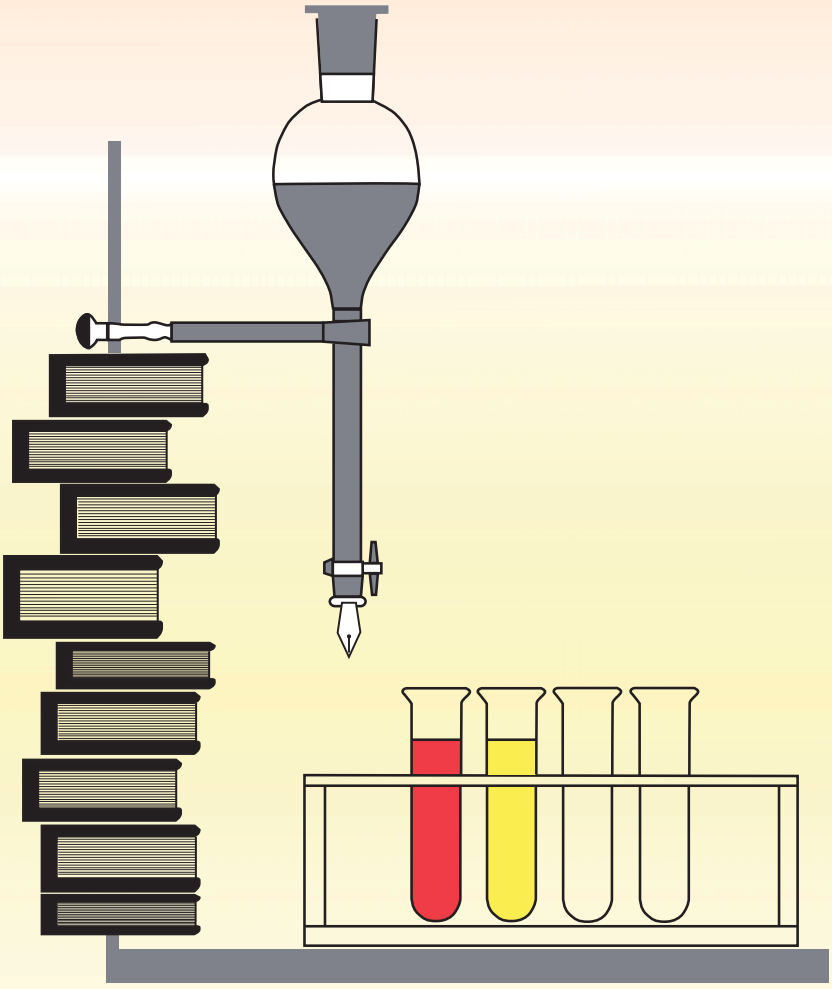
Writing with Chemistry Specific Genres

Teaching Guide ②

Procedural Account



True Light Middle
School of Hong Kong

Support Centre for Teachers
Using Chinese as the Medium of Instruction

Faculty of Education,
The University of Hong Kong

Science Education Section
Education Bureau

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Science Education Section
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FOREWORD

What is Subject Specific Genre?

The organisation of a language is called "Genre". Every subject has its unique nature and content; the way of thinking as well as the form of expression is also different. These features are reflected on the style of language and therefore each of the subjects has a unique genre, which is called "Subject Specific Genre".[1]

Different subject specific genres have different communicative functions which would in turn develop different features of genres. The process of using a genre to attain a specific communicative function is called genre structure. Having a good grasp of different genre structures can help students organise various writing materials more appropriately. Not only does every genre have its unique language structure, it also has its own language features. Language feature refers to the grammatical characteristics commonly found in that genre including the use of vocabulary, sentence patterns and others. [1]

The relationship between genre, writing and learning

Language can help us construct knowledge and it plays an important role in learning and teaching. Students should have a sound language foundation so as to construct content knowledge efficiently and carry out critical thinking. Writing is the outcome of a series of procedures like knowledge input, processing and knowledge output. These procedures can help students clarify and consolidate the knowledge they acquired. Therefore, teaching students to use subject specific genre in writing chemistry essays can help them enhance their ability of expressing scientific concepts. [1]

On the other hand, there are some suggested learning and teaching activities related to the NSS Chemistry and Combined Science (Chemistry Part) curricula; "reading and writing" is one of the examples. Chemistry teachers can take this opportunity to teach students to write with chemistry specific genre in order to improve students' ability of expressing chemistry knowledge. This can also arouse their interests in learning chemistry.

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1 岑紹基、謝錫金、祁永華、鄺偉良、陳偉發、勞惠昌、陳曦圖、謝翰章 (2003)。《中學會考化學科專科語體資料冊》(第二版)。香港：香港大學教育學院母語教學教師支援中心。

The design and content of this book

In order to assist chemistry teachers to teach subject specific genres, and also help students express content knowledge with the use of subject specific genres and ultimately help them improve their writing skills in chemistry, the Science Education Section of Curriculum Development Institute has compiled *Writing with Chemistry Specific Genres-Teaching Guide* for teachers' reference and usage.

The teaching guide has a total of four booklets. Each booklet introduces one common type of chemistry specific genres:

Writing with Chemistry Specific Genres-Teaching Guide 1 — Descriptive Report
Writing with Chemistry Specific Genres-Teaching Guide 2 — Procedural Account
Writing with Chemistry Specific Genres-Teaching Guide 3 — Causal Explanation
Writing with Chemistry Specific Genres-Teaching Guide 4 — Comparison

The arrangement of contents for the above four booklets is similar. Each booklet has two chapters; they are "Instructional Design" and "Learning and Teaching Materials" for Chemistry Specific Genres. Chapter one "Instructional Design" provides two teaching schemes for the aforementioned genre. Each scheme consists of a series of teaching activities which is designed to help chemistry teachers teach chemistry specific genres in a systematic way. As for the worksheets and references adopted in the teaching schemes, they are all put in chapter two "Learning and Teaching Materials".

This book has already been uploaded onto the website "Writing with Chemistry Specific Genres" of the Education Bureau for teachers' reference.
(Website: http://resources.edb.gov.hk/~science/genre/index-e.html)

Chapter 1 Instructional Design for "Procedural Account"

"Procedural Account" is the most commonly used genre in chemistry. Its major function is to describe a scientific activity accurately according to the sequence of events including aim, steps and results. Since doing experiment is a major activity which contributes to knowledge construction in learning chemistry, it is a basic requirement for chemistry students to record procedures and results of an experiment systematically.

1.1 Scheme 1

Level of Students: Secondary Four

Genre: Procedural Account

Topic: NSS Chemistry Curriculum and Combined Science (Chemistry Part) Curriculum Topic IV "Acids and Bases"

Implementation Period: Initial to intermediate phase of Secondary Four

Key Points	Teaching Activities	Learning and Teaching Materials	Estimated Time
• Teach students common vocabulary and sentence patterns of the writing topics, communicative function, genre structure and language features of "Procedural Account"	(I) Brief Notes on "Procedural Account" - Introduce the genre "Procedural Account" - Use Question 5 of HKCEE 1999 Chemistry Paper I as a model essay to analyse the structure and features of "Procedural Account"	Brief Notes on Procedural Account (Section 2.1 of this booklet)	10 minutes
• Develop students' ability of analysing questions • Teach students how to judge the most suitable genre for each question • Lead students to make use of relevant chemical knowledge of "Acids and Bases"	(II) Question Analysis - Finish Worksheet 1 - Discuss answers of Worksheet 1 • Review common vocabulary and sentence patterns of writing topics of "Procedural Account" • Discuss important notes of relevant chemical knowledge when answering questions	Worksheet 1: Question Analysis (Section 2.2 of this booklet)	20 minutes

1.1 Scheme 1

Key Points	Teaching Activities	Learning and Teaching Materials	Estimated Time
• Teach students how to organise information by using Graphic Organiser • With the aid of the paragraph formatting and vocabulary provided in the writing framework, help students recognise genre structure and vocabulary of "Procedural Account"	(III) Guided Writing - Review chemical knowledge related to the question - Finish Worksheet 2 in groups - Group presentation - Finish homework: Worksheet 3	Worksheet 2: Guided Writing-Graphic Organiser (Section 2.3 of this booklet) Worksheet 3: Guided Writing-Writing Framework (Section 2.3 of this booklet)	30 minutes
• Review the genre structure and language features of "Procedural Account" with students • Help students master the features of "Procedural Account" and express chemical knowledge in a clear and logical manner through writing "Procedural Account"	(IV) Writing Assignments for "Procedural Account" - Review the genre structure and common vocabulary of "Procedural Account" - Apply the genre "Procedural Account" to write an essay related to "Acid and Bases" - Distribute Assessment Rubric to students and lead a more in-depth discussion with students	Brief Notes on Procedural Account (Section 2.1 of this booklet) Suggested Writing Topics for NSS Chemistry Curriculum and NSS Combined Science (Chemistry Part) Curriculum-Procedural Account (Section 2.4.2 of this booklet) Assessment Rubric for Writing Assignment (Section 2.5 of this booklet)	40 minutes

1.2 Scheme 2

Level of Students: Secondary Four

Genre: Procedural Account

Topic: NSS Chemistry Curriculum and Combined Science (Chemistry Part) Curriculum Topic IV "Acids and Bases"

Implementation Period: Initial to intermediate phase of Secondary Four

Key Points	Teaching Activities	Learning and Teaching Materials	Estimated Time
• Teach students common vocabulary and sentence patterns of the writing topics, communicative function, genre structure and language features of "Procedural Account"	(I) Brief Notes on "Procedural Account" - Introduce the genre "Procedural Account" - Use Question 5 of HKCEE 1999 Chemistry Paper I as a model essay to analyse the structure and features of "Procedural Account"	Brief Notes on Procedural Account (Section 2.1 of this booklet)	10 minutes
• Let students develop a deeper understanding about the genre structure "Procedural Account"	(II) "Online Interactive Exercise" - Students should finish "Online Interactive Exercise: HKCEE 1996 Chemistry Paper I Question 4" by themselves at home or in school's computer room.	Online Interactive Exercise (Website: http://resources.edb.gov.hk/~science/genre/index-e.html)	20 minutes

1.2 Scheme 2

Key Points	Teaching Activities	Learning and Teaching Materials	Estimated Time
• Review the genre structure and language features of "Procedural Account" with students • Help students master the features of "Procedural Account" and express chemical knowledge in a clear and logical manner through writing "Procedural Account"	(III) Writing Assignments for "Procedural Account" - Review the genre structure and common vocabulary of "Procedural Account" - Apply the genre "Procedural Account" to write an essay related to "Acids and Bases" - Distribute Assessment Rubric to students and lead a more in-depth discussion with students	Brief Notes on Procedural Account (Section 2.1 of this booklet) Suggested Writing Topics for NSS Chemistry Curriculum and NSS Combined Science (Chemistry Part) Curriculum- Procedural Account (Section 2.4.2 of this booklet) Assessment Rubric for Writing Assignment (Section 2.5 of this booklet)	40 minutes
• Assess students' progress in applying "Procedural Account" in writing chemistry essays	(IV) Assessment - Incorporate questions with effective communication into tests or examinations and the required genre for these questions is "Procedural Account" - Teachers may set questions on other topics	Questions with Effective Communication in HKCEE Chemistry Paper I- Procedural Account (Section 2.4.1 of this booklet) Suggested Writing Topics for NSS Chemistry Curriculum and NSS Combined Science (Chemistry Part) Curriculum- Procedural Account (Section 2.4.2 of this booklet)	40 minutes

1.3 Teaching Tips

- It is proposed that teachers may teach students “Procedural Account” during the beginning period of the learning and teaching process of NSS Chemistry Curriculum (that is the initial to intermediate phase of secondary four). This can help students master the skills of how to write practical reports.

- Both teaching schemes 1 and 2 are comprised of four teaching activities. Teachers may choose either one of the schemes according to their preference.

- Teachers may adjust the weighting of assessment criteria in accordance with students’ aptitude and other factors.

- Teachers may incorporate questions with effective communication into tests or examinations in order to evaluate students’ learning progress in applying “Procedural Account” in chemistry writing.

- Teachers can directly use worksheets provided in this booklet to teach chemistry specific genres. They can also consult the design of worksheets and tailor-make teaching materials for students on other topics.

NOTE

Chapter 2 Learning and Teaching Materials for "Procedural Account"

2.1 Brief Notes on Procedural Account

Common vocabulary and sentence patterns of the writing topics

- Describe the process of ...
- Outline an experiment using the following equipment and materials …
- Design an experiment using …

Communicative Function

- To recount an experiment in sequence

Structure

Parts of the Structure	Contents and Functions
Aim	- restate the purpose of the experiment (Remark: Although the purpose has usually been appointed in the topic, it will be more complete and clear if it is restated briefly in the answer.)
Steps	- list the steps of the experiment in sequence with explanation - the sequence usually cannot be reversed - write the expected observable changes in the experiment - may include diagrams, notes or chemical / mathematical equations if necessary
Result	- summarise the results of the experiment

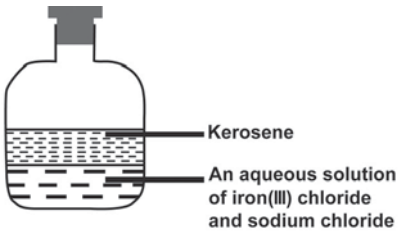
Language Features

Language Features	Examples
Omit personal pronouns to express objectivity	Personal pronouns : I , We, You, He, She, They
Use **verbs** to show steps of theexperiment	**Add** sodium chloride ; **Insert** two metal strips into the lemon.
Use **passive voice and past tense** in the "Steps" and "Result" of **experimental reports**	Sodium chloride **was added**.
Use **words expressing time & sequence** in the "Steps" to express the connection between steps.	First, second, after that, then, next, finally, lastly, before, after, in turn, first of all, to begin with, while
Use **words expressing cause & effect** in the "Steps" and "Result"	Because, because of, due to, owing to, since, as, on account of, cause…to, contribute to, lead to, the reason for, the cause of , as a result, consequently, as a consequence, therefore, hence, thus, when

Sample Text

HKCEE 1999 Chemistry Paper I Question 5 :

The diagram below shows a bottle of chemical waste in a school laboratory. Describe and explain how you would remove kerosene and iron(III) ions from the chemical waste.



(You may use any apparatus and chemicals available in a school laboratory.)

Structure	Suggested Answer	Language Features
Aim	Kerosene and iron(III) can be separated from the chemical waste in the diagram according to their different physical and chemical properties.	
Step 1	***First of all***, the liquid waste **was added** to a separating funnel. Since kerosene and water were immiscible and kerosene was less dense than water, two layers **were formed**. ***After that***, the lower aqueous layer was removed and the upper kerosene layer **was collected**.	**Use passive voice and past tense** ***Use words expressing time & sequence***
Step 2	***Then***, excess sodium hydroxide solution **was added** to the above aqueous layer until all the brown precipitate **was formed**. The chemical equation is : $Fe^{3+}(aq) + 3OH^-(aq) \longrightarrow Fe(OH)_3(s)$	
Step 3	***Finally***, the mixture **was filtered** to remove the residue.	Use words expressing cause & effect
Result	The residue is iron(III) hydroxide. In this way, iron(III) ions are extracted from the waste.	

2.2 Question Analysis

Worksheet 1

Read the following question carefully. Underline the keywords on the topic to determine the type of genres to be used, and put down the name of the genre in part (1). After that, find the relevant chemical knowledge from textbooks or other ways according to the prompt (a, b, c), and write down the important notes in part (2).

> Question :
>
> Describe how large [a] crystals [b] of ammonium sulphate [c] can be prepared from an aqueous solution of ammonia in a school laboratory.
>
> (HKCEE 1995 Chemistry Paper I Question 5)

(1) The writing genre required for the answer: _____

(Hint: descriptive report / procedural account / causal explanation / comparison)

(2) Relevant chemical knowledge:

a. _____

b. _____

c. _____

2.2 Question Analysis

Suggested Answer for Worksheet 1

Read the following question carefully. Underline the keywords on the topic to determine the type of genres to be used, and put down the name of the genre in part (1). After that, find the relevant chemical knowledge from textbooks or other ways according to the prompt (a, b, c), and write down the important notes in part (2).

Question :

Describe how large [a] crystals [b] of ammonium sulphate [c] can be **prepared** from an aqueous solution of ammonia in a school laboratory.

(HKCEE 1995 Chemistry Paper I Question 5)

(1) The writing genre required for the answer: procedural account

(Hint: descriptive report / procedural account / causal explanation / comparison)

(2) Relevant chemical knowledge:

a. Factors affecting the size of crystals, including: cooling rate, the presence of small particles as crystal seed

b. The reaction of ammonia with dilute sulphuric acid

c. The process of making crystals, including: titration, saturated solution, filtration

2.3 Guided Writing

Worksheet 2

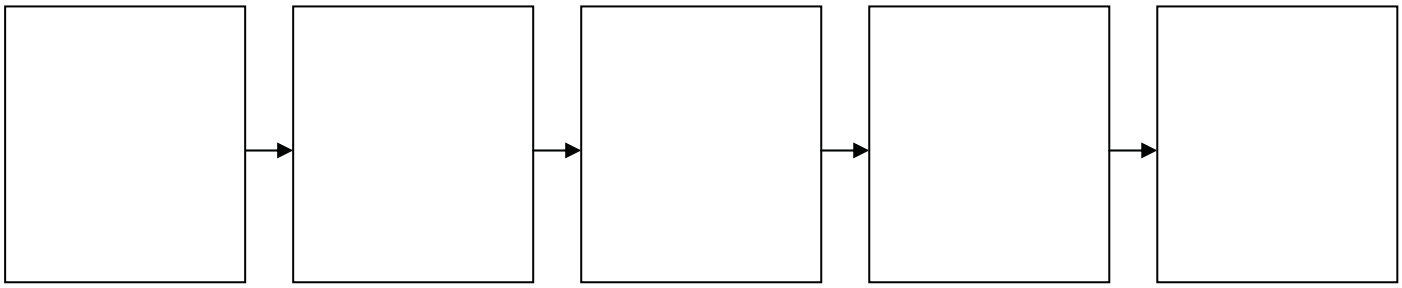
The writing genre required for the following question is "Procedural Account". Put down the experimental steps and keywords in the **Graphic Organiser** provided and draw the experimental setup.

Question :

Describe how large crystals of ammonium sulphate can be prepared from an aqueous solution of ammonia in a school laboratory.

(HKCEE 1995 Chemistry Paper I Question 5)

(1) List the experimental steps in the following graphic organiser:



(2) Draw the experimental setup in the following box.

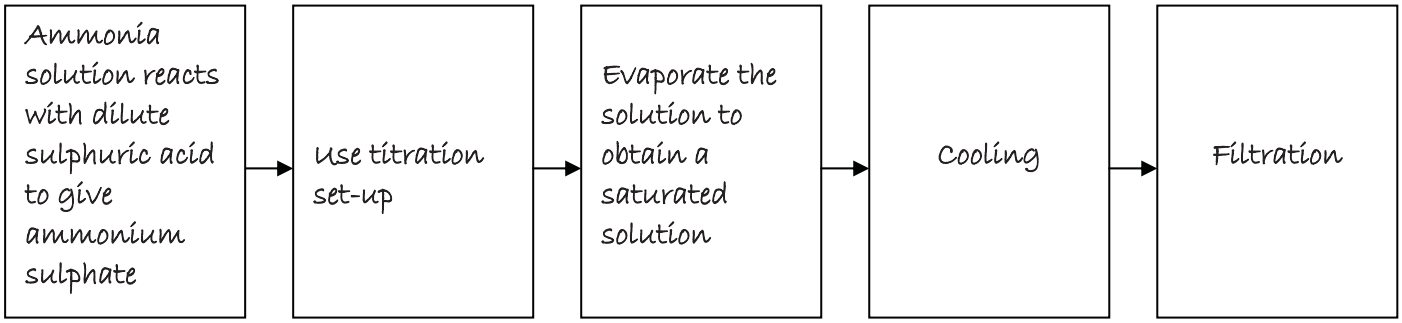
2.3 Guided Writing

Suggested Answer for Worksheet 2

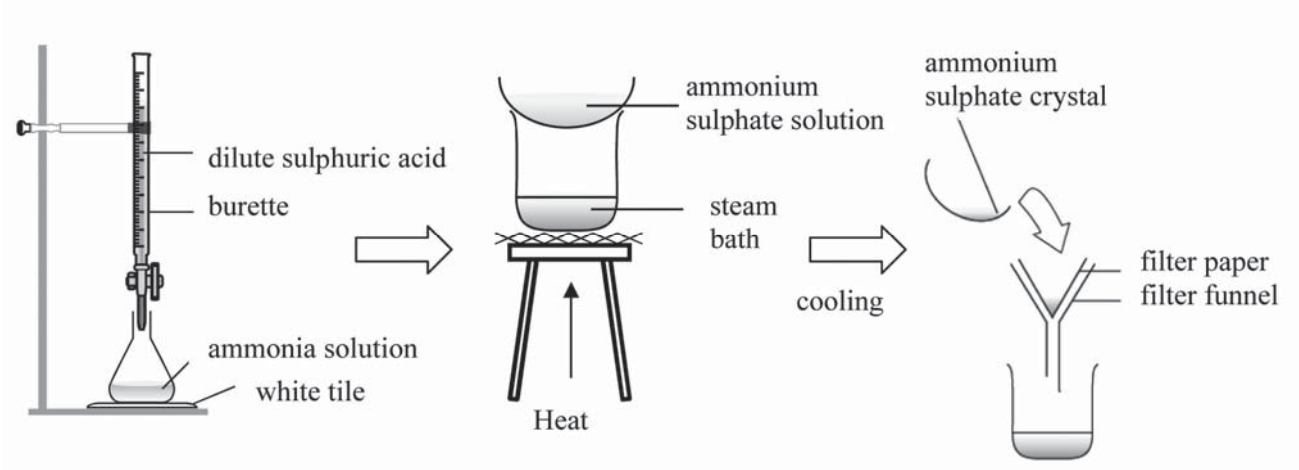
The writing genre required for the following question is "Procedural Account". Put down the experimental steps and keywords in the **Graphic Organiser** provided and draw the experimental setup.

> Question :
>
> Describe how large crystals of ammonium sulphate can be prepared from an aqueous solution of ammonia in a school laboratory.
>
> (HKCEE 1995 Chemistry Paper I Question 5)

(1) List the experimental steps in the following graphic organiser:



(2) Draw the experimental setup in the following box.



2.3 Guided Writing

Worksheet 3

According to the information written in Worksheet 2, answer the question in the following **Writing Framework**. The framework indicates the paragraphs and the structure of the genre. The vocabulary suggested in the framework are the language features commonly used in "Procedural Account". Yet, similar wordings can be used instead.

Question :

Describe how large crystals of ammonium sulphate can be prepared from an aqueous solution of ammonia in a school laboratory.

(HKCEE 1995 Chemistry Paper I Question 5)

Paragraph	Structure	Answer
1	**Aim**	
2	**Step 1**	***- Words expressing time & sequence*** (example: Firstly)
3	**Step 2**	***- Words expressing time & sequence*** (example: After that)
4	**Step 3**	***- Words expressing time & sequence*** (example: Finally)
5	**Result**	***- Words expressing cause & effect*** (example: As a result)

2.3 Guided Writing

Suggested Answer for Worksheet 3

According to the information written in Worksheet 2, answer the question in the following **Writing Framework**. The framework indicates the paragraphs and the structure of the genre. The vocabulary suggested in the framework are the language features commonly used in "Procedural Account". Yet, similar wordings can be used instead.

Question :

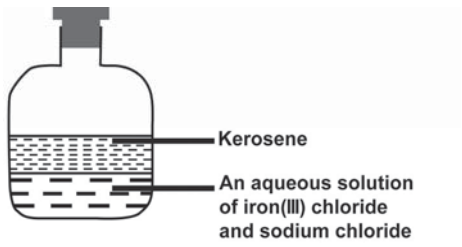
Describe how large crystals of ammonium sulphate can be prepared from an aqueous solution of ammonia in a school laboratory.

(HKCEE 1995 Chemistry Paper I Question 5)

Paragraph	Structure	Answer
1	Aim	In a school laboratory, large crystals of ammonium sulphate can be prepared through the following reaction between an aqueous solution of ammonia and sulphuric acid.
2	Step 1	***Firstly***, ammonia is titrated with dilute sulphuric acid until the end-point is reached. Ammonium sulphate solution is obtained.
3	Step 2	***After that***, the resulting solution is heated over a steam bath for a while in order to obtain a saturated solution. The solution is then cooled down slowly to obtain large crystals of ammonium sulphate. A small crystal of ammonium sulphate can also be put into the saturated solution as seed to obtain large crystals of ammonium sulphate.
4	Step 3	***Finally***, the crystals and the solution are separated by filtration.
5	Result	***In this way***, crystals of ammonium sulphate are obtained.

2.4 Suggested Topics of Writing Assignments

2.4.1 Questions with Effective Communication in HKCEE Chemistry Paper I - Procedural Account

Writing Topic		Curriculum Topic
CE 95 Question 5	Describe how large crystals of ammonium sulphate can be prepared from an aqueous solution of ammonia in a school laboratory.	Neutralisation & Salts
CE 96 Question 4	Briefly describe an experiment, using the following apparatus and materials, to show that air is necessary for the rusting of iron. 2 test tubes, a test tube holder, a Bunsen burner, 2 clean iron nails, paraffin oil and tap water	Corrosion & Protection of Metals
CE 97 Question 4	Briefly describe how you would conduct an experiment, using the materials and apparatus listed below, to nickel-plate a clean metal spoon. (Diagrams are NOT required.) State the expected observation of the experiment. A clean metal spoon, a nickel plate, nickel(II) sulphate crystal, a large beaker of distilled water, a d.c. power supply and connecting wires	Electrolysis
CE 98 Question 5	Each of the five unlabelled bottles contains one of the following chemicals : 2M hydrochloric acid 2M nitric acid 2M sodium chloride solution 2M sodium hydroxide solution distilled water Suggest how you would carry out tests to identify the contents of each bottle, using the material and apparatus listed below. Your answer should include the observation of each test. Copper foil, solid copper(II) carbonate, 2M copper(II) chloride solution, test tubes and a Bunsen burner. (*You are NOT required to write chemical equations. Answer in the form of flow diagram will NOT be marked*.)	Neutralisation & Salts + Detection of Substances
CE 99 Question 5	The diagram below shows a bottle of chemical waste in a school laboratory. Describe and explain how you would remove kerosene and iron(III) ions from the chemical waste.  (You may use any apparatus and chemicals available in a school laboratory.)	Separating Mixtures + Detection of Substances

2.4.1 Questions with Effective Communication in HKCEE Chemistry Paper I - Procedural Account

Writing Topic		Curriculum Topic
CE 00 Question 4	The mass of a sample of copper powder contaminated with copper(II) oxide is known. Describe how you would conduct an experiment to determine the percentage by mass of the copper powder in the sample. State the expected observation of the experiment. (Hint: You may use an acid in the experiment.)	Neutralisation & Salts
CE 05 Question 7	A chemical cell can be made from two metal strips and a lemon. Given the following materials and equipment, outline how you can set up a chemical cell with the maximum output voltage. "a lemon, a copper strip, a magnesium strip, a zinc strip, a multimeter and several connecting wires" (Your answer should include variables that need to be controlled.)	Simple Chemical Cells
CE 05 Question 12	There are four unlabelled reagent bottles each containing one of the white solids listed below : ammonium chloride, ammonium nitrate, sodium hypochlorite and sodium sulphate Suggest how you would carry out tests to distinguish the four solids from one another.	Detection of Substances
CE 06 Question 12	You are provided with the following materials : Magnesium ribbon and 2 M hydrochloric acid Design an experiment to determine the molar volume of hydrogen at room temperature and pressure. (You may use apparatus commonly available in a school laboratory.)	Simple Volumetric Works Involving Acids & Alkalis

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2.4.2 Suggested Writing Topics for NSS Chemistry Curriculum and NSS Combined Science (Chemistry Part) Curriculum - Procedural Account

Writing Topic	NSS Chemistry	NSS Combined Science (Chemistry Part)
Design an experiment for testing calcium carbonate.	Topic I Planet Earth	Topic I Planet Earth
Describe how to investigate the migration of ions of aqueous solutions (e.g. copper(II) dichromate and potassium permanganate) towards oppositely charged electrodes.	Topic II Microscopic World I	Topic II Microscopic World
Design an experiment to investigate factors that influence rusting.	Topic III Metals	Topic III Metals
Describe briefly an experiment to find the molarity of hydrochloric acid using acid-base titration.	Topic IV Acids and Bases	Topic IV Acids and Bases

2.5 Assessment Rubric for Writing Assignment

Teachers write scores and feedback in the appropriate boxes.

(1) Content knowledge (10 marks)

Excellent (9-10 marks)	**Good** (6-8 marks)	**Average** (3-5 marks)	**Need to improve** (0-2 marks)

(2) Structure (6 marks)

Excellent (5-6 marks)	**Good** (3-4 marks)	**Average** (2 marks)	**Need to improve** (0-1 mark)

(3) Use of Language (4 marks)

Excellent (4 marks)	**Good** (3 marks)	**Average** (2 marks)	**Need to improve** (0-1 mark)

(4) Feedback

Total Score of Writing Assignment : **/20**

REFERENCES

1. 岑紹基、謝錫金、祁永華、鄺偉良、陳偉發、勞惠昌、陳曦圖、謝翰章 (2003)。《中學會考化學科專科語體資料冊》(第二版)。香港：香港大學教育學院母語教學教師支援中心。

2. 岑紹基等 (2005)。《中學會考化學科專科語體資料冊》(光碟)。香港：香港大學教育學院母語教學教師支援中心。

3. 岑紹基、祁永華 (2008)。《公營學校語文及學習優化計畫：以專科語體教學促進跨學科語文與學習》。香港：香港大學教育學院中文教育研究中心暨母語教學教師支援中心及教育局質素保證分部。

4. 岑紹基、祁永華、湯建國、羅燕琴、林偉業、勞惠昌、陳偉發、陳錦源、潘廣祥、彭遠華 (2008)。《促進化學科學習的閱讀及寫作計畫 ── 學習活動示例》。香港：香港大學教育學院中文教育研究中心暨母語教學教師支援中心及教育局科學教育組。

5. 香港大學教育學院母語教學教師支援中心網頁。(http://www.cmi.hku.hk/)。

NOTE