

**ST. LOUIS SCHOOL ANNUAL PLAN 2019-2020****SUBJECT / TEAM****CHEMISTRY****(I) Aims**

1. To improve public examination result in HKDSE.
2. To cater for the diversified needs of students by adopting eLearning and reflective formative assessments.
3. To improve school's academic reputation by joining terrestrial competition that stress on creativity and/or problem solving.

(II) Situational Analysis**(a) Strengths**

- A certain degree of cohesion and collaboration spirit is maintained in team in promoting teaching materials in current curriculum.
- Public examination result is maintaining to be acceptable even under continuous gradually enlarging learning difference of students due to appropriate remedial and consolidation measures done on them.

(b) Weakness

- The learning ability difference of students is getting wider and more low-achievers lack the self-learning ability to study chemistry themselves.
- The interactions between students of different ability during the lessons are needed to be enhanced further so measures of catering for learning difference in classroom via e-learning.
- Variety of learning and teaching methodology, assessment methods are required continuously to develop.

(c) Opportunities

- Panel members are willing to attend workshops and seminars to enrich their knowledge on teaching and develop the pedagogy of learning and teaching chemistry. All these are essential for teachers in upgrading their teaching professionalism.

(d) Threats

- The number of capable students choosing chemistry (science) as elective is continuously declining under the current trend of utilitarian society. Moreover, STEM education is challenging to chemistry teachers.
- Current challenging trend of e-learning and m-learning has to be faced and panel members should be aware of and keep pace with the new education trends.

(III) Highlight

- (a) S4 Problem Solving – Copper Extraction Experiment Project
- (b) Environmental S3 “Living a Low-Carbon Life” Chemistry Video Competition

(IV) Short Term Direction

- (a) To improve school’s academic reputation by maintaining appreciated public examination results and joining terrestrial competition.
- (b) To strengthen the measures of e-Learning and m-Learning in and after classroom teaching.
- (c) To incorporate problem solving and design-thinking elements in students project.

(V) Areas of Concern

1. Major Concern 1: **Students as visionary leaders possessing enhanced thinking skills, especially creativity and problem solving**

Program title (1): **S4 Problem Solving Project - Copper Extraction from ore**

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required																																																																														
Students are able to identify needs and devise ways to meet the needs when facing problems of real-life problems.	<p>Devise group project learning (S4 Problem Solving Project - Copper Extraction from ore) that required different generic skills especially problem solving (including creativity, design-thinking) of students in an authentic problem situation.</p> <ul style="list-style-type: none"> • Assessments are made use of for effective learning • Adopting multi-ways for assessments • Reports of assessments indicative to areas/ways of improvement • Students reflecting on results of assessments 	<ul style="list-style-type: none"> • All S4 chem students can formulate their plan and finish the experimental report of the project on time. • Their overall rating score higher than 50 (50% of total 100 marks) in the assessment form of assessment criteria. 	<ul style="list-style-type: none"> • Assessment criteria in assessment form : <table border="1"> <thead> <tr> <th colspan="3">Description of assessment criteria</th> </tr> <tr> <th>Criteria-</th> <th>Max score</th> <th>Score Award</th> </tr> </thead> <tbody> <tr> <td colspan="3">Laboratory written proposal:</td> </tr> <tr> <td>1. Cover pages-</td> <td>30</td> <td>✓</td> </tr> <tr> <td>2. Objectives-</td> <td>2</td> <td>✓</td> </tr> <tr> <td>3. Chemical principle/ Theory-</td> <td>5</td> <td>✓</td> </tr> <tr> <td>4. Experimental procedures-</td> <td>10</td> <td>✓</td> </tr> <tr> <td>5. Discussion of advantages and disadvantages of your method-</td> <td>4</td> <td>✓</td> </tr> <tr> <td>6. Risk assessment-</td> <td>5</td> <td>✓</td> </tr> <tr> <td>7. Appropriate citation of written and/ or web-based references-</td> <td>2</td> <td>✓</td> </tr> <tr> <td colspan="3">Modified Laboratory proposal:</td> </tr> <tr> <td colspan="3">Laboratory written report:</td> </tr> <tr> <td>1. Cover pages-</td> <td>1</td> <td>✓</td> </tr> <tr> <td>2. Objectives-</td> <td>2</td> <td>✓</td> </tr> <tr> <td>3. Introduction -</td> <td>2</td> <td>✓</td> </tr> <tr> <td>4. Chemical principle/ Theory-</td> <td>4</td> <td>✓</td> </tr> <tr> <td>5. Experimental procedures-</td> <td>10</td> <td>✓</td> </tr> <tr> <td>6. Result and calculation-</td> <td>5</td> <td>✓</td> </tr> <tr> <td>7. Discussion-</td> <td>7</td> <td>✓</td> </tr> <tr> <td>8. Conclusion/ Interpretation of Results-</td> <td>4</td> <td>✓</td> </tr> <tr> <td>9. Appropriate citation of written and/ or web-based references-</td> <td>2</td> <td>✓</td> </tr> <tr> <td>10. Neat and organized work-</td> <td>3</td> <td>✓</td> </tr> <tr> <td colspan="3">Laboratory work:</td> </tr> <tr> <td>1. Correct handling of chemical equipments in the laboratory-</td> <td>5</td> <td>✓</td> </tr> <tr> <td>2. Clean work throughout the whole experiment-</td> <td>5</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100</td> <td>✓</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Students’ written feedback in their post-project reflection. 	Description of assessment criteria			Criteria-	Max score	Score Award	Laboratory written proposal:			1. Cover pages-	30	✓	2. Objectives-	2	✓	3. Chemical principle/ Theory-	5	✓	4. Experimental procedures-	10	✓	5. Discussion of advantages and disadvantages of your method-	4	✓	6. Risk assessment-	5	✓	7. Appropriate citation of written and/ or web-based references-	2	✓	Modified Laboratory proposal:			Laboratory written report:			1. Cover pages-	1	✓	2. Objectives-	2	✓	3. Introduction -	2	✓	4. Chemical principle/ Theory-	4	✓	5. Experimental procedures-	10	✓	6. Result and calculation-	5	✓	7. Discussion-	7	✓	8. Conclusion/ Interpretation of Results-	4	✓	9. Appropriate citation of written and/ or web-based references-	2	✓	10. Neat and organized work-	3	✓	Laboratory work:			1. Correct handling of chemical equipments in the laboratory-	5	✓	2. Clean work throughout the whole experiment-	5	✓	Total	100	✓	<p>Nov. 2019</p> <p>—</p> <p>Apr. 2020</p>	S4 : LCY, KCH	<p>\$ 800</p> <p>Book Coupons as prize for the best two groups in each elective group.</p> <p>[\$50 × 4 × 4]</p>
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2. Major Concern 2: **Students as visionary leaders with necessary positive values including self-discipline and respect inculcated**Program title (2): **S3 Low–Carbon Life Chemistry Video Competition**

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required																																																			
<p>Students are able to identify needs and devise ways to meet the needs when facing problems of real-life problems.</p> <p>Students could behave in proper manners on all occasions</p>	<ul style="list-style-type: none"> Highlight Environmental education by implementing project learning across S3 computer literacy (Video making and editing) Moreover, the marks of the project should be included (~contributed 20%) in their assessment marks of (T3A1) as a driving force to finish the project. 	<p>Students can demonstrate a good understanding of the chemistry principles about low–carbon life through video making.</p> <ul style="list-style-type: none"> 70 % groups can finish their work on time. 70 % participating groups have their overall rating score higher than 50 (50% of total 100 marks) in the assessment form of assessment criteria. 	<ul style="list-style-type: none"> Performance of students' project by the assessment criteria in assessment form : <table border="1"> <thead> <tr> <th>Criteria</th> <th>Percentage</th> <th>Mark</th> </tr> </thead> <tbody> <tr> <td>Add title at the beginning of the movie (在電影開頭處加上標題)</td> <td>2%</td> <td></td> </tr> <tr> <td>Title appearance</td> <td>7%</td> <td></td> </tr> <tr> <td>Attractiveness, dialogue (對話)</td> <td></td> <td></td> </tr> <tr> <td>Apply video effects (特效效果) and transitions (過渡轉接)</td> <td>5%</td> <td></td> </tr> <tr> <td>Apply sound effects like background music (背景音樂)</td> <td>5%</td> <td></td> </tr> <tr> <td>Suitable background environment when recording the movie</td> <td>5%</td> <td></td> </tr> <tr> <td>Clear wording from the commentators (字幕)</td> <td>5%</td> <td></td> </tr> <tr> <td>Record the movie without hand shaking (手震)</td> <td>5%</td> <td></td> </tr> <tr> <td>Content (relatedness to the topic)</td> <td>20%</td> <td></td> </tr> <tr> <td>100% Completion of the worksheet from reading extracts</td> <td>10%</td> <td></td> </tr> <tr> <td>% Creativity – Creative idea description (~200 words)</td> <td>10%</td> <td></td> </tr> <tr> <td>% Reflection upon completion of project (~200 words)</td> <td>10%</td> <td></td> </tr> <tr> <td>Add name list and chart of division of labour of group at the end of the movie (在電影開頭處加上組員名單及分工表)</td> <td>2%</td> <td></td> </tr> <tr> <td>Show "The End" at the end of the movie</td> <td>3%</td> <td></td> </tr> <tr> <td>Suitable length of the movie (5 minute - 5 minutes)</td> <td>5%</td> <td></td> </tr> <tr> <td></td> <td>100 %</td> <td>100</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Comments and evaluation from subject teachers. 	Criteria	Percentage	Mark	Add title at the beginning of the movie (在電影開頭處加上標題)	2%		Title appearance	7%		Attractiveness, dialogue (對話)			Apply video effects (特效效果) and transitions (過渡轉接)	5%		Apply sound effects like background music (背景音樂)	5%		Suitable background environment when recording the movie	5%		Clear wording from the commentators (字幕)	5%		Record the movie without hand shaking (手震)	5%		Content (relatedness to the topic)	20%		100% Completion of the worksheet from reading extracts	10%		% Creativity – Creative idea description (~200 words)	10%		% Reflection upon completion of project (~200 words)	10%		Add name list and chart of division of labour of group at the end of the movie (在電影開頭處加上組員名單及分工表)	2%		Show "The End" at the end of the movie	3%		Suitable length of the movie (5 minute - 5 minutes)	5%			100 %	100	<p>Mar 2020</p> <p>—</p> <p>May 2020</p>	<p>S3 : LCY, LHF</p>	<p>\$ 800</p> <p>Book coupons for the best group of each S3 class</p> <p>[Total 4 groups : 200@ × 4 = 800]</p>
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(VI) Other panel-based / team-based concerns:

Program title (3): S4 Remedial program

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required
Students with diverse learning abilities and needs are facilitated and supported to raise their academic performance	<p>Coaching our students by providing support to the weak students who have fallen behind.</p> <p>Identify less able students (bottom 12 in S4 Chem) with learning difficulty in chemistry to join the remedial courses after school in order to prepare them better for the internal and public examination.</p> <p>In response to nourishing students' self-directed learning habits through elearning and mlearning, a set of self-directed explanatory video and learning package for 12 weak or voluntary students of S4 are purchased.</p> <p>Making use of iPad in small room of school library after school in scheduled remedial period monitoring by subject teacher in charge, participants have to go through the questions set by the package. At the end of each remedial lesson, students are required to complete similar questions set by teacher-in-charge in order to check their understanding from the self-learning explanatory video learning package.</p>	<ul style="list-style-type: none"> •More than 70% of participants attain 70% attendance. •More than 75% participants rate 3 or above (out of 5) in different items in Course Evaluation Questionnaires. 	<ul style="list-style-type: none"> •Participants' attendance record. • The participants' responses /opinions collected from the Course Evaluation Questionnaires. 	<p>S4 : (5 lessons) Oct – Nov 2019</p> <p>&</p> <p>(5 lessons) Mar – May 2020</p>	S4 : LCY	<p>Photocopying fee of the worksheets \$200</p> <p>Earphones for 12 S4 students : \$200</p> <p>Self-directed learning package (with explanatory video) for S4 whole year \$450 x 12 = \$5400</p> <p>13 iPad are borrowed and used in school library after school.</p> <p>(Total : \$ 5800)</p>

Program title (4): **S5 Remedial program**

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required
Students with diverse learning abilities and needs are facilitated and supported to raise their academic performance	<p>Coaching our students by providing support to the weak students who have fallen behind.</p> <p>Identify less able students (bottom 12 in S5 Chem) with learning difficulty in chemistry to join the remedial courses after school in order to prepare them better for the internal and public examination.</p> <p>In response to nourishing students' self-directed learning habits through elearning and mlearning, a set of self-directed explanatory video and learning package for 12 weak or voluntary students of S4 are purchased.</p> <p>Making use of iPad in small room of school library after school in scheduled remedial period monitoring by subject teacher in charge, participants have to go through the questions set by the package.</p> <p>At the end of each remedial lesson, students are required to complete similar questions set by teacher-in-charge in order to check their understanding from the self-learning explanatory video learning package.</p>	<ul style="list-style-type: none"> • More than 70% of participants attain 70% attendance. • More than 75% participants rate 3 or above (out of 5) in different items in Course Evaluation Questionnaires. 	<ul style="list-style-type: none"> • Participants' attendance record. • The participants' responses /opinions collected from the Course Evaluation Questionnaires. 	<p>S5 : (5 lessons) Oct – Nov 2019</p> <p>&</p> <p>(5 lessons) Mar – May 2020</p>	S5 : LHF	<p>Photocopying fee of the worksheets \$200</p> <p>Earphones for 12 students : \$5 \$200</p> <p>Self-directed learning package (with explanatory video) for \$5 whole year</p> <p>\$450 x 12 = \$5400</p> <p>13 iPad are borrowed and used in school library after school.</p> <p>(Total : \$ 5800)</p>

Program title (5): **S5 Consolidation program**

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required
Students with diverse learning abilities and needs are facilitated and supported to raise their academic performance	<p>Coaching our students by providing more able students with enhancement /consolidation program.</p> <p>Identify more able students (top 6–7) in S5 to participate in the consolidation programme in small group to prepare them better for the public examination.</p> <p>Two sets of Exercise Book (Aristo MC and Structural Exercise Books and Manhattan New Success Key Exercise Books) and also other School Mock Papers are used as teaching tools by recruited tutor.</p>	<ul style="list-style-type: none"> •More than 75% of participants attain 70% attendance. •More than 75% participants rate 3 or above (out of 5) in different items in Course Evaluation Questionnaires. 	<ul style="list-style-type: none"> •Participants' attendance record. • The participants' responses /opinions collected from the Course Evaluation Questionnaires. 	<p>1st term Oct-Nov 2019 (4 lessons),</p> <p>2nd term Mar-May 2020 (4 lessons)</p> <p>→ 8 lessons per year</p>	<p>S5 : LHF / LCY</p> <p>Tutor : Lau Wing Ho (LWH)</p>	<p>S5 Tutor's remuneration: (\$370/lesson)</p> <p>$\\$370 \times 8 =$ \$2,960</p> <p>Photocopying fee of worksheets \$200</p> <p>(Total : \$ 3160)</p>

Program title (6): **Participation of Secondary School Mathematics & Science Competition 2019-2020 (SSMSC by HKPU)**

Targets	Strategies	Success Criteria	Methods of Evaluation	Time Scale	Person in charge	Resources Required
Students are nurtured as self-directed learners by maximizing their learning opportunities	<ul style="list-style-type: none"> To encourage and coach students to participate in a territory-wide competition (SSMSC) as a way of learning in real contexts and authentic settings. Identify more able students (6 top students in S5 Chem for SSMSC) to participate in the SSMSC in order to broaden their horizons and bring their potentials into full play. 	<ul style="list-style-type: none"> At least total 6 students joined the SSMSC. At least : <ul style="list-style-type: none"> -1 participant get “ <i>Certificates of High Distinction</i>” ; -1 participant get “ <i>Certificates of Distinction</i>” ; -1 participant get “ <i>Certificates of Credit</i>” 	<ul style="list-style-type: none"> Performance of the competition in SSMSC awarding system. 	SSMSC Quiz Date : <i>End of Apr. – beginning of May</i> Training periods : <i>Mar / Apr 2020 ;</i>	LHF / LCY	Registration Fee of SSMSC : <i>HK\$120 per entry</i> (7 S5 students : \$840 + 100 copy fee) = \$ 940

N.B. **Application should be made by early Jan, 2020 via registered school SSMSC Online Application System.**

<https://www6.polyu.edu.hk/fast/ssmsc/page.php?p=Enrolment>

(VII) Provisional Scheme of work

Month	Events	PIC / VPIC
Sept 2019		
Oct 2019	S4 Chemistry Remedial Course S5 Chemistry Remedial Course	LCY LHF
Nov 2019	S4 Chemistry Remedial Course S5 Chemistry Remedial Course / S5 Chemistry Consolidation Course Start of S4 Problem Solving Project - Copper Extraction from ore	LCY LHF LHF, LCY LCY , KCH
Dec 2019		
Jan 2020	Application of SSMSC	LCY
Feb 2020		
Mar 2020	S4 Chemistry Remedial Course S5 Chemistry Remedial Course S5 Chemistry Consolidation Course SSMSC Training + Competition Start of S3 Low–Carbon Life Chemistry Video Competition	LCY LHF LCY LHF, LCY LCY, LHF
Apr 2020	S4 Chemistry Remedial Course S5 Chemistry Remedial Course / S5 Chemistry Consolidation Course Participation of SSMSC	LCY LHF LHF, LCY LCY, LHF
May 2020	S4 Chemistry Remedial Course S5 Chemistry Remedial Course S5 Chemistry Consolidation Course Forensic Science Workshop (STEM activity)	LCY LHF LHF, LCY KCH, LCY, LHF
Jun 2020		
Jul 2020	Visit to HKBU, Science Festival	LHF, LCY, KCH

(VIII) Budget and Other Resources

	Amount
EXPENDITURE	
A. General Panel / Team-based budget	
A1. S3-S6 Experiment (Chemicals, Consumable and Apparatus etc.)	6,000.00
A2. Wi-Fi keyboard and mouse	500.00
A3. Speaker for PC	250.00
A4. Reference Books and overseas examination papers, on-line teaching software and Apps	2,000.00
A5. Teaching kits from HKASME	500.00
A6. S4 Problem Solving Project Competition	800.00
A7. S3 Low Carbon Life Video Competition	800.00
A8. Participation of 2019-2020 Secondary School Mathematics & Science Competition (SSMSC)	940.00
A9. "Digi-Science" Video Production Competition for Hong Kong Secondary Schools 2019-2020	1,500.00
A10. Printing quota for Chem. Technician (Mr. Keung)	20.00
A11. Charging fee (2019-2020) of teaching materials (teacher copies / IT support materials) from textbook publisher (Aristo)	400.00
Sub-total (A) =	13,710.00
B. CEG	
B1. S4 Chemistry Remedial Course	5,700.00
B2. S5 Chemistry Remedial Course	5,700.00
B3. S5 Chemistry Consolidation Course	3,160.00
Sub-total (B) =	14,560.00
C. Furniture and Equipment (F & E)	

C1. Wireless Spectrometer	4,900.00
C2. Passport Voltage current sensor	1,370.00
C3. Advanced Chemistry Sensor	3,750.00
C4. Monitor for PC	2,500.00
Sub-total (C) =	12,520.00
D. DLG	
Sub-total (D) =	\$0
E. Reading Grant	
E1.	
Sub-total (E) =	
F. Life Wide Learning Grant (LWLG)	
F1.	
Sub-total (F) =	
G. Budget of items using other specific grant from EDB* :	
*Chinese History, NCS or Student Support grant	
G1.	
Sub-total (G) =	
H. Other Resources	
H1.	
Sub-total (H) =	
Total Expenditure =	\$40,790.00

(IX) Members

Li Chi Yip Leo (LCY)

Lai Hon Fai (LHF)

Keung Chun Hing (KCH)