

School Base Assessment
(Chemistry)
Sharing of Experience

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Experience sharing

- ◆ How to arrange and select experiments for SBA
- ◆ How to run the SBA smoothly

School Base Assessment

◆ What ?

◆ Why ?

◆ How ?

◆ When ?

◆ Who ?

Belief :

- ◆ **Chemistry** is a **practical subject**
- ◆ **Theory** ← **close linking** → **experiments**
- ◆ **Learning through experiments**



- ◆ **Experiments** can be used to **consolidate** the knowledge of chemistry.
- ◆ **SBA** allows **room for other learning activities**.
- ◆ **SBA 20%** of Examination marks of **whole subject**.

How to arrange and select experiments for SBA

- ◆ Experiments
- ◆ For normal teaching purpose
- ◆ To consolidate the knowledge of chemistry
- ◆ To arouse the interests of students

- ◆ SBA Experiments
- ◆ **With assessment element**
- ◆ For normal teaching purpose
- ◆ To consolidate the knowledge of chemistry
- ◆ To arouse the interests of students

Rationale : Experiments match the teaching schedule (S4)

- ◆ 1. 研習各種混合物的分離方法
- ◆ 2. 計算大氣中氧氣的含量
- ◆ 3. 利用蒸發法提取海水的主要成分及驗證食鹽(氯化鈉，**NaCl**)的成分元素
- ◆ 4. 研究碳酸鈣的化學

- ◆ 5. 研究週期表的排列
- ◆ 6. 金屬的認識及提取
- ◆ 7. 研習金屬的活性
- ◆ 8. 透過不同金屬及其金屬鹽的水溶液來研習金屬的置換反應
- ◆ 9. 金屬的腐蝕及保護
- ◆ 10. 測定氧化鎂的實驗式

- ◆ 11. 探究稀酸的特性
- ◆ 12. 探究水對酸性質的重要性及其應用
- ◆ 13. 探究濃酸與稀酸的特性
- ◆ 14. 認識濃鹼/弱鹼及其性質
- ◆ 15. 研習烷烴和烯烴的化學性質

- ◆ 16. 研習石蠟油的裂解作用
- ◆ 17. 塑膠的研究

Rationale : Experiments match the teaching schedule (S5)

- ◆ 1. 製作富勒烯的模型
— 布克碳 (C60)
- ◆ 2. 簡單電化學電池
- ◆ 3. 探討氧化還原反應
中氧化劑及還原劑
的變化
- ◆ 4. 探討氧化還原反應
- ◆ 5. 探究不同濃度硝酸
與金屬產生的氧化
還原反應
- ◆ 6. 電解的研究
- ◆ 7. 電鍍的研究
- ◆ 8. 乙烯的製備及其反應
- ◆ 9. 利用 ‘甲醛時鐘反應’ 去研習影響化學反應速率的因素
- ◆ 10. 利用pH計去決定
弱酸的解離常數

SBA Experiments – pay attention on coverage and diversity

- ◆ 1. 利用**稀釋**後的氫氯酸進行容量分析，以找出溶液A的濃度。
- ◆ 2. **製備**乙二酸(二元酸)標準溶液及利用乙二酸標準溶液去找出氫氧化鈉溶液' B'的濃度
- ◆ 3. **定性分析(I)** - 辨別溶液
- ◆ 4. **定性分析 (II)**觀察及推論練習
- ◆ 5. 決定硫酸銅(II)的水合焓
- ◆ 6. 探究濃度變化對平衡位置的影響

- ◆ 7. 有機化學 – 各官能基團的特別反應
- ◆ 8. 研習羰基化合物的一些特別化學反應 (包括醛與酮)
- ◆ 9. 利用簿層分析法分離朱古力豆糖衣所含的著色劑

- ◆ 10. 製備不溶的鹽 – 硫酸鋇
- ◆ 12. 研習簡單電化學電池

How to run DSE Chemistry SBA smoothly ?????

◆ **Good and Proper Arrangement**

➔ **School authority (time-table)**

➔ **2-periods (afternoon)**

➔ **Supplementary lessons (after school)**

➔ **inform them in advance (date and target)**

- ◆ **Students' belief**
- ◆ **Colleagues' co-operation**
- ◆ **Good House keeper (suggested solution and worksheets of students)**

Problem concerned:

- ◆ Fair????
- ◆ How to **make** the **greatest benefit** to our students **from SBA**

Problems caused from SBA

For students :

- ◆ Too much experiments – complained by students
- ◆ Too great pressure (Assessment)
- ◆ Fair assessment ??



For teacher :

- ◆ **Limited time** in teaching
- ◆ **Limited time** in marking experiment reports
- ◆ **How** to choose some good experiments for our students
- ◆ **Poor** learning behavior of students

SBA - Strengthening the confidence of students

- ◆ **Teach** them how to **perform experiments and write a good report**
- ◆ **Good preparation work for experiment**
 - **pre-lab worksheet**
 - **pre-lab oral questions**
 - **group presentation and discussion**

SBA - Strengthening the confidence of teachers

- ◆ **Well prepared for experiment (pre-lab)**
- ◆ **Collecting interesting / useful experiment manuals/resources**
 - **cdi (chemistry)/universities' website**
 - **book suppliers**
 - **reference book**
 - **attending seminars**
 - **sharing experience with other teachers**

Project : Problem???

◆ What kinds of topic for our students ??

☞ **various topics** chosen by students

☞ **one main topic** assigned by teachers

Seeking resources:

- ◆ from **Hong Kong Chemistry Olympiad**
- ◆ from **seminars / workshops**
(CDI/HKEAA/Universities etc..)
- ◆ **Resources books (CDI)**
- ◆ **Journals (oversea or mainland etc...)**

Some authentic investigations are meaningful to students (CDI)

- ◆ **Investigation of the different brands of drain cleaners.**
- ◆ **Study the vitamin C in fruits and drinks.**
- ◆ **Study the oxygen – absorber in packages of moon cakes etc**

Experience Sharing

- ◆ What can I do for my students?
 - knowledge
 - basic technique
 - practise more

Experience Sharing

◆ How to arrange a fair assessment in volumetric analysis and QA

→ Report writing

→ skill (2 teachers for assessment)



Thanks