

Part C: Project Details

1. Goal & Objectives

201210004

One of the major concerns in NSS curriculum is to promote "Life-long Learning" to students. One possible direction is to empower them to become active and independent learners by equipping them with the following four learning habits:

- 1) Doing pre-lesson preparations
- 2) Raising questions & searching for answers
- 3) Reorganizing learning materials
- 4) Consolidating learning materials

We believe that this can be achieved through a series of tailor-made and structured TSS trainings and a planned learning cycle which leads to the formation of a "habit of thinking"(思考習慣). Our objectives are as follows:

- Students will apply main point identification skills and other active learning strategies in acquiring knowledge during pre-lesson learning.
- Students will think out self-questions about the subject contents and discuss within and beyond the classrooms to prompt understanding and deep learning.
- Students will search for information to answer the self-questions and have the initiative to learn more.
- Students will be able to internalize learning materials through reorganizing them in a systematic and meaningful way.
- Students will use Spaced Repetition System (SRS) effectively in memorizing vocabulary and concepts.
- Students will apply different memory skills, including chaining method, narrative story, visualization and mnemonics in consolidating learning materials.

2. Background & Experience

Our school, Our Lady of the Rosary College, was founded by the Sister Announcers of the Lord in 1971. We are an EMI girls' school in Sham Shui Po District with the majority of our students coming from less than well-off families. We follow the model of preventive education philosophy founded by Don Bosco, the great educator. We move students to action by appealing to their sense of reasons, nurture them in the spirit of Christian faith, and strike their hearts with our sincere love. We aim to provide a caring and pleasurable learning environment so that our students can have an all-round development in the following six areas: moral and spiritual, intellectual, physical, social, aesthetic and emotional. Most of our students are hardworking and obedient. They have high potentials to perform well.

In the past few years, we have successfully implemented a number of funding projects such as Quality Education Fund (QEF) for setting up the MMLC, Environmental Conservation Fund (ECF) for setting up the renewable energy systems and food waste recycling system, Refined English Enhancement Scheme (REES) for developing school-based drama education. Moreover, we cooperated with external educational organizations, such as HKIED in carrying out several learning and teaching projects.

On the other hand, we put great effort in promoting teachers' professional development. During the past few years, our teachers have been actively taking different professional post-graduate courses and participating in collaborative teaching and peer-lesson observations. Teachers' professional development is not only cultivated at school, but is also promoted by various activities like cultural exchanges and professional sharing with our nearby schools in Hong Kong and our sister school in the Mainland. That makes a good foundation for us to launch large-scale projects at school.

Our school set up the Thinking and Study Skills Committee a few years ago. In 2011-2012, the committee laid emphasis on equipping S1 students with different study skills and to help them build up a "habit of thinking" through a series of training sessions (Appendix 1a & 1b). These training sessions were conducted by the head of the committee; Ms. Au Yee Ling. Ms. Au received professional training on how to help students acquire higher-order thinking skills in the Master in Education program offered by HKU (Appendix 1c). Ms. Au is also pursuing further knowledge about "Memory Skills and Creativity" offered by the School of Continuing and Professional Studies (CUSCS) of CUHK. Ms. Au has been actively participating in the teaching of TSS since 2003. With over 10 years' of professional experiences in the discipline and continuous devotedness in the TSS education, Ms. Au has prepared a great quantity of school-based TSS materials for S1 students in 2011-2012. Apart from learning materials, regular training sessions are conducted throughout the year.

According to the latest feedback from 2011-2012 S1 students (Refer to Appendix 1d), 97.2% and 94.4% of students agreed that they acquired the knowledge of applying active learning strategies and concept map respectively in these training sessions. In addition, both students' and subject teachers' qualitative feedback towards the workshops was very positive. Referring to Appendix 1e, many S1 students reported that they benefited much from the workshops. For example, their sense of satisfaction by applying the skills in learning increased. They also felt that they faced fewer learning difficulties with the adoption of the skills. Quite a lot of students even expressed that they would continue to apply these skills in their study.

To emphasize the application of the skills, teachers did not only teach the theoretical knowledge, but also required students to use the skills learnt in different subject contexts. In a previous workshop, after students learned how to do pre-lesson preparation in Chinese History, they were asked to apply the pre-lesson preparation skill in other subjects like Science (Appendix 1f). With the aforementioned, we strongly believe that this program will benefit our students.

3. Our Difficulties and Needs on QEF

The following is the assessment of our needs and difficulties. In order to have a successful large scale implementation, the difficulties need to be addressed and the needs met.

professionalism and makes the large scale implementation of the program possible.

Need of resources to compile progressive learning materials

There is a need for us to refine the current S1 learning materials and develop progressive teaching resources for S2 and S3. We must release the teaching load of some teachers so that they could devote more time on preparing learning materials including lesson plans, TSS student handbooks and teaching guides.

Need of trainings and feedback & sharing sessions to follow up and monitor students' learning progress

Skill acquisition involves different stages, including the acquisition and internalization of the skills. In order to internalize a skill successfully, long-term investment such as doing frequent practices is essential. Under current situation, we could only arrange trainings for S1 students. After students are promoted to S2-S3, they are not provided with enough opportunities to practice the skills acquired, thus they cannot master the skills. Even worse, they may forget the skills in the long run. We realize that it is of utmost importance to implement the program not only to S1, but also to the whole junior forms. It is understood that trainings and follow-ups are essential to guarantee the building up of the "habit of thinking". We believe that students can internalize the skills throughout their junior journey with sufficient progressive practices and feedback sessions. In order to make the program more sustainable and comprehensive, we decide to establish a task force, "The TSS Task Force". We expect the task force to monitor the program in a systematic way and foster a large scale implementation of the program.

to form the TSS

To allow the task force members to implement the expansion plan of TSS program successfully, there is a need to release 1/3 teaching workload from each of the task force members .

Thus a 1 year full-time supply teacher and a 1 year full-time teaching assistant have to be employed to create space for the task force to carry out the project, including:

- developing teaching materials
- conducting trainings and collecting feedback from students & involved teaching staff
- enhancing communication and cooperation between subject panels and TSS
- promoting cross-subject collaborations to solve students' common learning problems
- monitoring students' learning progress

4. Approach & Design

Pedagogy of TSS program

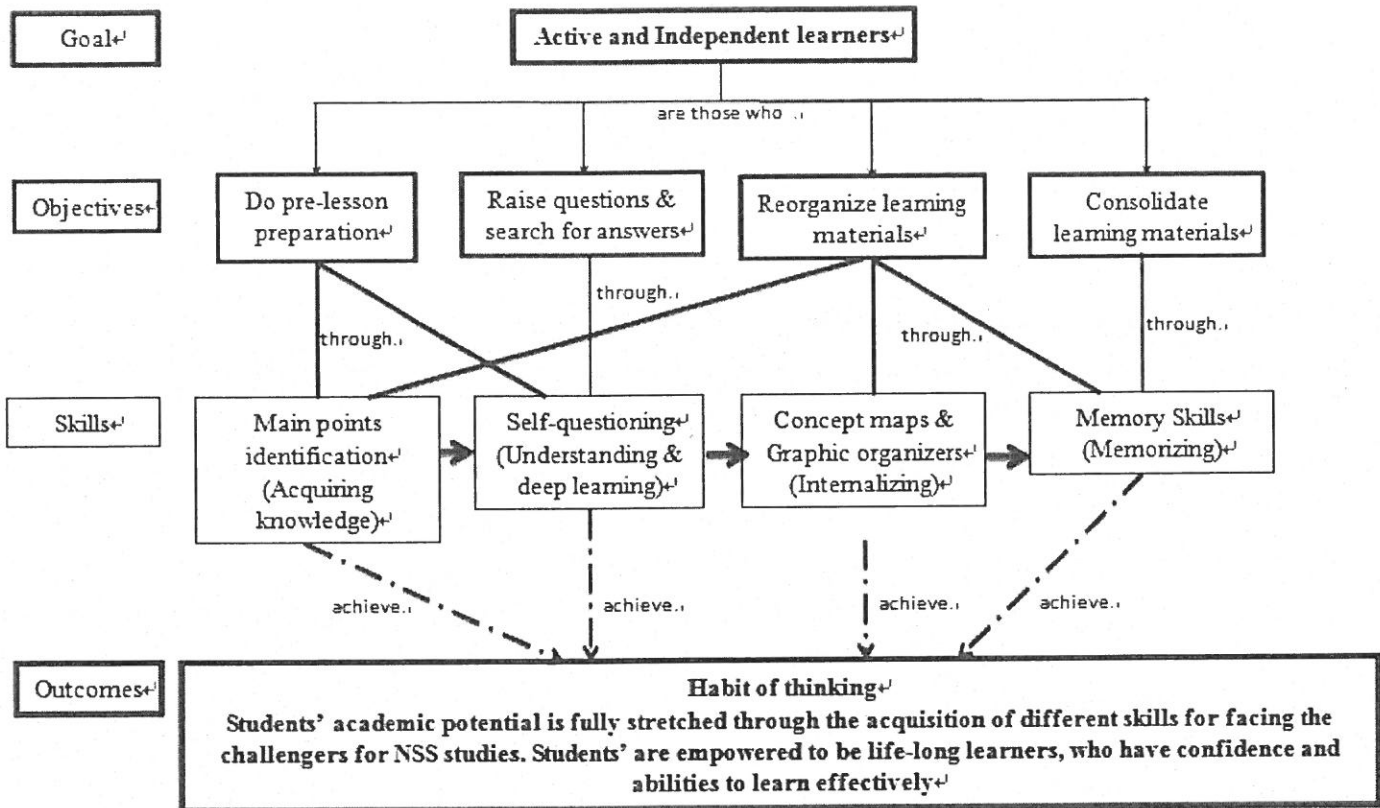


Figure 1 A concept map showing the relationships among goal, objectives, strategies and outcomes

As shown in figure 1, we believe that active and independent learners are those who possess four learning habits including doing pre-lesson preparation, raising questions & searching for answers, reorganizing learning materials and consolidating learning materials. We will help students to form the above habits through teaching them the four skills, including main points identification, self-questioning, concept mapping and graphic organizers and memory skills. In order to master the skills, students are provided with opportunities of frequent practices. Thus, we will maintain close collaborations with subject panels to ensure a repetition of learning cycle.

Subject-based training – By collaborating closely with subject panels

By collaborating with various subject panels, we could ensure more subject-based practices about TSS. TSS committee members will work closely with subject teachers to follow up on students' learning progress by holding regular sharing sessions with them. Students are encouraged to do self-reflection and teachers will give feedback to their work. We strongly believe that students can acquire and internalize a skill learnt through frequent practices, sharing and reflections. In repeating this learning cycle, the habit of thinking will be formed and a supportive learning atmosphere will be created.

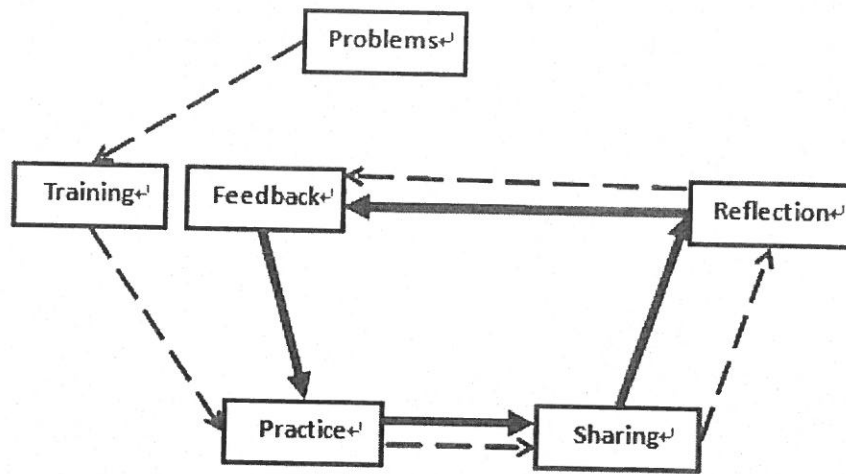


Figure 2 Learning cycle

Through students' sharing, teachers' feedback and own reflections, students should be able to recognize their own strengths and weaknesses in learning and regulate their learning accordingly. We strongly believe that the mastery of the aforementioned skills and the well-planned program will help students to become active and independent learners. The skills have long been agreed and given credits by numerous scholars and have been proved to be effective in enhancing learning efficiency. (Refer to Appendix 2)

Concerning the program structure, we adopted a spiral teaching model. The spiral approach gives a full access to all kinds of skills in each level of learning. It allows students to be promoted to the next level, and be given progressive challenges to stretch their abilities. Therefore, after the whole junior journey, students will have full mastery of each skill. The summary of the main progress in each level is as follows:

Level	Main point identification skills	Self-questioning skills	Concept mapping / graphic organizers	Memory skills
S1	to identify the main points in simple-structured articles & to connect the main points to what they have already known (prior knowledge).	to raise lower order questions (remembering, understanding) & to find out the answers through searching and discussion	to reorganize learning materials by drawing concept maps of fundamental level (Focus on organization, relationships, examples and presentation)	to distinguish some common confusing words & to memorize the spelling of some difficult vocabulary
S2 (on top of S1)	to identify the main points in complicated-structured articles	to raise higher order questions (applying, analysis)	to reorganize learning materials by drawing concept maps of higher level (Focus on previous knowledge and explanations/elaboration)	to memorize seven items with correct order (if necessary)

S3 (on top of S2)	to identify the main points in articles concerning unfamiliar matters	to raise higher order questions (evaluating, creating)	to reorganize learning materials by drawing concept maps and other graphic organizers & to choose suitable graphic organizers	to memorize eight or more items with correct order (if necessary).
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Compiling progressive teaching materials

Besides the spiral structure, the program needs to be more well-structured, systematic and assessable; thus a learning package which consists of a TSS student handbook and a teaching guide will be produced and be used in each level. On the other hand, with the comprehensive and systematic training provided, students are expected to develop in-depth knowledge and apply TSS in learning.

Training up a team of student leaders

To ensure the sustainability of the program and to develop TSS program as our school's feature, a team of student leaders will be trained to:

- Share their learning experiences and work, including concept maps, notes and questions
- Give support to S1 students during trainings and feedback & sharing sessions (facilitators)

Introducing information technology in consolidating learning materials

To create more chances for students to learn beyond classrooms, our school has made good use of information technology, the "Spaced Repetition System" (SRS Appendix 3), to help all S1 students to memorize difficult words and concepts. The SRS was developed by the charitable organization "Education Endowment Fund". SRS is designed based on human's forgetting curve. We will use SRS to help students consolidate learning materials more effectively. The work flow will be as follows:

- Subject representatives of TSS Committee are responsible for collecting and preparing questions from their subject panels in each term.
- Teaching assistant will be responsible for data entry.
- Students are required to finish 3-5 questions online daily throughout the year.
- Teachers are responsible for monitoring their learning progress online and give reminders to students.

We have already carried out a pilot scheme in 2011-2012. According to the feedback of S1 participants, SRS can help them memorize vocabulary and concept words better. The mean score attained is 4.13 in a 6-point scale survey. The system has also been applied in some senior form subjects such as S5 Liberal Studies, S5 Biology and S5 vocabulary building. Most participants agreed that SRS is effective in enhancing their memory about different subject contents. (Refer to Appendix 3)

5. Schedule of Work & Details

Schedule 1 P. 1 1

No. of lessons assigned for each type of training

	2012-2013 (S1) Preparation Period			2013-2014 (S1 to S2) QEF Supporting Period			2014-2015 (S1 to S3) Sustainable Development Period		
	Training	Feedback and Sharing	Total	Training	Feedback and Sharing	Total	Training	Feedback and Sharing	Total
S1	8.4	21.1	29.5	8.4	21.1	29.5	8.4	21.1	29.5
S2				8.4	19.4	27.8	8.4	19.4	27.8
S3							8.4	19.4	27.8
Total	8.4	21.1	29.5	16.8	40.5	57.3	25.2	59.9	85.1

According to the table above, the number of hours assigned for the program is increasing with its expansion. In 2012-2013, which is claimed as the preparation period, we will focus on refining the teaching materials for S1. At the same time, we will also develop teaching materials and work out training schedule for S2. In 2013-2014, the TSS Committee will finalize the teaching materials for S1-S2. We will also devise teaching materials for S3 and conduct trial training sessions for them. The estimated workload in 2013-2014 will be the heaviest. It is because the TSS Committee has to evaluate and refine the materials and arrangements for S1-S2 and try out new materials to be used in S3 during the year. Therefore, we write to apply for QEF sponsorship for 2013-2014 so as to hire an additional teaching staff for us to carry out the project.

Timeline for student training

Training for students (S1 – 2012-2013; S1 to S2 – 2013-2014; & S1 to S3 – 2014-2015)

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
S1	MPa + SRSa (2.5 Isn) MPb (1x4 Isn)	SQa (1.7 Isn) SQb (1x4 Isn)	CMa (2.5 Isn)	CMb (1x4 Isn)	SRSb (1x4 Isn)	MSa (1.7 Isn)	MSb (1.7 Isn)	CMc (1.7 Isn)	ALLc (1.7 Isn)
S2	MPa (2 Isn) MPb (1x4 Isn)	SQa (1.7 Isn) SQb (1x4 Isn)	CMa (2 Isn)	CMb (1x4 Isn)	SRSb (1x4 Isn)	MSa (1.7 Isn)	MSb (1.7 Isn)	ALLc (1.7 Isn)	
S3	MPa (2 Isn) MPb (1x4 Isn)	SQa (1.7 Isn) SQb (1x4 Isn)	GOa (2 Isn)	GOb (1x4 Isn)	SRSb (1x4 Isn)	MSa (1.7 Isn)	MSb (1.7 Isn)	ALLc (1.7 Isn)	

Abbreviations:

1. MP – Main points identification
2. SQ – Self-Questioning
3. CM – Concept map
4. GO – Graphic organizers

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|-----------------------------------|---|
| 5. MS – Memory skills | 8. a: training session: (theory) |
| 6. SRS – Spaced Repetition System | b/c: feedback session: (feedback and sharing) |
| 7. ALL – Overall | 9. Isn : Lessons |

Timeline for TSS committee

	2012-2013	2013-2014	2014-2015
Sep Oct Nov Dec		➤ Evaluate the trainings conducted and students' performance after each training	➤ Evaluate the trainings conducted and students' performance after each training
Jan		➤ Conduct mid-year evaluation on the program	➤ Conduct mid-year evaluation on the program
Feb Mar Apr	➤ Prepare the teaching materials for the training for teachers	➤ Evaluate the trainings conducted and students' performance	➤ Evaluate the trainings conducted and students' performance
May	➤ Conduct the training for S1 and S2 subject teachers and committee members	➤ Conduct the overall evaluation on the program	➤ Conduct the overall evaluation on the program
Jun	➤ Collect the followings from the subject teachers <ul style="list-style-type: none"> ■ Guidelines (MP, SQ, CM, GO) ■ Examples and exercise (MP, SQ, CM, GO, MS) ■ Questions (SRS) 	➤ Conduct the training for S3 subject teachers	➤ Conduct the public sharing
Jul Aug	➤ Refine the teaching and learning materials for S1 ➤ Prepare the teaching and learning materials for S2 (Student Handbook, Teaching Guide, PPT, self-reflection forms and lesson plans) ➤ Conduct the training for student helpers	➤ Refine the teaching & learning materials for S1 to S2 ➤ Prepare the teaching & learning materials for S3 ➤ Conduct the training for student helpers	➤ Refine the teaching & learning materials for S1 to S3 ➤ Conduct the training for student helpers

According to the above table, our program does not only emphasize on students' development, but also concern with teachers' training. To ensure sustainability of the TSS program, teachers' mastery on teaching TSS is very important. Therefore, _____ will conduct trainings for TSS Committee members so that the members can help to prepare some of the teaching materials about the program and hold some of the trainings and sharing sessions. Apart from internal trainings, _____ will also conduct professional sharing sessions for teachers in nearby schools so as to promote the idea of TSS education.

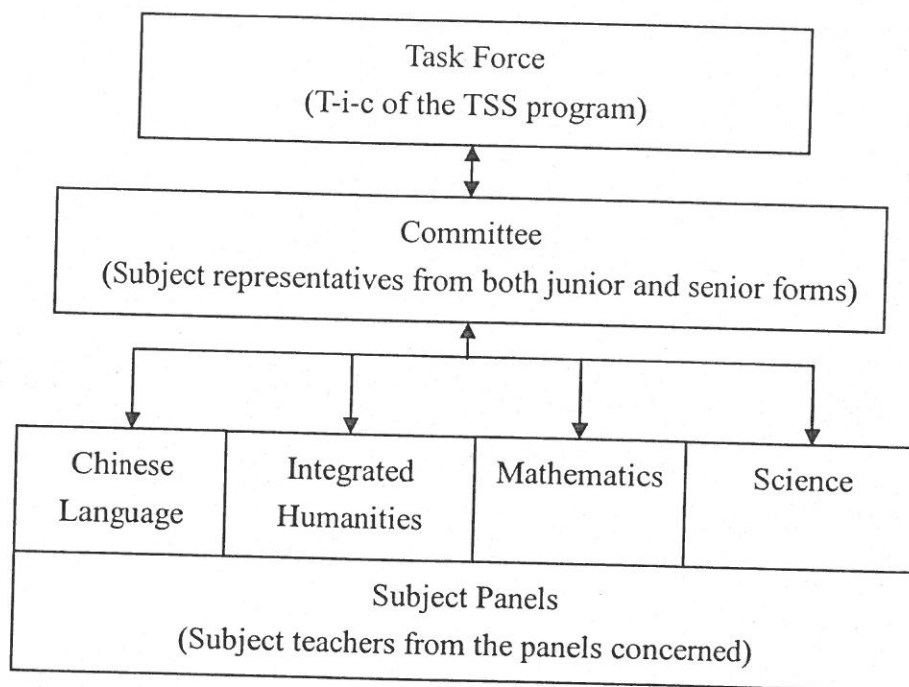


Figure 3 The Administration Structure of TSS Program

Role of different parties

1. TSS Task Force	
	Roles
Ms.	Provide trainings <ul style="list-style-type: none"> ➤ Arrange trainings and feedback sessions for S1 to S3 students, student helpers and teachers involved ➤ Prepare the corresponding teaching materials
Ms.	Monitor the progress of the program <ul style="list-style-type: none"> ➤ Monitor the operation of Spaced Repetition System (SRS) ➤ Monitor students' learning progress ➤ Set up the reward system
Mr.	Evaluate the effectiveness of the program <ul style="list-style-type: none"> ➤ Prepare questionnaire and conduct survey ➤ Analyze data
2. TSS Committee	
	Roles
Subject representatives from both junior and senior forms	<ul style="list-style-type: none"> ➤ Act as the bridge between the task force and subject panels ➤ Identify the learning difficulties of students ➤ Support the task force by providing training, monitoring the progress of the program and evaluating the effectiveness of the program ➤ Collect and Prepare questions from subject panels for SRS
3. Subject Panels	
	Roles
Subject teachers	<ul style="list-style-type: none"> ➤ Provide subject-based guidelines, exercises and examples for TSS student handbook and teaching guide ➤ Assign subject-based practices (e.g. homework, dictations, quizzes, tests)

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| | <p>and exams) which are in line with the aims of the TSS program.</p> <ul style="list-style-type: none"> ➤ Select suitable students' work as examples for trainings and sharing ➤ Report students' performance ➤ Give suggestions about the TSS program |
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Temporary Supporting Staff:

The teaching staff will take up some of the teaching duties of the TSS Task Force in order to create time and space for the Task Force to implement the plan during 2013-2014. The supply teacher will also provide support for the hardware and software maintenance of the program. We expect the staff to have at least 2 years teaching experience and will carry out the following duties:

- take up 18 senior science lessons (each lesson = 35 mins)
- take up 9 senior humanities lessons
- maintain the smooth running of hardware, software and database of the TSS Program

7. Project Deliverables & Benefits

In this project, we expect to deliver the following:

1. A structured TSS Program which is suitable for junior form students in forming good learning habits and pave way for NSS curriculum. We estimate the program to benefit all committee members (8 people), participated junior teachers (10 people) and junior form students (429 students).
2. A Teaching Package with
 - a TSS Student Handbook; and
 - a Teaching Guide,
 allows the sustainability of the program (~150 students per year).
3. Spaced Repetition System for consolidating the learning materials will be built in our school to serve all students (no. of students in this school ~1000 students)
4. The program can be easily shared to other schools, which will subsequently benefit the education field.

8. Financial Planning

Items	Unit cost (\$)	Quantity	Estimated Expenditure (\$)
1. Staff Cost <ul style="list-style-type: none"> Full-time Supply Teacher (GM point 15) Duration: 1 Sep 2013 – 31 Aug 2014 \$23, 530.00 * 12 months * 1.05 (MPF) = \$296, 478.00 	296, 478.00	1	296, 478.00
2. Software and Server <ul style="list-style-type: none"> SMART Ideas Concept-Mapping Software – a software to construct concept map (Appendix 4) A server to cater for the running of “Spaced Repetition System Program” (Appendix 3) 	51, 345.00	2	51, 345.00
3. Trainings & Publications <ul style="list-style-type: none"> Leaflets, handouts, venue booking and miscellaneous items for students’ and teachers’ trainings and professional sharing Production cost of TSS Student Handbook and Teaching Guide 	40, 000.00	NA	40,000.00
4. Audit Fee <ul style="list-style-type: none"> Audit Report 	5, 000.00	1	5,000.00
Total :			HK\$ 392, 900.00 (to the nearest 100)

According to the above financial planning, we would like to apply for QEF to finance the program:
HK\$ 392, 900.00

Asset Usage Plan

Category (in alphabetical order)	Item / Description	No. of Units	Total Cost	Proposed Plan for Deployment (Note)
audio and video equipment	NA	NA	NA	NA
book & VCD	NA	NA	NA	NA
computer hardware	A server to cater for the running of “Spaced Repetition System Program”	2	\$51, 345	For the running of “Spaced Repetition System Program” at school
computer software	A software to construct concept maps (Inspiration 9)			For students to construct concept maps and other graphic organizers in learning at school
musical instrument	NA	NA	NA	NA

office equipment	NA	NA	NA	NA
office furniture	NA	NA	NA	NA
sports equipment	NA	NA	NA	NA
Others	NA	NA	NA	NA

Note: for use by school / organization / in other projects (please provide details of the department / centre to which the asset will be deployed and the planned usage of the asset in activities upon project completion).

9. Performance indexes & Measures

We will collect both qualitative and quantitative feedback from the involved parties for the evaluation of the program.

Quantitative

Performance indexes	Success Criteria	Remark
1. Work in Students' handbook	90% or above of the students complete the tasks in the student booklet	
2. Spaced Repetition System's usage rate	an average of 120 hits rate per day	
3. Students' evaluation on the usefulness of the program	70% or above rate the program as grade 3 or above	5-point scale
4. Subject teachers' evaluation on the usefulness of the program	70% or above rate the program as grade 3 or above	5-point scale
5. Parents' evaluation on the usefulness of the program	70% or above rate the program as grade 3 or above	5-point scale

Qualitative:

Performance indexes	Measures	Remark
1. Written feedback of students, teachers and parents about the program	They have positive feedback towards the program	
2. Quality of students' works in Students' Handbook	Students can achieve the aim of each skill (refer to the table on page 5-6)	
3. Quality of assignments given by different subject teachers	Students can achieve the aim of each skill (refer to the table on page 5-6)	

Report Submission Schedule

I / My school / My organization commit(s) to submit proper reports in strict accordance with the following schedule :

Project Management		Financial Management	
Type of Report and covering period	Report due day	Type of Report and covering period	Report due day
Progress Report 1/9/2013 - 28/2/2014	31/3/2014	Interim Financial Report 1/9/2013 - 28/2/2014	31/3/2014
Final Report 1/9/2013 - 31/8/2014	30/11/2014	Final Financial Report 1/9/2013 - 31/8/2014	30/11/2014

Preview (Identify Main Points)**MP a: Teaching (90 mins – Hall Assembly)**

Before workshop (Subject teachers)	<ul style="list-style-type: none"> ➤ Inform subject teachers to (a) select a new topic for students to practice during the workshop (b) complete the active learning strategies form before the workshop (c) give students guideline for identifying keywords
Before workshop (Class teachers)	<ul style="list-style-type: none"> ➤ Ask students to (a) Complete the tasks in A1 (learning difficulties and solutions) (b) read Topic: 1.2 The Science Laboratory (Science) (c) Complete no. 1 to 4 in A6 (refer to the guidelines in A2 and A3) (d) Bring Science textbook and (electronic) dictionary for the workshop (e) Get ready to present at the end of the workshop
1:55-2:00 (5 mins)	Take attendance in the Hall
2:00-2:25 (25 mins)	1. Introduction <ul style="list-style-type: none"> ✧ Steps in preview ✧ Importance of preview, Assessment criteria
2:25-2:30 (5 mins)	2. Sharing by elite S2 students (the importance of preview)
2:30-3:00 (30 mins)	3. Apply the strategies and skills learnt in a given topic
3:00-3:15 (15 mins)	4a. Presentation by one/two group(s) from each class <ul style="list-style-type: none"> ✧ assigned by teachers ✧ 4 classes x 3 mins = 12 mins ✧ 2 classes: no.1-5 & 2 classes: no. 6-8 4b. Feedbacks from teachers and students
3:15-3:23 (8 mins)	5a. Summary 5b. Survey 5c. Ask students to complete the self-reflection form & HW at home
3:23-3:30 (7 mins)	Spaced Repetition Program

Preview (Identify Main Points)**MP b: Feedback and Sharing (35 mins – Lunch:1:20-1:55p.m.)**

Preparation	<ul style="list-style-type: none"> Select good examples for sharing (gifts) Invite students to share Identify students' problems and suggest solutions Prepare follow up tasks
Tasks	<ul style="list-style-type: none"> Show good examples Students' sharing Point out students' problems Modify their own works and present in group Comment from students Follow up tasks (if necessary)

Concept Map

CM a: Teaching (75 mins – Hall Assembly + the lesson followed)

<p>Before workshop (Subject teachers)</p>	<p><i>Subject teachers (IH):</i></p> <p>(a) <u>select a suitable topic</u> for students to practice</p> <p>(b) draw a concept map for the topic selected and prepare the <u>guidelines</u> for students (e.g. <u>ways to select keywords and classify the keywords; suggestion for linking words</u>)</p> <p>(c) ask students to <u>read</u> the chapter assigned for practice and write down about <u>20 keywords</u> (in groups) on the small <u>self-adhesive notes</u> provided</p> <p>(d) <u>collect</u> the self-stick notes from students before the workshop</p> <p>(e) ask students to <u>bring their textbook / notes and markers of different colours</u></p>
8:10-8:25	Morning prayer and taking attendance in the Hall (<i>no lining up</i>)
8:25-8:45 (20 mins)	<p>2. Introduction</p> <ul style="list-style-type: none"> ✧ Importance of concept maps ✧ Assessment criteria Differences between concept map and mind map Common mistakes Common ways to classify keywords Common linking words ✧ Steps in drawing concept map
<p>8:45-9:20 (35 mins)</p> <p>8:45-8:55 (10 mins)</p> <p>8:55-9:05 (10 mins)</p> <p>9:05-9:08 (3 mins)</p> <p>9:08-9:11 (3 mins)</p> <p>9:11-9:14 (3 mins)</p> <p>9:14-9:20 (6 mins)</p>	<p>2. Draw a concept map in groups:</p> <ul style="list-style-type: none"> ✧ <i>Distribute 2 pieces of A4 size papers and a notes pad to each group</i> 1. Write down all the keywords (KWs) done before the workshop 2. Classify them into groups 3. Write down the sub-headings 4. Arrange the KWs in a map 5. Construct relationships (, → & linking words) 6. Give (daily) examples optional to S1 7. Write down any previous knowledge optional to S1 8. Give explanations/elaboration optional to S1 9. Add diagrams and colours 10. Check for any missing concepts/facts ✓ <i>Post students' work on the boards provided at the end of the practice</i>
9:20-9:45 (25 mins)	<p>3.1 Vote for the best work (5 mins)</p> <ul style="list-style-type: none"> ✓ <i>Distribute a label to each student and ask them to affix the given label to the work that they find the best in their own classes</i> <p>3.2 Sharing through asking students questions (15 mins)</p> <p>3.3 Give comments (5 mins)</p> <ul style="list-style-type: none"> ✓ <i>Invite teachers and students to give comments</i>

9:45–9:55 (10 mins)	<p>4.1 Share the learning outcomes (insight and problems)</p> <ul style="list-style-type: none"> ✓ <i>Invite students to share their insight and the problems encountered in the workshop</i> <p>4.2 Give a souvenir to the best group in each class</p> <ul style="list-style-type: none"> ✓ <i>Announce the best groups and give them souvenirs</i> ✓ <u><i>Ask students to refine their works at home and hand in to their subject teachers/t-i-c on the coming Monday</i></u>
After workshop <i>(Subject teachers)</i>	<p>Collect the best 2 or 3 concept maps from each class</p> <p>Post the good concept maps on board</p> <p>At least one concept map is done by the software in e-class</p>

Concept Map

CM 1b & 2b: Feedback and Sharing (35 mins – Lunch:1:20-1:55p.m.)

Preparation	<p>Select good examples for sharing (gifts)</p> <p>Invite students to share</p> <p>Identify students' problems and suggest solutions</p> <p>Prepare follow up tasks</p>
Tasks	<p>Show good examples</p> <p>Students' sharing</p> <p>Point out students' problems</p> <p>Modify their own works and present in group</p> <p>Comment from students</p> <p>Follow up tasks (if necessary)</p>

Concept Map

Student Handbook

(I) Students' feedback

可以幫助溫習或預習,不用「死背」書,而且幫助頭腦思考。
 畫完後,我感到非常方便。學會後,也對溫習時更有自信心,也發現原來除了抄寫筆記和溫習筆記,也能畫概念圖,很方便!
 甚麼,還有做完概念圖,我很有滿足感,因為這樣畫可以方便我溫習,筆記看得更清楚,很有滿足。
 透過運用概念圖,我能夠清晰地了解課文中大概內容,這有助我在測驗或考試前溫習,我感到十分喜悅的是我又從這個課程中學
 我在這課的小測取得高分,全靠概念圖加深了我的記憶! 憶力,概念圖十分有用,我會繼續畫它來加深記憶! ><

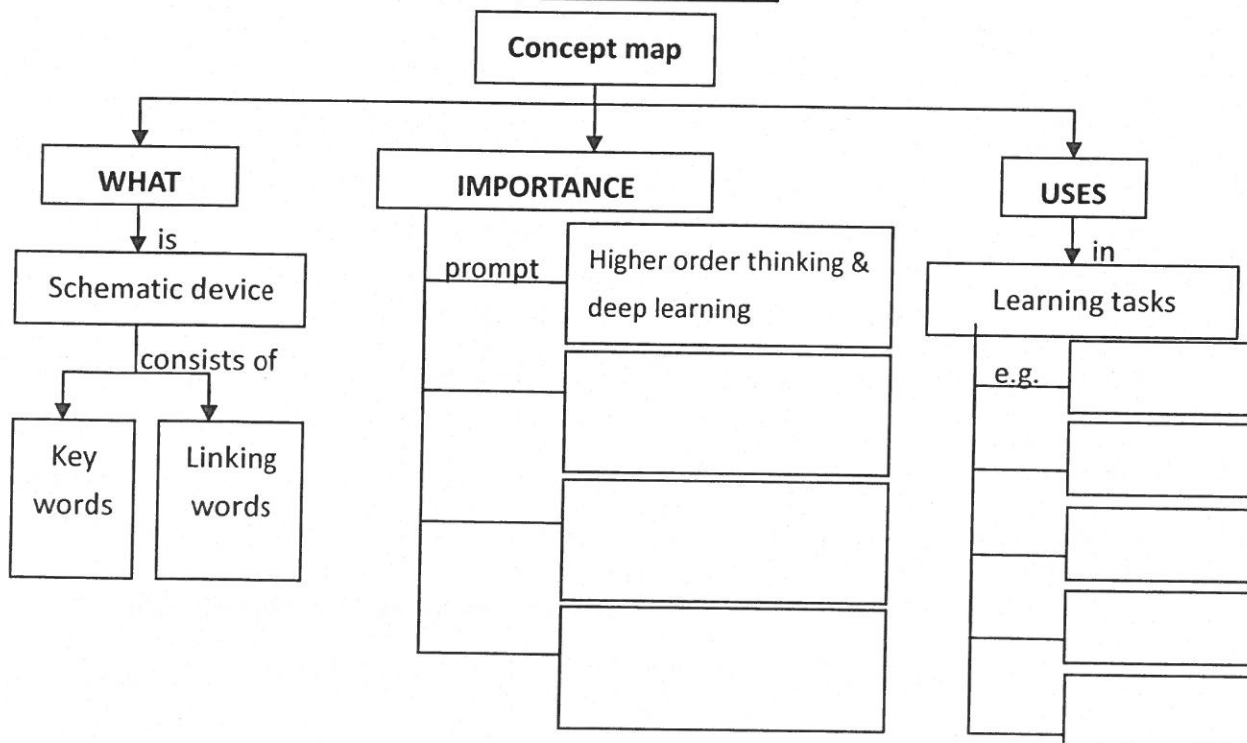
(II) Importance

Concept map is a schematic device which consists of key concepts (and keywords) and propositions (linking words).

Drawing concept map prompts higher order thinking and deep learning. As main points with relationships are emphasized, it facilitates organization of knowledge. Students' understanding can be checked and their misconceptions can be identified. Drawing concept map in groups initiates discussion.

Concept map can be used in making notes, essay-writing, newspaper cutting, writing book reports, and planning projects.

☺ Complete the following concept map before workshop.

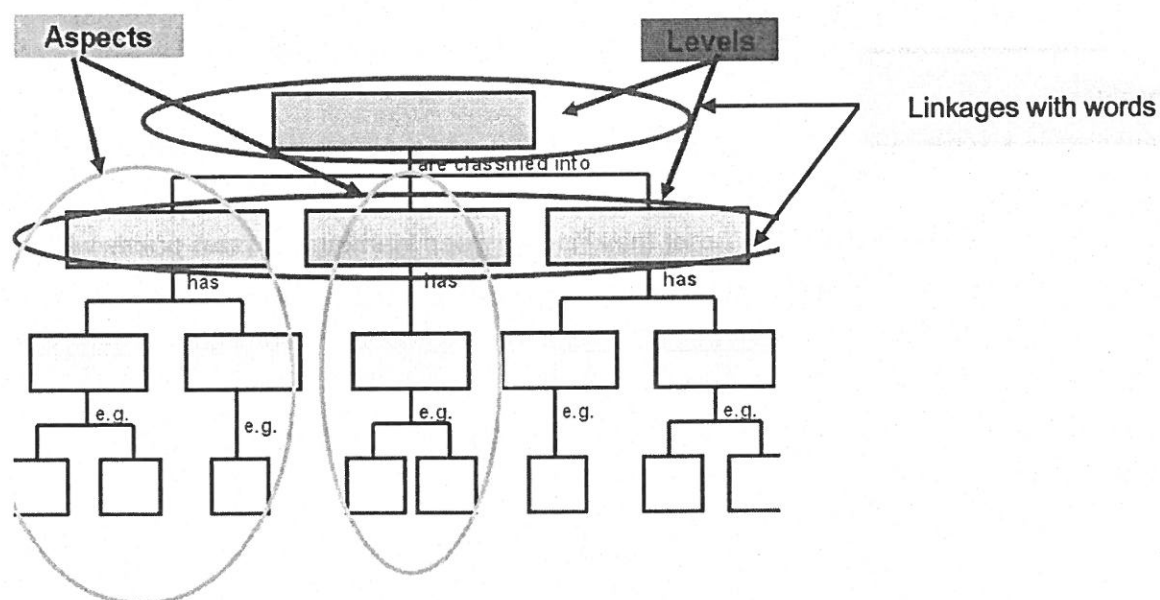


(III) Objectives at different levels

Students should be able

S1	to reorganize learning materials by drawing concept map of a fundamental level (Focus on <u>organization, relationships, examples and presentation</u>)
S2	to reorganize learning materials by drawing concept map of a higher level (Focus on <u>previous knowledge and explanations/elaboration</u>)
S3	<ul style="list-style-type: none"> ✧ to reorganize learning materials by drawing concept map and other graphic organizers ✧ to choose suitable graphic organizers for reorganizing learning materials

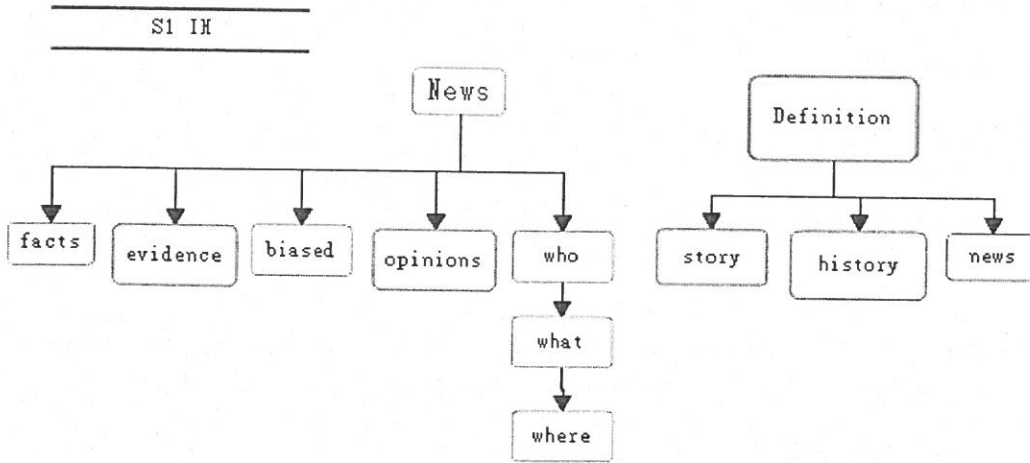
(IV) Assessment criteria (and common mistakes)



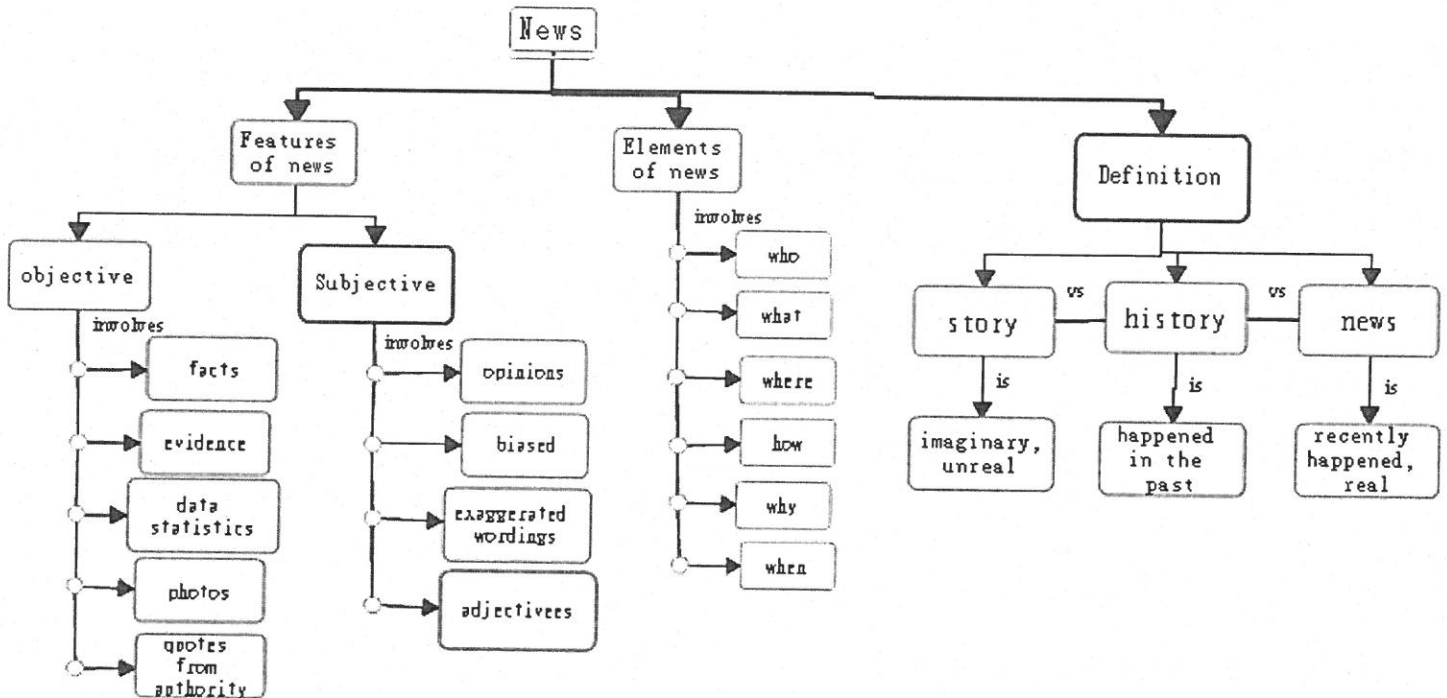
Part (A)

	Item	Description
1	Organization: <ul style="list-style-type: none"> ✧ Aspects and Levels of analysis & Key headings ✧ Content 	Logical organization of aspects and levels Suitable no. of aspects and levels Suitable branching at different levels Suitable key headings Enough content coverage
2	Relationship: <ul style="list-style-type: none"> ✧ Lines/Arrows and Linking words 	Suitable lines/arrows with linking words
3	Examples	Suitable (daily) examples
4	Previous knowledge	Relate concepts and facts to previous topics (same level and junior levels) and other subjects
5	Explanations/elaboration	Suitable explanations /elaboration
6	Presentation skills <ul style="list-style-type: none"> ✧ Colours and Diagrams 	Good use of colours and diagrams

Sample 1



Sample 2



		Sample 1	Sample 2
1	Organization: ✧ Aspects and Levels of analysis & Key headings ✧ Content	Only two separate aspects Only a few levels Not enough key heading Not enough content	Three major aspects More levels Suitable key headings More content coverage
2	Relationship: ✧ Lines/Arrows and Linking words		

3	Examples		
4	Previous knowledge		
5	Explanations/elaboration		
6	Presentation skills ✧ Colours and Diagrams		

Part (C)**Common ways to Classify Keywords**

1. Appearance (colour, shape ...)
2. Uses (bath soap, shampoo, facial cleanser, toilet cleanser ...)
3. Properties (active in the daytime / at night)
4. Constituents (Food: protein, fat ...)
5. Specific ways according the nature of the subject

e.g. IH (mental, physical and social);

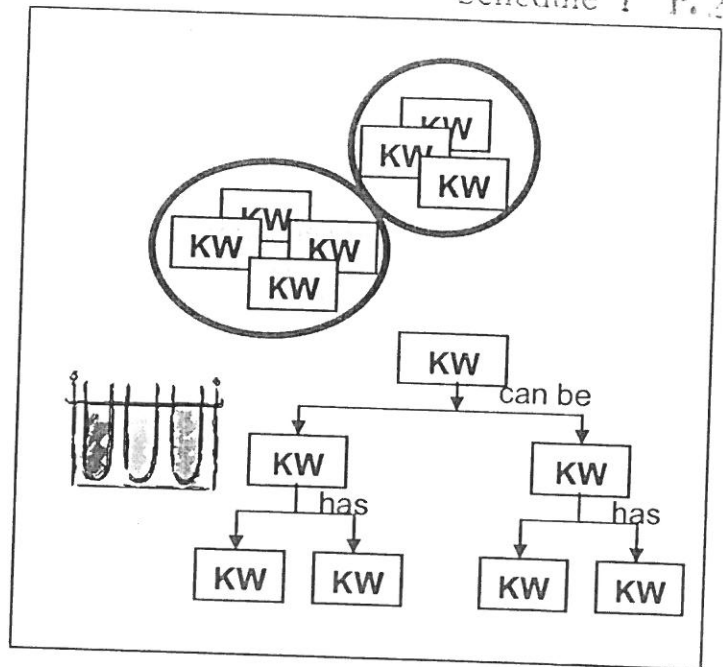
Chemistry (structures, properties and uses)

Common Linking words

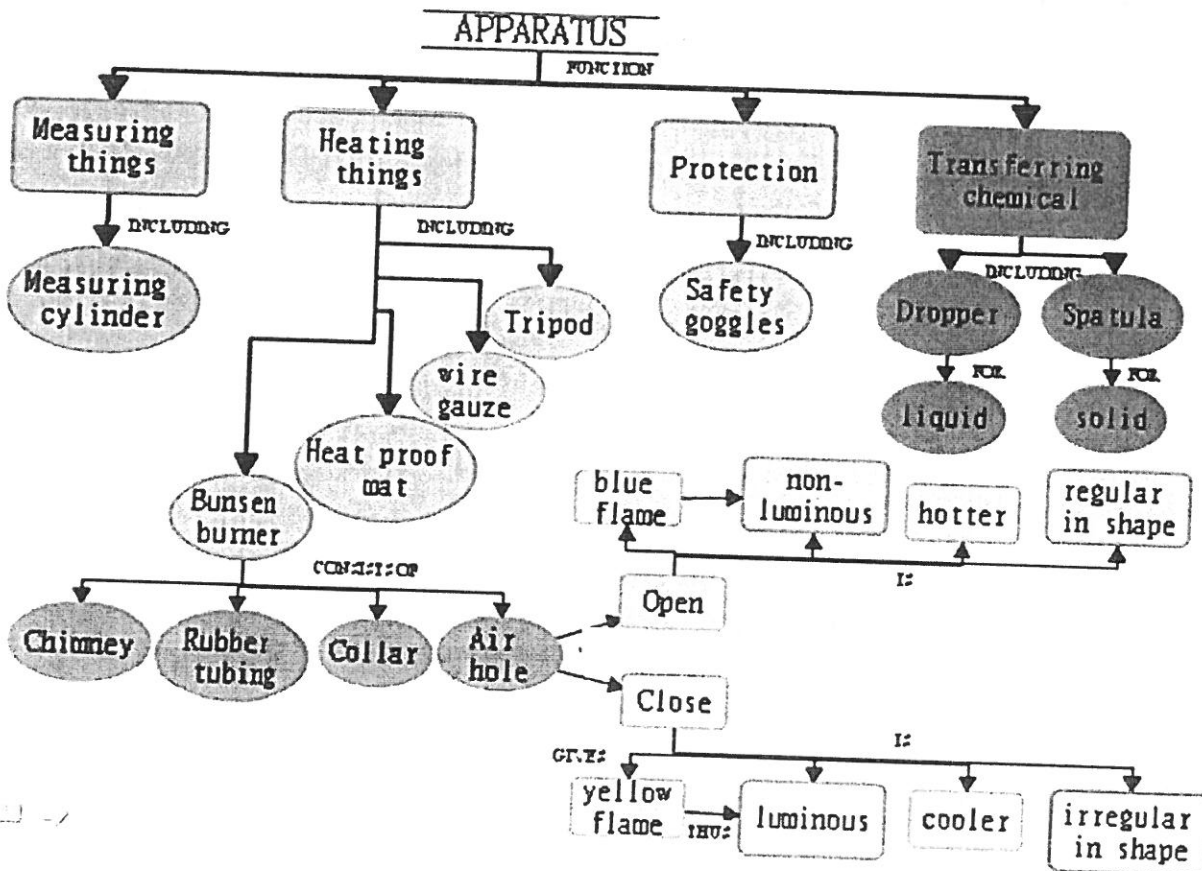
IH	involves	represents	means	causes	affects	vs
Science	consists of	divided into	process	remove	increase	leads to

(V) Steps

1. Write down all the **keywords** (KWs)
2. **Classify** them into groups
3. Write down the **sub-headings**
4. Arrange the KWs in a map
5. Construct **relationships**
(|, → & linking words)
6. Give (daily) **examples**
7. Write down any **previous knowledge**
8. Give **explanations/elaboration**
9. Add **diagrams** and colours
10. Check for any missing **concepts/facts**



(VI) Examples (different subjects)



(VII) Exercise

Draw a concept map to summarize the important concepts and facts in the topic 'Energy' in Science.

- (a) Feedback from students just after the workshop
I know how to apply active learning strategies.

	1A	1B	1C	1D	Overall
No. of students	35	36	36	37	143(100%)
%Strongly Agree	0	0	0	0	0(0%)
%Agree	35	31	36	37	138(97.2%)
%Disagree	0	4	0	0	4(2.797%)
%Strongly Disagree	0	1	0	0	1(0.699%)
Absent	0	0	0	0	(0%)

- (b) Feedback from students just after the workshop
I know how to apply concept map in learning.

	1A	1B	1C	1D	Overall
No. of students	34	36	36	37	143(100%)
%Strongly Agree	0	0	1	0	1(0.7%)
%Agree	34	34	31	36	135(94.4%)
%Disagree	0	1	4	0	5(3.5%)
%Strongly Disagree	0	0	0	0	0(0%)
Absent	0	1	0	1	2(1.4%)

I. Pre-lesson preparation – Main points identification and Self-Questioning

做完這個自我評估後我發現，我在考試前不單溫習課本，還要溫習上課時抄的筆記。我亦了解到原來我們身邊有很多平時自己沒有留意的與科學相關聯的事物。我希望在未來的日子裏可以多多參加這類活動。

我運用這個學習方法來讀這個課題後，比平常只是用普通方法來預習更加有效和加深記憶，對我的學習有莫大幫助。因為我以前每讀完一個課題後，沒勁便會忘記得一乾二淨，有了這個方法後我就再不用怕會忘記了。我真的很感謝老師舉辦這次的活動，希望他們能多舉辦類似的活動，必能幫助不少人。

經過這次預習後，即使老師教得很快，我也明白這個課題。透過這次預習，我明白到預習是十分重要的，我必須預習課題，才使我明白更多有關課題的知識。

我認為這個自我評估的成效理想，能令我把書中知識融匯貫通，而且聯繫日常生活例子，可加深我的記憶。

很有成就感。

我覺得用這個方法溫習很有效，因為可能提走找出重點，關鍵字。這個方法很有效，我會繼續用，和推介給朋友。

我想這一些方法一定可以幫助我的學業，例如上課時我會記得要做筆記，那便可以回家預習/複習。在這個活動課堂中，我學到了在課堂前/後需要做足的功夫，那才可以令自己的成績得到改善上，希望在未來這一年我能運用這些已學的技巧。

我可以快點明白老師的說話，懂得回答更多問題，還可以獲取更多知識，溫習也變得容易和快捷多了。

在這次活動中，讓深刻體會到課前學習的樂趣，閱讀課本的趣味性，以日常生活例子，更容易理解文課的重點，練習課文中的關鍵。

原來自己用“自擬問題”的方法可以能更加吸收，也能為自己檢查自己所學是否已全部掌握。還有舉出例子也能溫習，也是一個好方法。

經驗

我利用概念圖做筆記，我把中史的《春秋戰國》這一課完成了一個概念圖，我果然把記憶加深了！我有先把霸主分開，再舉例他們做了甚麼，最後加上自己想像中霸主，塗上顏色。^^

成效及感想

我在這課的小測取得高分，全靠概念圖加深了我的記憶！概念圖十分有用，我會繼續畫它來加深記憶！><

經驗

以前做概念圖時，只是簡簡單單做了就當作完成，都沒有真正看過概念圖的好處。上了這課後，我多用了概念圖，並了解多了概念圖的好處。

成效及感想

令我每教新一課的時候，我也會利用概念圖來把每一課的內容分開，這令我更快能吸引到老師所教。這一次，我覺得獲益良多，學了很多^{上課時}之前沒有學過的知識。很感謝老師為我們上了這麼寶貴的一課。

經驗

雖然有時候會感到不耐煩，但當我完成畫概念圖時，會很有成就感。

成效及感想

透過運用概念圖，我能夠清晰地了解課文中大概內容，這有助我在測驗或考試前溫習，我感到十分喜悅的是我又從這個課程中學到了另一種有助我學習的技能。

經驗

學會用概念圖後，我認為能令自己容易溫習。初時認為畫概念圖是一件又難又麻煩。但學習畫完後，我發現原來概念圖是很多益處。

成效及感想

畫完後，我感到非常方便。學會後，也對溫習時更有自信心，也發現原來除了抄寫筆記和溫習筆記，也能畫概念圖，很方便！

經驗

我做概念圖的經驗不太足夠，但當自己親手做時，時間也要很長，而且要檢查自己有沒有任何金錯誤，但是做完後，所有重點全列出來，顯得很清晰。

成效及感想

做完概念圖後，我發覺自己對概念圖了解清楚了許多，而且當做那一科的概念圖後，我很了解那一課是想說甚麼，還有做完概念圖，我很有滿足感，因為這樣畫可以方便我溫習，筆記看得更清楚，很有滿足。

經驗

第一次做概念圖的時候，會不自覺地做成腦圖，但有了經驗後，便越做越好。

成效及感想

學會了畫概念圖後，能更清楚簡單記錄資料，方便預習和溫習。我覺得這個概念圖很好，令我可以更快捷地完成筆記或預習，我希望日後學到更多關於這方面的知識。

可以令我記得到更多的生字，幫助我在考試時的發揮。

用構法。很有效，令我對一些字加深了印象。

容易溫習，節省時間
記憶更持久

記東西時容易了很多。

I. Pre-lesson preparation – Main points identification and Self-Questioning

Sample 1

科目: <u>科學</u>	課題: <u>Safety in the laboratory</u>
1. 閱讀課本 <input checked="" type="checkbox"/> 有 / 沒有	6. 自擬問題 <input checked="" type="checkbox"/> 有 / 沒有
2. 找出關鍵字 <input checked="" type="checkbox"/> 有 / 沒有	舉例: <u>滅火器噴出的是甚麼?</u>
3. 找出重點 <input checked="" type="checkbox"/> 有 / 沒有	_____
4. 做練習 <input checked="" type="checkbox"/> 有 / 沒有	_____
5. 聯繫已學的知識和日常生活例子 <input checked="" type="checkbox"/> 有 / 沒有	7. 找答案/相關資料 <input type="checkbox"/> 有 / 沒有
舉例: <u>日前在ETV裏見過滅火器。</u>	舉例: <u>主要是水, 泡沫, 乾粉滅火劑, 二氧化碳, 鹵化烷或氟化碳化合物。</u>

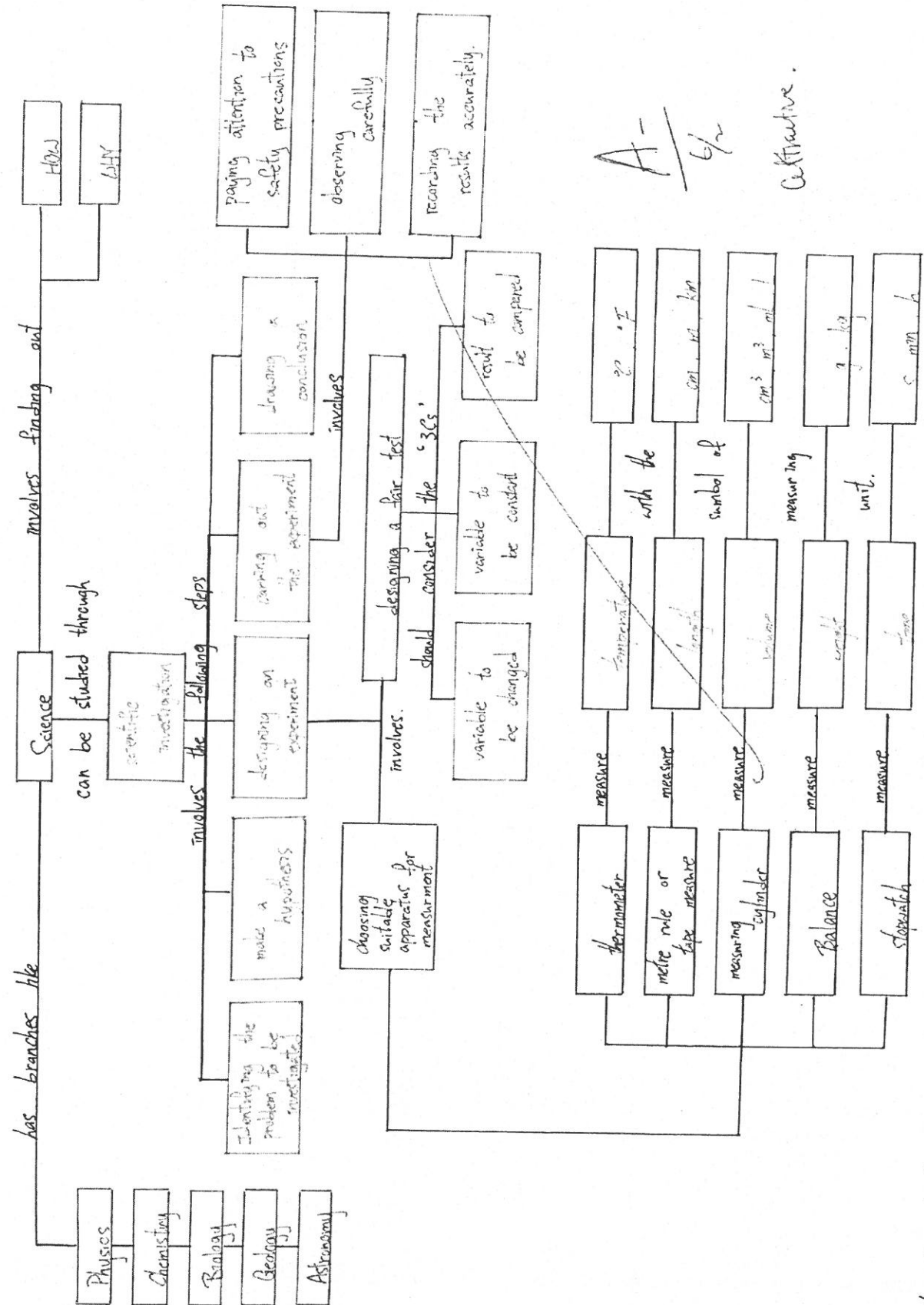
Sample 2

科目: <u>數學</u>	課題: <u>Directed Numbers and Number Line.</u>
1. 閱讀課本 <input checked="" type="checkbox"/> 有 / 沒有	6. 自擬問題 <input type="checkbox"/> 有 / 沒有
2. 找出關鍵字 <input checked="" type="checkbox"/> 有 / 沒有	舉例: <u>圖書沒有圈工</u>
3. 找出重點 <input checked="" type="checkbox"/> 有 / 沒有	<u>古代時, 人們用甚麼代表負數。</u>
4. 做練習 <input checked="" type="checkbox"/> 有 / 沒有	7. 找答案/相關資料 <input type="checkbox"/> 有 / 沒有
5. 聯繫已學的知識和日常生活例子 <input checked="" type="checkbox"/> 有 / 沒有	舉例: <u>古代人用顏色代表正負數, 紅色是正, 黑色是負。</u>
舉例: <u>有向數可以用在海拔上或入達通, 例: 負錢。</u>	

Sample 3

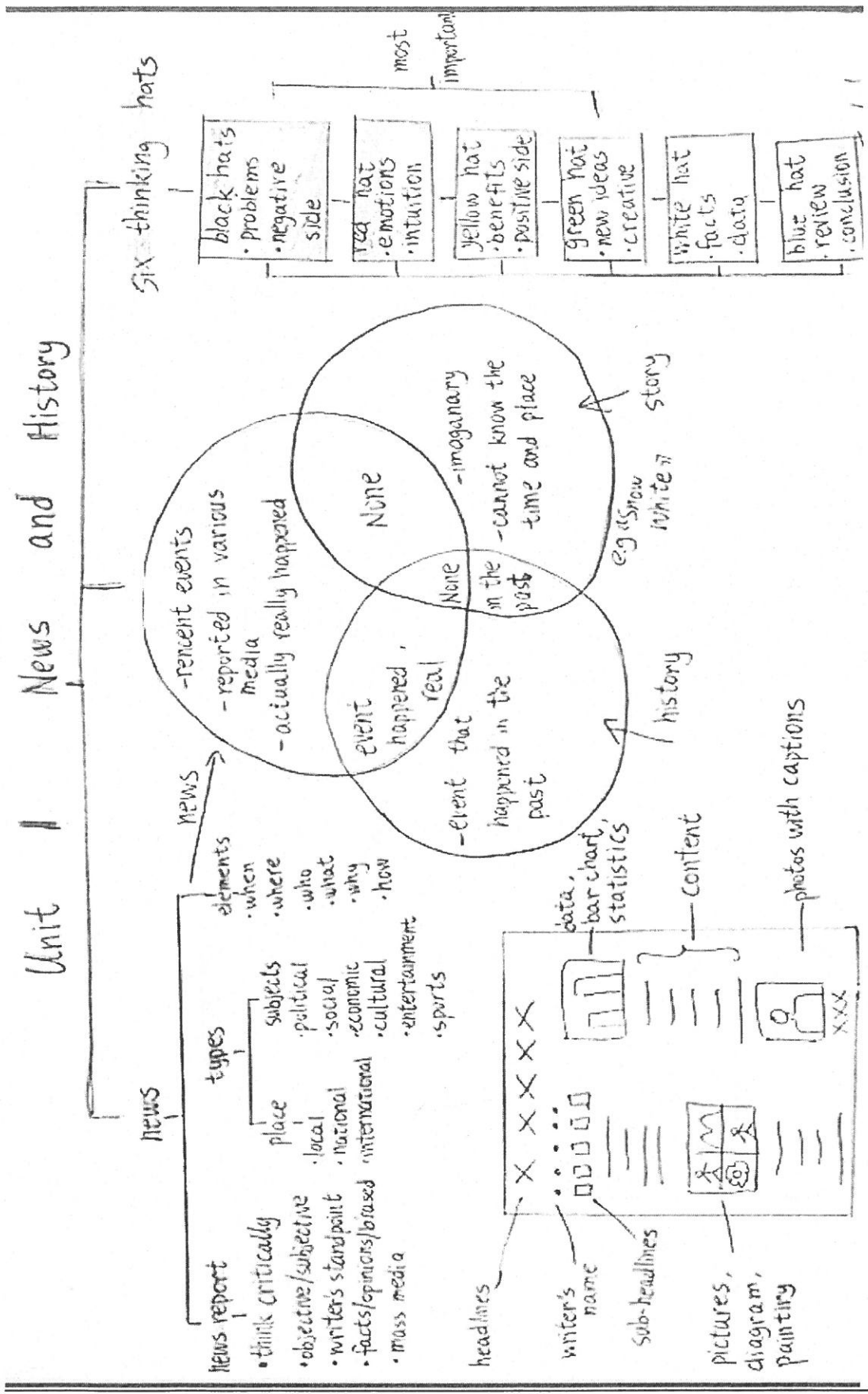
科目: <u>中英</u>	課題: <u>新舊石器時代</u>
1. 閱讀課本 <input checked="" type="checkbox"/> 有 / 沒有	6. 自擬問題 (書沒有答案) <input checked="" type="checkbox"/> 有 / 沒有
2. 找出關鍵字 <input checked="" type="checkbox"/> 有 / 沒有	舉例: <u>為甚麼在新石器時代女性地位比男性高?</u>
3. 找出重點 <input checked="" type="checkbox"/> 有 / 沒有	_____
4. 做練習 <input checked="" type="checkbox"/> 有 / 沒有	7. 找答案/相關資料 <input checked="" type="checkbox"/> 有 / 沒有
5. 聯繫已學的知識和日常生活例子 <input checked="" type="checkbox"/> 有 / 沒有	舉例: <u>因為女性不用打仗去找食物, 男性容易比動物吃掉。</u>
舉例: <u>古人去世後跟現在一樣都會火化。</u>	

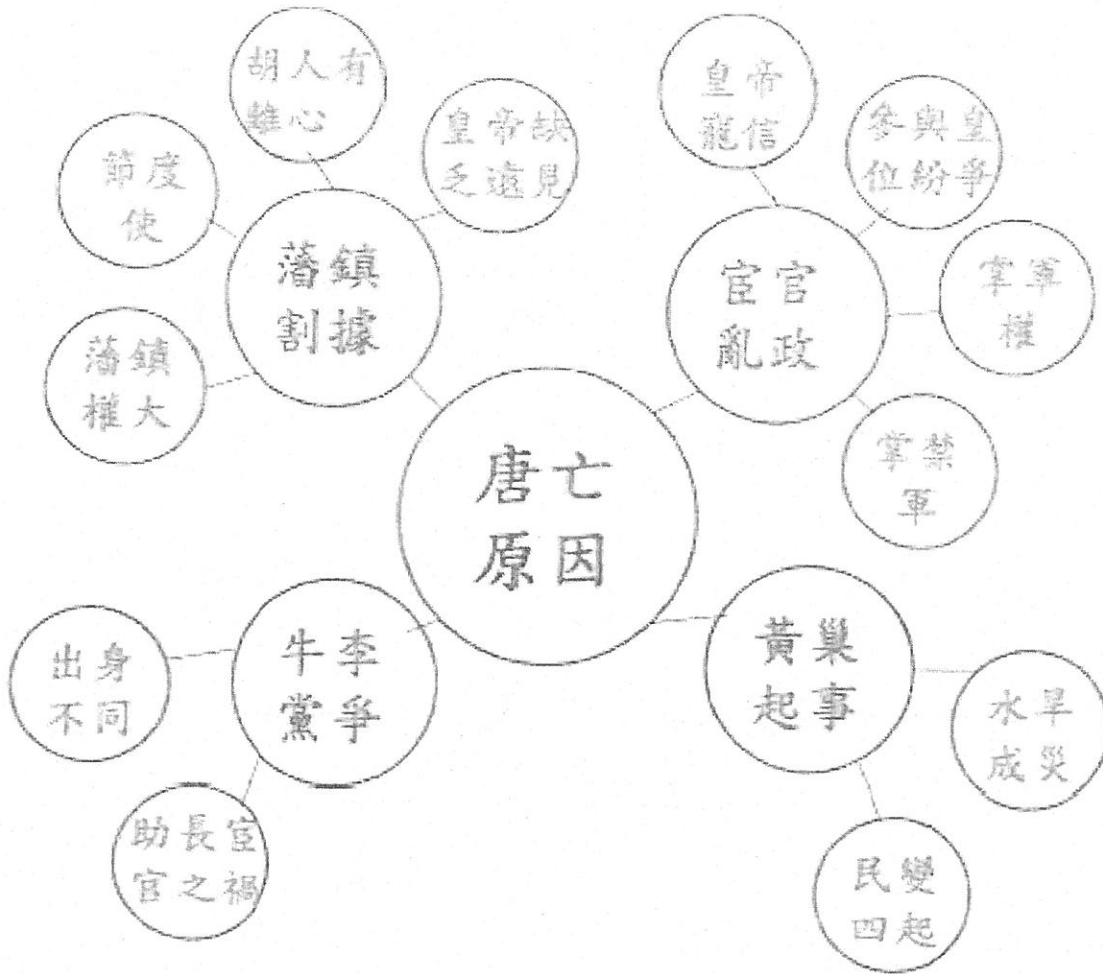
Sample 1



Chan Pui Jacinta Tung C.I.


Sample 1





Sample 1

Sample 2

Application 1			Application 2		
Subject:	Chapter:	Page no.:	Subject:	Chapter:	Page no.:
IH	Topic Three: Basic Geography	notes WS8	Science	6 (Matter as particles)	6.35
<p>拆字 拆句法</p> <p><u>capricorn</u></p> <p>cap / ri / corn</p> <p>↑ ↑ ↑</p> <p> 粟米</p> <p>頂 cap 上寫 RI</p> <p>有一個人戴著一頂寫了RI的cap帽， 買了粟米吃。</p>			<p>自創句法</p> <p><u>Atom</u> <u>Element</u> <u>Compound</u></p> <p>A boy call Tom went to Element ^(圓方), saw Coco in Macdonald. She have some pound for her trip to Europe. 阿 Tom 去圓方，見到 Coco 係「記」 Coco 話去歐洲旅行所以暢 咁 D 幾 pound.</p>		

Sample 3

Application 3		
Subject:	Chapter:	Page no.:
中史	地圖	/
<p>山東 → 山東餃子</p> <p>江蘇 → 江蘇餅</p> <p>浙江 → 浙江醋</p> <p>福建 → 福建炒飯</p> <p>廣東 → 我是廣東人</p> <p>海南 → 海南雞飯</p> <p>雲南 → 雲南米線</p>		

Appendix 2

Literature about the importance of the four study skills

As we have mentioned, there are four skills for students to learn. One of them is identifying main points. This skill is important as it helps students to extract the main ideas about a topic quickly, which enhances their comprehension skills and train them to think actively. This also facilitates understanding and enhances learning efficiency. Besides, we also aim at training students to be able to do self-questioning and answering. Based on schema theory [1,2], self-questioning [3] invokes higher-order comprehension processes, such as inferring answers from text already read. That skill is definitely crucial for an independent learner.

Also, organizing learning materials by concept mapping [4] and graphic organizer [5] is also another crucial skill. Clark (2007) [6] highlighted that graphic organizers not only enable students to record and categorize information, but also help students to understand difficult concepts, generate thoughts, and identify connections between ideas.

Last but not least, based on Sternberg, Jarvin and Grigorenko's research in 2010 [7], memory skills are essential to success in school and are important for high performance on standardized test.

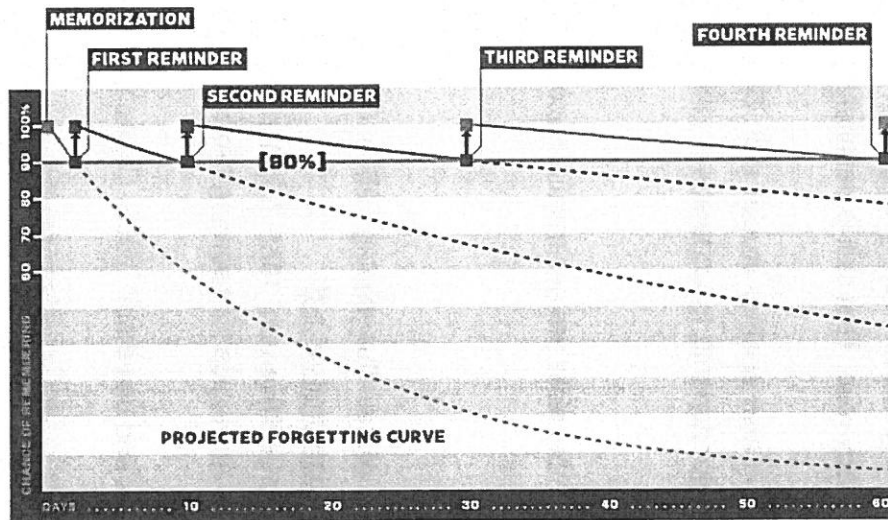
References:

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- [6] A. Clark, "GOs and the school library program.", University of Alberta Department of Elementary Education, 2007
- [7] R.J. Sternberg, L. Jarvin, L.L. Grigorenko, "Teaching for wisdom, intelligence, creativity, and success", 2010. Online available: <http://www.myiet-meta.com/resources/2%20-%20V10N1%20-%20Syaza%20-%20GRAPHIC%20ORGANIZER%20-%20Online.pdf>

Appendix 3a

The Spaced Repetition System (SRS)

SRS is an online system which was designed based on the idea of forgetting curve, which was first introduced in H. Ebbinghaus (1885). According to the theory, "repetition" of words and concepts at specific intervals can lower the rate of decay about the curve and help students to develop long term memory. SRS works like a scheduler and remind students about words and concepts from time to time, thus helps students develop long-term memory about difficult learning content.



Source from: http://www.wired.com/medtech/health/magazine/16-05/ff_wozniak?currentPage=all

SRS - Beta V0	Quiz - 2012-07-19
My Library	# Questions Today: 23
Quiz	# Questions Remaining: 23
Performance	Chemistry - ChapterE
Setting	The solubility of Ammonium Bromide is _____
Logout	(1) <input type="text"/> Submit

The interface of Spaced Repetition System

SRS - Beta V0	My performance Average performance Top 10% performance Top 10% students Records					
My Library	My performance: Current Score 7					
Quiz	23	7	0	0	0	0
Performance						
Setting	Start	Level 1	Level 2	Level 3	Level 4	Finish
Logout	The number above each column shows the number of questions at each level of mastery					

The performance gives the overall score of each student

S1 Spaced Repetition Experimental Project (SRS) (Final Term Evaluation, 2011-2012)*All students*

How often do you do SRS questions?(please tick as appropriate)									
0/week	1/week	2/week	3/week	4/week	5/week	6/week	7/week		
0	2	1	0	3	4	2	3		
			Strongly Disagree					Strongly Agree	
Q		1	2	3	4	5	6	Mean	
1	SRS can help memorize vocabs and concept words better	1	0	6	9	4	4	4.13	
2	I can spend less time on doing revision before quiz/ test after using SRS	0	4	10	4	6	0	3.50	
3	I make fewer spelling mistakes after using SRS	2	1	6	12	2	1	3.58	
4	I make fewer careless mistakes after using SRS	2	1	5	10	6	0	3.71	
5	My quiz/test result has improved after using SRS	1	3	1	9	6	3	4.09	
6	I will continue to use SRS	1	2	7	5	5	3	3.87	
7	I like Spaced Repetition System (SRS)	0	5	5	7	4	3	3.79	