basic science process skills and technology learning skills. Students are expected to have an increased awareness of the natural and technological world, keen interest in observing the surroundings, ask questions and develop a basic understanding of some simple natural phenomena. Under the guidance of teachers, students are expected to integrate and apply knowledge and skills, as well as developing their creativity. They are also expected to apply their science and technology experiences and develop sensitivity to safety issues for solving problems in everyday life.

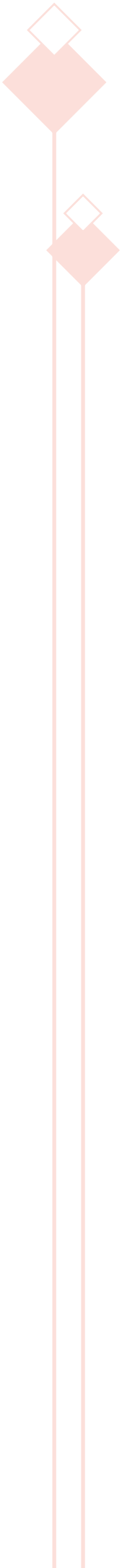
Learning Objectives

	KS 1	KS 2
Knowledge and understanding	• to recognise sources of energy and know their uses in everyday life • to identify some common materials and know their uses in everyday life • to recognise examples of applying science and technology to solve simple problems in everyday life • to recognise and describe the basic patterns of objects in the sky • to recognise how the positions of the Sun affect shadows of an object • to recognise the changes of objects when they get heated up • to recognise the thermal conductivity of different materials • to recognise some examples of forces	• to know how scientific knowledge can be used to explain and predict some phenomena and the importance of providing experimental evidence to support or disprove claims • to recognise the characteristics and uses of common materials • to distinguish between reversible and irreversible changes • to recognise some patterns and phenomena related to light, sound, electricity, movement and energy • to recognise some simple machines and ways to save effort • to recognise the characteristics of the Earth and some astronomical objects in the Solar System



	KS 1	KS 2
	• to know some examples of contributions from scientists in improving our living	• to illustrate some observable patterns of changes or phenomena on the Earth caused by movements of the Earth and the Moon • to recognise the purposes of space exploration • to know some applications and effects of scientific and technological advances in everyday life • to know the concepts and applications of the design cycle • to recognise the safety measures of applications of science and technology
Skills	• to make observation, simple measurement and classification, record and carry out simple presentation • to observe common natural phenomena and predict changes • to understand direct and simple causal relationship • to identify the characteristics and changes of materials using senses • to design and make artifacts with daily materials	• to discuss observation and suggest simple interpretation • to apply science process skills in inquiry activities, integrate and apply knowledge and skills in solving everyday life problems • to work in accordance with safety rules while using tools and technology • to communicate scientific findings and solutions in different ways

	KS 1	KS 2
	to work individually or collaboratively with peers to identify problems and design feasible solutions	- to design and build models by using different materials and to test for functions and characteristics of the model - to solve problem through application of coding for developing computational thinking
Values and attitudes	- to show curiosity and interest about the natural environment and technological world - to show interest and curiosity in knowing how things work - to appreciate the functional and aesthetic aspects of technological products - to be aware of the close relationship among science and technology and our everyday life - to show concern about the safety issues in using science and technology - to appreciate the inquiring mind and contributions of scientists and inventors	- to show curiosity and sustained interest in science - to accept decisions and inferences based on evidence - to appreciate the mystery of the Universe - to show concern about the beneficial and harmful effects of the use of science and technology on people and the environment - to appreciate the function and design of technological products - to be serious on the safety precautions when using technology and science in everyday life - to show concern on the latest advances in science and technology and appreciate the people who have made efforts to contribute to the success



Core Learning Elements

Key Stage One:

- hands-on and minds-on scientific investigation activities
- natural phenomena (e.g. pattern of day and night, light and shadow)
- common materials, their characteristics and uses
- designing and making artifacts with common materials
- sources of energy and uses of energy in everyday life (e.g. light and electricity)
- heat conduction and relevant phenomena (e.g. thermal conductivity of different materials, thermal expansion and contraction)
- examples of forces (e.g. push and pull)
- phenomena related to forces in everyday life (e.g. forces can change the shapes and movements of objects)
- how science and technology contribute to everyday life (e.g. facilities and equipment at home/in school)
- using science and technology to solve problems at home
- safety measures for using science and technology
- famous scientists and inventors and their contributions (e.g. Zhang Heng and seismograph, Thomas Edison and light bulb)

Key Stage Two:

- hands-on and minds-on scientific investigation activities
- investigating some properties and phenomena related to light, sound and electricity (e.g. reflection of light, closed circuit)
- examples of energy and conversion of energy (e.g. light, sound, electricity)
- examples of force (e.g. friction, magnetic force) and phenomena related to movements
- simple machines (e.g. lever, inclined plane, roller)
- identify the difference between reversible changes (e.g. the three forms of water) and irreversible changes (e.g. burning)
- use and characteristics of some common materials
- the patterns of changes or phenomena observable on the Earth caused by movements of the Earth and the Moon around the Sun (e.g. solar eclipse, lunar eclipse)
- the wonder of the Solar System (e.g. The Sun and planets of the Solar System) and characteristics of the Earth (e.g. shape and structure, distribution of ocean)

- and continents)
- space exploration and everyday life
- application of design cycle to design and make products
- problem-solving through application of coding for developing computational thinking
- application of scientific and technological advances and their effects on everyday life
- safety and individual responsibility in using science and technology

Suggestions for Extended Learning Activities

Schools may consider providing extension elements for their students so that they can study a particular topic more deeply. Schools can consider the following:

- After students have recognised patterns of light reflection by plain mirror, they may make use of convex and concave mirrors to learn about the relationship between the actual objects and images formed by different types of mirrors. When students complete the activity, they may describe the application of convex and concave mirrors in everyday life.
- Apart from information from textbooks, students may further explore the achievements and contributions of famous scientists and inventors. For example, students may read stories about scientists or inventors (e.g. Charles Kao and fiber optics, Galileo Galilei and the telescope), and study their discoveries or inventions and their impact on our everyday life.
- Schools may also consider deepening the learning on some of the core learning elements. For example, in scientific investigations, teachers may guide students to make hypotheses, design and carry out experiments, collect and analyse data, make judgements and report results and conclusions.

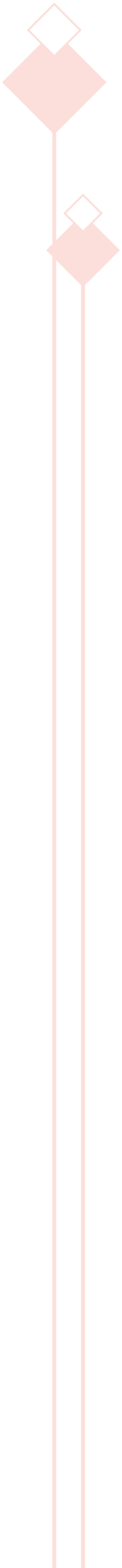
Strand 4: Community and Citizenship

This strand is designed to help students understand their local community, develop concern for community affairs, understand the rights and responsibilities of citizens and arouse their sense of civic awareness. Teachers can guide their students to know Hong Kong and investigate community issues from different perspectives through enquiry learning. The emphasis in this strand is NOT on the amount of factual information that students memorise, but rather on developing their capability to adapt to the changing needs of society, learning to care for others, respect for the rule of law and to be a responsible citizen.

Learning Objectives

	KS 1	KS 2
Knowledge and understanding	• to know the characteristics of our community • to identify one's roles, rights and responsibilities in different social groups • to know the importance of respecting the rights of others • to recognise the multi-cultural backgrounds of Hong Kong residents • to recognise different occupations and the people who serve the community • to know that the local people meet their needs through trading activities • to identify facilities and services in the community • to have basic knowledge about the background and the importance of the Basic Law • to have basic knowledge about "one country, two systems"	• to recognise the history of Hong Kong • to recognise factors affecting the economic development of Hong Kong • to know major economic activities of Hong Kong • to recognise that economic decisions of the society can affect our lives as well as the environment • to understand the importance of harmony among members in different communities • to recognise the constitutional background of the Basic Law and "one country, two systems" • to understand the rights and responsibilities of individuals and how they are protected by the Basic Law and the local legal system

	KS 1	KS 2
	to know the importance of law and order to the life of Hong Kong residents	to understand the functions and services provided by the HKSAR Government and local institutions
Skills	- to arrange events in chronological sequence - to describe and compare different customs, practices and traditions in society - to find examples of how one's own needs and the needs of others are met through individual's endeavours and cooperation with others - to acquire the skills necessary for participating in a group - to exercise one's rights appropriately and make good use of community services and facilities - to be a responsible citizen	- to attempt to distinguish between facts and opinions in information as a basis for developing critical thinking skills - to analyse some family, school and social issues, and attempt to suggest solutions to the problems - to suggest ways to help members of family, school and society get along harmoniously with one another - to reflect on the balance between one's rights and responsibilities in various settings through different channels
Values and attitudes	- to appreciate the efforts and contributions of people who work to meet our needs and maintain a harmonious community - to respect people from different cultural backgrounds and their rights - to appreciate multi-cultures of Hong Kong - to recognise the need for fair rules and be willing to observe law and order	- to show concern for the environment of the local community and conservation of cultural heritage - to appreciate the ways the people of Hong Kong adapt to the changing society - to be willing to get along harmoniously with other members in different communities



	KS 1	KS 2
	• to develop a sense of belonging to the local community • to develop a concern for community issues and respect for the rule of law	• to appreciate the contributions made by different sectors in Hong Kong • to appreciate and respect the multi-cultures of Hong Kong • to respect and be willing to observe the Basic Law, and law and order • to recognise the importance of basic rights and observe duties in appropriate situations • to be willing to serve the community and care for others

Core Learning Elements

Key Stage One:

- family and school members
- roles and responsibilities of individuals in family, school, society and other communities
- characteristics of our community (e.g. history and famous places, natural landscapes, community living)
- goods, facilities and services in the community
- multi-cultural backgrounds of Hong Kong residents as well as their contributions and impact on the historical development of Hong Kong
- different occupations in the local community
- conduct goods and services exchange activities to meet the needs of individuals and families
- our rights and responsibilities as consumers of goods and services and in using community facilities
- differences among people and the need to respect the rights of others
- communicating and getting along with others in the community
- the need for law and order
- origin of the Basic Law and “one country, two systems” (e.g. travel documents, currencies)

- local symbols (e.g. flag, emblem) of the HKSAR and their meanings
- the importance of the Basic Law to the lives of Hong Kong residents

Key Stage Two:

- maintain harmony with members of different communities
- the history and development of Hong Kong
- factors affecting the economic development of Hong Kong (e.g. geographical location, resources)
- major and emerging industries of Hong Kong
- trade between Hong Kong and the Mainland and other parts of the world
- the functions and services provided by the HKSAR Government and local institutions
- the constitutional background of the Basic Law and “one country, two systems” (e.g. religions, sports)
- rights and responsibilities of Hong Kong residents according to the Basic Law
- the importance of observing law and order
- the importance of participation in local affairs (e.g. participating in fund-raising activities or voluntary work in the community)
- channels and ways to express opinions to government, organisations or groups

Suggestions for Extended Learning Activities

School can deepen and/or extend the exploration of core learning elements by providing extended learning activities for their students (e.g. project learning, life-wide learning activities, online games for self-learning). Here are examples of such learning activities:

- When students are learning topics on rights and responsibilities, they can refer to the learning materials of the Basic Law, so as to understand the importance of the Basic Law to the lives of Hong Kong residents. Teachers can also encourage students to collect information related to rights of children of the United Nations Convention on the Rights of the Child, thus enhancing their understanding of their rights and cultivating their positive attitudes and action of “respecting the rule of law, performing responsibilities and enjoying rights”.
- School can use the approach of project learning to let students understand the living conditions and cultural attributes of different ethnic groups in Hong Kong so that they learn to respect and accept people with different cultural backgrounds. Students can conduct questionnaires to collect viewpoints from their families, neighbours and peers on their knowledge and understanding of different ethnic groups. They can also analyse the impact of cultural differences on society through news discussions in order to learn caring for others.

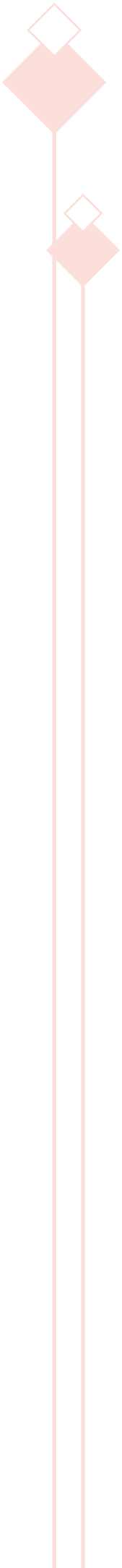
Strand 5: National Identity and Chinese Culture

Through stories and topics of interest relevant to our everyday life, this strand aims at arousing students' interest in Chinese history, nation, culture and national development. The overall expectation is that students will enhance their understanding of our country and national identity, as well as develop their knowledge of the country and sense of belonging through enquiry learning. Students should be guided to make use of different sources of information and develop a concern for the development and current affairs of the country. The emphasis of study for this strand is NOT on the number of topics taught or the amount of information that students memorise. In contrast, schools should select and adjust learning contents according to students' needs, interests and abilities, and let them know more about history and culture of our country from multi-perspectives.

Learning Objectives

	KS 1	KS2
Knowledge and understanding	• to recognise symbols of one's home country and their meanings • to know the major features of the national capital and some important cities in China • to recognise the origin of the Chinese nation • to recognise Chinese culture • to recognise some figures and stories that have had an important impact on Chinese history	• to recognise the geographical location, physical characteristics and territory of China • to know the relationship between the natural environment and people's life in China • to recognise the important dynasties and their chronological sequence in Chinese history • to understand that significant historical figures and events have influenced China • to understand what is unique and significant in Chinese culture • to recognise the history and culture of China and the development of Hong Kong

	KS 1	KS 2
		• to understand the influences of Chinese culture on the life of people in Hong Kong • to recognise the economic and technological development of China • to have basic understanding of the relationship between the Central Authorities and the HKSAR
Skills	• to present the changes of Chinese historical periods in form of a timeline (past, present and future, or days, weeks, months and years, etc.) • to identify the national symbols of China • to investigate major features in Chinese culture • to read stories of Chinese historical figures and the significant events of the time • to make use of information from books and other sources and present it in different ways and styles • to make use of learning tools to record and present Chinese historical figures and their contributions	• to read and use simple 2D and 3D diagrams showing features of China • to identify the major cultural characteristics of Chinese dynasties • to understand Chinese history and Chinese culture through reading or use of timeline • to collect and select useful information for making comparison of ethnic groups' culture in China • to explore influences of historical figures and events on the development of country • to make use of different information for the understanding of events happened in the past and present from multi-perspectives • to distinguish facts and opinions as well as source and evidence through case analysis



	KS 1	KS2
Values and attitudes	• to develop a sense of time and an appreciation of the contributions made by people in the past • to appreciate Chinese culture and develop an interest in finding out more information • to recognise the importance of conservation of cultural heritage • to respect the long history development of Chinese culture • to appreciate the development of Chinese values through history • to develop a concern for the people and events in China • to appreciate the inheritance of history and culture of Hong Kong and the country • to develop a sense of belonging towards one's country and nation	• to show interest in the understanding of Chinese history and Chinese culture • to develop a concern for the protection of culture and heritage in China • to appreciate the long history of China and its culture • to show concern for the development of China in the past, present and future • to develop an attitude of respecting historical evidence in studying • to be open minded to accept different viewpoints and analyse events and people from multi-perspectives • to develop a sense of belonging and responsibility towards one's country and nation

Core Learning Elements

Key Stage One:

- my home country - national flag and emblem, national anthem, national capital, important cities (e.g. Xian) and some important dates
- origin of the Chinese nation (e.g. ancient Chinese stories, Yu the Great and flood control, understanding the Han culture through Lei Cheng Uk Han Tomb)
- characteristics of Chinese culture (e.g. stories of festivals, origin of Chinese characters, customs of ethnic groups)
- figures and stories that have had an important impact on Chinese history (e.g. Qin Shi Huang and the Great Wall, Zhang Qian and the Silk Road)
- some significant or interesting events / things of China (e.g. giant pandas, Chinese cuisine)

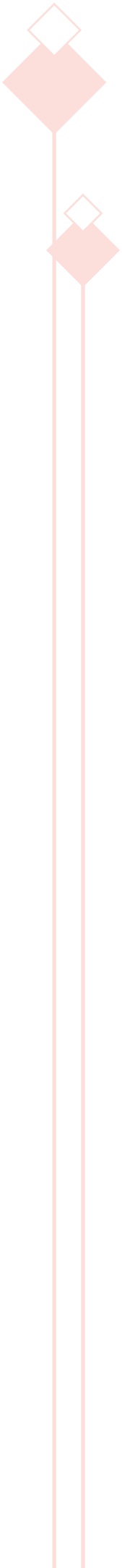
Key Stage Two:

- the geographical location, physical characteristics and territory of China
- the natural environment and people's life in China (e.g. river basins of Zhu Jiang, Chang Jiang and Huang He)
- characteristics of Chinese culture as demonstrated by cultural heritage (e.g. ancient cities, buildings, art and culture)
- knowing Chinese history and culture through monuments in Hong Kong (e.g. understanding history of the Song dynasty from Sung Wong Toi, understanding Chinese culture from walled villages in Hong Kong)
- figures and stories that have had an important impact on Chinese history (e.g. Zheng He and the Maritime Silk Road, Jeme Tien Yow and the railway of China, Dr Sun Yat-sen and the Chinese Revolution of 1911)
- important dynasties and their chronological sequence in Chinese history
- some major historical events that have had an impact on today (e.g. Opium Wars, Chinese Revolution of 1911, Chinese people's war of resistance against Japanese aggression, establishment of the People's Republic of China, signing of the Sino-British Joint Declaration, establishment of the HKSAR)
- recent development of China (e.g. economic and technological aspects)
- linkage between China and other parts of the world
- the relationship between the Central Authorities and the HKSAR

Suggestions for Extended Learning Activities

Schools may consider providing extended learning elements for their students so that they can study a particular topic more deeply. When planning elements for extension, schools can consider the following:

- Getting students to investigate a topic related to their interest and experiences, e.g. when students study the characteristics of national culture, they can study their own hometowns through project learning, e.g. by interviewing elderly/relatives, collecting objects and photos that relate to their family history, customs and traditions. Students may then present in different forms to show the characteristics of their hometowns.
- When students study a major historical event or the recent development of the country, they can select a topic of interest and study it in depth, such as the impact of the Opium Wars on China, development of aerospace technology in China, Chinese Medicine and the role of China in the world. They may collect information on this topic from various sources, e.g. through visiting museums, collecting information from books and the Internet, attending talks or interviewing experts.

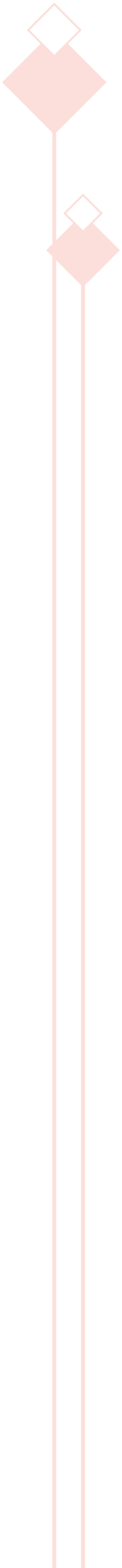
- 
- Students are encouraged to read biographies and anecdotes of famous historical figures that contributed to the society. They are free to show and express their viewpoints and thoughts towards the selected figures in various ways (e.g. role play, book report). Teachers can further encourage students to share incidents related to those famous people via online platform and social media to sustain students' interest in learning and enhance self-directed learning.
 - Teachers may cover more relevant topics, historical events or figures in the curriculum if students are interested to find out more about Chinese history and Chinese culture. Students can be encouraged to read more leisure books or search for more information, and share the findings with their peers.

Strand 6: Global Understanding and the Information Era

This strand aims at developing students' interest in understanding the past, the present and the future through interesting stories and daily-life issues, as well as enhancing students' information literacy and their awareness of proper use of information technology. Above all, students are expected to understand and care about global issues, acquire basic understanding and appreciate different cultures and the lives of peoples around the world through enquiry learning and case studies.

Learning Objectives

	KS 1	KS 2
Knowledge and understanding	- to understand the multi-cultures of local residents - the ways to communicate and interact with people of different cultural groups - to understand how science and technology are changing peoples' interactions and relationships throughout the world - to understand the importance of obtaining, storing and sorting information - to know of the extensive use of information technology in everyday life - to understand that information exist in different forms - to know the reasons of exchanging goods and services - to know common methods to contact and communicate with people - to recognise healthy ways to use information technology	- to understand influences of the physical environment and social conditions on cultural development in different parts of the world - to know the ways that people of different cultures interact and how such interaction has developed - to understand the interrelationship between Hong Kong and different parts of the world in economic and trade development - to recognise the importance and extensive use of the Internet - to recognise the impact of media and social media on individuals and society - to recognise the impact of science and technology on social culture - to understand the importance of healthy, safe and proper use of information technology



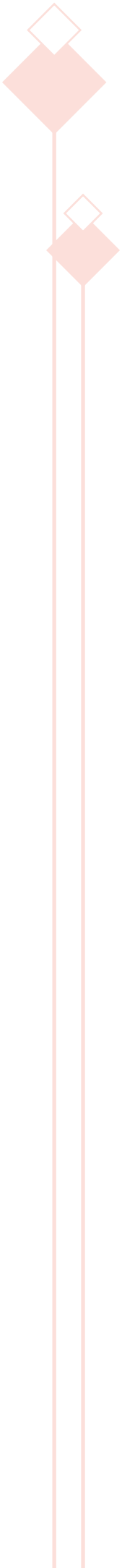
	KS 1	KS 2
	• to recognise intellectual property rights	• to recognise the importance of respecting for intellectual property rights
Skills	• to interact with people of different cultural backgrounds • to obtain information from the Internet and mobile devices • to extract, organise and classify information • to identify suitable information from available sources and choose appropriate information	• to analyse issues from multiple perspectives and distinguish between facts and opinions for nurturing critical thinking skills • to search for, evaluate, extract, sort and present information by IT tools • to be aware of the positive and negative messages conveyed in media and social media and make judgement • to reject and refuse to forward indecent and inaccurate information on communication and social network • to adopt appropriate criteria for evaluating information • to use IT tools to express opinions, communicate with other people and process information • to obey the security rules when using IT
Values and attitudes	• to understand and accept that different cultural groups may have diverse views • to respect lifestyles and cultural activities of different groups	• to appreciate and respect for different cultures and show acceptance • to be willing to get along harmoniously with people of different cultural groups

	KS 1	KS 2
	• to appreciate and respect experiences and viewpoints of different people • to appreciate the importance of the increasing interactions among people that has been brought by science and technology • to cultivate interest and positive attitudes in using IT as a communication tool	• to show interest in and concern for international affairs • to show concern about the impact of IT on our everyday life • to respect intellectual property rights and protect privacy • to show concern for the consequences of information overflow • to appreciate the need for life-long learning to cope with the fast-changing world

Core Learning Elements

Key Stage One:

- family and school as the basis for development of social culture
- lifestyles of people of different cultural backgrounds in local community
- recognising different cultural groups and respecting their cultures and lifestyles
- ways of communication and interaction of people in different cultural groups
- reasons for people to exchange information, goods and services
- the importance of and ways to obtain, store and sort information from different channels
- obtaining information by means of computers and mobile devices, organising and classifying information collected (e.g. timeline, mind-map)
- common methods to contact and communicate with people
- impact of Internet communications on health and everyday life (e.g. eye care, spinal health, do not indulge in web surfing)
- using information effectively and ethically (e.g. using the Internet, keyword searching, respecting copyright, rejecting piracy)



Key Stage Two:

- common elements in different cultures
- influences of the geographical environment and social conditions on cultural development in different parts of the world
- effects of cultural exchange on societies and cultures
- heritage conservation and activities of historic preservation
- important historical events that influenced global development (e.g. war and peace, development of the Internet and mobile devices)
- global issues that are the common concerns of mankind (e.g. population problem, climate change issues)
- the interdependence of different parts of the world (e.g. trade and cooperation agreements, utilisation of world resources, healthcare and medical aids)
- impact of the development of science and technology on human life (e.g. lifestyles, communication modes)
- impact of the information era on individual health and society (e.g. media, digital divide, cyberbullying)
- processing information and expressing opinions via communication network and social media (e.g. e-mail, online platforms)
- using information technology properly and safely to convey information (e.g. avoid disclosing personal information, illegal uploading/downloading files, opening unknown files)
- media education and information literacy, including intellectual property rights and privacy (e.g. citing the sources of information, avoiding plagiarism, protecting personal information)

Suggestions for Extended Learning Activities

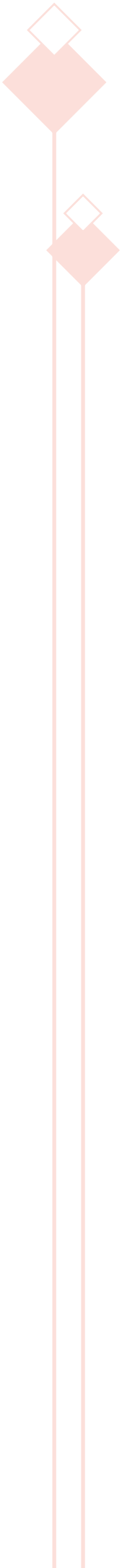
Schools could encourage students to care about local and international affairs, and enquire into those issues with guidance of teachers. For example:

- collect and analyse information of TV advertisements, newspapers or information from the Internet (e.g. facts and opinions, creditability and ethics of the information providers) and discuss the impact on individuals and the society.
- collect information of a war, discuss causes and consequences of it from historical and cultural perspectives, and influences on other parts of the world.

When handling learning content related to IT tools, schools might make arrangements

with reference to the school culture and readiness of students. For example,

- Students who are more competent can be allowed to select appropriate IT tools to record their learning process, for example, conducting surveys and making animated presentations with online applications. Schools can also guide students to use social media or join online communities with a positive attitude so that students are able to share knowledge and ideas with peers and teachers effectively.
- Strengthen students' information literacy by integrating relevant elements into classroom activities. For example, when students are engaged in project learning, they are encouraged to compare the accuracy of different information so as to verify the reliability of sources. Students can share the work of themselves or others on online platforms legally and ethically.
- Students might also choose to have an in-depth investigation on topics related to the digital era, such as the significance and the importance of equal access to information, and the effects of IT on health or the hidden threats of the Internet.



2.5 The Thematic Approach

According to core learning elements of each strand, schools may develop learning plans with lateral coherence to help students learn how to learn through authentic experiences and everyday life events. Schools may refer to the examples of themes on the following pages or design school-based learning themes to suit the needs, interests and abilities of their students. Teachers have to pay attention to the following principles when designing learning themes:

- The learning goals of every theme should consist of ‘knowledge and understanding’, ‘skills’ as well as ‘values and attitudes’;
- Learning objectives of the curriculum are organised in a spiral manner, and teachers should take into consideration the vertical continuity of related themes between Key Stages;
- There should be integration of suitable learning objectives from the same or different strands, which matches the learning goals of a theme.

The flexible GS curriculum framework allows teachers to devise learning themes to integrate learning elements from the six strands and other Key Learning Areas. Time allocation of themes or units could be adjusted according to their breadth and depth, while all core elements should be included in the curriculum.

2.6 Life-wide Learning Activities

Life-wide learning is a strategy that expands the learning horizon, from the classroom to other contexts. Through flexible use of diverse environmental and community resources, students can gain learning experience that is difficult to acquire in ordinary classroom settings.

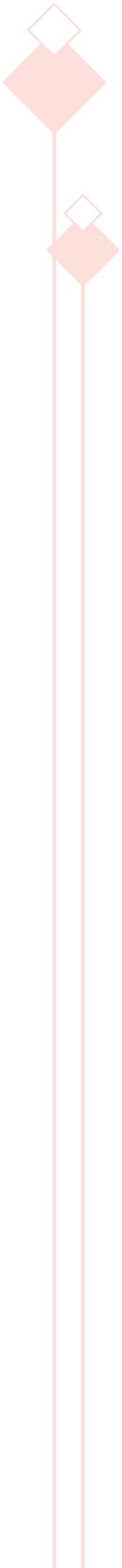
When planning life-wide learning in the GS curriculum, the most important criterion is to make decisions on how the learning targets and learning objectives of subject-based or cross-subject activities can be enhanced through co-curricular activities in order to facilitate student learning.

Schools should develop strategies to ensure that students are engaged in meaningful learning experiences that are in line with the learning targets. When planning and implementing Life-wide learning, teachers are advised to refer to Chapter 4 of Safety Handbook for General Studies for Primary Schools (2011) for the recommendations and points to note related to Life-wide learning. Website: http://www.edb.gov.hk/en/gs_safetyguide

Examples of Themes for GS Curriculum

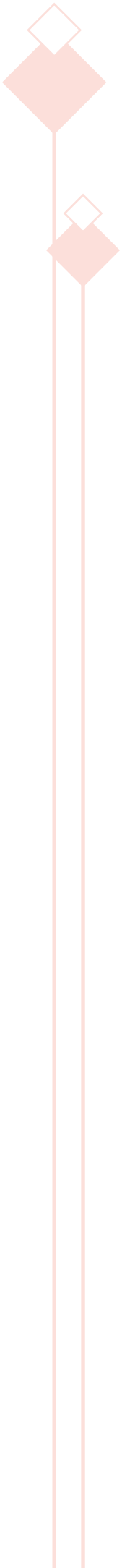
Primary 1

Theme	Module	Learning elements
Growing up	I am Growing Up	• My changes in infancy, babyhood and childhood (e.g. height and weight, milk teeth and permanent teeth) • Similarities and differences between boys and girls • Knowing private parts of our body and ways of protecting them • Accepting differences and uniqueness of our body • Protecting our body and beware of sexual abuse
	I Can Do It	• Functions and ways of caring for different parts of our body, including sensory organs (e.g. eye care), function of the spine and proper posture, personal hygiene (e.g. brushing teeth) • Daily schedule (e.g. play, learn, eat, exercise and rest) • Helping out at home (e.g. keeping it clean, preparing food) • Expressing needs and feelings
	Plants and Animals	• Common characteristics of living things (e.g. growth, excretion, reproduction) • Simple classification of living things (e.g. animals and plants) • Growing environment of animals and plants and their interdependent relationship • Growing environment of plants



Theme	Module	Learning elements
Home Sweet Home	My Family	• Family members • Relatives, family names and hometowns • Family gatherings and activities • Roles and responsibilities in my family • Living in harmony with family members
	Home Life	• Characteristics and uses of common materials (e.g. plastic, metal, glass) and home facilities • Common technological products at home and their impact on our everyday life and health • Energy and home safety (e.g. fires, emergency response) • Importance of hygiene at home
Going to School	Our School	• School environment and activities • Roles and responsibilities of school members • Importance of school regulations and discipline • School facilities, technological equipment and safety • Use of network facilities at school, and proper attitudes towards the use of information
	School Life	• Healthy school, including food and personal hygiene • Going green at school, including environmentally-friendly facilities and individual responsibilities • Effective and ethical use of information (e.g. using the Internet)

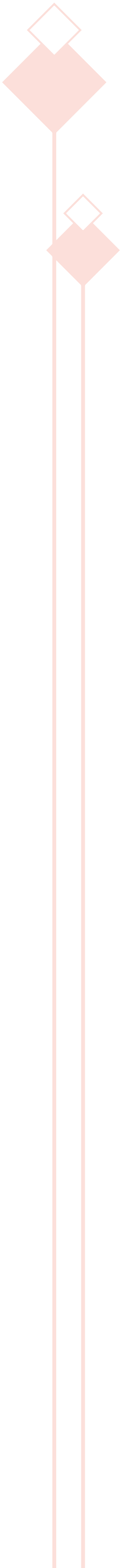
Theme	Module	Learning elements
My Life	Day and Night	• Characteristics of day and night, their patterns and relationship with our everyday life • Light and shadow • Time management and proper use of leisure time • Impact of online activities on work and rest
	Weather and everyday life	• Seasonal activities • Choice of clothes in different seasons • Activities under different weather conditions (e.g. sunny, rainy) and the safety issues
	Festivals and celebrations	• Stories of traditional Chinese Festivals and ancient Chinese stories • Stories of Western festivals and festival activities in Hong Kong • Customs of new year celebrations of children with multi-cultural backgrounds • Making good use of money: Use of red packet money



Primary 2

Theme	Module	Learning elements
Growing Up	Healthy Diet	• Different types of food • Importance of balanced diet • Healthy living styles, including good eating habits • Importance of food hygiene and the safety of processed food • Organs of the digestive system and their functions • Common diet-related diseases and prevention
	Growth of Animals and Plants	• Growing plants—Basic needs of plants and their growth • Taking care of small animals—Basic needs of animals and their growth
Fun to Play	Making Friends	• Psychological and social development in childhood • Expression of emotions and development of empathy • Getting to know classmates, neighbours and friends • Appreciating the uniqueness of every individual • Roles, rights and responsibilities of individuals in social groups • Ways of seeking help when facing problems

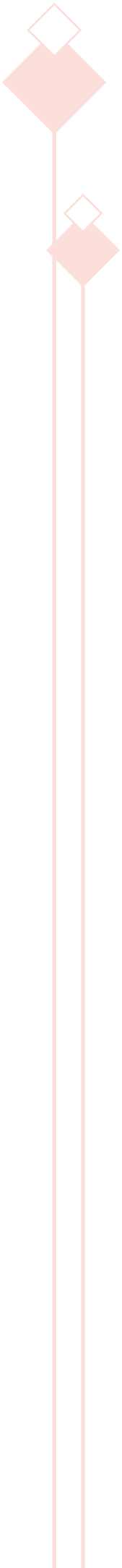
Theme	Module	Learning elements
	Proper Use of Leisure	• Healthy activities • Planning individual daily schedule • Types of leisure activities, selection criteria and their influences • Making good use of money: Use of Octopus Card
	Let's Play	• Understanding forces through games (e.g. push and pull) • Science and technology in toys (e.g. magnetic force, motor-driven, light, sound) • Making toys with common materials • Traditional Chinese toys and games • Taking good care of and sharing toys • Impact of online games on health and living, and avoiding overindulgence
Our living Community	My neighbourhood	• Characteristics of the community of our home/school (e.g. history and famous places, natural landscapes) • Environmental hygiene of our community • Different occupations in the local community • People who contribute to the environment and community health • To be a responsible community member and living in harmony with others
	Going to the Park	• Facilities in parks and their uses • Animals and plants in parks (e.g. invertebrates and vertebrates, flowering and non-flowering plants) • Caring for parks



Theme	Module	Learning elements
	Joy in Nature	• Seasons suitable for outings • Suitable places for outings (e.g. country parks, beaches) • Outdoor safety under different weather conditions (e.g. equipment, contingency plans) • Materials and uses of outing products (e.g. sunblock, waterproofs) • Observing regulations and protecting the environment
My Home Country	Stories of China	• Origin of the Chinese nation, the story of Yu the Great and flood control • Qin Shi Huang and the Great Wall • National flag, emblem, anthem and some important dates of China • The stories of giant pandas
	Stories of Hong Kong	• Understanding the Han culture through Lei Cheng Uk Han Tomb • Establishment of the HKSAR • Regional flag, emblem and the meaning of flag raising
	Multi-cultures in Hong Kong	• Understanding the multi-cultural backgrounds of Hong Kong residents and showing respect towards their traditions and customs • Roles and responsibilities of individuals in different communities • Showing respect to different cultures and religions (e.g. customs)

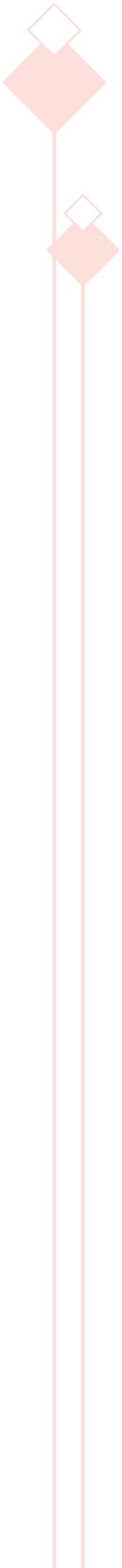
Primary 3

Theme	Module	Learning elements
Healthy Living	Healthy Habits	• Body parts and their functions, including the respiratory system, bones and muscles • Importance of physical exercise and rest • Sport safety (e.g. swimming, hiking, cycling) • Treatment of sport injuries
	Green Living	• Influence of natural environment on our living • Practising green living in everyday life (e.g. treasuring food, using public transport) • Reduce, reuse, replace and recycle • Ways of protecting environment and saving resources (e.g. reducing use of electricity, saving water)
	Community Health	• Common respiratory diseases • Transmission and prevention of communicable diseases • Facilities for maintaining community health • Proper use of medicine • Impact of taking harmful substances (e.g. cigarettes, alcohol) and drugs on health • Good habits of personal hygiene and community health



Theme	Module	Learning elements
Living in Hong Kong	Community Living	• Impact of community environment on the living of residents • Goods, facilities and services in the community • Places for exchanging goods/services in the community (e.g. shopping malls, supermarkets and wet markets) • Factors affecting choices of goods/ services and money management • Being a wise consumer (e.g. understanding consumer rights and responsibilities, making sensible consumer decision) • Skills of managing and minimising risks in everyday life
	Our Daily Needs	• The living environment and housing development of Hong Kong • Transport development and mass transit system of Hong Kong • Road safety • Eastern and western characteristics of everyday life in Hong Kong • Impact of technology and inventions on our life (e.g. Thomas Edison and light bulb, Charles Kao and fiber optics) • Ways to communicate with others

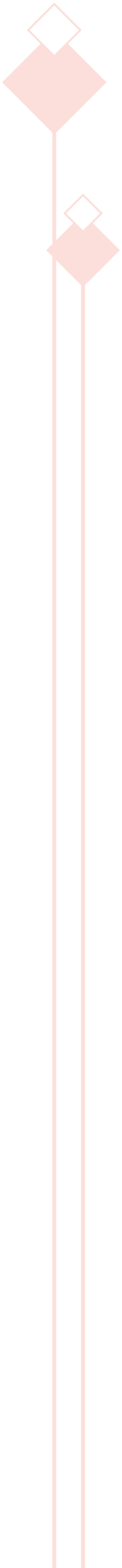
Theme	Module	Learning elements
	Hong Kong, Our Home	- The multi-cultural backgrounds of Hong Kong residents—figures and stories - The origin of the Basic Law and examples of “one country, two systems” in everyday life - Importance of the Basic Law in protecting our lives - Observing law and order and being a good citizen
The Natural Environment	Love of Nature	- Natural landscapes (e.g. geoparks, wetlands) - Common animals and plants in Hong Kong - Simple classification of animals (distinct differences and similarities, e.g. feather, hair, fins) - Caring for and conserving the natural environment
	Climate of Hong Kong	- Changes of climate and weather in Hong Kong - Impact of weather changes on everyday life - Weather forecasts and records - Contingency arrangement in adverse weather conditions
	Hot and Cold	- Sources of heat - Heat conduction and related phenomena (e.g. thermal conductivity of different materials, thermal expansion and contraction) - Safety rules in handling hot objects



Theme	Module	Learning elements
History and Culture Journey	Sightseeing in Hong Kong	• Cultural heritage of Hong Kong (e.g. Geopark, dragon boat races in Tai O) • Monuments in Hong Kong (e.g. Mei Ho House, Old Tai Po Market Railway Station) • Understanding the transportation of the Tang dynasty from Tuen Mun
	Sightseeing in China	• The capital and some important cities in China (e.g. Xian) • Conservation and inheritance of Chinese culture (e.g. Peking man site in Zhoukoudian, Forbidden City in Beijing and Terracotta Warriors in Xian) • Figures and stories that have had an important impact on Chinese history (e.g. Zhang Qian and the Silk Road) • Some interesting events or things of China (e.g. Chinese cuisine)

Primary 4

Theme	Module	Learning elements
My Healthy Lifestyle	Prevention of Diseases	- The human circulatory system - Communicable and non-communicable diseases in Hong Kong (e.g. SARS, cholera, heart disease, asthma), their symptoms and prevention - Problems and solutions related to environmental hygiene in Hong Kong - Important medical discoveries and related figures (e.g. Fleming and Penicillin, Tu Youyou and Chinese medicine) - Medical services and health facilities in Hong Kong, e.g. application of Western and Chinese medicines - Rights and responsibilities of patients
The Connected World	Information Technology	- Impact of the development of science and technology on human life - Impact of the information era on individual health - Intellectual property rights and privacy - Using IT properly and safely to convey information (e.g. avoiding disclosing personal information, illegal uploading/downloading files, opening unknown files)
	Making Sensible Choices	- Processing information via communication network and social media - Messages transmitted on media - Impact of media on our life, including consumption, mindset and values



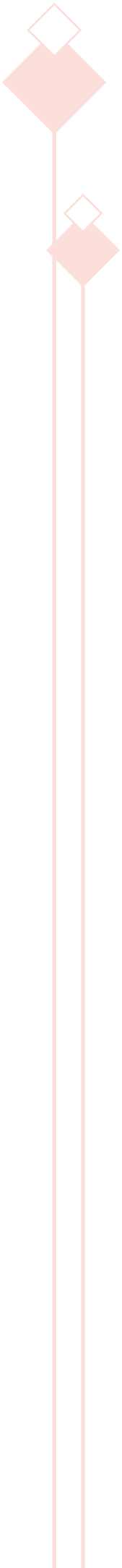
Theme	Module	Learning elements
The Wonderful World	Living on the Earth	• Features and changes of the surface of the Earth— distribution of oceans and continents • Life of people and living things in different climatic regions, e.g. deserts and plains, equatorial and polar regions
	Light and Sound	• Investigating light and sound • The wonderful world of colours and sound • Phenomena related to light and sound • Protecting our eyes and ears • Energy and energy conversion: light, sound and electricity
	The story of Electricity	• Electricity and everyday life • Investigating electricity and closed circuit • Safety precautions in using electricity • Saving electricity, and making good use of resources
Knowing our homeland	National Geography	• Geographical location, physical characteristics and territory of China • Natural environment and people's life (e.g. Huang He, Chang Jiang, Zhu Jiang) • Recognising the characteristics of Chinese culture from cultural heritage

Theme	Module	Learning elements
	Hong Kong in the past	• The geographical location and the origin of the name of Hong Kong • Understanding the history of the Song dynasty from Sung Wong Toi • Understanding Chinese culture from walled villages in Hong Kong • Life and economic activities of early Hong Kong residents, (e.g. The salt fields, pearl fishing, farming and fishing)
	20 th Century Hong Kong	• Development of entrepot trade • Light industry and heavy industry in Hong Kong • Development of financial industry
	Return to China	• The constitutional background of the Basic Law and “one country, two systems” • Protection of the Hong Kong residents under the Basic Law • The importance of observing law and order • The relationship between the Central Authorities and the HKSAR

Primary 5

Theme	Module	Learning elements
Wonders of Life	Puberty	• Characteristics and changes during adolescence, adulthood and late adulthood • Individual differences in growth and development during puberty • Physical, psychological and social changes during puberty • Gender roles and relationships • Sexual feelings and reactions, and ways to deal with them
	Continuation of Life	• Cycles in the living world and life cycles of living things • Biodiversity and classification of living things • Photosynthesis • The interdependence of living things and the environment (e.g food chain) • Caring about endangered species
Healthy Life	Mental Health	• Interpersonal and assertiveness skills • Understanding our strengths and weaknesses • Dealing with stress and frustration: expressing emotions, academic pressure and peer pressure • Rejecting temptations (e.g the Internet, sex) • Healthy lifestyles: regular daily schedule, do not indulge in Internet surfing

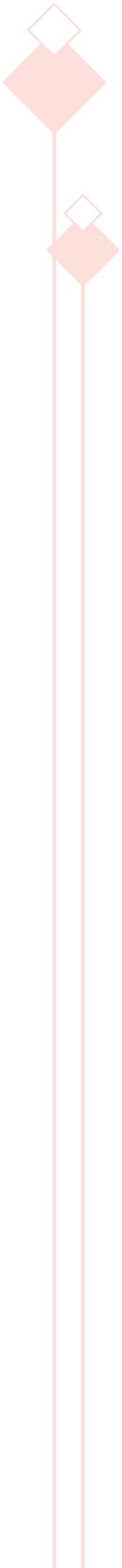
Theme	Module	Learning elements
	Staying Safe and Healthy	• Dealing with unfamiliar situations and challenges • Simple first aid and dealing with accidents • People and organisations that provide assistance in first aid and prevent accidents and violence • Healthcare services in Hong Kong • Importance of community health • Individuals' responsibilities in community health
Natural Resources	Energy source	• Shape and structure of the Earth • Knowing energy: Renewable energy and non-renewable energy • Energy problems and their impacts on the environment • Preventing pollution, and making good use of resources
	Air	• Characteristics of air • Air and burning • Air pollution problem, preventive measures and solutions
	Water	• Uses of water • Investigating water • Water pollution and purification • Treasuring water resources
	Saving Energy	• Problems of energy overuse and waste reduction at source • Government and individual responsibilities in environmental conservation • Practising green living



Theme	Module	Learning elements
Development in the New Era	Economy of China	• Chronological sequence of important dynasties in Chinese history • Zheng He and the Maritime Silk Road • Jeme Tien Yow and the railway of China • Economic and technological development of China • Linkage between China and other parts of the world
	Economy of Hong Kong	• Factors affecting the economic development of Hong Kong • Major and emerging industries of Hong Kong • Trade between Hong Kong and the Mainland, and other parts of the world • Protection to Hong Kong's economy and culture under the Basic Law (e.g. following the principle of keeping expenditure within the limits of revenues in drawing up HKSAR's budget, the Government of the HKSAR shall, on its own, formulate policies on culture)
	The Digital Era	• Impact of science and technology inventions on economic development • Popularity of the Internet and proper attitudes towards application of technology • Impact of IT development on society • Processing information and expressing opinions via communication network and social media • Temptation of advertisements • Internet fraud

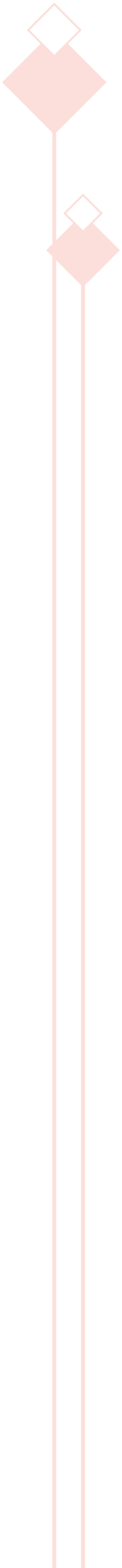
Primary 6

Theme	Module	Learning elements
A Glimpse of the Universe	Beyond our Earth	• Rotation and revolution of the Earth • The Sun and planets of the solar system • Natural phenomena related to movement of the Earth and the Moon, e.g. solar and lunar eclipse
	Wonders of the Universe	• Objectives of space exploration • Space exploration and changes brought to our everyday life • Technological development of China—ancient astronomy and modern aerospace development • Other countries' contributions and achievements in space exploration
Environment and Living	Energy and Environment	• The Earth as a source of resources • Reversible changes (e.g. the three forms of water) and irreversible changes (e.g. burning)
	Survival of the Fittest	• Forms and functions of living things and their adaptation to the environment • The effects of human activities on the natural environment • The effects of climate change on human lives • Making good use of resources and practising green living



Theme	Module	Learning elements
	Inventions for Better Life	• Examples of force (e.g. friction, magnetic force) and related phenomena • Application of simple machines in everyday life • Characteristics and uses of common materials • Scientific and technological advancements and their effects on everyday life (e.g. 3D printing) • Solving problems through application of coding for developing computational thinking • Safety issues and individual responsibilities in using science and technology
Healthy Growth	Embarking on the Journey of Life	• Changes in different stages of growth and development: preparation for adolescence, adulthood and late adulthood • Dating, love and marriage • Related social issues: compensated dating, Internet pornography • Time and money management • Healthy lifestyles
	Treasure Life	• Functions of the nervous system • Importance of mental health • Organisations and activities related to promotion/maintenance of community health • Importance of healthy diet • Health services in Hong Kong • Work of the World Health Organisation

Theme	Module	Learning elements
	Substance Abuse	• Smoking, drinking and health • Reasons for and harms of drug abuse (impact on individual, family and society) • Say “NO” to drug abuse, smoking and drinking • Treatment and recovery
A Century of Change	Exploring the World	• Global issues that are the common concerns of mankind (population, climate change) and their solutions • Importance of international communication and cooperation in solving global problems • Incidents that affect world development (e.g. war and peace, popularity of the Internet and mobile devices) • Impact of science and technology on society (e.g. lifestyles, communication modes) • Impact of the information era on individual health and society (e.g. digital divide, cyberbullying)
	Reviewing the National History	• Significant events and figures in Chinese history • Understanding the history of late Qing dynasty through the Opium Wars • Dr. Sun Yat-sen and the Chinese Revolution of 1911 • Chinese people’s war of resistance against Japanese aggression • Establishment of the People’s Republic of China



Theme	Module	Learning elements
	Home in Hong Kong	• Hong Kong as a Special Administrative Region of China • Relationship between the Central Authorities and the HKSAR • Relationship between work of the HKSAR Government and district organisations, and our everyday life • Hong Kong's electoral system, and rights and responsibilities of Hong Kong residents • Participation in local affairs • Channels and ways to express opinions • The importance of observing law and order • Maintain harmony with members of different communities



Chapter 3

Curriculum Planning, Management and Leadership

Curriculum Planning, Management and Leadership

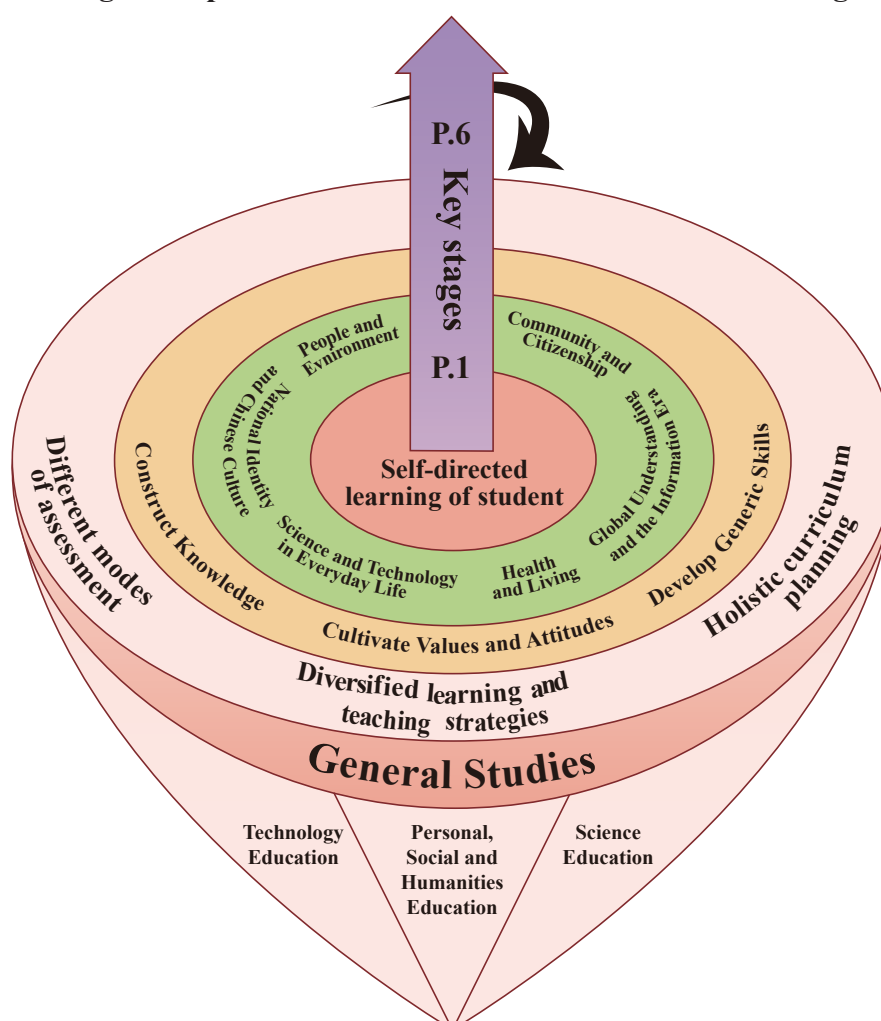
3.1 Central Curriculum and the Development of School-based Curriculum

The Curriculum Guide is prepared by the Curriculum Development Council (CDC). It sets the direction of curriculum development of General Studies (GS) from Primary 1 to 6. The central curriculum, in the form of an open and flexible framework, sets out the learning targets, learning strands and core learning elements in order to help students construct knowledge, develop generic skills, and cultivate positive values and attitudes.

Schools should compile with the basic requirements of the GS Curriculum Guide as students are entitled to equal learning opportunities to acquire fundamental knowledge of all learning strands, develop the ability to integrate and apply generic skills and cultivate humanistic qualities.

As schools develop their school-based curriculum according to their school contexts, they can build on their strengths and experiences of launching new curriculum initiatives.

3.1.1 Guiding Principles for School-based GS Curriculum Planning



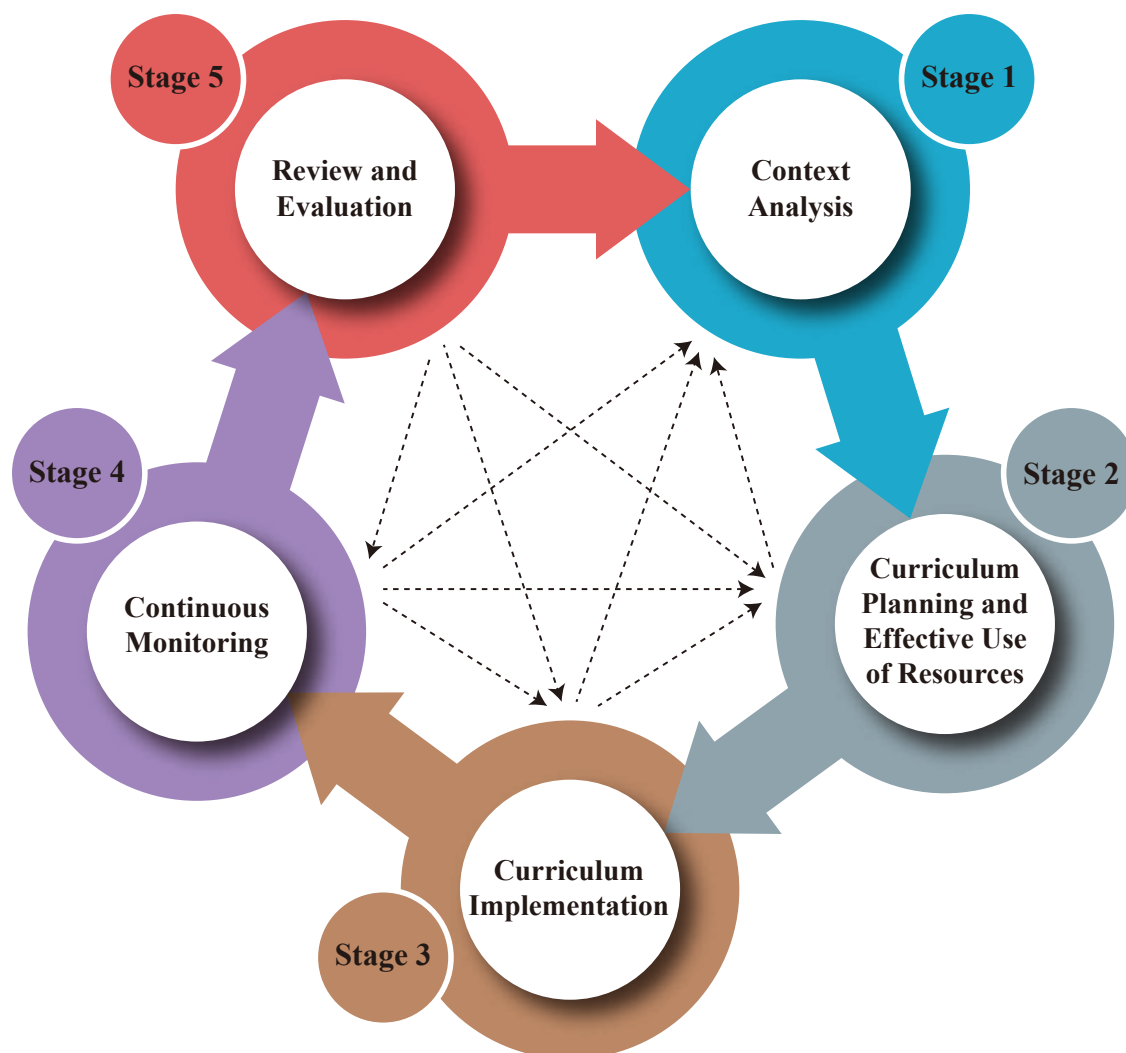
Lateral coherence and vertical continuity of the GS curriculum

Curriculum development is an ongoing process. When developing a school-based GS curriculum, schools should:

1. formulate a school development plan with reference to the aims and learning targets listed in this Guide, and adjust the breadth and depth of the curriculum contents to cater for learner diversity.
2. devise thematic learning plans with lateral coherence of core learning elements across learning strands, so that students can learn through authentic learning experiences and life events.
3. develop a spiral curriculum with due attention to vertical continuity in order to ensure smooth interface between different year levels and key stages.
4. develop learning, teaching and assessment strategies (e.g. enquiry learning, e-learning, project learning and life-wide learning).
5. make good use of learning and teaching resources, so as to provide timely support to the enquiry learning of students and enrich their learning experiences.
6. arrange learning time flexibly, with clear proportion of the lesson time assigned to thematic learning, extended learning activities and project learning (Please refer to Chapter 3.7).
7. conduct regular reviews on the implementation of school-based GS curriculum with the aids of the ‘Planning, Implementation and Evaluation’(PIE) cycle; and hence feed forward to subsequent whole-school curriculum planning.

In both key stages, students can gain deeper understanding of the learning content based on their prior knowledge and learning experiences, and develop generic skills and positive values.

3.2 Curriculum Planning, Implementation and Evaluation



Five-stage cycle for whole-school curriculum planning

The GS team should adjust the curriculum plan and teaching schedules of each academic year in accordance with the major concerns of the current school development cycle. Suitable learning and teaching strategies and activities should be adopted for smooth curriculum implementation. The GS team should monitor the progress and evaluate the learning and teaching effectiveness timely so as to provide feedback on the whole-school curriculum planning.

3.2.1 Curriculum Planning Process

Schools can conduct context analysis and devise holistic curriculum plans through the curriculum decision process. The major steps are briefly described below:

1. Taking the GS Curriculum Guide as a basic reference

Schools should make reference to the GS Curriculum Guide, including the curriculum aims and learning targets and objectives, core and extended learning elements, as well as the generic skills, values and attitudes, in order to devise suitable learning, teaching and assessment strategies.

2. Consider the school context

The school should review their school-based curriculum development and take into consideration these dimensions (i) the modes of curriculum planning and organisation, (ii) classroom learning and teaching strategies, and (iii) modes of assessment. Special attention has to be paid to the alignment of the school-based curriculum development with the school development plan, as well as external factors that might affect curriculum development.

3. Alternatives in learning, teaching and assessment strategies

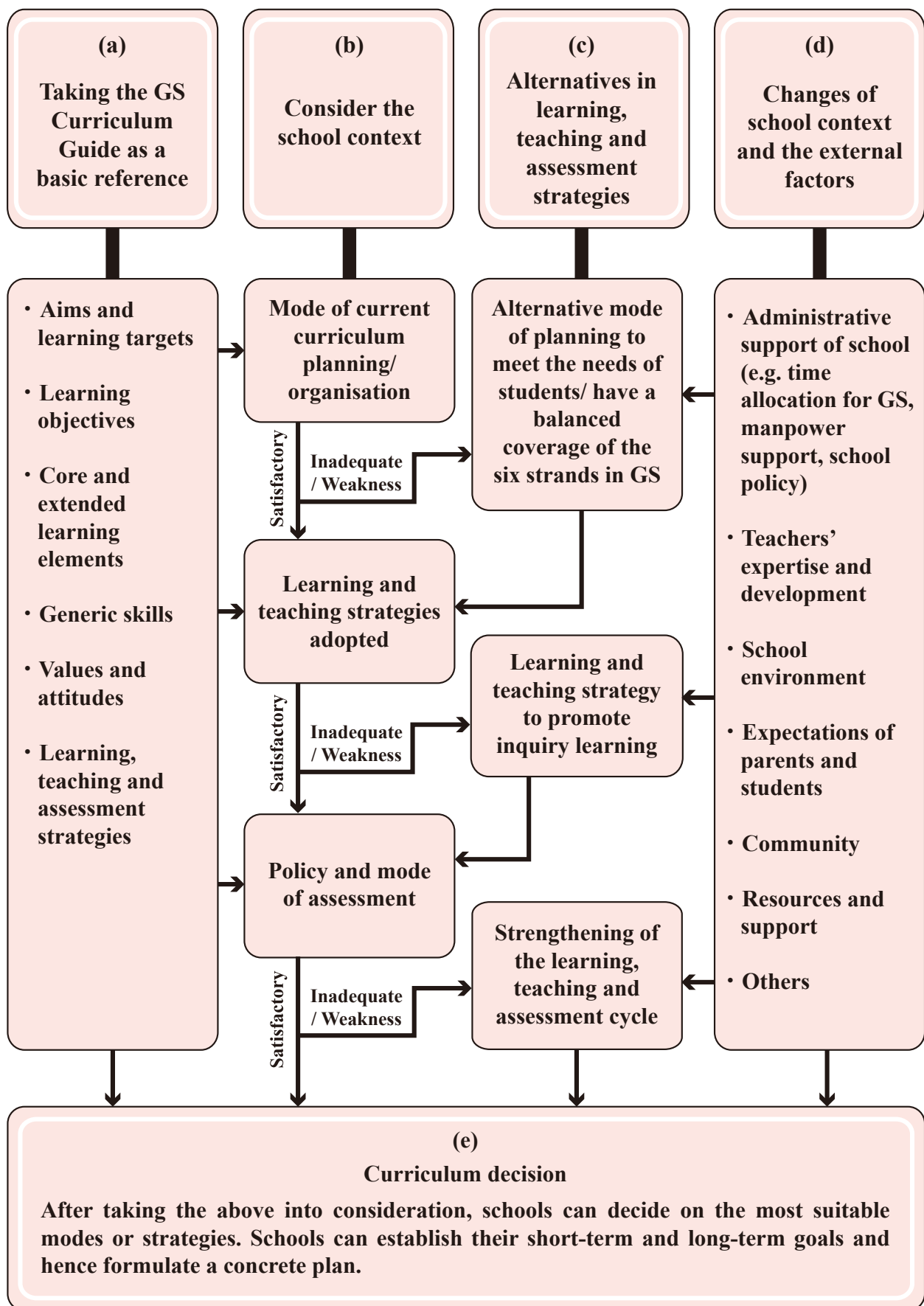
Schools could identify the foci for further enhancement based on their strengths in the aforesaid dimensions. To address the areas of improvement, schools can consider modifying the learning and teaching strategies or assessment modes.

4. Changes of school context and the external factors

Schools should explore the modes or strategies of curriculum implementation in response to the change in school contexts and external factors (e.g. administrative support, teachers' expertise, and expectations of parents and students, and support and resources from the community).

5. Curriculum decisions

After taking the above into consideration, schools can decide on the most suitable modes or strategies. Schools can establish their short-term and long-term goals and hence formulate a concrete plan.



3.2.2 Use of Curriculum Resources

To enhance learning and teaching effectiveness, the GS teaching team can refer to Chapter 6 for systematic planning of school-based resources.

3.2.3 Curriculum Implementation and Monitoring

The implementation of GS curriculum can be evaluated in panel meetings and co-lesson planning sessions. Methods of evaluating the effectiveness of curriculum implementation are shown below:

- reflections on classroom learning and teaching by teachers,
- peer lesson observations and feedback from parents,
- analyses assessment data and learning evidence, including pre-tests and post-lesson tests, observations and evaluations,
- scrutiny of students' works, which includes the breadth and depth of learning content, as well as understanding students' acquisition of knowledge and skills, and their attitudes.

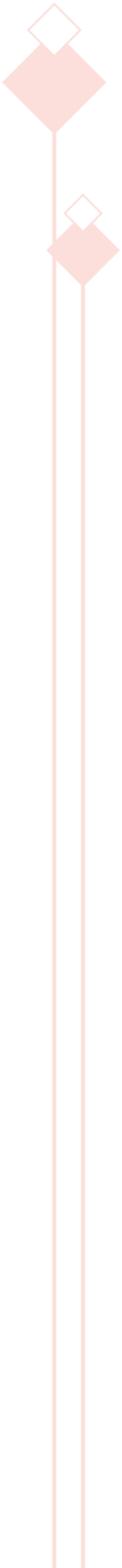
Regular monitoring of the curriculum implementation, and learning and teaching effectiveness can provide timely feedback to the learning performance of students. As a result, teachers can adapt their pedagogy and teaching progress to cater for students' abilities and learning needs. It also provides concrete evidence for subsequent curriculum planning, as well as adaptation of the breadth and depth of the learning contents.

3.2.4 Curriculum Review

The GS team should review the schedules of work and evaluates the effectiveness of learning and teaching regularly, in order to collect feedback on curriculum development. In each stage of the curriculum planning cycle, the GS team should continuously conduct self-evaluation and improve the learning and teaching practices.

- Professional sharing within the GS team

During the meetings on planning and evaluation of learning themes, teachers of the same year levels can share their experiences and suggest learning and teaching practices. Co-operative lesson planning and peer lesson observations can also strengthen the collaboration among teachers and foster professional development. Schools can further enhance the



learning and teaching practices by forming supporting networks for action research or lesson studies, taking into consideration the school context and the availability of human resources.

- Collection and analysis of evaluation data

Schools should make good use of ‘assessment of learning’ to identify students’ strengths and difficulties in learning, and hence suitably adapt the learning and teaching materials and curriculum organisation. However, schools should avoid treating mere marks as the sole indicator of the efforts made by students or teachers, which reinforces the misconception that ‘marks are of paramount importance’.

Schools should also make use of ‘assessment for learning’ and relevant data, including reviewing the assessment activities in class, scrutiny of students’ works and diversified modes of assessment (e.g. parents’ feedback). It helps monitor the teaching progress and effectiveness of activities regularly.

Teachers’ reflections and students’ self-assessments are evidences of their commitment in the learning and teaching processes. Timely feedback on the teachers’ work and students’ self-learning practices can give impetuses to their continual self-improvement. The GS team can make good use of the assessment data to review whether the assessment strategies yield effective feedback, which can foster continual development of the subject and enhance curriculum planning in the new development cycle.

3.3 Curriculum Management and Leadership

Primary School Masters/Mistresses (Curriculum Development) (PSM[CD]) have been leading the subject teams in developing school-based curricula with a whole-school approach. Co-operative lesson planning sessions serve as the platform of tapping collaborative efforts for school- based curriculum development, as well as professional sharing on learning and teaching strategies and assessment modes. Capitalising on these valuable experiences, schools can further strengthen the curriculum leadership of the GS panel chairperson(s) and build a strong professional teaching team. Throughout involvement and contribution in curriculum planning, teachers’ satisfaction and sense of achievement or accomplishment can be enhanced.

3.3.1 Importance of Curriculum Leadership of GS

The panel chairpersons of GS shoulder the responsibility of GS curriculum leaders. On top of managing the panel and learning and teaching resources, GS panel chairpersons should guide the GS team to conduct curriculum planning, formulate learning and teaching strategies, and collect learning evidence with reference to the assessment policies of the school, so as to inform subsequent curriculum development. To keep pace with the ongoing curriculum renewal, GS panel chairpersons could establish learning communities that foster professional dialogues. Teachers' confidence in initiating and implementing curriculum initiatives can be boosted with such continual professional development. Here are some examples:

- A panel chairperson shares and discusses with teachers from partner schools of the same district on how to fully utilise the resources by adopting suitable learning and teaching strategies and assessment modes, and seeks enhancement. Partner schools share resources and join hands to develop quality learning and teaching plans.
- A panel chairperson who has a good grasp of the strengths of each team member establishes learning communities by tapping the wisdom of teachers with different professional training (e.g. Humanities, Science or Technology). As a result, teachers can explore how to refine the thematic activities (e.g. project learning, case studies in daily-life matters, STEM education activities and life-wide learning activities). They share their professional knowledge and learn from each other.

3.3.2 Developing Learning Communities and Sharing Resources

Based on the strengths and students' needs, some schools have developed their school-based GS curriculum with flexible frameworks and distinctive learning themes. These good practices could be disseminated via learning communities, which foster professional development at the school level. Here are some examples:

- **Green Schools:** These schools have strengthened environmental education in GS or through cross-subject collaboration. To cultivate students' environmental awareness and civic responsibility, the schools fully utilise their school premises and create an atmosphere to promote environmental education, as well as strengthening the environmental planning and management. Also, they organised activities for students and their parents and tapped community resources.

- **e-Learning Resource Schools:** With advanced facilities and teachers who are competent in information technology, some schools have established professional teams to promote e-Learning. They devise learning plans and make good use of e-resources. Furthermore, these schools enhance students' capabilities in self-directed learning by developing learning resource banks and e-Learning programmes, as well as helping students to engage in project learning or enquiries using online resources.
- **Participation in Professional Development Schemes:** Schools with good practices for promoting GS curriculum initiatives, such as those on STEM Education, coding and Basic Law Education, can regularly share their good practices with their partner schools. Teachers can learn from each other through co-operative lesson planning, lesson observations followed by evaluations, and sharing relevant teaching resources. As a result, the schools become learning organisations.

3.3.3 Professional Development of Teachers

To enhance teachers' professional knowledge, attitudes and skills, schools can:

- strengthen the curriculum leadership and cultivate professional team spirit among their teachers so as to encourage new initiatives on curriculum planning, curriculum organisation and learning, teaching and assessment strategies. Action research related to their concerns or other themes can also be conducted.
- use learning communities as a platform for preparing and sharing curriculum resources:
 - encourage experienced teachers to participate in inter-school sharing programmes or professional development programmes, or share good practices for curriculum planning and implementation
 - encourage teachers to organise learning circles according to their interests and strengths. They can take turns to attend relevant professional development programmes so as to increase their understanding of various themes and confidence in teaching.
- Teachers could be encouraged to become reflective practitioners who are able to identify students' learning difficulties from their learning performance, and refine the learning and teaching strategies and adjust the curriculum planning accordingly.

3.4 Directions of Curriculum Planning

The Education Bureau launched the curriculum reform in 2000 to enhance students' thinking and the 'Learning to Learn' capabilities. Schools were encouraged to promote the Four Key Tasks, namely 'Moral and Civic Education', 'Reading to Learn', 'Project Learning' and 'Information Technology for Interactive Learning' in various Key Learning Areas or subjects using an integrative approach. Most teachers agreed that the GS subject content was closely related to everyday life and that GS serves well as a platform for developing students' basic learning skills and establishing a solid knowledge foundation. In addition, GS panel chairpersons and teachers agreed that GS was an important platform for implementing the Four Key Tasks.

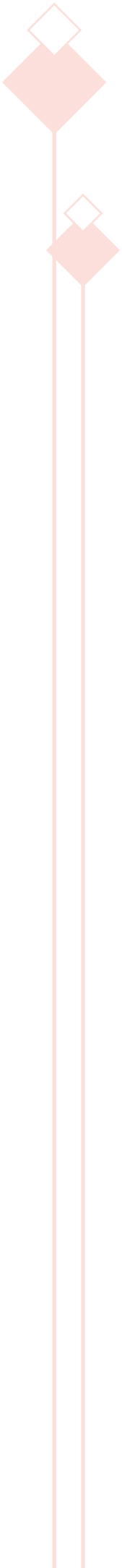
The EDB launched 'Learning to Learn 2.0' in 2015 to encourage schools to continue to reform their curricula, building on their accomplishments in the school-based curriculum development. The continual renewal focuses on sustaining and deepening the efforts in promoting 'Learning to Learn'. Building on their strengths in 'Reading to Learn', schools can further implement 'Reading across the Curriculum'. From facilitating learning with IT to interactive e-learning, schools can enhance students' language abilities and information literacy through interaction and integrative learning experiences. Furthermore, STEM education and values education should be the emphases as schools set the direction for curriculum development.

3.4.1 Development of STEM Education

STEM education is promoted through the Key Learning Areas of Science Education (SE), Technology Education (TE) and Mathematics Education (ME) in Hong Kong. The GS curriculum contains basic science and technology knowledge. Schools, when devising their school-based curriculum, can strategically connect the learning elements to provide students with the opportunities to solve everyday life problems and formulate creative solutions. Hence, students' capabilities to integrate and apply knowledge and skills can be developed. To enhance learning and teaching effectiveness, the PSM[CD], GS and Computer teachers should collaborate closely in planning and coordinating STEM activities.

The planning of STEM activities should:

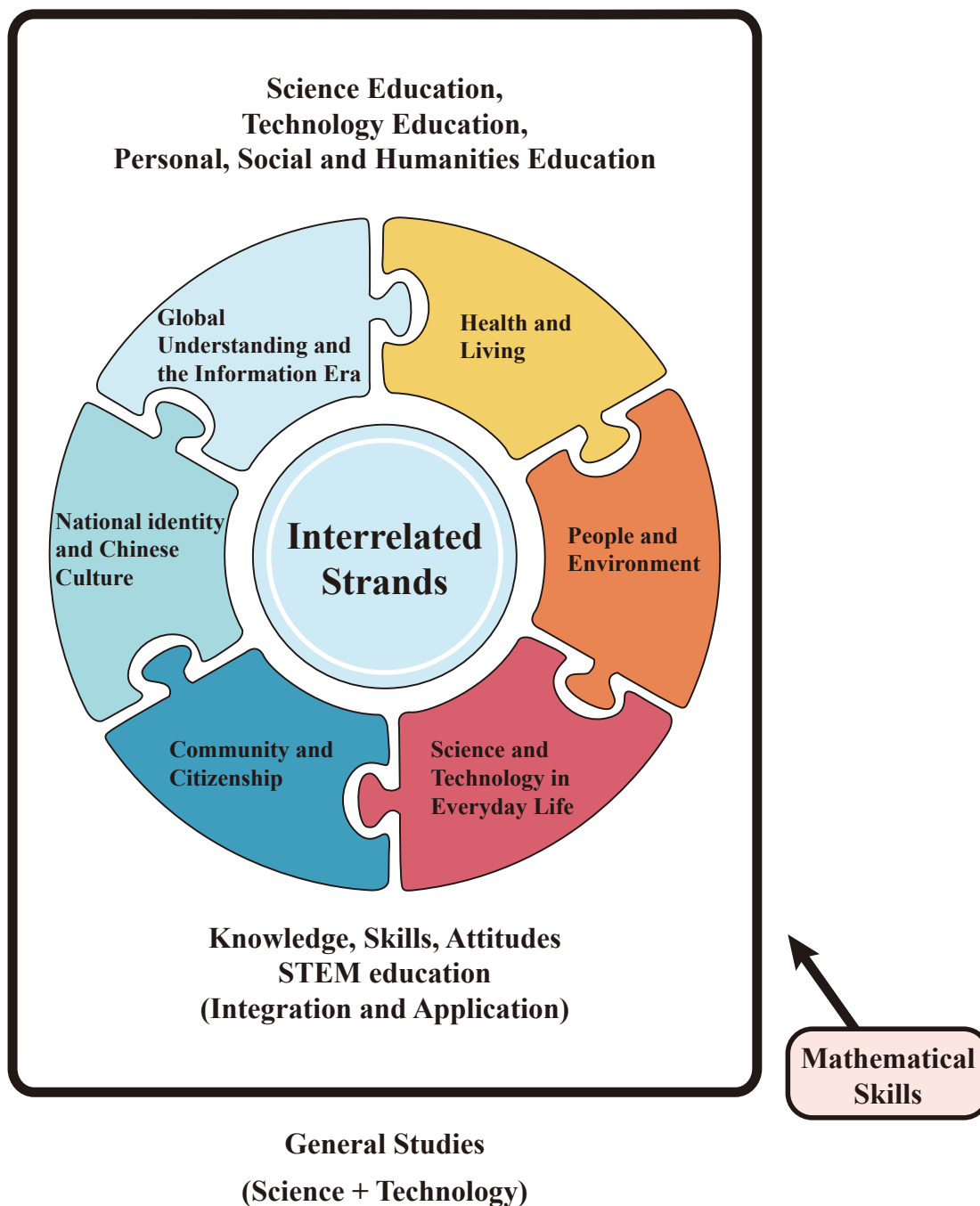
- enliven students' interest in and curiosity about science and technology;
- strengthen students' understanding of everyday life matters and develop their abilities to integrate and apply knowledge and skills;

- 
- enhance students' perseverance and abilities to make decisions, and to face challenges and solve problems with integrity; and to
 - cultivate students' creativity and innovative spirit by reinforcing the design cycle in inquiry learning.

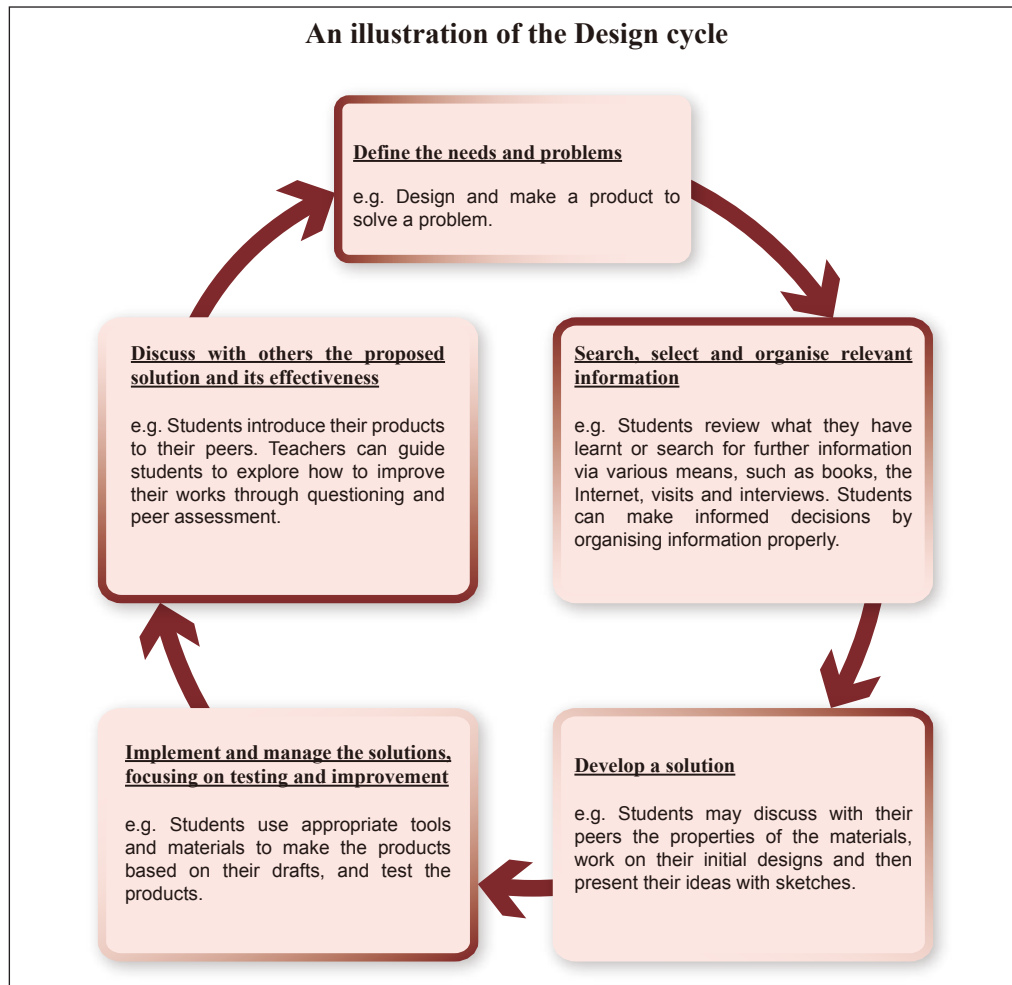
Approach 1 – Subject-based STEM Education

The learning strands of GS cover basic knowledge in SE KLA and TE KLA. The core learning elements are relevant to everyday life and raise students' awareness of surroundings and the nature. Science concepts in the strand 'Science and Technology in Everyday Life' provide students with the opportunities to develop science process skills through hands-on and minds-on scientific investigations, which could be a starting point for developing STEM activities for students to further integrate and apply knowledge and skills.

Teachers are advised to strengthen the learning elements of science and technology as they plan the GS curriculum, so as to help students solve everyday life problems by integrating and applying knowledge and skills. To address their daily-life needs, teachers could encourage students to apply knowledge, skills and experiences purposefully. During the process of 'design and make', students could master the concept of 'design cycle' and develop technological capabilities (e.g. planning, problem solving, testing, evaluating and making improvement). During the design process, quality of products could be improved with the continual refinement.



Design cycle



For a more reliable problem-solving process, students can analyse and infer from the data collected by applying mathematical concepts and skills.

Examples of Mathematical skills:

Key Stage 1	Key Stage 2
- perform comparison and basic computations of whole numbers - describe shapes, sizes and positions - apply knowledge in measurement and use appropriate units and tools for measurement - present data using simple charts and graphs, and retrieve information from simple charts and graphs	- perform computations and simple estimations involving whole numbers, fractions, decimals, and percentages, such as estimating expenses - use simple geometric properties, such as symmetry, parallel and perpendicular to describe shapes, sizes and positions more accurately

Key Stage 1	Key Stage 2
- perform simple deductions using basic logical concepts, such as “and”, “or”, “all”, “some”, “because”, “if ... then” and “contradiction” - apply mathematical knowledge in daily life	- apply strategies and formulae in measurement - collect and process data, present data by means of suitable charts and graphs, and retrieve information from charts and graphs - perform deductions, such as syllogism and provide counter examples - apply mathematical concepts in daily life

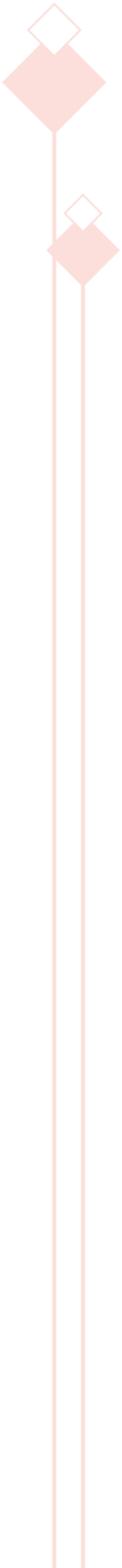
When planning the school-based curriculum, teachers should ensure that the learning content and STEM activities are commensurate with students’ learning abilities and are related to their daily life. Teachers can provide ‘hands-on and minds-on’ inquiry activities for students to develop their capabilities in integration and application of knowledge and skills. By organising STEM activities in the form of spiral learning, students’ understanding of science concepts and technological knowledge are systematically deepened. In addition, the knowledge and skills in TE, such as ‘design cycle’, can be incorporated in the diversified learning activities.

Example 1 Characteristics of materials

In KS1, students learn the characteristics of common materials (e.g. waterproof) under the theme ‘Weather and Everyday Life’. They may apply such knowledge in choosing materials for designing and making roof-top models. In KS2, students learn the transmission of sound and soundproofing ability of common materials under the theme ‘Sound’. Teachers may arrange students to make noise barriers in groups as integration and application of knowledge and skills.

Example 2: Forces

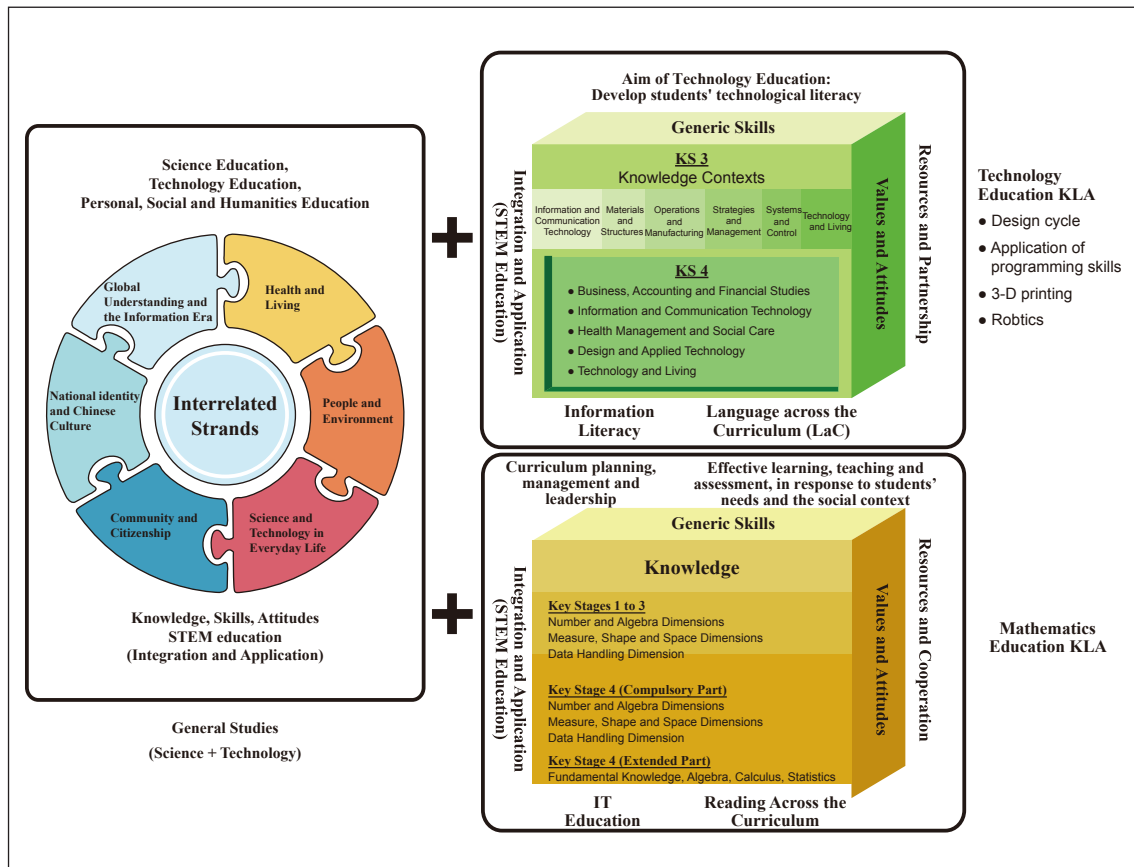
In KS1, students learn examples of forces (e.g. pulling and pushing) under the theme ‘Leisure Time’. They may apply such knowledge in making toys to develop their creativity. In KS2, students learn examples of forces (e.g.



magnetic force and friction) and motion. They may make models of ‘Maglev trains’ by applying the design cycle, as well as integrating and applying learnt knowledge and skills.

STEM activities can be implemented in many learning themes by connecting the learning elements of science and technology. For example, under the theme ‘Chinese culture’, students may apply the ‘mortise and tenon joints’ principle, which is commonly found in ancient Chinese architecture, to construct their models. Under the theme ‘People and Environment’, students may apply the concept of green living as they design and make models of windmill generators and water-saving showerheads, etc. These are examples of STEM activities that connect different learning strands.

Approach 2 – Cross-curricular STEM Education



1. Project Learning

Schools could foster collaboration among KLAs and subjects so that teachers with different subject expertise can join hands in planning STEM activities. Project learning can help students integrate knowledge and skills across different KLAs.

Example 1

KS 2

Theme: Forces and Simple Machines

Objectives:

1. To understand the concepts of magnetism and average.
2. To develop collaborative problem-solving skills.
3. To apply the design cycle in making creative models.
4. To cultivate students' interest in inquiry learning and enhance their sense of achievement.

Scenario and method:

Students might know that maglev trains have higher transportation efficiency and take shorter transportation time. This arouses students' curiosity to make a speedy and stable maglev train model, and develops their **science process skills** during the learning process.

Design:

With a grasp of the basic concepts of magnetic force (**scientific concepts**), students can construct steady maglev train models (**technological concepts**). Students should be able to reduce the experimental errors by conducting a few trials and taking the average (**mathematical concepts**).

Implementation:

By comparing the models made by their peers, students can explore the factors affecting the speed of trains. Students' creativity and collaborative problem solving skills can also be developed as they go through the design cycle. For instance, when students try out models with different shapes, they can discover that streamlined shapes can reduce air resistance, and thus increase the speed of trains.

Reflection:

1. "Making Maglev Trains" is a STEM activity conducted in the form of project learning, which enables students to apply knowledge and skills in Science, Technology and Mathematics. How should schools/ GS panel heads deploy lesson time for the learning activities? (factors: percentage of lesson time and flexible curriculum time)
2. What are the roles of teachers and students in the learning and teaching activities of "Making Maglev Trains"? (factors: Teacher-centered or teachers as facilitators, student-centered or self-learning)
3. What are the advantages of group work in STEM activities? (Factors: listening, sharing, division of work, collaboration, catering for learner diversity and enhancing the effectiveness of learning)

Example 2**KS1 & KS2****Theme: Making Planes**

In KS1, students design and make toy planes through group projects. They assemble the plane on their own, and they are requested to test materials to find the most suitable one for making a toy plane with the highest stability / the longest flight distance. Students can make use of different materials and know more about the properties of materials (e.g. light / heavy? solid / hollow?). By measuring the flight distances in different trials, students can collect data to improve their designs.

In KS2, students can make toy planes with streamlined-shape to reduce air resistance. They can also alter the positions of wings along the principal axis to balance the forces acting on the planes.

By the aforementioned simple inquiry tasks, students can apply the design cycle and identify the relationship between the shape of planes and flight performance.

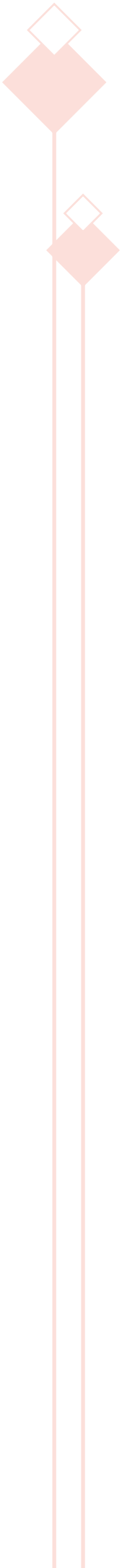
2. Application of Coding

According to the “Report on the Fourth Strategy on Information Technology in Education” and the “Report on Promotion of STEM Education – Unleashing Potential to Innovation”, the EDB suggests that equipping primary students with computational thinking is essential to cope with future societal needs. Furthermore, coding can cultivate the creativity, computational thinking and problem solving skills of primary students.

Schools can refer to the “Computation Thinking - Coding Education: Supplement to the Primary Curriculum as well as the recommendation in the “Computer Awareness Programme” (CAP) and adopt an appropriate mode to promote coding education.

Schools can also encourage collaboration among teachers of different subjects to design subject-based or cross-subjects learning activities in order to provide opportunities for students to learn and apply coding in their development of students’ computation thinking. Web link: http://www.edb.gov.hk/attachment/tc/curriculum-development/renewal/CT/supplement_CT_chi_draft.pdf (Chinese version only)

Schools can also encourage teachers of GS, Mathematics and Computer to devise STEM activities collaboratively in order to provide students with opportunities to learn and apply coding and demonstrate learning outcomes.



Example:

From Assembling Robots to Innovative Application of Coding

KS2

A school introduced STEM activities in the form of a scientific investigation in relation to application of simple machines. With a grasp of the basic skills of constructing closed circuits and principles related to simple machines such as levers and inclined planes, students constructed robots driven by motors. They constructed models with different materials and tested the functions and features. They were able to investigate the effects of assembling the components in different ways on the performance of the walking robots, and apply the design cycle to solve problems.

(extracted from EDB resources: 'Robot-Challenge in the Classroom' 2009)

Remark: The learning of robotics can be introduced in the form of project learning. Schools could consider assigning part of the flexible learning time (19% of the total curriculum time in primary schools) for such learning activities.

To develop students' basic coding skills, Computer teachers make reference to "CAP" prepared by the EDB and adopt suitable coding languages and tools such as Scratch and App Inventor.

GS teachers could promote STEM education by integrating the learning of coding and hands-on experience in simple machines.

Schools could encourage students to observe everyday life matters carefully and then formulate creative solutions to everyday life problems and design suitable tools using their knowledge in simple machine and coding. Students' computational thinking is thus cultivated.

Example: 'Electronic Prefect'

To reduce teachers' workload and allow them to take rest in the staff room during lunch time, students develop an innovative product called 'electronic prefect' with different sensors and application of coding. It can take over the duty of monitoring students. The 'electronic prefect' is composed of sound sensors and motion sensors. Automation can be achieved by a programme generated by Scratch. When the noise exceeds a certain sound level (three times) or someone approaches the classroom door (once), the device will send a message to the mobile phone of the corresponding class teacher and notify him or her to visit the class.

When deciding the mode of promoting application of coding by an inter-disciplinary approach, the school should take the school context into consideration. The possible modes include:

1. Organise more STEM-related co-curricular activities that unleash students' potential in designing and making;
2. Effective use of the flexible learning time to promote STEM education on activity days, so that the learning experiences of all students are enriched;
3. Authentic contexts or themes for cross-disciplinary project learning could be devised at curriculum planning level. While students' generic skills are further developed via collaborative problem solving, teachers can also motivate them to face challenges with strong determination.

In addition, GS learning activities are enriched by coding. For example:

1. With the aid of Scratch programmes, virtual experiments can be prepared. They illustrate the simulated experimental results clearly and help students consolidate learning related to experiments which cannot be conducted easily in regular classrooms (e.g. observe the reflection of light).
2. Students can consolidate their learning through Scratch computer games (e.g. proper methods of waste recycling and closed circuit). If the school have attained a certain level of development in coding education, students could be encouraged to modify the programmes so as to enrich the contents of games.

3.4.2 e-Learning

e-Learning extends learning time and allows more flexible learning.

Characteristics of e-Learning

- e-Learning connects learners with information worldwide.
- e-Learning is collaborative. It helps students learn collaboratively within and beyond classroom.
- e-Learning is interactive. With multimedia, abstract concepts can be explicitly illustrated.

- e-Learning is extendable. It enables students to learn beyond classroom according to their ability, progress and interest.

Making Good Use of the Advantages of e-Learning

1. The school intranet, provision of wireless network and mobile devices provide a good learning environment. Hence, the GS team can closely collaborate with the IT team to enhance the curriculum design with information technology.

Example 1 Greenland within the School Premises

The school has fully utilised the school premises to build a “Greenland”. To facilitate students’ self-learning, all plants in the school campus are labelled with QR codes which are linked to relevant resources on the Internet. The “Greenland” serves as a platform for cross-curricular activities (e.g. GS, computer lessons, Moral and Civic Education, Religious Education) and makes learning more interesting.

2. Information technology extends the learning experience and caters for learner diversity. It helps visualise abstract concepts and lets students extend their learning according to their interests and strengths. Thus, their confidence and capabilities in learning can be enhanced.

Example 2 Using Electronic Learning Tools in Outdoor Learning

Theme: My Community

KS1

Learning Objectives	1. To familiarise students with the community facilities. 2. To use e-learning tools in collaborative learning. 3. To cultivate the attitude of caring for the community, by suggesting the setting up or removal of community facilities to improve the quality of life for the elderly.
Learning Activities	Learning mode: Collaborative Learning Task: Design a route for the elderly to do exercise • Collecting information: Introduce the community of the neighbourhood of their school with texts and photos.

	• Field visits: Use mobile devices to take photos and record. • Use of IT: With the aid of apps, students locate the facilities on the map and insert the photos. While designing the route for the elderly, students can clearly indicate the locations where new facilities should be installed or the worn-out facilities should be removed. • Use of language: With the aid of sound-recording apps, students can attach audio scripts onto the map to introduce existing facilities. Also, they can explain their suggestions for the new facilities. • Application of mathematical concepts: Students can apply the concept of location and direction.
Learning Effectiveness	• Through relating authentic context and virtual reality, students' interest in learning can be enhanced. • The level of difficulty should be commensurate with the abilities of students. Technology helps students understand abstract concepts (e.g. location, direction and distance).

3. IT tools process data quickly. Hence, students can spend more time on interactive learning and higher-order thinking processes, such as analysis, integration of knowledge and skills, evaluation as well as viewing an issue from multi-perspectives.
4. GS teachers can make reference to 'CAP' modules to organise appropriate learning activities that involve IT skills, so as to enhance the learning and teaching effectiveness.

Example 3 Data Processing and the Application at the School-based Weather Station

Theme: Seasonal Changes

KS2

Students of upper primary collected daily weather information including temperature, relative humidity, rainfall and wind speed at the school-based weather station. Electronic spreadsheets were used to record, organise and analyse the data collected, for instance, to calculate the average monthly temperature and total monthly rainfall. Students presented the data with suitable graphs, such as bar charts and line charts. As a result, they could observe the trends and variations.

With the skills learnt in Computer lessons, students analysed the data, discussed the trends observed from the data and drew conclusions. Thus, students understood the characteristics and changes of climate of the four seasons.

(Extracted from CAP , Module 6: Calculation and Charting with Spreadsheets)

5. Teachers and students share knowledge and learn collaboratively within and beyond classroom via web-based platforms (e.g. online forums) and e-learning tools (e.g. apps),
 - Schools promote on-line news reading schemes in order to develop students' self-learning habit and raise their social awareness. There are weekly broadcasts of news and commentaries by students on the campus TV so that students can share their viewpoints with peers.
 - Schools train students to become GS ambassadors to help their peers prepare for GS inter-class quizzes with web resources. This helps cultivate students' interest and confidence in learning, and develop their capabilities of self-learning and civic responsibility.
 - Schools use intranets to deliver and collect pre-lesson tasks, promote after-class reflection and provide extended learning tasks. This enables more interactive and flexible learning.

Example 4 Understanding Chinese History and Culture from Foothold in Hong Kong **KS1 & KS2**

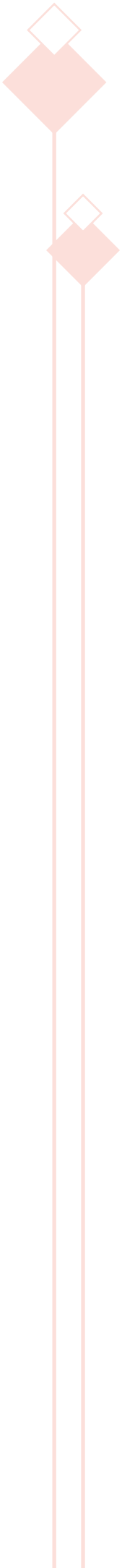
Cross-subject collaboration	IT facilities of the school
- Teacher-librarian sources relevant books. - Language teachers provide reading materials and enhance students' language abilities. - GS teachers collect and adapt learning materials to foster interactive classroom learning and self-directed learning.	- School sets up the e-learning platform (e-bookshelf and interactive electronic platform) with reading materials and video clips for pre-lesson tasks. - IT coordinator develops a school-based learning platform for uploading assignments or discussion.

e- Learning within and beyond classrooms

1. Pre-lesson

Examples:

- Students watch animation clips of related themes (e.g. Lei Cheng Uk Han Tomb, Sung Wong Toi) via e-platform to have an overview of the historical background. They jot down key points or answer questions about those videos. Teachers assess students' learning progress with the data collected by the e-learning platform.
- To promote Language across the Curriculum, students read information texts on the intranet (e.g. the story of paper-making by Cai Lun' (蔡倫), maritime trade in the Song dynasty)
- When enquiring into the topic 'The Ancient Tombs', students collect information on famous tombs in different parts of the world and know more about cultural heritage.



2. Classroom Learning:

Examples:

- When enquiring the topic, ‘Did the emperors of the Song dynasty stay in Hong Kong?’, students can discuss on the credibility of the information with reference to the electronic resources (e.g. pictures of Sung Wong Toi and video clips).
- By searching for pictures of Han Tombs, students can compare Lei Cheng Uk Han Tomb with the other Han Tombs, so as to predict if the Lei Cheng Uk Ham Tomb was built in the Han dynasty.

3. Extended Learning Activities

Examples:

- Students engage in field studies with the aid of IT and a map of Hong Kong or street view of Kowloon City. Augmented reality can help students compare the ancient scenes with the scenes nowadays.
- Students can visit historic sites or heritage trails with the aids of learning apps so as to make the learning in authentic contexts more interactive and interesting.
- Students visit websites related to ‘Riverside Scene at Qingming Festival’ (《清明上河圖》). By observing the economic activities and figures, students learn about the prosperity of the Song dynasty. Students can also express their thoughts by descriptive or narrative writing.
- To promote Reading across the Curriculum, students could be encouraged to read stories about the ancient Chinese (e.g. Stories about moral integrity, being loyal to one’s country and scientists on e-platforms).

Schools should encourage students to evaluate the information with critical thinking and promote the use of IT in a safe, legal, and ethical manner, and thus enhance their information literacy, such as respecting for the intellectual property right and specifying the sources of information.

3.4.3 Reading across the Curriculum

With the rapid development of IT and social media, students have to acquire the skills of inferring from and producing multimedia texts (e.g. text, images, animations and sounds). The GS curriculum, with daily-life related topics, provides a meaningful learning context for promoting Reading across the Curriculum (RaC), so that students can further explore subject knowledge and apply the reading skills and strategies learnt in language classrooms.

With diversified learning experiences, such as project learning and scientific investigation, students communicate with others, convey their ideas and exhibit creativity with IT skills and literacy skills.

There should be close collaborations between GS teachers, language teachers, teacher-librarian and IT teachers in providing opportunities for constructing knowledge and expressing ideas through the integration and application of knowledge and skills learnt in language classrooms.

Example: Integrative Thematic Learning

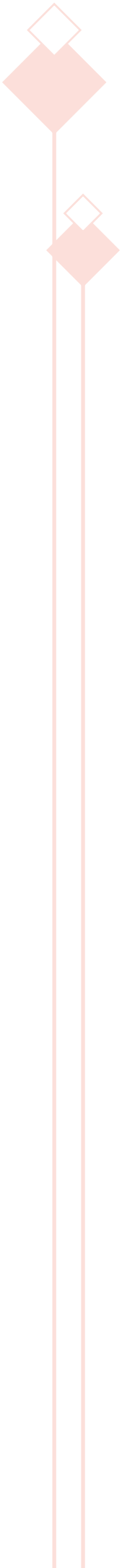
KS1

“Conservation of the Oceans” is a possible theme for project learning at Primary 3. Chinese language, English language and GS teachers can teach this topic in the same period of time and provide extended reading materials. Meanwhile, teacher-librarian borrows sufficient books from the public library. Besides, students search, select and analyse information collected from the Internet. As a result, students can have a good grasp of knowledge on environmental conservation. Afterwards, they design environmental-friendly tools in Visual Art lessons and share their learning outcomes.

GS lays the knowledge foundation while RaC provides enrichment for students to engage in-depth reflection after reading which enhances their critical thinking skills.

3.4.4 Project Learning

Project learning provides valuable experiences of active learning and enquiry. In each key stage, students can enquire into current issues which are commensurate with their abilities and interests. Throughout the process of collecting, organising and analysing information or testing, students can draw conclusions, suggest areas for improvement and try out innovative ideas in designing and making products.



Advantages of project learning

1. Students can broaden their horizons in the enquiry process, which enables them to construct or connect knowledge instead of learning passively.
2. Students' capabilities to self-directed learning can be developed by investigating authentic problems as active learners. Their collaborative skills are also developed.
3. Students investigate everyday life problems.
4. Students' thinking skills can be strengthened through a systematic and progressive enquiry process.
5. Students can effectively collect and analyse information with IT, and demonstrate learning outcomes.
6. Students learn how to integrate and apply knowledge and skills. They are encouraged to face challenges courageously and be responsible to their learning outcomes.

Subject-based project learning

GS teachers select appropriate themes for extended learning tasks to deepen students' understanding of those topics. By carrying out project learning with authentic contexts, students integrate and apply their knowledge and skills in enquiry-based activities to solve everyday life problems and learn collaboratively.

Example:

- When learning about family in KS1, students put the photos of their family on the worksheet and share the photos with the class. Students interview their family members and record the information such as hobbies and household duties. As an extended learning activity, students form groups and search for information on their homelands (e.g. geographical locations, scenic spots and customs). Their findings can be collected as a class-based project, namely "My Clan and hometown". It helps students cultivate a sense of belonging to their "families" and strengthen their collaborative skills.

- When learning the theme ‘Environmental Conservation’ in KS2, students choose to work on different sub-themes according to their interest (e.g. Environmental protection in Shatin – my responsibilities). Teachers show students the environment of Shatin by using multimedia resources so that students have an overview of the community. Students are then guided to formulate their enquiry topics. They have deeper understanding on environmental conservation through the process of extracting and organising information.

Each group is responsible for a topic on a particular type of environmental pollution, for example, water, land, air or noise pollutions. Students have to compile a report on the situations, causes and impact of the environmental pollutions.

Students are engaged in data collection, performing tests and conducting surveys and combining the findings of various groups. Hence, students understand the importance of environmental conservation and take action to protect the environment.

Example: Living in Shamshuipo

KS1 & KS2

The school conducts project learning on “Understanding our community” in both Key Stages 1 and 2 to help students explore the development of Shamshuipo with authentic learning experiences.

Students of junior classes learn the history of Shamshuipo by visiting museums. Primary 2 students visit ‘Lei Cheng Uk Han Tomb’ and learn about the culture of the Han dynasty while Primary 3 students visit ‘Mei Ho House’ and learn about the history of housing estates in Hong Kong.

‘The Arts in Shamshuipo’ is the learning theme for students in KS2. To develop students’ interest in visual arts, they visit the Jockey Club Creative Arts Centre, interview artists and attend inter-school art exhibitions. GS and Visual Arts teachers collaborate to organise drawing lessons at Laichikok Park so that students can appreciate the beauty of Chinese gardens.

Under the supervision of teachers, students of senior classes visit the Golden Shopping Centre and Apliu Street. Students can interview shopkeepers, take photos and collect information. Students analyse the data and present their findings in sharing sessions.

Remarks: Pay attention to safety. Consents from the shopkeepers should also be sought beforehand.

Cross-circular project learning

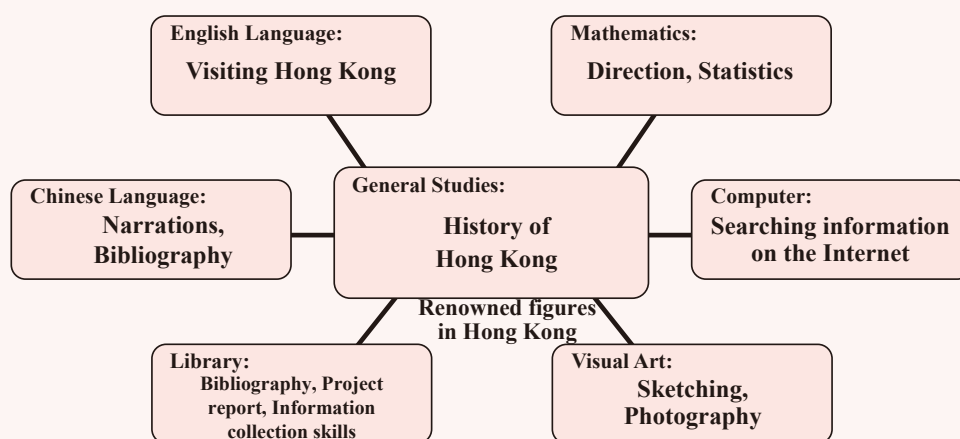
Curriculum leaders and GS panel chairpersons work collaboratively in devising project learning themes and adapt the learning content in order to promote project learning with a whole-school approach.

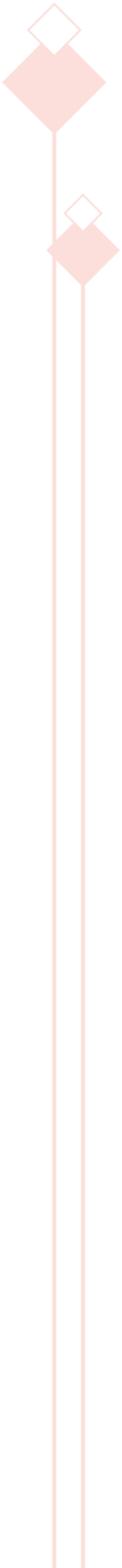
- To promote STEM education, schools can further encourage the collaboration among subjects and committees so that teachers with different expertise can contribute to the design of project learning. By solving authentic problems actively, students can apply the knowledge and skills of different KLAs in an integrative manner.

- Schools have made effort to develop the creativity, critical thinking and communication skills of students. Many schools are experienced in promoting cross-curricular project learning. Building on their strengths, schools can review the project learning framework and pay attention to the major emphases of the curriculum renewal. Plans on progressive development of students' generic skills in different key stages can thus be devised and the goals of self-directed learning can be achieved.
- Integrating the learning elements of GS with other KLAs or subjects (e.g. CLE, ELE, AE or PE) helps enrich students' learning experiences. Schools could adopt flexible curriculum design of each year level according to the learning needs of students.

Example 1 Cross-curricular project learning

The school devises their school-based curriculum of cross-curricular project learning using a whole-school approach in KS2. Two to three school days are reserved for cross-curricular project learning. To support the project learning, a GS learning theme serves as the backbone to connect the learning content of other subjects. Students' learning space is extended through attending workshops, collecting information, group discussions and presentations. It enhances their motivation and interest to learn. Students construct knowledge and develop critical thinking and creativity.





Different forms of learning activities, such as visits, talks and field trips, can arouse students' interest in the project. Teachers encourage students to participate in discussion actively and guide them to gather information from multiple sources. Thus, students' ability in processing information can be developed. Students are able to consolidate and reflect on their learning after processing and analysing the data. Finally, students may choose the modes for presentation of learning outcomes (e.g. written reports, oral presentations, displays, models and e-platforms).

Example 2 School-based project learning and its framework

The school devises plans of project learning with clear learning objectives in each key stage. Teachers collaboratively decide a theme for cross-curricular project learning. The school has established a school-based project learning framework starting from KS1 to develop students' generic skills and self-directed learning capabilities progressively.

Example 3

KS1

Theme: Touring around Hong Kong

GS: Students visit the website of the Hong Kong Tourism Board and classify different tourist attractions into historical sites, thematic parks and shopping malls etc. Teacher can facilitate a discussion on the economic benefits of tourism on Hong Kong in class. Afterwards, students can also plan a 2-to-3-day tour programme.

Language subjects: Students read relevant information and journals that enhance their reading and writing skills. Through interviewing the tourists in English or Putonghua at the tourist spots, their communication skills and presentation skills could be strengthened.

Mathematics: When planning trips on transport, students have to consider the distance between different scenery spots and the transportation. They apply mathematical skills in planning to make the trips feasible.

IT: Students use IT tools to locate the scenery spots on maps. Students may design related computer games with guidance from Computer teachers. Students can present their plans to their peers through different means, such as blogs, brochures or PowerPoint presentations.

Example 4**KS2****Theme: “Stay Healthy and Keep away from Drugs”**

Language subjects: Teachers collect encouraging stories help students to master vocabulary and writing skills.

Music: Teachers can play songs that contain positive values and messages to encourage students to adopt positive attitudes towards life.

Visual Arts: Students can appreciate how the painters express their passion to life by the sketch and colours.

Life-wide learning: Students are encouraged to learn more about healthy lifestyles by attending exhibitions or programmes of life education.

GS: Students search for information and news about anti-drugs. Students are encouraged to exhibit positive attitudes to life in various ways such as creative drawing, design, writing or designing slogans.

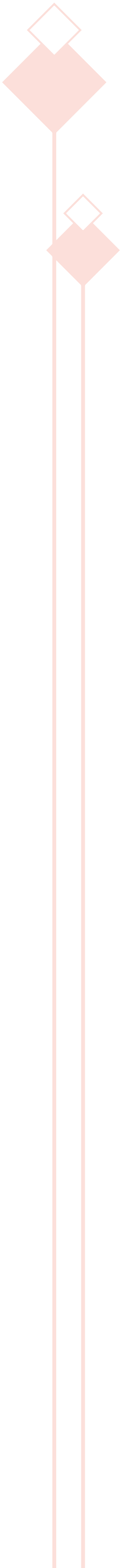
3.4.5 Values Education

Moral and Civic Education is essential to whole-person education. The seven priority values and attitudes (including “Perseverance”, “Respect for Others”, “Responsibility”, “National Identity”, “Commitment”, “Integrity” and “Care for Others”).

1. To promote values education, GS teachers can start with raising students’ awareness of good habits and put them into practices.

Example:**Shouldering the responsibility for protecting the environment**

Under the theme “Environmental Education”, teachers can use suitable life events to help students understand their environmental responsibilities. As affection is driven by ones’ cognition, students’ positive behaviours could be reinforced by encouragement, so are the humanistic qualities and desire to strive for a better future.



Cognition	Affection	Behaviour
• how to protect the environment and save natural resources • how to reduce waste in daily life • strategies to combat climate change	• valuing environmental conservation and effective use of natural resources • being willing to adopt a lifestyle that brings less impact on climate change	• developing the habits of protecting the environment • adopting a green lifestyle

2. GS teachers can also make good use of life events to help students understand their own feelings and that of others, and to understand and analyse an issue from multiple perspectives. This fosters the development of positive values, establishment of harmonious interpersonal relationships and cultivating respect and care for others. For example,

- Schools can provide opportunities for students to explore life issues, such as ‘Birth, Ageing, Sickness and Death’. Students learn how to express their emotions in different situations with appropriate vocabularies or pictures.
- Under the strand ‘People and the Environment’, students understand how precious life is from taking care of animals and plants.
- Students learn the importance of different roles in family, school and society in the strand ‘Community and Citizenship’. Schools can encourage students to express their feelings about news or social issues verbally or in written form. Furthermore, students can show concern for the needy.
- Students can know painful experiences of being sick from the theme ‘Being Sick’ under the strand ‘Health and Living’, and learn to care for and comfort patients.

- When conducting STEM activities under the strand ‘Science and Technology in Everyday life’, students learn to face the failures in testing honestly, to keep trying with perseverance and to show appreciation for their peers’ designs.
 - When reading news about famines or disasters, students feel the pain of the victims. Students show sympathy to the victims and give their donations or spiritual support.
3. When planning the school-based curriculum, schools can adopt suitable learning themes and select the learning elements meaningfully to develop positive values and attitudes in students.

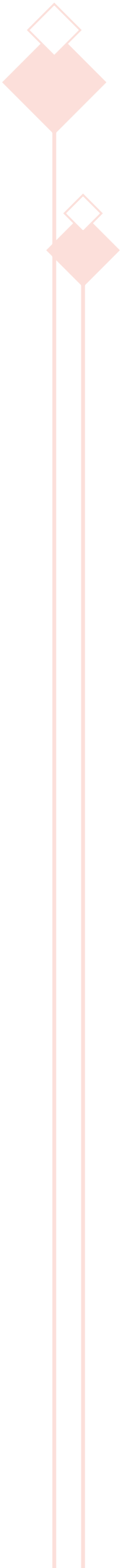
Schools could attach importance to students’ behaviour. With diversified learning experiences and infusing values education in regular teaching, good behaviour of students can be encouraged.

Schools can encourage students to take the initiative to reflect on their own attitudes and behaviour during the process of knowledge construction. They could develop positive values and attitudes through discussion with and feedback from their teachers and peers.

Example: To promote green living and environmental awareness and responsibilities

When planning a school-based curriculum, we should consider if the curriculum content is commensurate with the abilities and developmental needs of students. In KS1, teachers can incorporate the concepts of green living into thematic learning of clothing, food, housing and transportation so as to provide opportunities for students to practise green living habits in their campus and daily lives.

1. **Clothing:** Students can have a discussion on choosing appropriate clothes and conclude that comfortable clothing which suits the occasion is the most important criterion. They learn how to take good care of clothes from cloth labels. Also, wastage could be minimised through recycling and donation.
2. **Food:** Knowing the negative impact of importing food from distant regions on the environment, students understand that buying local food or food produced by nearby regions can reduce the pollution due to transportation and consumption of fuels. Also, stopping using disposable utensils helps reduce wastage.



3. **Housing:** Students explore how to prepare cleansing agents from natural substances (e.g. salt and fruit peels) and test their cleansing properties. Besides, they can plant to improve the air quality and make the living environment more comfortable.

4. **Transportation:** Students talk about green picnics by choices of transport, clothing, personal belongings, food and drinks.

In KS2, excessive consumption of fuels is an important theme under the strand ‘People and the Environment’. ‘Climate Change’ as a project learning theme helps students understand the phenomenon of global warming, the related natural disasters and thus adopt a green lifestyle from now on.

Schools can encourage students to participate in green activities actively and develop green habits. Also, life-wide learning activities such as exhibitions of green living and climate change can also facilitate learning.

4. To promote values education in GS, e-learning can be used in life-wide learning activities to help students appreciate and respect history and culture.

Example Sense of national identity and belonging to the country

Theme: Dr. SUN Yat-sen and Chinese Revolution of 1911 **KS2**

‘Dr. SUN Yat-sen and Chinese Revolution of 1911’ is a theme of the school-based curriculum. ‘Flipped classroom’ is adopted as a pre-lesson task. Students read stories about Dr. SUN and search the Internet for information on the Revolution. With a grasp of the basic historical background, students are better equipped for interactive learning in class, and gain a deeper understanding of the significance of Dr. SUN to the country. A life-wide learning activity of visiting ‘Central and Western Heritage Trail’ can be enriched by mobile devices and apps. It enables students to know more about the historical background, and experience the loyalty and enthusiasm of the people to the country through a trip.

Progressive deepening of values education can be achieved by learning through life events, or case studies. This also develops students’ critical thinking skills. (Relevant learning and teaching strategies can be found in Chapter 4.2.2)

5. A whole-school approach to promote values education can create a positive atmosphere for students to respect others and live in harmony.

Alongside covering the core learning elements in formal curriculum time, the school provides students with diversified and interactive learning experiences on the Basic Law and ‘one country, two systems’, such as those related to the national flag and emblem, and simulated elections.

Furthermore, moral and civic education activities held in the school illustrate the close relationship between the Basic Law and our everyday life, such as flag-raising ceremony and simulated election. It cultivates in students positive values and helps them respect for law and order. With the ‘Planning, Implementation and Evaluation’ cycle, schools can develop diversified learning activities (e.g. visits, cross-border learning activities and video competitions) and assess students’ performance timely to inform subsequent planning.

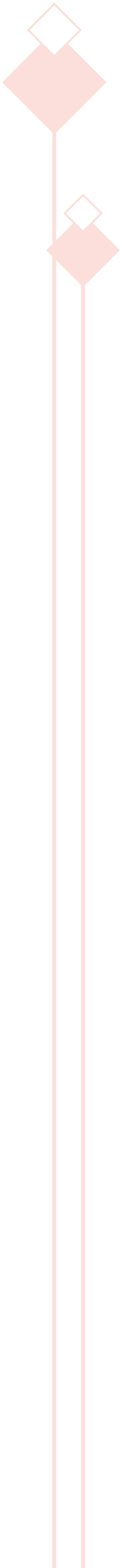
3.5 Modes of Curriculum Planning

The open curriculum framework of GS allows a high degree of flexibility for curriculum planning, adaptation of curriculum content, as well as offering diverse learning experiences for students. Schools should consider their mission, school contexts and strengths in planning a quality GS curriculum, which can cater for the needs, interests and abilities of their students.

The GS curriculum advocates an integrative approach to devising thematic learning activities under the six strands in relation to PSHE, SE and TE KLAs. When planning the school-based GS curriculum, schools can systematically arrange the core elements of the six learning strands through a thematic approach, and enrich the curriculum with diversified life-wide learning activities.

3.5.1 Lateral Coherence across Learning Strands

To illustrate the interconnection of learning objectives under different strands, schools are encouraged to plan the learning themes with special focus on



lateral coherence. In order to create space for development of skills and positive values, overemphasis on content knowledge should be avoided. For example,

Key Stage 1

- When planning the theme ‘Proper Use of Leisure Time’, teachers can arouse students’ curiosity and interest in science and technology by guiding them to make simple toys with common materials in addition to explanation on how to make good use of leisure time. Students also learn to treasure and share toys.
- When planning the theme “The Nature”, teachers can encourage students to observe the characteristics of marine living things and beware of the interaction between living things and the environment. This also helps student to respect for life and inspire them with wonders of the nature.

Key Stage 2

- Enquiry into the theme ‘Economic Transition in Hong Kong’ can help students understand the main features of the Hong Kong economy and its development. Students can also learn that trading with the Mainland and other parts of the world is beneficial to Hong Kong. The economic and technological advancement of the trading partners also affect the economy of Hong Kong. During the enquiry process, students may make reference to the concepts stipulated in the articles in Chapter V of the Basic Law to understand the relationship between the Central Authorities and Hong Kong Special Administrative Region in economic development.
- When planning the theme ‘Environmental Pollution’, teachers can select current local and global environmental issues to illustrate the causes of pollution. Simple scientific investigation to the environmental problems may be carried out. For example, students can make noise barriers with different materials and test for the effectiveness by decibel meters.

When developing subject-based or cross-curricular learning themes, schools could give priority to everyday life examples in order to enhance students’ interest in learning.

3.5.2 Devising Learning Themes with Unique School Contexts

To keep pace with rapid societal changes, schools could take into account the school contexts, school development and the developmental needs of students.

For example, they could devise learning themes to help students of junior classes know more about their school and the community.

A school devised a school-based learning and teaching package on “My School” according to the backgrounds and abilities of students. Students brought things they used in kindergartens to class to share with their peers and discussed the changes since they had been promoted to primary school. This helped students develop communication skills and friendships.

In addition, teachers designed worksheet to help students know more about the schools by observing, interviewing the staff (e.g. teachers, janitors) and reading articles on the interesting stories of the school. Hence, students learnt to respect for all members of the school and have the sense of belonging to the school developed.

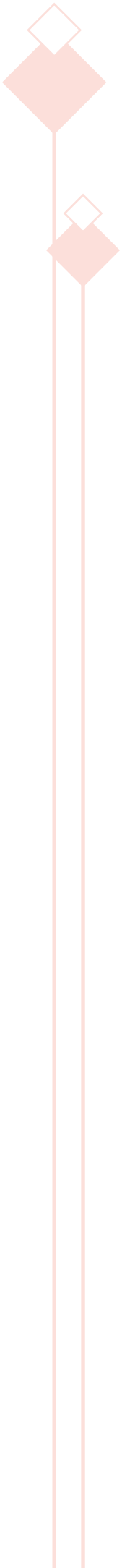
Besides, schools can design different learning topics and modules by integrating learning content from PSHE, SE and TE KLAs. This helps develop their abilities to integrate and apply their knowledge and skills.

Example 2

KS1

Theme: My Community

When designing the learning plan of the captioned theme, schools can use their local district as a blueprint so that students can learn the characteristics of an authentic community, such as the lifestyles and consumption patterns of the people. Schools can enrich the theme with the core learning elements of other learning strands, such as describing the natural environment, weather and plants. It helps develop students’ positive attitudes towards the environment and their sense of belonging to the community.



My Community — Shatin

Students collect information and conduct survey on their housing estates and the community in order to understand the urban planning and development of Shatin. Teachers guide students to conduct a case study on Lek Yuen Estate to explore the characteristics of public housing estates and urban planning. Furthermore, students understand urban planning of new town in terms of housing and transportation through analysing, comparing information and discussion. As an extended activity on community history, the school encourages students to search for information about historical sites in Shatin (e.g., Che Kung Temple or Tsang Tai Uk).

Regarding community life, the school helps students know more about the features of urban planning of a central town, including shopping malls, recreational and cultural facilities and healthcare facilities.

Field trips to the Shatin Park or country parks provide students with authentic learning experiences to learn about features of common plants and their adaptation in tropical climates. Appreciation towards the nature can thus be cultivated.

Teachers also help students identify their community on a Hong Kong map and encourage them to explore the features of other communities.

3.5.3 Vertical Continuity of the Curricula in Consecutive Key Stages

Curriculum planning should be coherent and systematic. Schools should attach importance to the vertical continuity of the GS curriculum in their curriculum planning. The core learning elements of different learning strands should be inter-connected with progression across different learning levels. Students should be given opportunities to construct knowledge with their prior knowledge.

A curriculum plan should avoid including all core learning elements of the whole learning stage into the curriculum of one year level, which leads to excessive information and surface learning without progression. Students would have difficulties in grasping knowledge and mastering skills, and the learning process is dominated by rote memory of information.

Examples:

Basic human body structure and common communicable diseases are the core learning elements of the strand ‘Health and Living’. Schools should spread the core learning elements across different levels with progression. Such practice ensures vertical continuity of the curriculum.

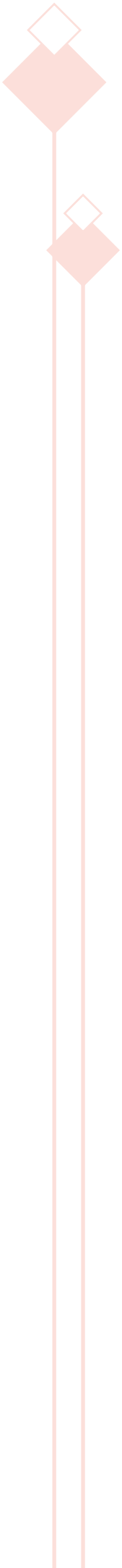
- Developing healthy living habits and environmental hygiene are important themes in KS1. Alongside appropriate attire, it is essential to understand how muscles and bones work together and the importance of maintaining proper postures. Regarding environmental hygiene, food-borne and respiratory diseases are common among children. When introducing basic knowledge of the digestive and respiratory systems, students should know their functions and develop good living habits.
- Healthy lifestyles and concerns for community health are important themes in KS2. To cultivate students’ awareness of community health, schools may arrange project learning on public health issues, in particular, the large-scale outbreak of infectious diseases like cholera, dengue fever and Severe Acute Respiratory Syndrome. Students thus know the transmission modes of diseases and the importance of maintaining community health. By learning various systems of the human body, students appreciate the wonderful functions of the human body and understand the importance of a healthy lifestyle and community health.

3.6 Interfacing between Different Learning Stages

3.6.1 Interface between the Kindergarten and Primary Education Curricula

There are similar learning themes in the Kindergarten Education curriculum and the GS curriculum in KS1. Teachers can tailor the learning materials according to the development of students at different ages to enhance learning effectiveness.

The Kindergarten Education curriculum encourages sensory learning, observing the environment, predicting and discerning how things are interrelated so as to explore and understand the surroundings, as well as appreciating the beauty of the nature and caring for the animals and plants. Their curiosity and everyday life experiences lay a good foundation for enquiry learning in GS.



When planning the KS1 curriculum, GS teachers could know more about the rationale, curriculum aims and assessments in kindergarten education, as well as understanding the learning styles of kindergarten students, in order to ensure smooth transition.

For more information, teachers can refer to the Kindergarten Education Curriculum Guide (2017). Web link: <http://www.edb.gov.hk/en/curriculum-development/major-level-of-edu/preprimary/index.html>

3.6.2 Interface between KS1 and KS2

The GS curriculum adopts a spiral approach. The core learning elements, including knowledge, skills and attitudes in KS1, are progressively deepened and developed in subsequent year levels, so are the humanistic values and learning capabilities.

Examples:

1. The curriculum plan on the growth of plants in the strand ‘People and Environment’ is devised in a progressive manner. In KS1, the core learning element is the needs of plants in growing. In KS2, students learn about photosynthesis and the growth of plants under sunlight.
2. When developing curriculum plans for the strand ‘Community and Citizenship’, teachers deepen students’ understanding of ‘self’ and their surroundings progressively, that is, from ‘family, school and community’ in KS1 to ‘city, country and the world’ in KS2. Students know more about their family history and the multiculturalism in the local community in an earlier stage and then extend their learning scope to the history of different ethnic groups in Hong Kong and their contributions.

3.6.3 Interface between Primary and Secondary Curricula

The GS curriculum provides the fundamental knowledge of PSHE, SE and TE KLAs. The curriculum contents of junior secondary subjects in these KLAs and the GS curriculum form a progressive continuum. The integrative application of skills and the humanistic qualities grounded in primary education should be sustained in junior secondary education.

The GS curriculum encourages students to learn actively, so that students can grasp science process skills and the learning content by employing diversified learning strategies. This foundation enhances their interests and curiosity in learning.

To facilitate smooth interface between KS2 and KS3, teachers of both key stages are advised to have a basic grasp in the curriculum contents of their counterparts. They can adjust the learning and teaching strategies for the smooth transition between key stages. Teachers can share their perspectives on the curriculum implementation and their teaching experiences, as well as reading the curriculum documents.

The abovementioned curriculum guides can be retrieved at:
<http://www.edb.gov.hk/en/curriculum-development/list-page.html>

Example: Interface between primary and secondary education

A through-train school convenes regular joint meetings for the primary school GS teachers and secondary school teachers from Science and Humanities subjects to review their curricula and the progressive development of students' generic skills in order to foster a smooth transition between KS2 and KS3. Teachers share the experiences on teaching students at different levels. Teachers from the secondary section expect primary graduates to master basic scientific investigation skills and critical thinking skills, which are essential to the learning of Science and Humanities subjects at junior secondary level. Therefore, the GS team develops a school-based curriculum plan for a smooth transition:

1. Designing Scientific Inquiry Tasks

In order to sustain students' interest in learning Science, the school provides more opportunities for students to participate in inquiry-based activities. Teachers devise progressive learning tasks systematically so that students are guided to conduct simple experiments. Contents of the tasks include setting objectives, hypotheses, fair tests, testing methods, results and conclusions. These helps lay a strong knowledge foundation for handling the learning tasks in Science at junior secondary level and develop logical thinking skills. Students apply science process skills in secondary school with confidence. The more capable students help demonstrate simple experiments to their junior counterparts, which benefit all students.

2. Discussion on Current Affairs

Critical thinking skills are crucial to the learning of Humanities subjects. In Key Stage 2, the school makes use of discussion on life events and news for progressive development of students' critical thinking skills. Teachers select news for students' enquiry learning in groups. The selection criteria of the news are shown below:

- the content is neutral so that students can differentiate between facts and opinions
- the content is commensurate with the cognitive abilities of the students
- the content enables students to understand the issue from multiple perspectives and its impact on society.

GS teachers guide students to differentiate between facts and opinions. They adopt open and neutral views and avoid dominating discussion. Meanwhile, teachers assist students to understand the background and associate the news with their prior knowledge and related concepts. Also, they guide students to formulate suggestions through a multiple-perspective thinking process.

3.7 Flexible Arrangement of Curriculum Time

12-15% of lesson time should be allocated for GS (285 - 356 hours over three years). There should be at least five 35-minute lessons per week for each year level.

In each key stage, schools should allocate 80% (228 - 285 hours) of GS lesson time to the core learning elements and 20% (57 - 71 hours) to diversified learning experiences. Relevant examples could be found in the extended learning activities of each strand and exemplars on project learning.

Arrangement of Lesson time

- Diversified learning experiences, such as community talks, scientific inquiry activities, project learning and presentations can be scheduled to the double-lessons or extended lessons arranged in different modes (e.g. by week, month or semester).
- Schools can arrange a common period for all classes of the same year level for collaborative learning tasks and seminars.

The flexible curriculum framework of GS allows teachers to design different learning themes to foster integrative application of learning elements across different learning strands of GS, as well as the learning of other KLAs. Thus, the time allocated for each topic, theme or unit may vary due to the differences in the level of difficulty and content coverage. Yet, all the core learning elements of GS should be included in the school-based curriculum.

Teachers, when devising their schemes of work, should allocate sufficient time for projects learning, scientific investigations and STEM activities.

Arrangement of Specific Learning Periods

When allocating lesson time to the KLAs/ subjects, including GS, school should attach importance to students' needs and the vertical continuity of the curriculum. The flexible learning time (19%, that is, 451 hours in three years) can be used to enhance students' learning experience. For example,

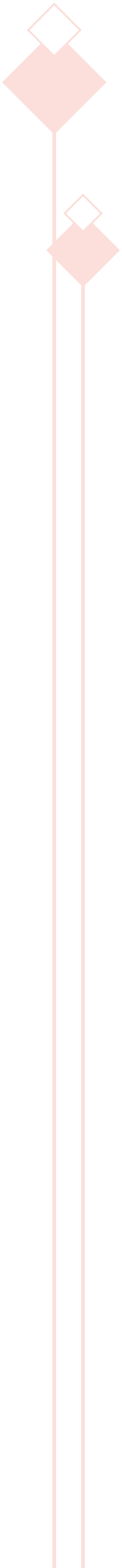
- To promote STEM education, school can organise activity days, such as 'STEM Day' and 'Science and Technology Day'. Community resources could be tapped to provide life-wide learning activities for students.
- External resources could be tapped to support school-based moral and civic education activities and Basic Law education so as to strengthen students' national identity.

Example 1

Theme: New Year customs of different ethnic groups

In view of students' diverse ethnic backgrounds, the school assigns "New Year" as one of the learning themes to Primary One students. Besides the traditional customs of Chinese New Year, students are encouraged to gather relevant information of their home countries as an extended activity. The school arranges a New Year celebration event for students. Students dress in national costumes and send each other blessings. They bring their family pictures and traditional food along to share with their schoolmates. Through discussions and organising information, students know more about each other and appreciate their culture. Students' learning outcomes, such as assignments, information and comments, are categorised into a set of display work. This activity can increase students' understanding of customs of different ethnic groups.

Remarks: Students are reminded not to bring excessive food and bring along their own utensils to avoid wastage.



Example 2: GS Science Day – Arrangement for different learning levels

Every year, the school organises a Science Day when all classes participate in inquiry-based activities with particular themes.

Themes for science inquiry:

Primary 1: Telephone – Transmission of sound

Primary 2: Toy gyroscope – Actions of forces

Primary 3: Skyscraper – Characteristics of common materials and their uses

Primary 4: Kaleidoscope - Reflection of light

Primary 5: Helicopter – Action and reaction

Primary 6: Forts – Uses of levers

Students are provided with worksheets and hands-on experiments of which they formulate hypotheses, record test results and suggest how to improve the effectiveness of their designs. Students also demonstrate their learning outcomes to their peers.

Example 3: Understanding the Basic Law through Games: A Learning Day

Teachers select stories, games and role-play activities from the “Let’s Learn the Basic Law: Basic Law Learning Package” and design game booths. All teachers and students enjoy learning under a relaxing atmosphere. Such cross-subject learning is not bound by formal lesson time. It helps develop positive values.

Reflection: Should GS be split into two subjects or more?

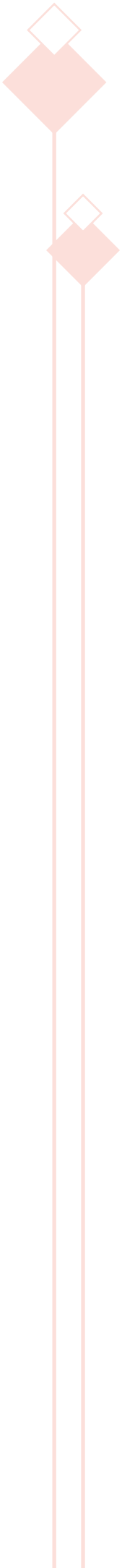
Points to note:

1. When developing learning and teaching materials for GS, no matter in the form of subject-based learning modules or cross-curricular learning themes, the content should be interesting and closely related to students' everyday life, in order to cultivate students' interest in natural environment and social issues.
2. GS adopts an integrative learning approach to devise thematic learning activities across six learning strands, which cover PSHE, SE, and TE KLAs.
3. When planning the GS curriculum, teachers can adopt different modes of curriculum organisation. They can integrate the core learning elements of different learning strands under particular themes and further integrate the core elements of other KLAs.
4. When implementing the curriculum plans in modules, teachers can adopt an integrative mode to help students construct knowledge. The learning content can be selected from more than one learning strand so that students can deepen their learning in a progressive manner and understand that knowledge from different stands is interrelated.



Chapter 4

Learning and Teaching



Learning and Teaching

Students' learning effectiveness and progress are determined by the quality of learning and teaching. To enhance interactive learning in and beyond the classroom, teachers have to adopt flexible and relevant learning and teaching strategies according to the contents of the GS curriculum and learning needs of students.

4.1 Guiding Principles

Prior to deciding what learning and teaching strategies would be adopted, teachers should consider the following principles:

4.1.1 Providing Various Learning Opportunities

It is better for teachers to put emphasis on interactions among students and their learning environments, providing them with ongoing learning opportunities to enrich learning experiences within and beyond the classroom, so as to help students broaden and deepen their learning.

For example, teachers are able to:

- arrange diverse class activities based on the lesson objectives, learning contents and key concepts, so as to sustain students' learning motivation and boost their confidence and satisfaction in learning.
- provide appropriate learning materials that invite students to enquire proactively and provoke thinking from different perspectives, so as to enhance students' interest and learning effectiveness.
- provide students with opportunities to share their experiences and construct knowledge with their teachers and peers during the interactive learning processes. They can ask questions, discuss issues and express ideas. Through guidance and feedback, teachers can help students build positive attitudes and values.
- devise life-wide learning activities that complement the implementation of the GS curriculum and enhance learning by taking it beyond the classroom. Students connect and apply their knowledge and skills in service learning, project learning and scientific investigations.

4.1.2 Stimulating Students' Learning Motivation

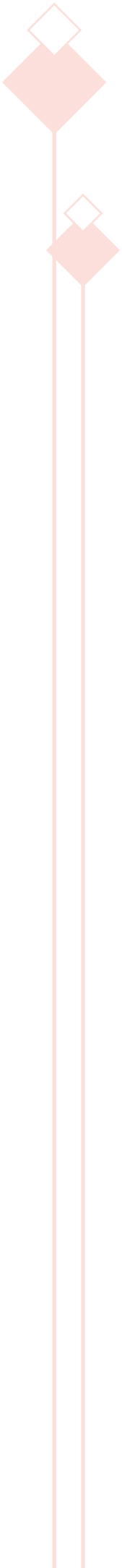
Teachers should take students' learning styles and cultural backgrounds into consideration, and devise learning activities that suit students' learning levels, needs and abilities so as to stimulate their interest and motivation in learning.

For example:

- Before teaching new concepts, teachers should understand students' prior knowledge to help them construct new knowledge and deepen their learning.
- Teachers should devise learning activities with clear learning objectives and reasonable expectations in order to encourage students to face challenges, and get satisfaction from solving problems.
- Teachers should provide students with opportunities to explore the environment and enjoy learner autonomy. A sense of commitment and learning satisfaction can thus be cultivated.
- Students are curious about daily events/ phenomena around them. During the learning and teaching process, teachers should be open to different opinions and varied responses from students, recognising their efforts and helping them overcome learning difficulties.
- Teachers should give timely assistance and concrete feedback that help students understand their learning progress. To encourage students to participate actively in learning activities, teachers should observe students' learning performance and provide support and recognition.

4.1.3 Catering for Learner Diversity

Every student is a unique individual with different learning styles and abilities. During the learning process, students will choose learning strategies that suit them to complete learning tasks in different learning environments. In addition to professionally understanding the curriculum contents, GS teachers should help students transform the information acquired from research of different things into structured personal understanding, perspectives and interpretations, as well as develop their potentials. Therefore, during the learning and teaching process, teachers should:

- 
- Provide clear explanations and instructions to help students learn step by step, adopt graded questions to help students with better understanding of the learning contents and develop their critical thinking skills, provide concrete and constant feedback to help students improve their learning.
 - Make use of flexible groupings of students, according to the nature and purpose of the activity being carried out, such as groupings based on students' abilities/ specialties/ interests, which may allow students to learn collaboratively through interactions.
 - Help students to understand other people's viewpoints and to eliminate possible tension due to their diverse backgrounds and cultures.
 - Adjust the pace of learning and teaching according to the learning process of the students, provide them with diversified learning resources and encourage them to use appropriate learning tools (e.g. timelines, comparison tables, mind maps) for learning.
 - Vary the means and degrees of support to facilitate students' self-directed learning, scaffolding more when new learning is introduced and allowing more learner autonomy as students develop.
 - Adopt different types of assessments (e.g. portfolio, project learning, performance assessment and attitude assessment) to evaluate student's learning performance comprehensively and recognise their efforts and contribution in different aspects.

4.1.4 Developing Students' Self-directed Learning Abilities

In self-directed learning, both the learning process and the learning targets are important, allowing students to manage their own learning activities. Students with self-directed learning abilities are proactive in thinking and finding out answers. They follow their own plans to achieve the learning goals. During the learning process, they select and use appropriate learning strategies and resources, and evaluate their own learning effectiveness through self-evaluation and self-reflection.

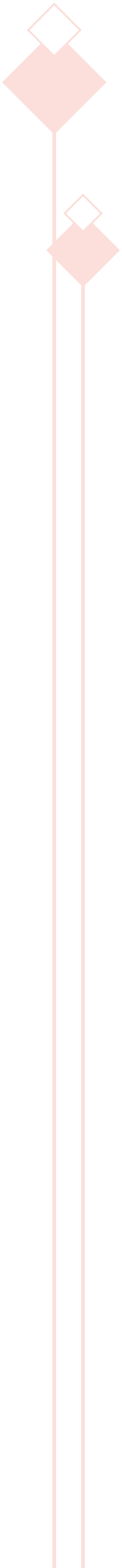
Self-directed learning should not be confined to the classroom, pre- and post-class learning activities can also help students develop self-directed learning skills and cultivate a self-directed learning habit. Therefore, teachers should provide students with a wide range of learning opportunities to integrate and apply what they have learnt. For example, teachers should allow students to:

- watch videos, search for illustrations, read articles or note down their comments and questions about a new topic before lessons so that their engagement in classroom learning can be enriched.
- use different learning tools to organise, generalise and consolidate what they have learned, and reflect on and improve their learning by identifying their strengths and learning difficulties.
- take the initiative to select themes for enquiry learning, conduct in-depth learning and enrich their learning by engaging them in various learning activities, e.g., interviews, surveys, field trips and reading.
- complete learning tasks/ assignments on their own, demonstrate their learning outcomes through different forms (e.g. writings, illustrations, oral presentations).
- reflect on and improve their learning effectiveness through feedback from peers and teachers continuously during the learning process.

4.1.5 Developing Students' Generic Skills and Cultivating their Positive Values and Attitudes

Over the past decade, schools have laid a good foundation for students to carry on their knowledge construction by developing students' potential among nine generic skills. Building on their strengths in developing students' generic skills, teachers can effectively combine various generic skills to provide students with the opportunities to integrate and apply these generic skills.

To keep track with the ongoing curriculum renewal, GS would deepen values education. (Please refer to Chapter 3.4.5 for more information). Teachers can help students develop empathy and consider others' stances using diversified learning and teaching strategies. Through multi-sensory learning, experience sharing, reading and writing or role-plays, students can understand others' feelings and difficulties, thereby learning how to respect others and accept different views. (Please refer to Ch 4.2.2 for more information).



4.2 Learning and Teaching Strategies

Enquiry learning is a ‘student-centred’ approach; therefore, teachers do not only transmit knowledge, but also need to perform multiple roles, such as that of a facilitator, co-learner and assessor. Through motivating, guiding and monitoring students’ learning, they help students learn to learn as well as become life-long learners.

In the enquiry process, students become active learners that construct knowledge. Instead of teachers giving answers, students are required to discover answers by asking questions, collecting information, analysing data, and clarifying misconceptions. Then, they provide answers, make products or propose solutions. They should also be required to find suitable and feasible solutions to different problems, and support them with evidence, instead of looking for model answers. To devise learning and teaching plans, teachers should adopt a wide range of teaching strategies and learning activities in accordance with the learning targets so that students can actively construct knowledge, develop generic skills and cultivate positive values and attitudes.

4.2.1 Collaborative Learning

In the process of collaborative learning, students are encouraged to complete a task cooperatively with clear division of work and discussion among members of a group, so that ideas do not come from a single mind, but are developed collaboratively. Working in an interdependent learning atmosphere, students can construct knowledge and solve problems together with teammates.

Teachers can make use of flexible groupings according to students’ abilities and interests, and the nature of activity being carried out, which allows each groupmate to contribute to the learning, so as to enhance the participation of and interaction among students. Effective grouping can enhance students’ learning interest and understanding of the learning contents, as well as cultivate a positive learning attitude and develop their collaborative problem-solving skills (Please refer to Appendix 1 for details).

Example 1**Theme: My Pocket Money****KS1**

A teacher assigns different roles (e.g. group leader, members and reporters) to students in groups according to their abilities / the nature of activity. Under the topic ‘Making good use of my pocket money’, students first share with their teammates their habits of using pocket money, then group leaders facilitate discussion among the members on “ways of making use of pocket money”, such as “consuming”, “saving” and “donation”, and encourage members to question different ideas to develop critical thinking skills. Group leaders then consolidate the opinions collected and point out some considerations of using pocket money. Reporters present the outcome of the discussion to the class.

Example 2**Theme: Multiple Ethnic Groups in China****KS2**

When teaching the topic ‘Multiple ethnic groups in China’, teachers can first use maps to show the locations of various ethnic groups in China. Then, they divide the class into different groups, and each group is encouraged to collect information of an ethnic group of their interest (e.g., ‘Han’, ‘Hui’ and ‘Mongol’), in terms of historical background, climatic region, festival, costume, food and custom so as to understand the lives and cultures of these ethnic groups. Before the lesson, teachers should be well prepared both in the lesson planning and activity arrangement. They should provide adequate learning materials, such as climatic charts, worksheets, reading materials and website hyperlinks for students to select appropriate information and master the learning contents well in advance. Students can play the roles as a teacher and a historian, report to other teammates their findings and respond to their peers’ questions and provide feedback in class. Finally, teachers can encourage the groups to compose puzzle-type posters based on the learning outcomes of every group and form a picture outlining the cultural characteristics of China. As a result, the theme is effectively conveyed to students and the values of inclusion and respect for cultural diversity cultivated.

4.2.2 Adopting Life Events for Promoting Values Education

Schools should adopt life events in different contexts as the learning contents. Through learning activities such as discussion, sharing and reflection, schools can deepen students’ understanding of the topics, enhance their abilities to analyse, make judgements and deal with the events or topics, and encourage them to uphold positive values and attitudes towards life and put them into practice.

- Teachers can adopt events that are relevant to the students' life experience as the learning contents (e.g., promotion to primary school, making friends, changes of lives), establishing a meaningful connection between students' learning in schools and their personal growth experiences. This allows students to reflect on their own values and attitudes, and learn how to face and overcome life difficulties and challenges, as well as cope with life changes positively.
- Teachers can encourage students to think and discuss the effects of life events, such as Internet addiction and performing in a public area, on them personally, as well as family and society. This can enhance students' abilities to analyse and make judgements, and enable them to solve problems objectively and rationally in the complicated social situations nowadays.

Example 1

Theme: Promoting Love and Harmony by Knowing Different Communities

KS1

Pre-class preparation: Students are asked to collect background information about their countries or regions, such as national flags or regional symbols, festivals, clothing and food. Students can also interview their family members to learn more about the history and culture of their countries.

Class activities:

1. Students share stories about their countries or ancestral hometowns with each other. This helps students deepen their understanding of different cultures and groups.
2. Teacher asks students with different nationalities to share their experiences of and feelings towards living in Hong Kong.
3. Teacher gives students different scenario cards for group discussion. Through discussion and listening, students are expected to learn the positive attitudes in socialising with different people.
4. Teacher refers to the "Census Thematic Report: Ethnic Minorities" and let students learn more about the current situation in Hong Kong.
5. Conclusion: A school is a microcosm of society where there are people with different customs and cultures. We should respect and accept everyone, help and love each other, and making their campus life more joyful.

Post-class activities: School organises a small-scale ‘Culture Day’. Students can wear their national costumes or share with their classmates some interesting features of their countries or hometowns, such as folk songs and games.

Example 2

Theme: Rights and Responsibilities

KS2

Teacher adopts a life-event approach in facilitating the learning of ‘Rights and Responsibilities’ in Basic Law education. First, students are encouraged to discuss with classmates regulations of utilizing classroom facilities so as to help them understand that personal rights cannot be taken for granted, but require compliance with regulations and obligations for the protection of public interest and to avoid conflicts.

Based on students’ real-life experiences, teacher provides a case: “Mrs. Chan refuses to pay the taxi fare because she is dissatisfied with the service she has received. If you were with her at that moment, what would you do?” Then, students can share their opinions. Students are then guided to understand the fact that Mrs. Chan has to pay the taxi fare, but she has the right to note down the driver’s name and taxi registration number so that she can file a complaint with the Transport Department.

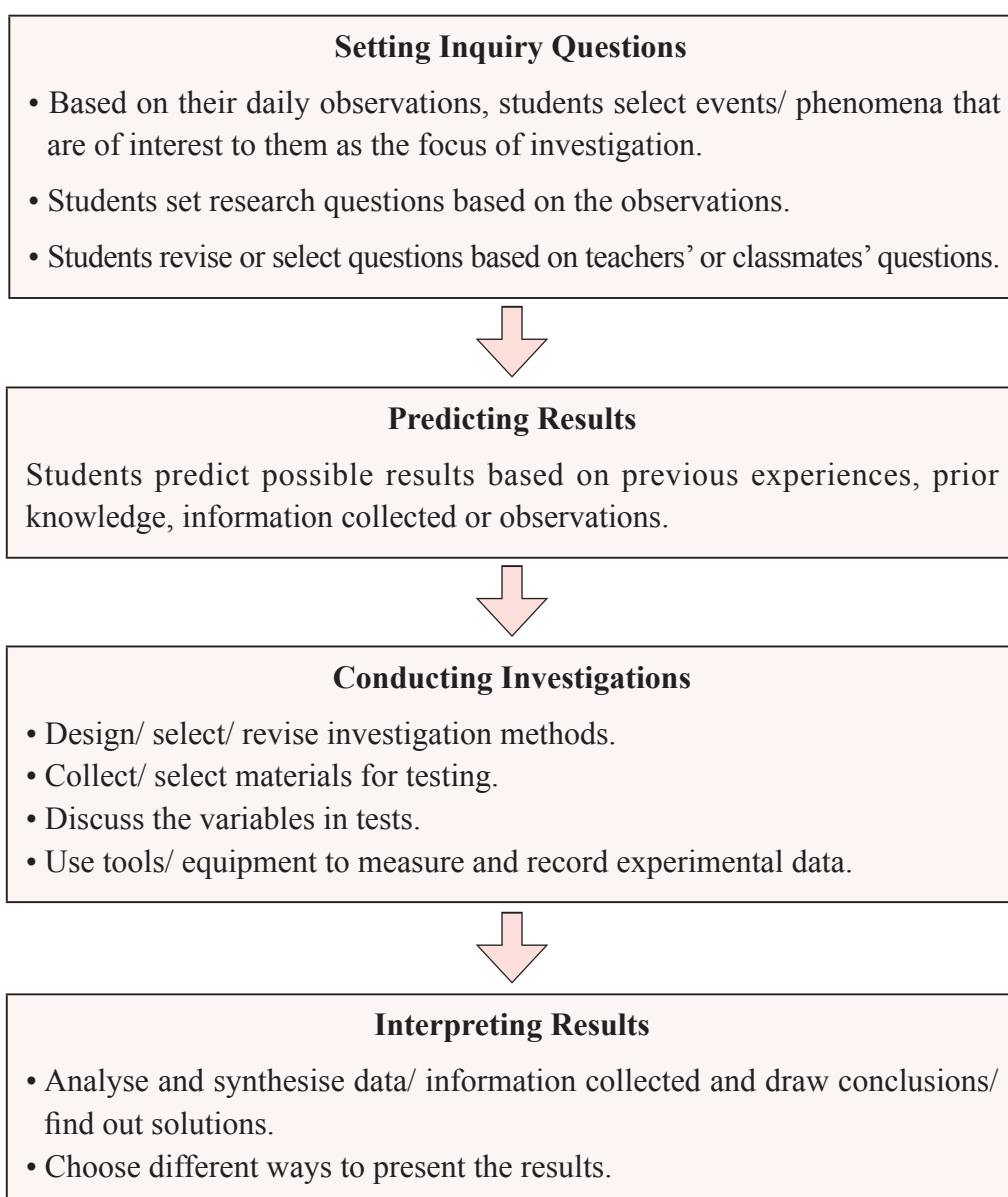
When planning class activities, teacher facilitates learning by making good use of the story ‘Adventures in Tsim Sha Tsui’ in the Learning Package. Case analysis and discussion are adopted to help students understand the fact that enjoying the freedom reasonably and legally is built on a foundation of mutual respect, and the importance of protecting everyone’s privacy.

Real life experiences can arouse student’s learning interest. Teachers can provoke students’ thinking through questioning (e.g. How would you feel if you were...? How would you solve the problem if you were...?). This can help students understand a situation from different perspectives and develop holistic thinking skills (Please refer to Appendix 2 for details), as well as cultivating their empathy and respect for others.

4.2.3 Scientific Investigations

Students are easily intrigued by new things and are interested in challenging questions. Teachers can select daily life events or phenomena that encourage enquiry and provide students with the opportunities to carry out scientific investigations, such as five sensory explorations, fair tests, pattern-seeking, etc., explore and search for solutions to problems, as well as explaining phenomena. Such practices can build up students' perseverance and develop their integrity in order to face challenges and solve problems.

The investigation involves the following processes:



In scientific investigations, students are actively involved in making observations, developing relevant questions, conducting experiments to verify predictions and solving problems they encounter. These hands-on experiences and problem-solving processes can further develop students' basic science process skills, including observing, predicting, measuring, recording, classifying, identifying variables, inferring and communicating during the investigation process. Such training can help students find evidence to support their understanding of phenomena in daily life and the natural world and use reasonable methods to solve problems.

Example

Theme: Investigation of Electric Circuits

KS2

Process in scientific investigation	Contents	Science process skills
Setting questions	In a closed circuit, if the number of batteries remains unchanged and the light bulbs are connected along one route, what is the relationship between the number of light bulbs added to the circuit and their brightness?	
Predicting results/ Making assumptions	(Provided that the type and number of batteries remain unchanged) Students predict the change of brightness of the light bulbs. For example, the more the light bulbs, the brighter the bulbs. Teachers can invite students to share the reasons for their predictions. Teachers should provide opportunities for students to think and explore the answers themselves instead of giving them the correct answers directly.	Predicting, communicating

Process in scientific investigation	Contents	Science process skills
Conducting investigations	Students work in groups to connect three different sets of closed circuits with one/ two/ three light bulb(s). The type and number of batteries of the three circuits are the same. The light bulbs are connected along one route. Students discuss and record the results of the experiments. In order to help students identify the variables in the test, teachers guide students through questioning: • In the experiment, what are the differences among the three closed circuits? • What do we need to measure? • Which parts of the circuit remain unchanged?	Observing and recording Identifying variables
Interpreting results	Students are asked to explain the results based on the evidence. (Explanation: when the number of batteries in a closed circuit remains unchanged, and the number of light bulbs increases, the brightness of each light bulb decreases.)	Inferring, communicating

4.2.4 Project Learning

Project learning usually starts with a challenging question or a problem, which allows students to conduct a study on a designated theme individually or in group. Project learning can complement the theme-based teaching in order to widen students' learning scope and enable students to direct their own learning more effectively.

Teachers should take students' prior knowledge, interests and abilities into consideration when guiding students to work on projects through diversified learning activities (e.g., reading, interviews, scientific investigations, case studies, field trips, design and product creation, and use of IT to collect information). Students can obtain and work with a range of learning materials from various channels by integrating and applying the knowledge and skills, and learning hence becomes more effective and meaningful. During the process of project learning, teachers should monitor the performance of students and give timely and concrete feedback for improvement. As the learning process and learning outcomes are of equal importance, students should be encouraged to be more independent, to monitor and evaluate on their own in order to improve learning effectiveness.

The three stages of project learning

There are three stages in project learning: Preparation Stage (Idea Initiation), Implementation Stage (Enquiry Process) and Concluding Stage (Presentation and Reflection of Learning Outcomes).

(1) Preparation Stage (Idea Initiation)

- Students own their learning. First, teachers should set clear targets and objectives with students, in order to increase their learning motivation.
- Teachers may arrange various activities, such as talks by experts, discussions on an issue, site visits, concept-mapping, to increase students' concern for and understanding of a topic. Teachers may then encourage students to actively participate in discussions and guide them to formulate researchable and challenging questions.

(2) Implementation Stage (Enquiry Process)

- Students collect various types of necessary information through different channels to build up their knowledge of the topic, and strengthen their project learning skills.
- Teachers should help students develop information processing skills, including collecting, reviewing and selecting information. They should help students understand the need to tailor and consolidate the information collected into useful knowledge to cater for the problems to be addressed in the project topic.
- In the process, teachers may gradually give students less guidance and encourage them to become more independent and to engage in reflection.
- The knowledge acquired is “transformed” into learning outcomes.

(3) Concluding Stage (Presentation and Reflection of Learning Outcomes)

- Apart from analysing and consolidating information, students have to make conclusions and reflect on the whole project.
- Finally, they can present, share and reflect on the outcomes of the project. This may be done in a variety of forms such as written reports, oral presentations, exhibitions, dramas, videos, models, web-pages, video games and seminars.

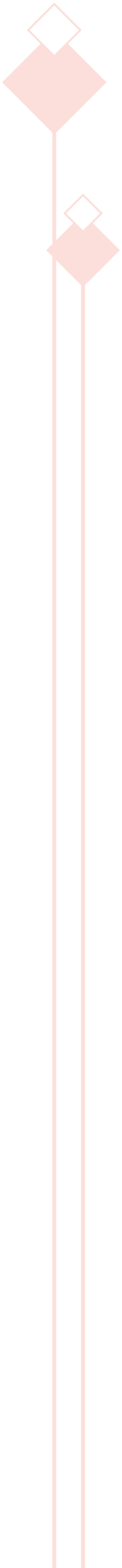


Example 1

Theme: Making Models of Tall Buildings

KS2

Objectives: Students are able to • design and make a tall building model that passes structural tests by integrating STEM-related learning elements of GS and Mathematics. • develop their collaborative problem-solving skills, science process skills and mathematical skills, as well as innovation and creativity.	
STEM-related learning elements:	Learning activities
GS • Hands-on and minds-on scientific investigation activities • Uses and characteristics of some daily materials • Concepts and application of the design cycle	(1) Preparation Stage • Ask questions and discuss: How do people construct tall buildings? What sorts of tests are needed to ensure that the building is firm and stable? (e.g., tests for loading capacity, tests for wind strength) • Set learning objectives: Students can integrate and apply their skills and knowledge to make a tall building model that passes structural tests. (2) Implementation Stage • Carry out load test for strength of blocks in different shape and materials. • Discuss in groups and draw a sketch for the model design. • Select blocks in suitable shapes to make a model of a tall building and form slabs and pillars using different materials. Then, test the model's loading capacity by weights. • Observe and keep a record of all the problems encountered during the enquiry process. Then, discuss and share with others and apply the design cycle to improve the design of the building model.



STEM-related learning elements:	Learning activities
Mathematics • Recognising the characteristics of cylinders and prisms • Make nets of cylinders and prisms	(3) Concluding Stage • Analyse data and consolidate information (e.g., Draw conclusions on what materials and block shapes are the most suitable for making a stable model based on the test results). • Share the model with other groups, perhaps through online presentations of photographs and explanatory notes. • Reflect and evaluate (e.g., What have we learned from this project? Was there any improvement in the second test? What are the strengths of other groups' models?)

Example 2

Theme: Green Living

KS2

This project learning aims to help students understand that cultivating environmentally-friendly habits in daily life can help reduce carbon emissions and to encourage them to commit to practicing green living and combating climate change.

Prior Knowledge:

Students learned about ways of “waste reduction”, and have basic understanding of climate and weather changes in Hong Kong.

(1) Preparation Stage

- Teachers provide students with videos or reading materials to help them gain a basic understanding of the relationship between carbon emissions and climate change.
- Teachers help students set a sub-topic under the topic “Don’t be the Big Waster” (e.g., How to reduce food waste, Environmentally-friendly transports) in order to nurture students’ sense of responsibility regarding environmental protection.
- Students’ self-learning: On the behaviour evaluation template, students record their own or families’ environmental protection habits as a basis for project learning.

(2) Implementation Stage

Students collect information from newspapers, books or related webpages:

- What kinds of phenomena are related to climate change in Hong Kong? (e.g., hotter weathers/ rising temperatures/ increasing number of extreme weather events). Students collectively analyze and integrate the information collected to find out the impact of climate change on Hong Kong. They can also interview their families or friends to understand their views about climate change.
- In groups, students can search for ways to respond to climate change and propose practical environmental protection measures in four aspects namely “clothing”, “food”, “housing” and “transportation”. They can also discuss the effectiveness of governmental, groups’ and individual actions in reducing carbon emissions and interview families or friends for their opinions about these measures.

- Students compare and analyse the changes in parents', peers' and individuals' attitude, behaviour and commitment towards practising green living after the project learning.

(3) Concluding Stage

- Students use different formats (e.g., study reports and dramas) to present their research results on the day of results sharing.
- Designing posters or slogans with the theme “Don’t be the Big Waster”.
- Extended learning: Students collect information according to their own interests to understand more about the impact of climate change on human life in different parts of the world.

4.2.5 Developing Computational Thinking through the Application of Coding

Coding can be integrated into the learning and teaching contents of various subjects including GS in order to cultivate students’ problem-solving skills, creativity and computational thinking.

Teachers can use coding software to create games that match the lesson contents of different subjects or demonstrate abstract and unfamiliar scientific concepts, in order to enhance students’ learning interest and help them gain a better understanding of the learning content.

Example 1: Consolidation after Investigations

Theme: Reflection of Light

KS2

First, teachers help students to gain basic understanding of reflection of light through scientific investigations. Then, teachers use a computer game to show how the light travels. This can help students consolidate the science concept learnt by visualising the reflection of light.

Learning objectives	Students are able to • consolidate the scientific concept “light travels in a straight line” through a computer game. • understand basic coding concepts and develop computational thinking.
----------------------------	--

Learning activities	GS: • After using mirrors to conduct investigations about the reflection of light, students can play a Scratch game “Cat catches mouse” on tablets. In the game, students need to place correct mirror(s) into the box(es) to help “Inspector Cat” reflect the light of the flashlight on the mouse. This game can help students consolidate knowledge, and understand light travels in a straight line and how it changes its direction once reflected. Computer lessons : • Students use the Scratch game “Cat catches mouse” as a model in computer lessons to experience the process of coding through “testing”, “modeling” and “debugging” activities, developing computational thinking.
Learning outcomes	After completing the investigations, students can consolidate the science concepts they have acquired in lessons by playing the computer game “Cat catches mouse”. Learning activities in computer lessons allow students to understand coding concepts and cultivate their computational thinking.

Source: “Computer Awareness Programme (Module 8C) - Using Scratch to develop students’ coding capability- Simulation package for the cat to find the mouse”, which can be accessed at: <http://www.edb.gov.hk/en/curriculum-development/4-key-tasks/it-for-interactive-learning/modular-computer-awareness-programme/index.html#9>

After mastering coding skills, students can present the learning contents of GS by making a Scratch game and modifying the game’s codes to practise what they have learnt.

Example 2: Cultivating Positive Values and Attitudes

Theme: Eco-friendly Recycling Bins

KS2

Teachers first use “Scratch” to design a game regarding eco-friendly recycling bins. Through classifying and recycling common wastes, students can learn the proper ways of using the recycling bins. Through the game, students can also understand the proper ways of handling used materials. For example, before recycling, used plastic bottles should be washed and the plastic cover on used envelopes should be removed.

Through modifying the game’s codes, students can further enrich the contents of the game by adding new items such as glass bottles and mooncake boxes. They can also search for relevant information about recyclable materials to deepen their understanding of recycling. They are able to practice self-directed learning throughout the process.

If students need to search for photos on the Internet, teachers can introduce students online platforms that are operated in compliance of intellectual property right, so that respect for intellectual property rights and information literacy can be cultivated.

Students can also demonstrate their learning outcomes through creating a game using coding.

Example 3: Presenting Learning Outcomes by Coding

Theme: Healthy Eating in Puberty

KS2

Learning elements: The importance of healthy eating - How to choose healthy food?

Prior Knowledge: Students have learnt how to use coding software to create a game in Computer lessons.

Learning Task: Each group of students design a game related to “Healthy eating” using “Scratch” to present their project learning outcomes. Before making the game, each group of students has to collect information (e.g. through accessing the Department of Health webpage, taking photos of food). Then, team members analyse the information and design a game together. After the game is made, students present it during class, and modify their game after collecting feedback from teachers and classmates. Lastly, each group of students uploads the game to the school platform for sharing with other classmates.

4.3 Reading across the Curriculum

Reading across the curriculum aims to provide students with the opportunities to broaden their GS knowledge base, as well as apply and consolidate reading skills and strategies developed in language classes.

4.3.1 Reading and Writing

Reading and writing are important tools for life-long learning and whole-person development. Different broadcasting media, including printed materials that suit students' age and learning needs (e.g. books, magazines and newspapers) and electronic communications (e.g. radio and the Internet), provide up-to-date information. Through these media, students can learn to connect what they see or hear to their prior knowledge, life and learning experiences, and thus deepen their learning in that topic. While students acquire knowledge, teachers should encourage them to adopt an objective attitude in interpreting figures and events and to differentiate facts from opinions.

Students can use different approaches (e.g., writing down their opinions after reading news, recording experimental results and using mind maps to organise learning contents) to demonstrate their learning outcomes. These approaches can help sustain learning interests and facilitate self-directed learning. During writing, students need to go through the processes of selecting, analysing and generalising information before they can present their ideas clearly in the form of a written text. These practices can foster students' thinking and communication skills.

Example 1

Theme: Personal Hygiene

KS1

To tie in with the unit “Health and I”, teachers of different subjects can jointly design reading materials that are relevant to the theme in conducting reading across the curriculum.

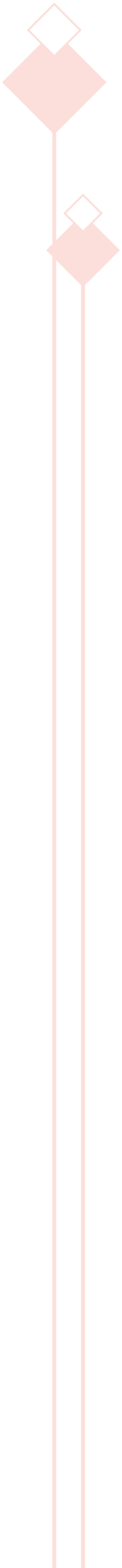
- **GS:** Through browsing webpages, watching videos, reading brochures and posters, students can learn about the appropriate methods of washing hands and using masks in order to develop a habit of maintaining personal hygiene. Examples of reading materials: Educational Television Programme - “Be Clean, Children”; Department of Health - posters of “5 Steps for Proper Handwashing” and “Maintain Cough Manners”, videos of “Correct Handwashing Method” and “Wearing Masks”, and adapted contents of the Department of Health webpage.
- **Language Subjects:** Teachers can provide guidance for students in reading relevant picture books and storybooks and encourage students to use different reading strategies, including reading aloud, making use of illustrations to infer the meanings of texts and sorting the contents, in order to connect the learning contents with their personal habits so as to cultivate positive values and attitudes.

Examples of reading materials: Children’s stories or picture books, articles of “World Handwashing Day”

- **Music:** By singing “Handwashing Song” and incorporating matching movements, students can learn about the steps in washing hands.

Example 2**Theme: History of Hong Kong Housing****KS2**

Teaching Process	Learning Activities	Assignments
Pre-lesson Preparation	Arousing learning interest Students collect information of public housing in Hong Kong in different decades in groups.	Making good use of broadcasting media to broaden the scope of knowledge • Reading and watching videos • Collecting information
Lesson Activities	Emphasising collaborative learning • Students share their pre-lesson preparation outcomes and finish the assignments. • Group discussions: 1. The characteristics of public housing and people's life in different decades: - the resettlement blocks in 1950s and 1960s (Individual flats without built-in kitchens and washrooms but close neighborhood.) - 1970s and 1980s – new types of housing estates (Individual flats with built-in kitchens and washrooms, shops and transportation facilities.) 2. Sharing of life attitudes worth our appreciation (e.g. flexibility and self-reliance)	Sharing learning outcomes and co-constructing knowledge Assignments: • Compare and contrast the characteristics of public housing and people's life in different decades using a table • Watch videos • Oral presentations



Teaching Process	Learning Activities	Assignments
Extended Activities	Towards self-learning • Site visit: A visit to Hong Kong's first generation resettlement blocks - Mei Ho House in Shek Kip Mei • Reading: Stories related to living in public housing	Apply and consolidate reading skills and strategies developed in language classes • Record key points of the visit • Write comments after the visit

4.3.2 News Discussion and Data Analysis

Developing a habit of reading newspapers in the early ages can raise students' concern towards societal issues and help them understand their responsibilities as a citizen. In GS, news selected for discussion should support the learning of related core elements. When selecting news articles, teachers should pay attention to the following:

- Is the news article selected suitable for students' learning levels and abilities?
- What are the implications? Is there any impact on students' psychological development? (e.g., Should avoid articles that contain horrific or disturbing illustrations)
- Is the news article biased? Is it discursive? Is it reported objectively?

Teachers could allow students to understand and discuss events from different sources and multiple perspectives. During the process of news discussion, teachers could guide students to make associations and apply related knowledge to understand the causes, development and impact of an issue or incident. Students can suggest possible solutions. By means of role play, students may be guided to understand and analyse the issue with different viewpoints, such as government officials, institutional members, residents, family members and friends, so as to develop critical thinking skills.

Examples:

- The News on ‘Drug-driving’ can help students understand the adverse impact of the drug addiction on individuals and society. Teachers can guide students to search the webpages of relevant government departments or organisations for a better understanding of their work and civic responsibilities of individuals.
- News on “Internet addiction among youngsters” can enable students to better understand the influence of Internet addiction on physical, psychological and social developments.

Example 1

Theme: Infectious Diseases

KS2

The Spread of Influenza

The Secretary for Food and Health announced that there are still six missing hotel guests, urging them to contact Department of Health as soon as possible for medical checks. According to the records of Immigration Department, it is believed that they have not left Hong Kong. If they return to the hotel to get back their luggage after the quarantine period, they will be asked to go through medical checks at once. They will not be put in quarantine unless symptoms of flu or fever are found. However, if they have not gone through medical checks, the Government will not allow them to depart from Hong Kong.

(From: Press Releases, 6th May, 2009)

Questions for Group Discussions:

- Why did Department of Health urge the missing hotel guests to contact them as soon as possible?
- If you were one of the missing hotel guests, would you contact the Department of Health? Why?
- If you suffered from the human swine flu and the doctor told you to (1) wear masks, (2) keep your hands clean and (3) wrap nasal and mouth discharges with tissue papers and (4) take sick leave to prevent the spread of infection, would you follow his/her advice completely? Why?
- Which of the above methods is the most effective in preventing the spread of infection? Why?

Societal changes are rapid; many discussion forums can be found on various media, which people can comment on and discuss current news, and express opinions and feelings. However, the credibility of some information is questionable. Therefore, when guiding students to learn from the media, teachers should bear in mind the following principles:

- Respect intellectual property rights
- Guide students to discriminate between facts and opinions so that they can understand the contents of the news reports objectively
- Help students differentiate different types of information

Example 2

Theme: Media Education

KS2

GS can collaborate with Chinese Language in organising learning activities related to Media Education for P.5 students. Teachers can set topics or choose an issue. Students can then form groups, collect news related to the topic or issue from newspapers, which shows different standpoints, and compare and discuss their reliability. In this way students' information literacy can be cultivated. Teachers can prepare newspaper cuttings to guide students in discussion. Then, teachers can encourage students to choose different news articles for comparison so as to develop their critical thinking skills.

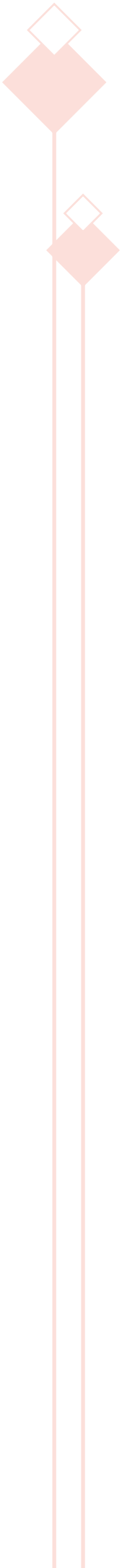
Example 3

Theme: Wise Choices

KS2

Learning foci	Class activities
Understand common advertising techniques/elements	1. Teachers guide students to consider the relationship between “theory” and “diseases and health” suggested by the advertisement of a health food product. Students make comparison based on the information, data from the advertisement and information they collect to determine whether the ad has exaggerated and whether the health food product is effective or not. 2. Students compare the contents of two similar advertisements, identify their advertising strategies, analyse and consider the purposes, and distinguish the features of these strategies.

Learning foci	Class activities
Discuss the messages conveyed by advertisements	1. Students question the biased messages based on the information and evidence collected. 2. Discuss criteria for an ideal advertisement from different perspectives (e.g., buyers, sellers) with explanation. 3. Teachers guide students to review the learning objectives so as to determine the reliability of advertisements' contents.
Analyse other advertisements	1. Teachers play some government promotional videos and commercial advertisements, and analyse their advertising strategies with students. 2. Students discuss the proper attitude when receiving messages in media. 3. Teachers encourage students to collect information of similar advertisements of other products, and use the knowledge acquired to categorise and make comments as extended learning activities.



4.4 e-Learning

e-Learning brings about a paradigm shift in school education. The teaching mode is changed from ‘textbook-oriented’ and ‘teacher-centered’ to ‘student-oriented’, which is more flexible and open. Therefore, teachers and students should make good use of e-learning tools and resources to explore new contents, concepts, information and ideas. Teachers should provide students with the opportunities to use e-learning tools to demonstrate and construct knowledge, as well as communicate with professionals and peers worldwide.

Schools should devise learning plans for e-learning, set clear objectives and incorporate e-learning elements into the school-based curriculum. Teachers can further improve teaching and provide students with the opportunities to participate in learning actively, which is no longer restricted by time or boundaries.

4.4.1 Facilitating Collaborative Learning with e-Learning

e-Learning does not replace traditional modes of learning. Rather, they should complement each other. The key to success lies in making good use of the electronic resources in different learning environments to enhance learning and teaching effectiveness.

GS teachers can present ideas and knowledge with the use of e-learning and integrate learning into everyday life so as to enrich the learning and teaching contents.

Examples:

- Teachers could make good use of real models and assignments in learning activities. Multimedia (such as animations, videos, ETV) can be also used to explain abstract concepts.
- Teachers could build an online platform on the intranet for students to discuss, comment on and share their opinions of the GS topics after school.
- Teachers could use IT to help students to find, organise, evaluate and present information in project learning. Students can use different IT tools to present and deal with the first-hand and second-hand information effectively. The information platform also allows the sharing of opinions and information among students and teachers.

Examples:

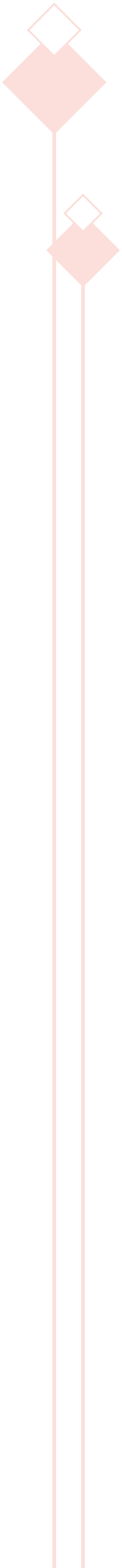
- Students find information of “cemetery” (such as, Terra-cotta Warriors in Xian, Pyramids in Egypt) on the Internet. They classify and compare the information in terms of generation, character, location and the type of funerary objects.
- Students conduct questionnaire surveys on “Eating Habits”, and analyse the data collected and present the results using electronic spreadsheets.
- School should make good use of community resources. Through cooperating with schools and universities, students and teachers can exchange views and information at different stages of project learning on an e-platform. Also, they make suggestions on the process and results.

4.4.2 Effective Use of Multimedia for Learning and Teaching

“Flipped Classroom” is one of the strategies for motivating learning by making good use of multimedia. “Flipped Classroom” attaches importance to student-centered learning. The teaching strategy is changed from the traditional one (Teachers teach in lessons and students complete homework after lessons) to a mode in which students prepare for lessons before class and understand more deeply in class. Teachers can make use of lesson time more effectively and create more meaningful learning opportunities, encouraging interactive learning among students.

A “Flipped Classroom” can be categorised into computer-based learning outside classroom and interactive learning activities in class. For instance, students learn some factual knowledge on their own before class, through school-based e-platforms or accessing websites suggested by their teachers. Then, teachers respond to students’ questions to deepen their understanding or rectify misconceptions. Teachers could foster discussion among students and peer learning by raising questions of different levels. Also, teachers could provide diversified learning activities (e.g., role plays, case studies and practical activities) to deepen students’ understanding and apply what they have learnt.

e-Learning complements “Flipped Classroom”. Students acquire knowledge and collect information through diversified electronic media (e.g., apps, videos), enhancing their learning interest. It can also cater for learner diversity. For example, when learners are preparing for lesson activities, they can watch videos at their own pace till they have a good grasp of the learning contents.



Example

Theme: The Stories of Walled Villages

KS2

Learning outside Classroom (1)

Preparation before Class:

- Students watch videos on the online platform to gain a basic understanding of the features of walled villages in Hong Kong and answer related questions.

Factual knowledge: The background of walled villagers, their reasons for settling in Hong Kong and the customs of walled villages.

- Teachers can assess students' initial understanding on the topic by inferring from the data collected by the online platform.

Interactive Learning in the Classroom:

- Teachers can guide students to engage in in-depth learning according to the factual knowledge acquired by the majority of students.

e.g. If you were the village head, where would you settle down with your villagers in Hong Kong? Why?

In groups, students collectively design the criteria for suitable living locations through reading relief maps of Hong Kong and discussions. They can further discuss with their peers and draw facilities that can protect the villagers and their properties.

- Teachers adjust teaching strategies to enhance students' learning according to the learning difficulties of students.

e.g. When students' understanding of the architectural features of walled villages is still limited, teachers can make use of the story "Luban and tenon" to arouse students' interests. Through activities of combining the "tenon" or "lock of Luban", students can gain basic understanding of the features of Chinese architecture.

Learning outside the Classroom (2)

Post-class Learning Activities:

- Students consolidate what they have learnt, including reviewing the online videos and resources used before class.
- According to their interests, students discuss with their peers and share comments on the relationship between the conservation of walled villages and city development on learning platform.
- Students read more stories related to customs in walled villages (e.g. lantern lighting, Poon Choi and Da Jiu)

4.5 Life-wide Learning

Life-wide learning provides students with the opportunities to learn in authentic contexts. Schools can organise diversified life-wide learning activities such as field trips, museum learning, service learning and cross-border exchange programmes to deepen students' learning as well as develop in them positive values and attitudes, through observations, experiential learning, sharing and reflection.

4.5.1 Service Learning

Cross-curricular service learning activities can be organised for students to integrate and apply knowledge and skills learned from different KLAs, serving the community and people in need.

Example

Theme: Caring for Others

KS2

Collaboration between the GS team and the IT team in Promoting Service Learning

The school, when planning its service learning programme, strategically invited P.5 students to apply what they had learned in Computer lessons. Students were asked to design and create learning games for junior students from a special school, using the coding software “Scratch”.

First, a visit was arranged for students to meet the target groups to understand their special educational needs (e.g., visual impairment and poor eye- hand coordination). Each group of students then engaged in game design to meet the needs of the target groups (e.g., adding sound effects or enlarging the words when the answer is clicked).

Finally, each group introduced their game to the target groups. During the process of learning, students were fully engaged in their work, able to solve problems collaboratively and cared for the target groups they served. Most students found the activity meaningful because they were able to apply what they had learned to help the needy.

4.5.2 Museum Learning

Museums are community resources. They include the following places:

- Natural Environment: Geoparks, wildlife parks, education paths, etc.
- Monuments and Historic Buildings: Former residences of famous people, compounds, archeological sites, heritage trails, etc.
- Science and Technology Centres: Science Park, Space Museum, Science Museum, etc.
- Exhibition Areas of both Public and Private Organisations: Drink factories, food factories, housing exhibition centres, and non-profit-making theme parks, etc.

By appropriately adding “Museum learning” to the school curriculum, schools can deploy teaching time effectively and enrich students’ learning experiences. If necessary, schools can also cooperate with the tour guides of museums and discuss with them the learning objectives and strategies, in order to cater for students’ needs and offer more meaningful learning trips to students.

Example

Theme: Maritime Silk Road and Belt and Road Initiative

KS2

For the GS learning themes “Chinese and western cultural exchange” and “Development of the economy of China”, the school makes use of the pamphlet “Unlocking the mystery of Maritime Silk Road” designed by the EDB and a special exhibition “Across the Oceans” in the museum, and arrange a learning visit for students. During the visit, teachers make good use of different displays and interactive learning games, explaining the contents in a fun and simple way. Students can also explore more deeply according to their interests.

4.5.3 Cross-boundary Learning

In order to widen students’ horizons and allow them to understand Chinese history and culture, schools can arrange exchange tours to various cities. In cross-boundary learning activities, project learning is used as a learning strategy to help students conduct investigations in a systematic and focused manner. Besides, students can recognise and understand the development of different cities through first-hand experiences.

Arrangement:

1. Before departure, students can read related information on the destination from the Internet and books. In collecting second-hand information, they can find out the things that they are interested in and set enquiry questions.
2. During the exchange, students can collect first-hand information through site visits and interviews. After returning to Hong Kong, they can select and organise the information and engage in learning based on the proposed inquiry questions. They can adopt a suitable concept map for analysing the information, inferring reasons and impact, explaining results, drawing conclusions and making suggestions.
3. Students acquire multi-perspective thinking and critical thinking skills. Lastly, they report the learning outcomes of the group study.

4.6 Assignments

Assignments can be classwork or homework, and include both preparation work and extended learning. Effective assignments should help students to construct knowledge, develop deeper understanding of connect the concepts learned, and provide them with the opportunities to prepare, apply, consolidate, show and generalise what they have learned, so as to increase their learning interests and foster self-directed learning.

Assignments should be well designed to help students consolidate classroom learning and demonstrate their abilities. Doing assignments is regarded as an effective learning activity if it is pleasurable and rewarding for students.

In order to design meaningful assignments, the following should be taken into account:

- **Diversity:** Different types of assignments can be designed to motivate students to learn. Interesting and challenging tasks can be designed for students to enhance their self-directed learning and develop their creativity. Teachers can also encourage students to present their learning outcomes in different forms (e.g., dramas, posters and videos), motivating them to complete an assignment. Exercises which focus on mechanical drilling, repeated copying and rote memory should be avoided, as these cannot achieve the GS curriculum goals.
- **Relevance to daily life:** In designing assignments, contexts and themes which are familiar to students should be adopted so that classroom learning is linked to students' daily life. For example, for the topic "My family" in KS1, students can be invited to give oral presentations based on the findings from interviewing their own families regarding their preferences and eating habits. For the topic "Healthy eating" in KS2, teacher can organise a discussion "Should the school's tuck shop sell fish balls?" for students, and ask them to collect and analyse relevant information, and draw conclusions.
- **Level appropriateness:** Teachers should consider the needs, interests, levels and abilities of students while designing assignments. For example, junior level students may use drawings or simple diagrams and oral presentations to express themselves in learning topics such as "Emotions" and "Use of leisure time". For the topics "Energy" and "Simple machines" in KS2, senior level students may apply what they have learned by making models or creating computer games, demonstrating their creativity and problem solving skills.

- **Support measures:** Students are encouraged to make effective use of different learning resources (e.g., community resources, the Internet, e-learning platforms) to complete the learning tasks in an enjoyable way. Teachers also need to remind students of the ethical use of information and the importance of intellectual property right. Students should distinguish between facts and opinions, and complete their assignments using appropriate materials.
- **Sufficient time:** Teachers should allow students sufficient time to complete assignments that take longer to complete (e.g., projects, making models). They should encourage students to plan their pace of work effectively, go deeply into topics that interest them, and integrate different types of information, ideas and opinions and as a result, deepening their learning.
- **Concrete feedback:** More important than marks or grades in many ways, concrete and constructive feedback from teachers help students understand their strengths and learning difficulties and enhance their learning. Students' efforts in learning should be frequently recognised in order to increase their motivation and build their confidence.

Assignments can be assessment tools. Effective assignments can evaluate the knowledge and skills acquired by students, as well as their attitudes and values. They help students understand their learning progress and identify areas for improvement. (Please refer to Ch 5.7.4 for more information.)



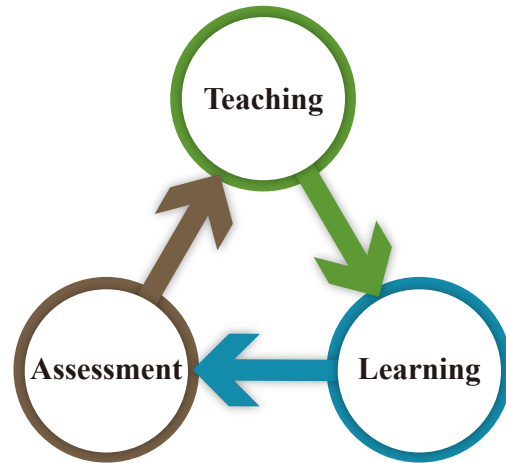


Chapter 5

Assessment

Assessment

Assessment is the practice of collecting evidence of various aspects of student learning (including learning processes and learning outcomes); interpreting the data, and determining students' performance to provide feedback to students, teachers, parents and other stakeholders. Assessments are fundamental to improve learning and teaching. Therefore, they are an integral and inseparable part of the learning-teaching-assessment cycle.



5.1 Aims of Assessment

For teachers:

- To identify the strengths and weaknesses of students in learning GS
- To provide quality feedback and concrete suggestions for students on how to improve their learning
- To evaluate the effectiveness of the implementation of the GS curriculum and improve the quality of learning and teaching
- To review and adjust the learning objectives and expectations on students, curriculum design and contents, teaching strategies and activities so that they can better meet the needs and abilities of students and enhance the effectiveness of learning and teaching

For students:

- To understand the learning targets of GS , as well as their learning progress
- To understand their strengths and weaknesses in learning
- To identify their learning needs and ways to improve learning so that they can eventually become self-directed learners

5.2 Modes of Assessment

In line with the purposes of assessment, there are three assessment modes.

Assessment of Learning	Assessment for evaluating the quality of education or understanding students' standards.
Assessment for Learning	Assessment for helping students to understand their strengths and weaknesses in learning and to make continuous improvement. This also enables teachers to review and adjust their teaching objectives, teaching plans and teaching strategies to facilitate learning.
Assessment as Learning	Assessment for enabling students to be more active in connecting learning and assessment, thereby developing their self-directed learning abilities.

5.2.1 Assessment of Learning

To understand students' learning performance, schools usually use tests and examinations as summative assessment at the end of a teaching module or a semester. These assessment results, apart from being used to examine whether students have achieved certain pre-defined academic standards and to understand their learning difficulties, can also be used as feedback for the school's curriculum development. Teachers should make constant reference to the learning objectives of the GS curriculum framework to ensure that not only students' knowledge and understanding, but also their skills, values and attitudes are included in the assessments.

Schools should avoid over-relying on written tests/ examinations as they cannot be comprehensive assessments of student performance in learning.

Regarding the use of daily marks, please refer to “Internal Assessment Guide for Schools” (Chinese version only).

Website: http://cd1.edb.hkedcity.net/cd/gs/Guideline_for_School_Internal_Assessment.pdf

Reflection: Do the GS teachers

1. rely totally on written examinations to assess students' learning performance?
2. use this type of examination to find out students' learning strengths and difficulties?
3. use the assessment data as feedback for school-based curriculum development?
4. collect and analyse the assessment data to understand students' learning progress and provide feedback for enhancing learning?
5. adopt other assessment modes? need diversified assessment modes?

5.2.2 Assessment for Learning

Learning is a continuous process. Therefore, assessment should not only focus on learning outcomes, but also student performance during the processes of learning. Through meaningful learning and assessment activities in regular classroom teaching, teachers know whether students can achieve the learning targets, thus understanding their learning difficulties. They can adjust their teaching strategies based on the learning abilities of students and help students construct knowledge, cultivate attitudes and develop generic skills by making reference to students' learning abilities. The 'assessment for learning' activities can be carried out through diversified modes including observation, questioning and learning tasks in everyday learning.

- Teachers should take the prior knowledge and previous learning experiences of students into consideration when devising contents of the assessment tasks so that previously learned ideas are integrated with the new one to form a structured understanding.
- Teachers should give positive and constructive feedback according to student performance so as to strengthen their learning. Quality feedback can provide concrete information for students to clearly identify their strengths and weaknesses. Timely feedback helps students understand their learning progress and make improvement. Feedback is much more significant than mere marks in developing students' learning potential.

Reflection: Do GS teachers

1. adopt relevant assessment modes (design of tasks and activities; questioning and observations) that best review students' performance in particular learning contexts?
2. focus on students' learning progress (i.e. how they learn)?
3. devise assessment activities that involve knowledge acquisition (which include both application and transfer), attitudes cultivation and skills development during the learning processes?
4. provide students with opportunities for self-directed learning (including self-reflection, peer learning and response to teacher's feedback)?

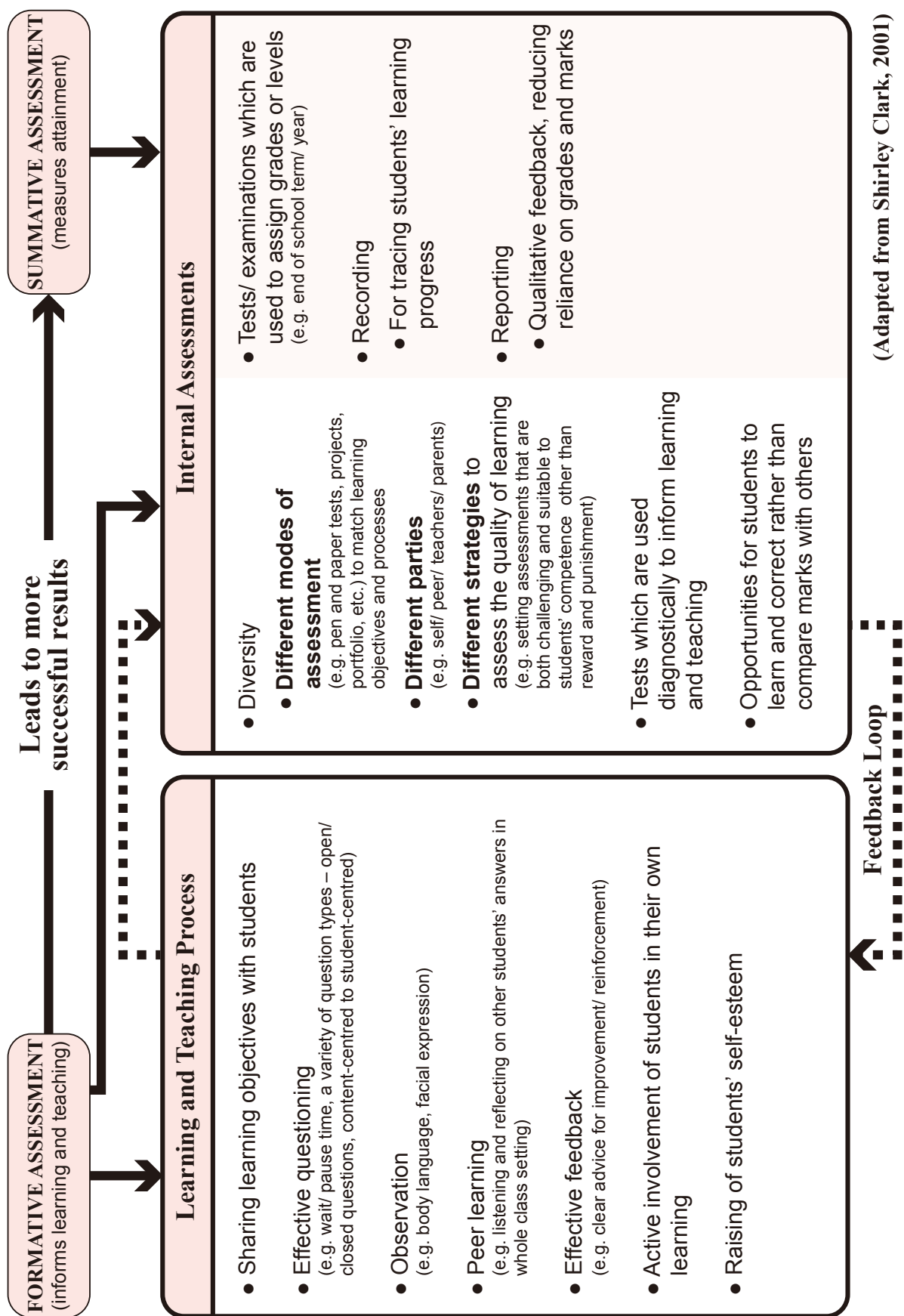
Different from summative assessment, formative assessment can provide high quality feedback on learning effectiveness, thus helping students strive for improvement. Both formative assessment and summative assessments should be used progressively to compile a comprehensive profile of each student's learning. The relationship between formative assessment and summative assessment in GS is illustrated in the figure, 'A Framework of Assessment Practices for General Studies'.

Over the past decade, schools have attached importance to both summative and formative assessments in formulating their assessment policies and measures. Both assessment modes should complement each other in evaluating students' performance. At the same time, schools have adopted diversified modes of assessment, and emphasised more on feedback to students from various stakeholders (e.g. students' self-assessment and parents' involvement in the assessment process). Some schools have reviewed and analysed assessment data for subsequent curriculum development.

5.2.3 Assessment as Learning

With the advancement of Formative Assessment in schools, teachers can further assist students to become self-assessors and provide their own feedback to their self-directed learning. Self-assessment becomes part of learning if students can reflect on their progress when engaging themselves either in self-studies or interactive peer learning. More meaningful learning could be resulted if students become more capable of self-monitoring and seeking feedback for adjustment of their own learning methods, and reflect on their learning strengths and difficulties.

Figure: A FRAMEWORK OF ASSESSMENT PRACTICES FOR GENERAL STUDIES



5.3 Summative Assessment

Summative assessment, usually in the form of tests and examinations, are often carried out at the end of a learning module, a semester or a year. This form of assessment cannot provide timely feedback for immediate improvement but it allows students to know what standards they have attained, what they have learned within a certain period and whether they can apply what they learned.

5.3.1 Planning of Summative Assessment

When setting test or examination papers, teachers should consider the following:

- Set a desirable number and suitable proportion of questions for each assessment area. Any inclination towards a specific area should be avoided.
- For selected item contents, make reference to students' prior knowledge and previous learning experiences. The level of difficulty should meet the standards of students. Questions should be arranged in an easy-to-difficult sequence in order to build up students' confidence in answering questions.
- Use diversified types of assessment, such as filling in blank questions, multiple choice questions, short questions, case analysis, matching and sorting, assessing students' learning appropriately.
- Test items should be designed to assess students' understanding on concepts and problem-solving skills. Teachers should avoid setting items that assume rote memorization.
- Open-ended questions should not have a model answer or single solution so as to provoke students' thinking and creativity.

5.3.2 Questions Related to Current Issues

Items on current news aim at assessing students' awareness and understanding of the surroundings, and their analytical skills. The questions should not rely on rote memory to avoid students from reciting large amount of scattered and unrelated current information.

Reflection:

Can the questions below help cultivate students' thinking and analytical skills?

1. Which writer has won the Nobel Prize in Literature this year?
2. Which TV operators failed to obtain TV license?
3. Who is the present Executive Council Convenor?

Teachers can provide the news in their assessment items so that students can answer the questions with their prior knowledge.

Example: Social Media**KS2**

A student invited friends to her birthday party via a website of social media, but she forgot to set the 'invitation' as a 'private activity'. As a result, thousands of responses flooded in. On her birthday, about 200 people gathered to participate in. The family escaped from their home and called the police for assistance. At last, these 'unknown friends' who had come to celebrate the student's birthday were dispersed.

Questions: (Accept any reasonable answers)

- How did the student invite friends to her birthday party?
- What are the advantages of using this type of invitation?
- Why do the parents of the student call the police for help?
- If you hold a birthday party, will you set it as a 'private activity'? Why?
- What is the impact of misusing social media?

Reflection:

1. Is news analysis in GS a reading comprehension?
2. Is the content of the news relevant to the themes/ modules taught?
3. Should the knowledge learnt serve as the basis for analysing the news?
For example, have the students learnt the functions of social media?
4. The focus of the questions should not be the news content, but the assessment of students' capacity to apply what they have learnt in their analysis.

Teachers could provide information related to the topics in the examination papers and design open-ended questions so that students can apply knowledge and skills (e.g. critical thinking skills, creativity and problem-solving skills) to analyse questions as well as expressing their opinions on the issues.

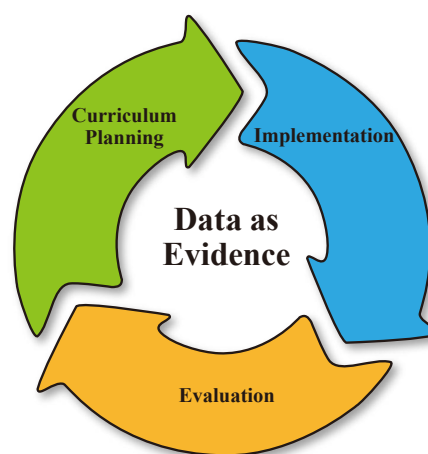
When marking test or examination papers, teachers should:

- be flexible and positive. In some cases, students may give unexpected answers that are different from teachers' answers. Teachers should accept answers that are reasonable and logically presented. Positive feedback should also be provided to provoke students' thinking and creativity.
- gather students' common mistakes and discuss their performance with teachers of the same learning levels so as to find out their learning difficulties. The analysis can help teachers improve student learning and assessment tasks.

5.3.3 Using Summative Assessment to Provide Feedback on Classroom Teaching

Summative assessment can help teachers

- understand students' learning progress and difficulties;
- improve teaching and modify lesson design;
- provide more feedback for students to improve their learning.



5.4 Formative Assessment

Assessments should be integrated with regular learning and teaching activities to allow students to understand their learning performance.

1. Teachers can use questions at different levels to encourage students to answer, express their opinions and make suggestions in lessons. Through interaction, teachers can understand students' learning progress and performance. Students can also reinforce their learning from teachers' feedback.
2. With project learning, teachers can encourage students to review and assess their own performance during discussion, which foster learning.

Example: Using e-learning platform to assess students' learning progress **KS2**

Teachers prepare pre-lesson learning materials by searching relevant video clips, doing editing, as well as adding remarks and suggested questions in the video clips for students to watch the videos and respond on the e-platform. They can master the lesson contents and key concepts prior to the lesson. Teachers can immediately understand students' performance from the data (e.g., through the percentage of correct answers and frequency of students' watching videos) collected via the e-platform. The statistics can help teachers understand individual students' mastery of the topic and concepts, and their learning difficulties for devising suitable class activities (e.g. group work and individual tutoring) to cater for learner diversity.

5.4.1 Inquiry and Assessment Activities in STEM Education

In line with the learning targets of STEM education, teachers should adopt different assessment strategies, such as project learning, science experiments, design-and-make activities to understand the learning progress and outcomes of students.

Besides traditional written reports, students are encouraged to display their learning outcomes in alternative ways. They can demonstrate science concepts learned through devising games by coding or by making models as learning products.

Through interactions, teachers use questions of different levels to understand whether students have acquired the science knowledge. During the activities, teachers understand students' performance in mastering the science process skills so as to enhance learning by observation and feedback. Students learn

to face challenges and complete tasks with persistence through the process of trying and improving. These learning experiences can help teachers to assess students' performance in STEM activities continuously, including cultivation of innovation and exploration, which is a focus in the assessment process.

During the learning process, students can understand whether they can solve the problems by collaboration and application of knowledge and skills, through peer collaboration and self-evaluation. As a result, they can understand their own strengths and weaknesses in learning, as well as build confidence and sustain their interest in learning.

Teachers can decide the learning targets and the assessments criteria, and design exploring activities and assessments which suit the abilities of students. Teachers must be cautious about safety while designing activities. They should take appropriate safety measures to avoid accidents. Teachers should refer to the Safety Handbook for General Studies for Primary Schools.

Website: http://www.edb.gov.hk/en/gc_safetyguide

Example:

Testing soundproofing materials and making noise barriers

KS2

Learning and Teaching Process	Modes of Assessment
Effective questioning: Teachers make use of questions of different levels to provoke students' thinking, and assess their understanding of related knowledge.	Assessment for learning: Teachers use questioning techniques to assess students' prior knowledge, learning experiences and progress.
Peer collaboration / Active learning: - Students conduct soundproofing tests to distinguish the features of different materials that affect their effectiveness in sound-proofing. - Taking into account the test results and references of making noise barriers, students start sketching drafts of their noise barriers through peer discussions.	Assessment for learning: Observations on students: - Application of science process skills: Predicting, observing, recording and communicating - Application of collaborative problem-solving skills.

Learning and Teaching Process	Modes of Assessment
Effective feedback: During the learning process, teachers provide feedback on students' designs. Students work collaboratively to improve their designs.	Assessment for learning: Feedback from teachers can enhance learning motivation.
Peer collaboration / Active learning: - Students make noise barriers in groups. They carry out two tests on the products made. - Through peer interactions, students deduced problems from the test results and teachers' feedback and start improving their designs. - Finally, teachers use a decibel meter to test the effectiveness of the modified noise barriers.	Assessment for learning: Observation on students - Application of science process skills: Predicting, observing, recording and communicating. - Application of collaborative problem-solving skills. Assessment as learning: - Self-evaluation
Self-assessment and peer assessment Students review their making process and share the difficulties they have faced.	Assessment as learning: - Self-evaluation - Peer assessment

5.4.2 Assessment of Project Learning

Students can apply what they have learned, and employ various skills in their thinking process to identify problems, formulate hypotheses, select and employ different methods and evaluation. Teachers can assess students' performance in various learning aspects timely. When assessing students' performance in project learning, teachers should take the following points into consideration:

- Areas of assessment should cover the learning processes and learning outcomes, including knowledge, progress, attitudes, generic skills and project report.
- Assessment should take into account students' actual learning performance, for example, their performance on field trips, when conducting interviews and searching information in libraries or on the Internet.

- Starting from the preparatory stage, teachers should progressively provide students with suggestions and comments as feedback, helping them improve and amend their enquiry plans. Mere marks or grades cannot facilitate learning and sustain students' learning interest.
- Teachers, students and parents can participate at different stages in the assessment of a project. Their timely and concrete feedback could be provided to students in every learning stage of project learning.
- Schools can give opportunities for students to report and share with others their learning outcomes. The uploading of students' projects to the intranet of school enables sharing of learning outcomes with more students.

Many schools are currently developing their school-based project learning framework to develop students' generic skills and interest in enquiry progressively from KS1 onwards. Teachers can improve their frameworks according to the data collected and education development, so that students can develop integrated generic skills in different inquiring experiences.

5.4.3 Assessment of Self-management Skills

Schools can design diversified school-based activities at different learning stages so that students can gradually develop self-management habits (e.g. time management and financial management). As primary students grow up, they are more likely to persevere in coping with challenges when encouraged by seniors or peers. They can also develop confidence and set learning targets for themselves, build a habit of reflection and keep making improvements.

Example:

1. Schools can strengthen classroom routine by carrying out subject-based award schemes. Junior students can record the frequency of some behaviour regarding personal hygiene so as to improve their self-management skills.

Checking Your Habits

KS1

(A) Do you have these good habits? Enter the dates and put a '✓' next to items that 'you can do'.

Good Habits	Dates						
1. Use tissue to cover your nose and mouth when you sneeze or cough.							
2. Put the used-tissue into a litter bin with lid and wash hands at once.							
3. Avoid touching your eyes, ears, mouth and nose with your hands.							
4. Wash hands before eating and after going to toilet.							
5. Wash hands at once upon arriving home.							
6. Wash hands correctly.							
7. Avoid using sharing food utensils.							
8. Avoid using shared towels.							

(B) Read your checklist and write down your feelings.

Appreciation Index: ☆☆☆☆☆
Good habits I have : _____
Things I need to improve on : _____

- Teachers design a worksheet or diary for students to record their activities in a week or semester. Students are required to keep record for a week and calculate the time spent on personal hygiene, homework, rest, play and physical exercises. They are encouraged to give their peers suggestions for improvement. This activity can help cultivate students' healthy lifestyle and develop their self-management skills (Please refer to Appendix 3).
- Teachers can adapt or develop assessment forms related to the learning themes in KS2, such as emotional management, resisting temptations

related to money, materialism or the Internet.

4. Students can invite parents to assess their performance on the evaluation forms and compare the results with those in self-evaluation. This exercise can help students understand themselves from different perspectives, thereby developing self-management skills and achieving improvements.

Example: Impact of Internet Addiction

KS2

Self-management Skills	Suggested Questions	Degree of impact (Insert '✓' in the right box)		
		Not Accurate	Accurate	Very Accurate
Emotional Control	1. When being interrupted /stopped while using the Internet, I /my child will exhibit intense emotions.			
	2. When the Internet is forbidden, I/my child become(s) agitated.			
	3. I/my child cannot help thinking about the Internet even when I/ she/he am/is offline.			
Self Control	4. I/my child take(s) every opportunity to use the Internet.			
	5. Under all circumstances, I/my child fail(s) to reduce time spent online.			
	6. Using the Internet makes me/my child lose interest in my/his/her studies.			
	7. Using the Internet makes me/my child perform poorly at studies (e.g. messy homework, poor performance).			

Self-management Skills	Suggested Questions	Degree of impact (Insert '✓' in the right box)		
		Not Accurate	Accurate	Very Accurate
Self Control	8. Using the Internet makes me/my child stay up late every night.			
	9. Using the Internet makes me/my child late for school always and doze off during lessons.			

5.4.4 Self-assessment

Formative assessment focuses on students' progress and performance in the learning process, with 'assessment for learning' and 'assessment as learning' as aims. It provides feedback for teachers to adjust and improve their teaching plans, and offer opportunities for students to reflect on their own learning. Through teachers' feedback, students can understand their learning strengths and overcome their weaknesses.

Example: GS formative assessment records for students

Every student in the school receives a 'Formative assessment record for GS' at the beginning of each school year. GS panel chairperson informs parents of the aims and modes of assessment. Parents are encouraged to participate in students' learning and help their children to reflect on their learning, so that the various forms of feedback can stimulate students' learning motivation.

The school encourages students to choose different self-learning strategies in self-directed learning. Students have to review the effectiveness of these strategies at the end of each semester.

After each learning module, students can use the assessment criteria to evaluate their own learning effectiveness in knowledge acquisition, and development of attitudes and skills. They record their views. Parents can also put down their comments after reading the assessment record to encourage their children to strive for excellence.

Students record their own participation in co-curricular activities (e.g. Science and Technology Day) and evaluate their own performance (e.g. “I shall complete each task wholeheartedly”, “I like seeking advice from others”).

What I have learned in Studies this school year:

I have used the following methods to learn

☐ writing notes	☐ writing key points	☐ pre-lesson work
☐ graphs	☐ association	☐ mind maps
☐ concept maps	☐ brainstorming	☐ resource tools
☐ Searching information		

5.5 Self-assessment and Self-directed Learning

In the self-directed learning process, students set their own targets actively. Through self-assessment and reflection, students evaluate their learning tasks, then adjust their learning targets and improve their learning strategies.

GS teachers can set learning targets of each learning theme with students. During the learning process, teachers act as facilitators who provide feedback and assist students in constructing knowledge and developing learning abilities. Collaboration among peers also encourages each group member to bear his/her own learning responsibilities.

5.5.1 Preparatory and Extended Learning

Prior to formal class teaching, students use various resources for self-learning and have a basic grasp of the topic. Students' responses usually show their learning interest and level of understanding. Teachers can also ask questions of different levels (e.g. comparison and application) to develop students' critical thinking skills. After-class extended activities also help students consolidate their learning and reflect on their learning progress.

Pre-lesson Preparation

Teacher selects an unfamiliar disease and asks students to find its meaning (e.g. What is avian influenza or Dengue?). This exercise can assess students' enquiry skills (e.g. selecting and analysing information). Students' responses can also reflect their understanding on the topics.

Class Learning

Teacher selects open-ended questions without fixed answers to help students understand concepts and develop skills progressively. He/ She designs interactive activities for students to work in groups and apply what they have learned. Teacher should also timely assess students' understanding and evaluate their values and attitudes.

Extended Learning

Teacher consolidates the learning by encouraging students to adopt various methods to compile and record what they have learned in class. When completing the learning tasks, students also reflect on their own learning difficulties and suggest possible solutions. Their ability to reflect becomes the foundation and motivation for students to engage in self-directed learning.

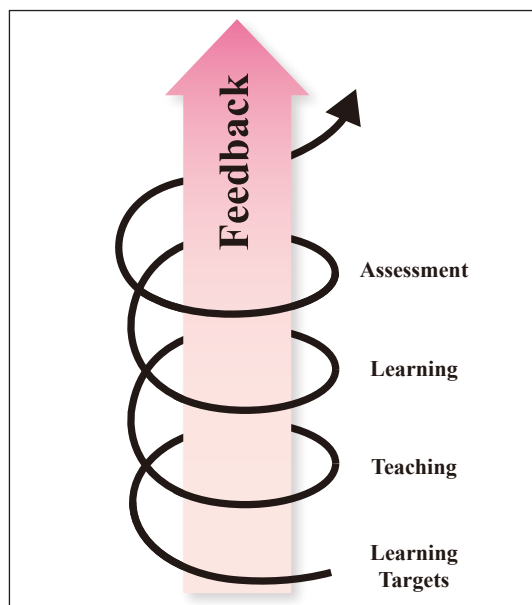
5.5.2 The Learning Portfolio

A learning portfolio is a way of documenting students' learning under a particular theme. The portfolio provides evidence of a student's learning process (e.g. that in project learning, scientific investigation or service learning) when enquiring into a selected theme. It showcases specifically students' performance and competence, including collecting and organising information, and understanding information collected from scientific investigation. It allows teachers to judge whether the learning processes require any remediation, consolidation or extension.

Students select the works to be incorporated in their learning portfolio. On their own initiative, students are able to further review their own learning strengths and weaknesses to make improvement. They use their learning portfolio to discuss their achievements and learning difficulties with their teachers, parents and peers.

5.6 The Importance of Feedback in Learning and Assessment Practices

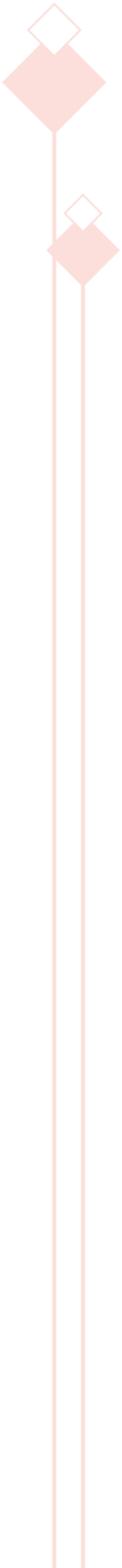
Feedback is an essential part of effective learning. It helps students understand the significance of the subject being studied and gives them clear guidance on how to improve their learning. Feedback is the recognition given by teachers to students regarding their learning efforts. It can be both formative and summative.



1. Formative feedback: The diagnostic information given by teachers to students. It is intended to help students revise and improve the outcome. Feedback can take place at any stage in the teaching, learning and assessment cycle.
2. Summative feedback: The possible grades after analysing the task. Good feedback at this stage helps students improve on their performance in similar tasks in future.

Teachers have to understand how to provide feedback that is most helpful in improving students' learning:

- Provide students with positive and constructive feedback.
- Timely feedback encourages students to learn.
- Feedback should offer suggestions for improvement that meet the students' levels and needs.
- Feedback is valuable if it can encourage students feel that "I can do this".
- Feedback should refer to skills or knowledge acquired to help students achieve the targets.
- Feedback should be interactive and concrete, allowing exchanges of ideas and flexibility towards meeting the learning needs of individual students.
- Good feedback rewards students' learning efforts and allows self-adjustment by students.



Feedback should be presented in languages and in ways that students can understand. It may be in oral or written form, offered to individuals, small groups or the whole class. Feedback can be given by teachers, peers or parents.

Types of feedback:

- **Self-assessment:** It is essential to allow students to practise assessing their own learning progress and weaknesses so as to adjust their learning plans and strategies.
- **Peer-assessment:** It helps students learn how to assess both their own and others' learning outcomes as a result of their efforts, and develop an appreciation for the contributions of others and acceptance of different opinions.
- **Assessment involving parents:** It helps students understand their learning performance from different perspectives. Parents' recognition and support can encourage students to work hard and improve parent-child relationship.
- **Teacher observation and feedback:** Teachers' encouragement and praises are their recognitions of students' learning efforts. In addition to marks, grades and written comments, specific and constructive oral feedback should be given to students to help them understand their strengths and weaknesses for improving learning effectiveness.

5.7 Schools' Assessment Policy

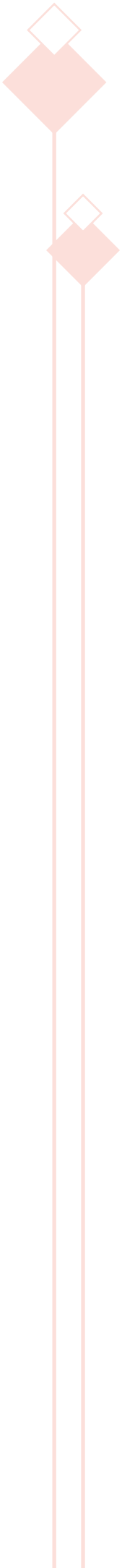
Schools can understand students' performance through tests and examinations set according to curriculum targets and contents. Evidence of learning related to students' knowledge, skills, values and attitudes can then be collected during the learning process or upon the completion of learning. Such evidence can be transformed into self-assessment for teachers to adjust their teaching and feedback for students to adjust their learning processes.

In the past ten years, the implementation of schools' assessment policies has changed from "using students' results for assessing learning outcomes" to "using feedback on students' performance for promoting learning effectiveness". When devising assessment policies, schools can strengthen the effectiveness of "assessment for learning" in order to facilitate learning and thereby developing "assessment as learning".

5.7.1 Planning and Co-ordinating Assessment Policies in GS

GS assessment policies should adhere to the following principles:

- Matching students' abilities and needs. Clear assessment targets should be formulated, with stated marking criteria as reference. Assessment areas should include knowledge, skills, values and attitudes.
- Diversified assessment methods including both formative and summative assessments should complement each other. School should not overly emphasise on written tests.
- School assessments in Primary 5 and 6 are counted in the Secondary School Places Allocation (SSPA) System. The weighting of GS daily mark in Primary 5 and 6 assessments can be as high as 20% of the total marks.
- Schools can develop their criteria for the "daily mark" according to the existing school culture and student characteristics.
- Based on the learning process, diversified and suitable assessment strategies should be devised for different teaching strategies, such as project learning, scientific investigation and data analysis, and clear assessment criteria should also be set.
- Assessments can be designed by multiple parties. Information obtained from assessments can be used to review and improve the curriculum and the quality of learning and teaching.
- Teachers should offer timely and concrete feedback to help students understand their strengths and weaknesses, as well as how to improve.
- Students' learning achievements should be recorded.



5.7.2 Assessment Literacy

Understanding and adopting effective assessment methods can help collect information about students' performance and show assessment results effectively, thereby helping modify the learning and teaching strategies and improving learning. Teachers should encourage students to actively engage in evaluating, recording and sharing so as to sustain their learning motivation and enhance learning effectiveness. Schools can make reference to the following principles in cultivating their teaching team's assessment literacy:

- Select and design appropriate assessment activities according to the nature of learning targets.
- Adopt different modes of assessment, marking and interpretation of students' learning evidence.
- Make use of data collected from assessments to provide feedback to individual students, improve teaching and learning strategies, develop the school-based curriculum and planning for the school development.
- Clearly explain students' performance to different stakeholders.
- Equip students with the necessary knowledge and skills for different types of assessment activities.
- Help students develop a positive attitude towards assessment activities so that they participate actively in the activities, and continuously develop their self-directed learning abilities.

5.7.3 Assessment Activities and Assignments

The goal of assessment is to support students' learning. School-based assessments should include assignments that can help achieve the teaching goals and meet students' needs. When deciding on assignments, teachers should take students' backgrounds, interests, abilities and the schools' resources into consideration.

- In class, learning activities designed by teachers can function both as learning tasks and assessments. Students not only have to grasp learning targets, concepts and knowledge that they have been encouraged to learn, but also need to cultivate related learning attitudes and skills. When teachers are well-versed with the assessment targets, they can derive the foci for observation and record. At the same time, teachers should make clear to students the assessment criteria for each assessment.

- Assignments should promote students' thinking skills and deepen their understanding of the specific topics. Teachers should also design group learning tasks to develop students' communication, organisation, and collaborative skills through co-operation. Students can use a range of learning resources such as libraries, other community resources, the Internet and e-learning platforms to complete assignments. These elements should be incorporated into the assessment criteria to evaluate students' abilities related to generic skills.
- Assignments can strengthen what students have learned in lessons and help students prepare for upcoming lessons. Assignments should be interesting, inspiring and creative. Taking into account learner diversity, different designs can be used for the same learning content. Meanwhile, assignments can be used to understand students' performance and constructive feedback can be offered to help them solve problems. For details, please refer to Education Bureau Circular No. 18/2015 "Guidelines on Homework and Tests in Schools – No Drilling, Effective Learning". It can be retrieved at: <http://applications.edb.gov.hk/circular/upload/EDBC/EDBC15018E.pdf>

Learning Targets	Gender roles in the family
Activities	1. Compare gender roles in families in the past and that in the present. 2. Students can use pictures, writing or other ways to express their ideas.
Lesson Arrangement	Prior knowledge: Students' family members Preparation before class: Students have to observe their family members' roles and duties and make a brief record. 1. Play a video: An elder shares his/her thoughts on the changes in gender roles in families. 2. Students work individually to note down on "post-it" notes the roles and duties mentioned by the elderly person during the video. 3. Students categorise all the information collected by sticking their notes on the categorisation form for discussion. 4. Invite students to rearrange the information, show and describe the changes in gender roles in families over time.
Assessment Areas	Knowledge: Changes of the social concepts; changes the role of family members Skills: Classify information and oral presentation
Learning Outcomes	In learning activities, students will perform self- assessment and receive feedback from teachers and other students. Assessment criteria include: 1. Using pictures to display gender roles in a family 2. Pointing out changes in gender roles in families over time 3. Abilities to present and report findings

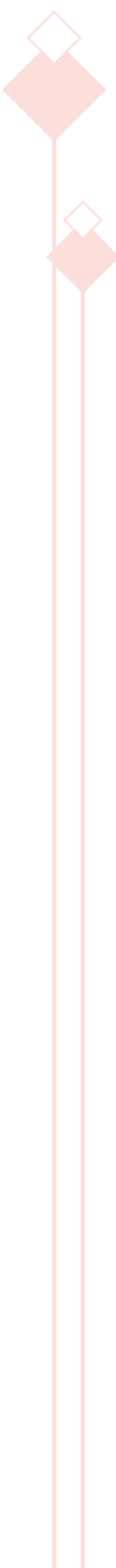
In May 2012, the EDB launched the ‘One-stop Portal (OSP) for Learning and Teaching Resources’ (<http://www.hkedcity.net/edbosp>), helping teachers select and compile teaching materials that suit their students’ needs. Assessment tasks in the OSP can assist teachers in designing class assessments for the GS subject (Please refer to Chapter 6.5.4).





Chapter 6

Learning and Teaching Resources



Learning and Teaching Resources

Learning and teaching resources can enhance students' learning experience. If teachers are able to select and use suitable learning and teaching resources, they can cater for learner diversity and help students construct knowledge, nurture positive values and develop generic skills, thereby helping students lay a strong foundation for life-long learning.

6.1 Resource Management in Schools

Over the last decade, GS teachers in schools have engaged in collaborative lesson planning for curriculum design, experience sharing, discussion on learning and teaching strategies and assessment modes. Building on these good practices, schools are encouraged to establish professional GS teaching teams. With the leadership of curriculum leaders and subject panel heads, schools can make good use of human resources and develop resource banks to promote school-based development of GS.

6.1.1 Human Resource Planning

1. Deploying teachers with different tertiary qualifications to form learning communities and contribute their expertise to related learning strands in GS, and share knowledge and experiences in school-based professional development programmes (Please refer to Chapter 3.3.2 for more information).
2. Encouraging GS teachers to collaborate in the preparation of learning and teaching resources, increasing their sense of ownership and sense of belonging in the subject.
3. Encouraging teachers to participate in professional trainings to help them acquire subject knowledge in different strands of GS and gain confidence in teaching GS.
4. GS teachers may collaborate with computer teachers in planning learning activities. Students may apply the computer knowledge and skills they have acquired in the learning of GS.

6.1.2 School-based Resources Bank Management

Managing and improving school-based resources is a major administrative task in schools. It can facilitate information sharing within the school and provide abundant learning and teaching resources for implementation of the school-based curriculum.

GS panels should pay attention to the following principles regarding managing school-based resources:

1. The planning, design and management of school-based resources could be standardised to facilitate teachers' retrieval and refinement of the information easily. GS Panel heads should monitor the quality of the resources in the resources bank as well as paying attention to copyrights and privacy matters. Use, upload and release of inappropriate information and resources should not be allowed.
2. Schools should regularly review the resources in the school-based resources bank. The resources should be categorised according to levels, themes and types to facilitate teachers' searching, enrichment and updating of the information. GS Panel heads could make good use of IT system of the school to facilitate the storage, sharing and retrieval of suitable learning and teaching resources. They can comment on the quality of resources, make suggestions on the use of the resources, and establish a sharing culture among teachers.
3. If practicable, schools can upload resources to the school webpage or intranet to allow sharing among teachers and students, and help students make good use of web-based learning platforms to expand their learning scope.

Example: Classification of GS resources

The school has classified GS resources into three categories: learning software, teaching kits and activity plans.

Learning software:

GS e-resources (e.g., learning software, video clips of experiments, and web links of related learning themes) are classified and uploaded onto the school intranet according to the class level. GS teachers add hyperlinks of learning themes to the scheme of work for reference and use.

Teaching kits:

The teaching kits of GS are categorised according to the class level and arranged orderly in the storeroom or GS room. There are trays for keeping teaching kits and related activity plans that are arranged according to the scheme of work, so that the teaching kits are easily accessible to teachers and ready for use in class.

Activity plans:

The learning and teaching activities in the lessons are compiled into a booklet of activity plans (including learning activities and related assignments). There are indices of 'Learning software' and 'Teaching kits' in the booklet for teachers' easy reference during lesson preparation.

6.2 Facilities and Equipment in Schools

6.2.1 GS Room

Schools with a GS Room should make good use of the facilities and equipment in the room to provide students with opportunities of hands-on and minds-on learning activities, in order to foster learning.

Example 1: Use of GS Room

Different types of teaching tools, such as human body models, globes, plant and animal specimens and water rocket are kept inside the GS Room for student learning. Students could make use of the facilities in GS room for scientific investigations and related learning activities in GS lessons. The GS room provides students with a good learning atmosphere, allowing them to conduct investigation and participate in problem-solving activities.

In order to keep abreast of the latest development of the GS curriculum, the items in “Furniture and Equipment List” have been categorised in “Categorisation of Furniture and Equipment for General Studies”. STEM education resources are also included for teachers’ easy reference when designing learning and teaching activities. Schools may purchase the resources according to their own needs. “Categorisation of Furniture and Equipment for General Studies” has been uploaded to the EDB website.

Example 2: Investigative activities

Every month, GS teachers of the school regularly conduct investigations for senior level students in the GS room in the afternoon. Through observation and participation in simple experiments, students’ interests in conducting scientific investigations can be aroused.

In fact, a majority of GS learning activities can be conducted in classrooms or in open spaces on school premises. Schools can refer to the “Safety Handbook for General Studies for Primary Schools” on how to manage and make good use of GS resources. Website: http://www.edb.gov.hk/en/gs_safetyguide

Example 3: Creating Learning Environment

Schools can make good use of multipurpose areas or open areas in the school to create learning environments (e.g., information corridor, science exploration corner, ecological environment exhibition zone). Interactive exhibition zone, with I.T. learning tools, can be set up to allow students to explore and learn on their own.

Display boards can be used to exhibit information related to health, STEM education, Chinese culture and other aspects. These can help enrich students' knowledge.

6.2.2 School Library

The abundant resources in the school libraries can broaden students' horizons and enhance their literacy. GS subject panel could collaborate with the teacher librarians to promote Reading across the Curriculum (RaC) and project learning. The school library could provide students with books, magazines and multimedia learning resources which are interesting and commensurate with students' abilities and enable them to integrate and apply the information.

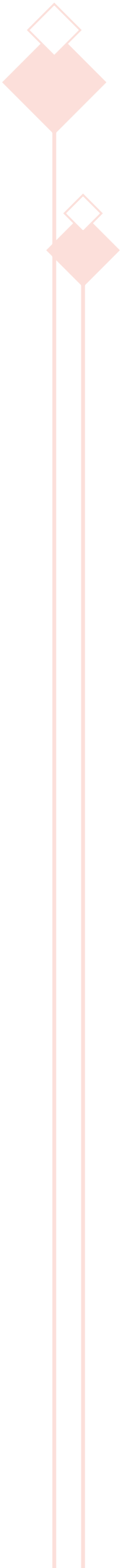
GS provides opportunities for students to construct knowledge and apply reading strategies through RaC and develop into life-long learners. Reading materials in the library which match the interests and abilities of the students can help promote RaC in the school.

Example:

Students read information related to common communicable diseases on government websites. They then draw mind maps to list the causes, ways of transmission and ways to prevent or cure the diseases. And then, students read stories about Hong Kong during a pandemic. This enables students to connect subject knowledge with life experiences and social issues.

6.2.3 Information Technology Facilities in Schools

With the rapid development of information technology, the Wi-Fi infrastructure in schools has been upgraded to accommodate the use of e-learning resources in class. The computer devices in classrooms should be repaired, replaced and purchased timely to keep up with the need for e-learning development.



Schools should provide students with opportunities to use IT facilities in schools for organising and demonstrating their ideas and learning outcomes. IT can be used as an effective tool for learning and sharing of knowledge.

Schools may use technology equipment to make models for illustrating concepts and demonstrating students' designs. Use of technology equipment can nurture students' curiosity and interests in the operation of machines. Students can learn to appreciate the designs and functions of technology products. In addition, with appropriate use of technology products, the school-based computer curriculum can also be enriched to support the cross-curricular STEM activities, such as project learning and model making.

If schools need to purchase equipment or items other than those listed on the “Furniture and Equipment List for New Schools” and “Categorisation of Furniture and Equipment for General Studies”, they should pay attention to the following:

- (1) When purchasing non-standard furniture, equipment or items, approval from Incorporated Management Committee (IMC) or School Management Committee (SMC) should be sought in advance.
- (2) The equipment should be properly kept in designated places on the school premises (e.g., General Studies Room, Computer Room or STEM Room). Schools should comply with the “Safety precautions and guidelines” of School Administration Guide, which is updated from time to time, and the safety precautions under Section 21(2) of Education Regulations (Chapter 279 Subsidiary Legislation A), and inform the IMC or SMC of the above arrangement.
- (3) Schools should ensure that the equipment and devices are managed according to the safety measures prescribed by the manufacturers. Installation, maintenance and regular inspection should be conducted by qualified technicians. Those items should be operated by qualified or trained personnel. Students should not be allowed to operate the machines on their own nor carry out dangerous experiments. Schools should take all reasonable precautions to reduce risks and avoid accidents.

Example: Use of Technology Product – 3D Printer

When students learn the topic of renewable energy, they might make models of windmill generators using a 3D printer and then modify the products by going through the design cycle.

When students learn the topic of Chinese culture, they can learn about mortise and tenon in ancient Chinese architecture. They can then apply the principles of mortise and tenon to make models and resemble products using 3D printing.

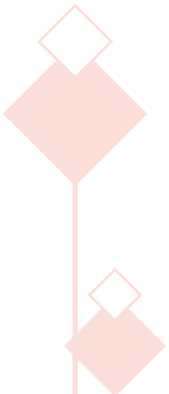
Students and teachers must follow the safety regulations when using a 3D printer.

6.3 Selection of Quality Learning and Teaching Resources

Teachers should consider the needs, abilities and interest of students when selecting learning and teaching resources. Teachers should adapt the learning contents and pedagogy to cater for learner diversity. Schools are encouraged to collect, adapt and enrich diversified learning resources to enable students to conduct investigation from multiple perspectives.

The following factors should be taken into consideration in the selection of learning and teaching resources:

- relating to everyday life contexts so as to fulfill students' learning needs and interests and develop their learning capabilities.
- stimulating students' motivation and engaging them in learning, thereby enhancing learning effectiveness.
- providing a channel for knowledge acquisition, exploration and deep learning to help students make progress.
- developing students' positive values and attitudes as well as various generic skills and self-directed learning strategies.
- providing learning activities at different levels of difficulty and a variety of learning experiences to cater for learner diversity.
- complementing to and extending what students have learned in class to broaden their learning experiences



While selecting learning and teaching resources, schools should make reference to Education Bureau Circular Memorandum No. 29/2017 “Selection of Quality Textbooks and Learning and Teaching Resources for Use in Schools” or the updated version that may be issued from time to time.

Website: <http://www.edb.gov.hk/textbook>

6.4 Printed Materials

Printed materials can be used as references for students to enrich their knowledge and nurture their language ability. Teachers should select materials according to students’ abilities and levels to enhance their reading interests. There are many picture books and well-illustrated children’s books available for primary students. The contents of these books can explain abstract concepts or values in simple ways. They can be used for broadening students’ learning.

Magazines, newspaper articles and information leaflets should be used to complement textbook contents in providing examples of current issues. These printed materials can raise students’ awareness of current issues and connect learning with everyday life. As the target readers of these printed materials are usually not primary students, teachers should select and adapt the contents so that they suit the language competency level and interests of students.

Textbooks provide learning and teaching contents and activities for teachers’ reference. Textbooks are not the only learning materials. Teachers should exercise their professional judgement in preparing and choosing learning and teaching materials to meet the needs of their students. Teachers may use the learning and teaching resources and everyday authentic materials provided by the EDB as supplementary teaching materials to enrich students’ learning.

While selecting textbooks (including e-textbooks), schools could make reference to ‘Textbook Information webpage’ provided by the EDB.

Website: <http://www.edb.gov.hk/textbook>

6.5 Making Good Use of e-Learning Resources

e-Learning is a strategy that facilitates learning and teaching through electronic media. There are a variety of e-Learning resources; teachers can use and adapt the resources to suit different students’ learning needs and cater for learner diversity. If teachers can use electronic learning tools effectively and appropriately, they can enhance students’ communication and self-learning skills. Through the sharing of resources, the effectiveness of learning and teaching can be improved.

6.5.1 Electronic Books

Electronic books are digitalised books that come in the form of electronic files or can be downloaded from the Internet to platforms such as personal computers, notebooks or tablets. They can also be read directly from browsers. When comparing with traditional books, electronic books do not consume paper or take up physical space, and the information can be spread more widely.

There are a variety of electronic books on the HKEdCity bookshelf. Teachers can use them for Reading across the Curriculum and encourage students to conduct self-directed learning.

Website: https://edmall.hkedcity.net/store/index.php?dispatch=categories.view&category_id=527&sl=EN

There are a variety of electronic books in public libraries. They can be used for self-study and leisure reading, and promote self-directed learning.

Website: <https://www.hkpl.gov.hk/en/e-resources/e-books/home>

6.5.2 Educational Television Programmes

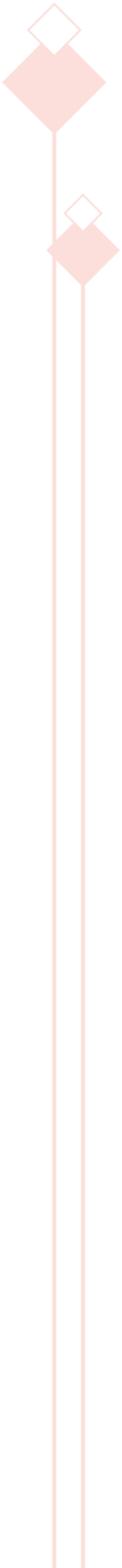
Educational Television programmes (ETV) is one of the commonly used multimedia resources to supplement GS learning. The GS ETV programmes are produced according to the curriculum contents. The programmes can promote values education through life stories. They also demonstrate experiments and abstract concepts through videos. To keep abreast of the development of society, GS ETV programmes are being enriched with topics concerning current issues.

For example,

- (1) Teachers may ask students to watch relevant ETV programmes at home before starting to teach a topic. Detailed discussion can be conducted in class to explore the topic in greater depth.
- (2) Teachers may select and show appropriate episodes of the ETV programmes in lessons to explain some abstract concepts, and help students grasp the main learning points through the videos.
- (3) Teachers may encourage students to watch ETV programmes at home for extended learning.

GS ETV programmes are available on this website:

<http://etv.edb.gov.hk/home.aspx>



To better meet students and teachers' needs, ETV also produces audio-visual resources such as video clips, sound tracks and photos to provide schools with resources to design learning and teaching activities.

6.5.3 The Internet

Students can obtain abundant information from the Internet instantly. Appropriate use of the Internet can help students understand the ever-changing world and allow them to deal with different viewpoints, values and cultures with an open mind.

When teachers are choosing online resources, they should verify whether the information is correct, reliable and suitable for students. In addition, teachers ought to pay attention to intellectual property rights. They should help students build awareness and practice of protecting intellectual property and understanding of the need to identify sources when they use web-based information in their learning.

Information about e-learning is available on the EDB website – “IT in Education”

<http://www.edb.gov.hk/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/index.html>

Information about “copyright and education” is available on the website of Intellectual Property Department:

http://www.ipd.gov.hk/eng/intellectual_property/copyright/copy_edu.htm

6.5.4 EDB Learning and Teaching Resources Platform

The EDB has launched the “EDB One-stop Portal for Learning and Teaching Resources” for teachers to retrieve the resources at ease. Teachers may search and access up-to-date resources that have been developed to support learning and teaching of GS. Website of “EDB One-stop Portal for Learning and Teaching Resources”: <http://www.hkedcity.net/edbosp/>

Abundant learning and teaching resources have been developed by the EDB to support the learning of GS, including teaching examples, resource packages, assessment banks, selected library resources and links. These resources are available on the EDB website: http://www.edb.gov.hk/en/gs_resources

A website to facilitate the promotion of STEM education had been developed and was launched. It disseminates information about the promotion of STEM education, including upcoming professional development events and programmes, relevant student activities, STEM-related resources and other community resources for schools' reference.

Website: <http://stem.edb.hkedcity.net/en/home/>.

6.6 Community Resources

Community resources facilitate students' learning in authentic situations. Museums provide rich learning resources that cannot be provided by classroom learning. Students can learn about history and science in museums. Also, there are outdoor educational sites operated by non-governmental organisations and tertiary institutions such as eco-gardens or exhibition centers, and some of them offer guided tours. Students' awareness of environmental protection and nature conservation can be raised through visits and field trips.

It is essential that these outings are planned as learning activities, and not simply seen as "fun days out". Requesting or searching for online teaching resources from the facilities and pre-trip site visits can help the preparation of necessary learning activities, such as taking photographs by students and engaging them in on-site group work.

Schools may collaborate with other schools or secondary schools to organise theme-based Science and Technology Days or competitions. Resources available from local organisations could be utilised to facilitate life-wide learning of GS and enrich the learning experiences of students. Through exchange activities and collaboration, schools can strengthen the connection with non-governmental organisations or professional bodies, enhancing the professional development of teachers and benefiting students' learning.



Appendix

Appendix

Appendix 1

Examples of Developing Collaborative Problem Solving Skills

Example 1:

Theme: Reduction of Wastes

KS1

Learning elements: the importance of protecting the environment, ways of reducing waste in daily life (e.g. Reduce, Reuse, Recycle and Replace)		
Topic: How can we reduce waste in our school?		
Learning and teaching process	Activities	Related generic skills, values and attitudes
Pre-lesson preparation	Each group of students read and search for the information of “4Rs of Environmental Protection” and find out the waste in their school.	Self-learning skills
Lesson activity	- Students share their preparation work and talk about what are the sources of waste in their school and why they should reduce waste. - The leader of each group leads the discussion and gives suggestions on reducing waste in school, such as using re-usable cutlery, recycling plastic bottles, etc. - Students share their views with other groups and make a plan on “Reducing waste in our school” collaboratively under teacher’s guidance.	Communicative skills, Collaborative skills Problem solving skills Respecting others’ views during discussion
Extended learning activity	To implement the plan in school, such as converting a used plastic bottle into a flowerpot.	Creativity, Responsibility

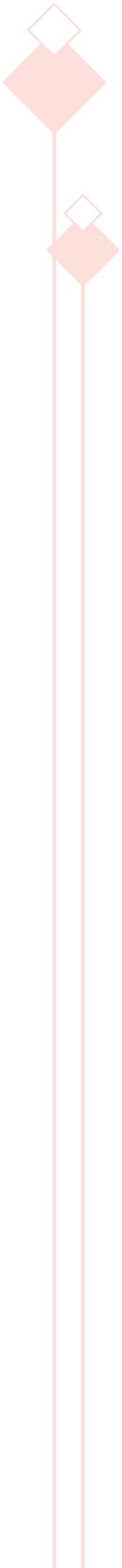
Examples of Holistic Thinking Skills

Example 1: The Problem of Aging Population in Hong Kong

Theme: Grandparent is Getting Lost

KS2

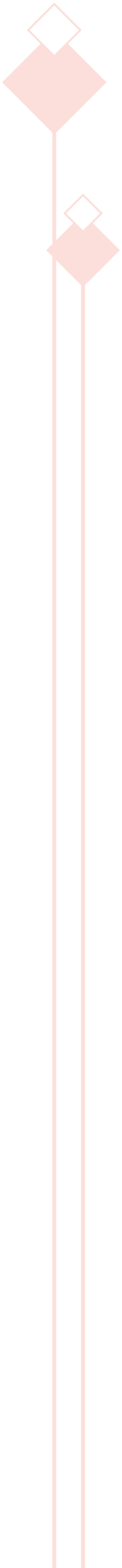
Content of activities	Related Generic Skills
Enquiry and Review Students devise discussion points and enquiry questions for the case study. • Why is your grandparent getting lost? • How serious is the problem of elders getting lost in Hong Kong? • Are there any suggestions from the Government, elderly homes and families to prevent the elderly from getting lost? • Is there any new technology help preventing grandparents from getting lost? Enquiry question : How to prevent elders from getting lost?	Critical thinking skills
Formulating Ideas Students understand the reasons why the elders easily get lost and suggest preventive measures. e.g • Hang the name cards with correspondence on the elders' bodies. • Employ nurses to take care of the elders. • Install a GPS tracking devise to the clothing or shoe-pads of the elders.	Creativity
Analyse and Compare Students analyse and compare the feasibility and practicability of various suggestions and select the probable solution. Solution: Install a GPS tracking devise in the shoe- pads of the elders.	Problem solving skills



Content of activities	Related Generic Skills
Forecast and Adapt Students suggest solutions and deal with the potential problems. e.g. 1) Is the cost too expensive? 2) Is there enough equipment for the production of shoe-pad in school? If not, how to demonstrate the idea?	Creativity Problem solving skills
Implement and Monitor After selecting the method to tackle the problem, students have to use the existing support of the school and feedback of teachers to devise the implementation plan. • Use computer software to draw and design the shoe-pad • Interview the expertise and find the suitable GSP devices for making the shoe-pad. Use PowerPoint slides to present how to combine the GPS tracking devise and shoe-pad.	Problem solving skills
Evaluation and Reflection Assesses the effectiveness of the plan and show the learning outcome to peers for feedback to enhance learning	Problem solving skills Critical thinking skills

Example 2: How Can We Save Water in School?**KS2**

Content of activities	Related generic skills
Enquiry and Review Case: Students found that a lot of water is used for cleaning the utensils after the lunch in school. They asked the following questions: • Is it wasting water? How to improve? • Is there any suggestions for saving water by the government? • Is there any new technology help saving water in school? Enquiry question: How can we save water in school?	Critical thinking skills
Formulating Ideas Students propose possible solutions for saving water in school. For example: • Don't wash lunch box under a running tap. • Reuse the water left over. • Use water-saving devices, e.g. water-efficient showerhead or water tap.	Creativity
Analyse and Compare Students analyse and compare the feasibility and desirability of the possible solutions and then choose one. Solution: increase the water pressure and reduce water consumption Advantage: fit a shower head on the water tap.	Critical thinking skills Problem solving Creativity
Forecast and Adapt Students suggest ways to tackle problems which may arise, for example: • Is the cost high? • How can we reduce the factors which may produce errors in the testing process?	Critical thinking Problem solving skills



Content of activities	Related generic skills
Implement and Monitor Choose a solution. Work out an implementation plan with support and advice from teachers. • Use a recyclable plastic bottle to make a shower head. • Change the water pressure of the shower head by putting in various materials, such as rags and sponge. Then test and observe the effectiveness of the water-saving device. • Record the time for cleaning the same amount of dirt by each shower head. Repeat the test 3 times for each shower head.	Problem solving skills
Evaluation and Reflection Students conclude and determine which design of shower head is the most effective in saving water. Students show their findings to peers and enhance learning from feedbacks.	Problem solving skills Critical thinking skills

Example of Self-directed Learning - Time Management

The school takes a proactive role in developing students' self-management skills. Learning portfolios are adopted for students to record their working and rest time throughout the academic year. Through self-reflection, feedback from parents and peer, students are able to develop a habit of time planning, and learn how to allocate their time wisely.

1. School distributes the annual "Time Management Learning Portfolio" at the beginning of the school year.
2. In the portfolio, tasks are set with clear objectives. Reasons for failures are marked as reference for evaluation.

Name of the Task: Time Management

Expected outcome: Students are able to allocate, manage and make good use of their time.

Students complete tasks within the time limit and are able to enjoy free time and have sufficient rest.

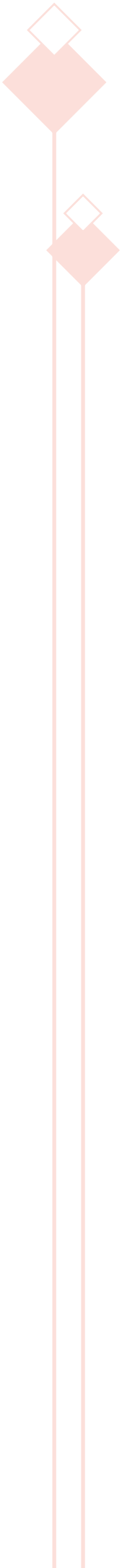
3. Strategies for good time management:

Strategies	Principles
Set targets	Targets should be clear, practical and meaningful
Time allocation	Precise prediction of time to complete each task
Set priority	Urgent and important tasks have to be completed first
Avoid delay	Persevere to work through the process
Smart arrangement	Work through the difficult tasks in your fresh time
Balance work and rest time	Short breaks in between tasks/jobs are important
Make good use of in-between time	Utilize in-between time to do simple works.





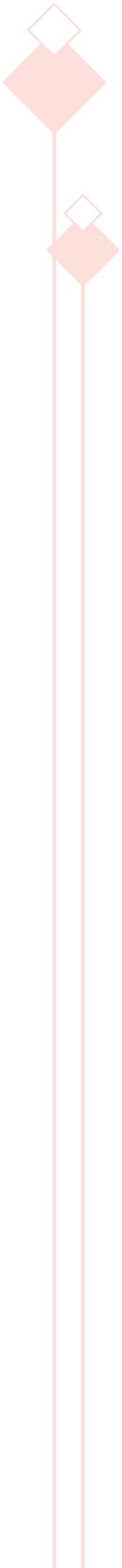
Glossary



Glossary

Term	Description	Page
Curriculum Development Council (CDC)	The CDC advises the Government on all matters related to curriculum development for the school system, from kindergarten to secondary levels. Members include school principals, teachers, parents, employers, scholars from tertiary education institutions, professionals from related parties or sectors, representatives from Hong Kong Examinations and Assessment Authority(HKEAA), representatives from Vocational Training Council(VTC) and Education Bureau officers.	i, 2, 13, 15, 70
Coding	The terms ‘coding’ and ‘programming’ are considered to be identical in meaning and are used in a broad sense to refer to a process that leads from an original formulation of a problem (computing problem) to an executable program (computer program).	v, vii, 31, 32, 66, 78, 87, 88, 89, 134, 135, 136, 148, 162
Computational Thinking	Computational thinking involves solving problems, designing systems, and understanding human behaviour, by drawing on the concepts fundamental to computer science. Students become tool builders instead of tool users through a set of computational thinking concepts such as abstraction, algorithm and automation. Computational Thinking is a problem solving methodology that can be transferred and applied across subjects.	vii, 5, 31, 32, 66, 87, 88, 134, 135

Term	Description	Page
Generic skills	Generic skills are skills, abilities and attributes which are fundamental in helping students to acquire, construct and apply knowledge. They are developed through the learning and teaching that takes place in different subjects or Key Learning Areas, and are applicable in different learning situations. Nine types of generic skills are identified in the Hong Kong curriculum, i.e. collaboration skills, communication skills, creativity, critical thinking skills, information technology skills, mathematical skills, problem solving skills, self-management skills and self-learning skills.	iii, iv, v, vi, vii, 2, 3, 4, 7, 12, 13, 14, 15, 16, 18, 70, 71, 73, 74, 85, 89, 99, 100, 111, 121, 122, 156, 164, 165, 175, 180, 185, 192, 193, 194, 195, 196
Humanistic qualities	Nurturing humanistic qualities in students is to enable them to treasure life and maintain healthy living; to show care and respect for others, to be willing to contribute to the common good; to cherish history and culture as the common human experiences; to enhance aesthetic appreciation; and to develop care for the nature and show concern for its sustainable development.	17, 70, 101, 110
Information literacy	Information Literacy is the abilities and attitudes in using information effectively and ethically. In the age of information, students need to learn how to find, evaluate, access, organize and express information in order to create new ideas. Also, they have to protect their privacy and refrain from unethical use of information such as cyberbullying and infringing intellectual property right.	3, 7, 9, 17, 43, 46, 47, 79, 85, 94, 136, 142



Term	Description	Page
Mathematical skills	Mathematical skills include the ability to perform computations and estimations of numbers in various forms, to describe spatial relationships between objects, to understand geometrical relationships, to perform measurements, to manage data, to employ logical reasoning for drawing valid conclusions, applying mathematical concepts in different contexts.	15, 81, 82, 100, 131
Science process skills	Science process skills refer to the skills that students practise in the process of scientific investigation. They include ‘observing’, ‘predicting’, ‘measuring’, ‘recording’, ‘classifying’, ‘identifying variables’, ‘inferring’ and ‘communicating’. These are the basic skills which facilitate the science learning of students.	9, 18, 29, 30, 80, 86, 110, 111, 127, 128, 131, 162, 163, 164
STEM	STEM is an acronym that refers collectively to the academic disciplines of Science, Technology, Engineering and Mathematics.	v, vi, vii, viii, 4, 5, 9, 19, 77, 78, 79, 80, 81, 83, 84, 85, 86, 87, 88, 89, 98, 103, 112, 113, 131, 132, 162, 163, 182, 183, 184, 189



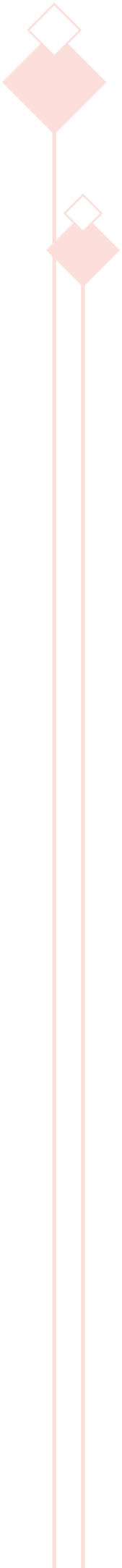
References

References

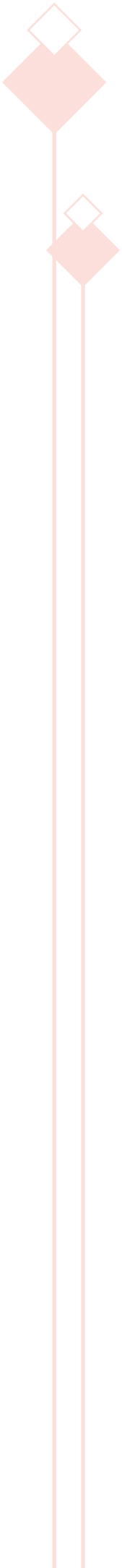
Bibliography

1. Allen, R. (2006). *The Essentials of Science, Grades K-6: Effective Curriculum, Instruction, and Assessment (Priorities in Practices Series)*. Alexandria, VA: Association for Supervision and Curriculum Development.
2. Bearne, E. & Bazalgette, C. (2010). *Beyond Words: Developing Children's Understanding of Multimodal Text*. United Kingdom: United Kingdom Literacy Association.
3. Bender, W. N. (2012). *Project-Based Learning: Differentiating Instruction for the 21st Century*. Thousand Oaks, CA: Corwin Press.
4. Bishop, J. L. & Verleger, M. A. (2013, June 23-26). "The Flipped Classroom: A Survey of the Research." Paper presented at the 2013 American Society for Engineering Education Annual Conference & Exposition, Atlanta, Georgia.
5. Bos, B. (2011). Professional Development for Elementary Teachers Using TPACK. *Contemporary Issues in Technology and Teacher Education*, 11(2), 167-183.
6. Chung, T. W. S. (2012). A Case Study on Formative Assessment-The Use of Peer Evaluation in Primary General Studies in a Context of Hong Kong. *Hong Kong Teachers' Centre Journal*, 11, 79-99.
7. Clarke, S. (2001). *Recommendations for the development of Formative assessment in Hong Kong*. Hong Kong: Education Department.
8. Clarke, S. (2001). *Unlocking Formative Assessment: Practical Strategies for Enhancing Pupils' Learning in the Primary Classroom*. London: Hodder & Stoughton.
9. Cohen, L., Manion, L., Morrison, K. & Wyse, D. (2010). *A Guide to Teaching Practice* (5th ed.). London: Routledge.
10. Curriculum Planning and Development Division, Ministry of Education. (2013). *Primary Social Studies Syllabus 2012*. Singapore: Author.
11. Earl, L. (2003). *Assessment as Learning: Using Classroom Assessment to Maximize Student Learning*. Thousand Oaks, CA: Corwin Press.

12. Earl, L. (2006). Assessment - A Powerful Lever for Learning. *Brock Education*, 16(1), 1-15.
13. Education Bureau, Hong Kong Special Administrative Region. (2009). *Working Group on Textbooks and E-Learning Resources Development Main Report*. Retrieved July 4, 2015 from <http://www.legco.gov.hk/yr09-10/english/panels/ed/papers/ed1214-rpt0910-e.pdf>
14. Education Bureau, HKSARG (2010). *Report of the Task Force to Review Learning and Teaching Materials*. Retrieved July 4, 2015 from http://www.edb.gov.hk/attachment/en/curriculum-development/resource-support/textbook-info/report%20of%20the%20task%20force%20to%20review%20learning%20and%20teaching%20materials_english%20version_20111213.pdf
15. English, L. D. (2016). STEM Education K-12: Perspectives on Integration. *International Journal of STEM Education*, 3(3), 1-8.
16. English, L. D., & King, D. T. (2015). STEM Learning through Engineering Design: Fourth-grade Students' Investigations in Aerospace. *International Journal of STEM Education*, 2(14), 1-18.
17. Fullan, M. & Langworthy, M. (2014). *A Rich Seam: How New Pedagogies Find Deep Learning*. London: Pearson.
18. Galton, M. (2007). *Learning and Teaching in the Primary Classroom*. Los Angeles, CA: SAGE Publication.
19. Grabe, W. & Stoller, F. (2013). *Teaching and Researching Reading*. New York, NY: Routledge.
20. Harlen, W., Bell, D., Cutler, M., Hall, A., Harrison, C., Howard, S., Keogh, B., Lawrence, L., Naylor, S., Reiss, M., Shallcross, D. & Turner, J. (2012). *Developing Policy, Principles and Practice in Primary School Science Assessment*. London: Nuffield Foundation.
21. Harris, J., Mishra, P. & Koehler, M. (2009). Teachers' Technological Pedagogical Content Knowledge and Learning Activity Types: Curriculum-based Technology Integration Reframed. *Journal of Research on Technology in Education*, 41(4), 393-416.
22. Honey, M., Pearson, G., & Schweingruber, A. (2014). *STEM Integration in K-12 Education: Status, Prospects, and an Agenda for Research*. Washington, DC: National Academies Press.

- 
23. Education Bureau, Hong Kong Special Administrative Region. (2015). *Report on the Fourth Strategy on Information Technology in Education. Releasing IT Potential, Unleashing Learning Power (A Holistic Approach)*. Retrieved August 15, 2016 from http://www.edb.gov.hk/attachment/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/ITE4_report_ENG.pdf
 24. Fitzpatrick, M. (2012). *Classroom Lectures Go Digital*. Retrieved January 23, 2015 from <http://www.nytimes.com/2012/06/25/us/25iht-educside25.html>
 25. Hong Kong Institute of Educational Research, The Chinese University of Hong Kong. (2014). The Flipped Classroom. *HKIER Newsletter*, 36, 1-2.
 26. Hoodless, P., McCreery, E., Bowen, P. & Bermingham, S. (2009). *Teaching Humanities in Primary Schools*. Manchester: Manchester Metropolitan University.
 27. Hutchings, W. (2007). *Enquiry-Based Learning: Definitions and Rationale*. Manchester: University of Manchester.
 28. Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge?. *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.
 29. Lambros, A. (2002). *Problem-based Learning in K-8 classrooms: A Teacher's Guide to Implementation*. Thousand Oaks, CA: Corwin Press.
 30. Morris, P. & Adamson, B. (2010). *Curriculum, Schooling and Society in Hong Kong*. Hong Kong: Hong Kong University Press.
 31. New York City, Office of Curriculum, Instruction & Professional Learning. *STEM Framework* (n.d.). Retrieved May 21, 2015 from http://schools.nyc.gov/NR/rdonlyres/DE2FC1DE-5FB8-474F-BD27-D75FF70EF610/0/STEMframework_WEB1.pdf
 32. Ng, P. N., Cheung, S. P., & Lee, C. K. (2010). *Report on the Evaluation Study on the Implementation of the General Studies for Primary Schools Curriculum*. Hong Kong: Centre for University and School Partnership, Faculty of Education, The Chinese University of Hong Kong.

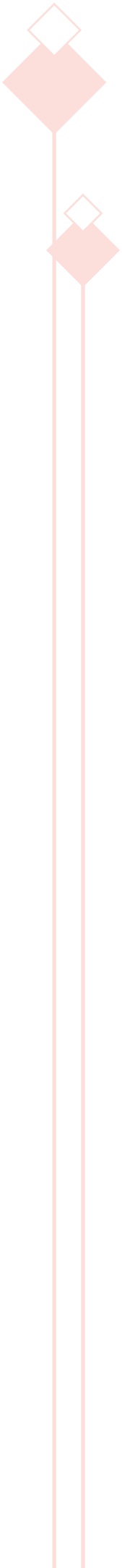
33. New South Wales Education Standards Authority. *Board of Study Teaching and Educational Standard of NSW: Assessment for, as and of Learning*. Retrieved June 15, 2015 from <http://syllabus.bos.nsw.edu.au/support-materials/assessment-for-as-and-of-learning/>
34. Sams, A. & Bergmann, J. (2013). Flip Your Students' Learning. *Educational Leadership*, 70(6), 16-20.
35. Stronge, J. H. (2007). *Qualities of Effective Teachers* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
36. Wilkinson, S., & Clive, S. (2001). *Developing Cross Curricular Learning in Museums and Galleries*. London: Trentham.
37. Vasquez, J., Sneider, C., & Comer, M. (2013). *STEM Lesson Essentials, Grades 3–8: Integrating Science, Technology, Engineering, and Mathematics*. Portsmouth, NH: Heinemann.
38. Wiles, J. (2008). *Leading Curriculum Development*. Thousand Oaks, CA: Corwin Press.
39. Wiles, J., & Bondi, J. (2007). *Curriculum Development: A Guide to Practice* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
40. Wong, Y. L. W. T. (2004). Formative Assessment in General Studies Classrooms. *Hong Kong Teachers' Centre Journal*, 3, 141-154.
41. 丁玉祥 (2015)。《新課程實施進程中校本資源庫的管理原則、策略及優化途徑》。南京：南京市白下區教師進修學校（教研室）。
42. Education Bureau. (2016). *Promotion of STEM Education – Unleashing Potential in Innovation*. Retrieved March 5, 2017 from http://www.edb.gov.hk/attachment/en/curriculum-development/renewal/STEM%20Education%20Report_Eng.pdf
43. Curriculum Development Institute. (2014). *Basic Education Curriculum Guide – To Sustain, Deepen and Focus on Learning to Learn (2014)*. Retrieved August 15, 2015 from <https://cd.edb.gov.hk/becg/english/index-2.html>

- 
44. Curriculum Development Institute. (2017). *Kindergarten Education Curriculum Guide (2017)(Draft)*. Retrieved November 6, 2017 from <http://www.edb.gov.hk/attachment/en/curriculum-development/major-level-of-edu/preprimary/KGECEG-En-Draft-2017.pdf>
 45. 黃余麗華 (2000)。〈教師的專業發展：常識課課室情境的反思〉。載於葉國洪、胡少偉、陳城禮、何景案和凌榮添編，《教師在職進修與終身教育（華人地區）國際教育研討會論文集》，（頁 173 — 186）。香港：香港教師中心教育研究小組。

Websites

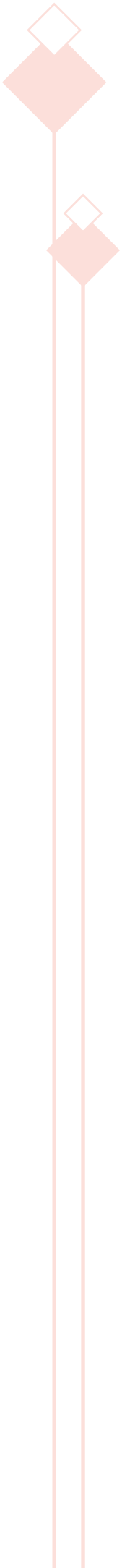
1. Conservation Online. *Resources for Conservation Professionals*. Retrieved March 22, 2015 from <http://palimpsest.stanford.edu/icom/statutess.html#18>
2. Partnership for 21st Century Learning. *Framework for 21st Century Learning*. Retrieved January 2, 2015 from <http://www.p21.org/our-work/p21-framework>
3. Thames Valley District School Board. *Assessment for, of and as Learning*. Retrieved October 4, 2016 from <http://www.tvdsb.ca/webpages/takahashid/techdia.cfm?subpage=128207>
4. Vanderbilt University Center for Teaching. *Flipping the Classroom*. Retrieved July 4, 2016 from <http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/>
5. Education Bureau. *General Studies for Primary Schools – Learning and Teaching Resources*. <http://www.edb.gov.hk/en/curriculum-development/cross-kla-studies/gs-primary/references-resources.html>
6. Education Bureau. *Categorisation of Furniture and Equipment for General Studies*. http://www.edb.gov.hk/tc/gs_felist
7. Education Bureau. *Textbook Information*. Retrieved September 28, 2017 from <http://www.edb.gov.hk/en/curriculum-development/resource-support/textbook-info/index.html>

8. Curriculum Development Institute. *Safety Handbook for General Studies for Primary Schools* (2011).
http://www.edb.gov.hk/en/gs_safetyguide
9. Education Bureau. *General Studies Internal Guide for Schools*. (Chinese only)
http://cd1.edb.hkedcity.net/cd/gs/Guideline_for_School_Internal_Assessment.pdf
10. Education Bureau. *Modular Computer Awareness Programme* (Module 1-8) (Website). Retrieved March 5, 2017 from
<http://www.edb.gov.hk/en/curriculum-development/4-key-tasks/it-for-interactive-learning/modular-computer-awareness-programme/index.html>
11. Education Bureau. *EDB One-stop Portal for Learning & Teaching Resources*.
<http://www.hkedcity.net/edbosp/>
12. Education Bureau. *Information Website of STEM Education*.
<http://stem.edb.hkedcity.net/en/home/>
13. Education Bureau. *Website of Life-wide Learning*. (Revision date: 20 September 2017). Retrieved October 12, 2017 from
<http://www.edb.gov.hk/en/curriculum-development/major-level-of-edu/life-wide-learning/index.html>
14. Education Bureau. *Educational Television for General Studies*. Retrieved July 3, 2017 from
<http://etv.edb.gov.hk/home.aspx>
15. Education Bureau. *IT in Education*. (Revision date: 20 September 2017). Retrieved September 28, 2017 from
<http://www.edb.gov.hk/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/index.html>
16. Education Bureau. *Understanding the Law, Access to Justice – Basic Law Learning Package (Junior Secondary)*. (Reprinted with minor amendments in 2015)
<http://basiclawebook.edb.hkedcity.net/bookweb/index.php>
17. Education Bureau. *Basic Law Learning Package and Assessment Bank (Senior Primary)*.
<http://basiclaw.edb.hkedcity.net/sp/>

- 
18. Education Bureau. *Let's Learn the Basic Law – Basic Law Learning Package and Assessment Web (Senior Primary)*.
<http://basiclaw.edb.hkedcity.net/sp/hb/index.html>
 19. Hong Kong Public Libraries. *e-Books*. Retrieved July 12, 2017 from
<https://www.hkpl.gov.hk/en/e-resources/e-books/home>
 20. Intellectual Property Department. *Copyright and Education*. (Revision date: 14 August 2017). Retrieved August 28, 2017 from
http://www.ipd.gov.hk/eng/intellectual_property/copyright/copy_edu.htm
 21. The University of Hong Kong. *Development of Evaluation Tools for Assessing Students' Information Literacy and Promoting Information Literacy among Students*. Retrieved July 5, 2017 from
<http://iltools.cite.hku.hk/>
 22. EdBookshelf
<https://www.hkedcity.net/edmall-ebs/en/>



**Membership of the
Ad Hoc Committee on
General Studies for
Primary Schools
(February 2015 to March 2017)**



Membership of the Ad Hoc Committee on General Studies for Primary Schools

(February 2015 to March 2017)

Chairperson

Ms. LI Mei-sheung, Flora
Dr. Catherine F. Woo Memorial School

Members

Ms. CHAN Ka-man, May
Technology Education Section,
Curriculum Development Institute

Ms. CHEUK Ling-ling
Science Education Section
Curriculum Development Institute

Ms. CHOI Hing-ling
Tin Shui Wai Methodist Primary School

Mr. CHOY Sai-hung
C.C.C Heep Woh Primary School (Cheung Sha Wan)

Dr. CHUNG Wai-hung
Student Health Service,
Department of Health

Dr. Alvin KWAN
Division of Information and Technology Studies,
The University of Hong Kong

Dr. LAI Ling-yan
Personal, Social and Humanities Education Section,
Curriculum Development Institute

Dr. LAU Chi-pang
Department of History
Lingnan University

Mr. LEE Chun-yiu, Simon
Evangel College (Primary Department)

Dr. LI Wai-chin
Department of Science and Environmental Studies
The Education University of Hong Kong

Mr. MOK Ming-kei
Alliance Primary School, Whampoa

Ms. NG Wai-yin
S.T.W. Dr. Catherine F. Woo Memorial School

Mr. WONG Kam-hon, Golden
Hong Kong Association for Science and
Mathematics Education

Official member Mrs. AU TANG Oi-lai, Alice
Kindergarten and Primary Section,
Curriculum Development Institute

Secretary Ms. CHEUNG Kar-man
Kindergarten and Primary Section,
Curriculum Development Institute

