PART 2: Initial Recommendations on Subject-level Issues

Questionnaire to be completed by the Subject Panel Head

Integrated Science

Please make reference to the school-level recommendations in Part 1 (can be accessed from the EDB website at http://www.edb.gov.hk/nas/review), C&A Guides and the 2012 HKDSE Examination Report before responding to the subject-level recommendations as the issues are interrelated and should be considered as a whole.

Purpose of questionnaire

Your views and other suggestions on the subject-level recommendations in Part 2 would help fine-tune the recommendations further for consideration by the Joint CDC-Public Examinations Board meeting in early 2013. The relevant CDC-HKEAA Committees and the HKDSE Subject Committees would study the feedback collected, and decide on the short-term recommendations for addressing the related issues and concerns as well as explore suggestions to be deliberated further at a later stage. Recommendations for the short-term stage are expected to be announced in early 2013 following the Joint CDC-Public Examinations Board meeting.

Design of questionnaire

Considering the scale of the survey, this questionnaire is designed to encompass the major considerations and recommendations (as deliberated at the CDC-HKEAA Committees and the HKDSE Subject Committees on the NSS subjects and based on feedback from other stakeholders) without overloading the respondents. The recommendations are by no means exhaustive, and those that are not included can be discussed through other channels, e.g. written submissions, forums and interviews. Further, subject panel heads and teachers are also welcome to express their views under ‘Other comments’ in this questionnaire.

Return of completed questionnaire

For each NSS subject questionnaire, schools are expected to return ONE reply only. While school principals, subject panel heads and teachers should exchange views on all the key issues in the staff meeting, the subject panel heads should also discuss subject-specific issues with the subject teachers concerned, collate all their views on the subject-level recommendations and submit a consolidated reply to the principal/coordinator before 19 December 2012.
Schools are advised to complete this hard copy of the questionnaire and your views can be expressed in either English or Chinese. The Chinese version of this questionnaire will also be uploaded on the EDB website in late November 2012 for schools’ reference.

Your views, if any, are welcome even if your school does not offer this subject. For enquiries, please contact Mr Eric Tam of CDI at 2892 5882 and Ms Maria Fung of HKEAA at 3628 8070.

Confidentiality

All information provided will be kept strictly confidential and will only be used for the purpose of the NAS review. No information on individual schools/teachers will be revealed.
Integrated Science

BACKGROUND
The EDB, CDC and HKEAA have joined hands to review the first cycle of curriculum implementation, the HKDSE Examination, and their impact. Based on the feedback collected, some initial recommendations on addressing the concerns and enhancing the implementation of the curriculum and assessment at school level (Part 1) as well as subject level (this questionnaire in Part 2) are proposed.

ISSUES AND CONSIDERATIONS
The following feedback and concerns with respect to the implementation of the Integrated Science curriculum and assessment framework are noted:

* teachers’ difficulty in mastering the breadth and depth of the curriculum.
* insufficient lesson time for teachers to cover the curriculum.
* teachers’ concerns about catering for greater learner diversity.

In making recommendations to address the concerns above, our major considerations are:

* Introducing major changes in the short term would require further intensive preparation again when teachers have just familiarised themselves with the subject. More data collection and deliberations are required to explore suggestions that may have major impact on the curriculum and assessment design.
* Most of the issues and concerns are related to teachers’ understanding of the breadth and depth of the curriculum. Supplementary notes are needed to enhance teachers’ understanding of the curriculum and assessment.
* It is important to maintain high regards of the subject in international benchmarking.

Based on the above considerations, please answer the following questions.

ACTION REQUESTED

Please make reference to the school-level recommendations in Part 1, and let us know your views and other suggestions on the subject-level recommendations in Part 2, so that we can fine-tune the recommendations further for consideration by the Joint CDC-Public Examinations Board meeting in early 2013.

(1) Please fill in the school name and school code at the top of this page.

(2) Please blacken the appropriate circle and/or state your views in the space provided.

(A) Short-term Recommendations
Teaching at S4 in the 2013/14 school year, leading to the 2016 HKDSE Examination

Curriculum

1. It is recommended that the curriculum framework (including the Compulsory Part and the Elective Part) remain unchanged, subject to regular review and continuous provision of support measures for schools.

   ○ Agree
   ○ Disagree
   ○ No opinion

Other comments: _____________________________________________________________________________
### 2. Supplementary notes for the C&A Guides will be provided to articulate more clearly the breadth and depth of the curriculum.

- **Agree**
- **Disagree**
- **No opinion**

Other comments: __________________________________________________________


### 3. Do you agree that the following support measures should be provided to help your planning and implementation of the senior secondary Integrated Science curriculum and assessment?

**A)** Providing professional development programmes on interpreting the curriculum

- **Agree**
- **Disagree**
- **No opinion**

Other comments: __________________________________________________________

**B)** Providing experience sharing on good practices in curriculum implementation in schools

- **Agree**
- **Disagree**
- **No opinion**

Other comments: __________________________________________________________

### 4. In relation to the further promotion of the Integrated Science curriculum, do you agree that the following support measures are effective?

**A)** Enriching the curriculum resources

- **Agree**
- **Disagree**
- **No opinion**

Other comments: __________________________________________________________

**B)** Strengthening the support to teachers (e.g. providing curriculum resources such as assessment items, organising module-based professional development programmes, sharing of resources through on-line platforms, setting up teacher networks on experience sharing and curriculum planning, etc.)

- **Agree**
- **Disagree**
- **No opinion**

Other comments: __________________________________________________________
(C) Arranging visits to schools on the implementation of curriculum and assessment framework

○ Agree
○ Disagree
○ No opinion

Other comments: ________________________________________________________________

(D) Arranging briefing for different stakeholders (e.g. principals, parents, etc.)

○ Agree
○ Disagree
○ No opinion

Other comments: ________________________________________________________________

(E) Further promoting the curriculum to the public (e.g. through newspaper supplement, etc.)

○ Agree
○ Disagree
○ No opinion

Other comments: ________________________________________________________________

5. Other comments on the curriculum of this subject:

Public Examination

With the completion of the first HKDSE Integrated Science Examination, feedback on the Assessment Framework and Examination Papers of the 2012 HKDSE Examination is gathered from various channels. Teachers’ views on the Assessment Framework for Integrated Science, including examination paper structure, weighting, examination duration and SBA, are all positive. Please refer to Annex 11 for the proposed assessment framework for the 2016 HKDSE Examination.

6. In view of the positive feedback from schools, no changes to the design of the 2016 HKDSE Public Examination are proposed, subject to regular review and continuous improvement in light of feedback from live examinations.

○ Agree
○ Disagree
○ No opinion

Other comments: ________________________________________________________________
7. Other comments on the public examination of this subject:

School-based Assessment (SBA)

8. In view of the positive feedback from schools and the SBA requirements has been streamlined starting from the 2014 Examination, no further changes to the design of the 2016 HKDSE SBA are proposed, subject to regular review and continuous improvement in light of feedback from schools.

   ○ Agree
   ○ Disagree
   ○ No opinion

   Other comments: ________________________________________________________________
   ________________________________________________________________

9. Other comments on the SBA of this subject:

(B) Medium- or Long-term Recommendations
Teaching at S4 beyond the 2013/14 school year, leading to sittings beyond the 2016 HKDSE Examination

10. Medium- or long-term recommendations on this subject:

11. **Background Information:** Please indicate the provision of this subject in your school:

   ○ This subject has been offered in the 2012/13 school year and/or in previous school year(s)
   ○ This subject has not been offered
PROPOSED 2016 HKDSE INTEGRATED SCIENCE ASSESSMENT FRAMEWORK

INTRODUCTION

The public assessment of this subject is based on the Integrated Science Curriculum and Assessment Guide (Secondary 4-6) jointly prepared by the Curriculum Development Council and the Hong Kong Examinations and Assessment Authority. Candidates have to refer to the Curriculum and Assessment Guide for the knowledge, understanding, skills and attitudes they are required to demonstrate in the assessment. Candidates are expected to have general knowledge of the materials contained in the Science Curriculum (Secondary 1-3). The mathematical skills required in the assessment will not exceed those covered in the Compulsory Part of the Hong Kong Diploma of Secondary Education Mathematics Curriculum.

ASSESSMENT OBJECTIVES

The assessment objectives are to evaluate the following abilities of candidates:

1. to recall and show understanding of facts, concepts and principles of science, and the relationships between different topic areas of the curriculum framework;
2. to apply scientific knowledge, concepts and principles to explain phenomena and observations, and to solve problems;
3. to formulate working hypotheses, to plan and to perform tests for them;
4. to show practical skills related to the study of science;
5. to present data in various forms, such as tables, graphs, charts, drawings, diagrams, and to transpose them from one form into another;
6. to analyse and interpret data including numerical and non-numerical data such as those in the form of continuous prose, diagrams, photographs, charts and graphs; to make inferences, logical deductions and draw conclusions from them;
7. to formulate arguments, justify claims, evaluate evidence and detect errors;
8. to select, synthesise, and communicate ideas and information clearly, precisely and logically;
9. to show understanding of the applications of science to daily life and the contributions of science to the modern world;
10. to show awareness of the ethical, moral, social, economic and technological implications of science, and to critically evaluate science-related issues; and
11. to make suggestions, choices and judgements based on scientific knowledge and principles.

Mode of assessment

The public assessment will consist of a public examination component and a school-based assessment component as outlined in the following table:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weighting</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1 Questions set on Compulsory part</td>
<td>45%</td>
<td>2 hours</td>
</tr>
<tr>
<td>Paper 2 Section A Multiple-choice questions on Compulsory part</td>
<td>15%</td>
<td>1 hour 30 minutes</td>
</tr>
<tr>
<td>Paper 2 Section B Questions set on Elective part</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>School-based Assessment (SBA)</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>
PUBLIC EXAMINATION

In Paper 1 and in Paper 2 Section A, all questions are compulsory. In Paper 2 Section B, a choice of two out of the three electives is allowed.

In Paper 1 and in Paper 2 Section B, the types of items include short questions, structured data-response questions and short essays. Some of the questions may be set on unfamiliar situations. In such cases, candidates will be required to study a given piece of information which may be presented in the form of text, diagrams or graphs, and to apply their skills and knowledge to answer questions set on the information given.

SCHOOL-BASED ASSESSMENT (SBA)

School-based Assessment (SBA) is compulsory for all school candidates. Candidates are required to perform a stipulated amount of practical related tasks, which refer to activities that require the use of science apparatus and/or fieldwork. In S5 and S6, they will be assessed by their teachers in two ability areas: A and B. Each of the ability areas carries 10% of the subject mark. Details of the two ability areas are as follows:

**Ability area A:**
(a) to organise and perform practical work, including the use of suitable apparatus and equipment, and the appropriate manipulative skills in carrying out experiments;
(b) to make accurate observations and measurements.

**Ability area B:**
(a) to identify the problem to be investigated and to formulate a hypothesis, where applicable, and put it into a testable form;
(b) to devise a plan of investigation in accordance with the problem being investigated;
(c) to record and to present data in an appropriate form;
(d) to interpret experimental results and to draw appropriate conclusions.

The table below summarises the percentage weighting and the minimum number of assessments required in S5 and S6 for the different areas of the SBA:

<table>
<thead>
<tr>
<th>Practical related task</th>
<th>Ability area A</th>
<th>Ability area B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighting in subject</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Minimum number of</td>
<td>S5</td>
<td>S6</td>
</tr>
<tr>
<td>assessments</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

For monitoring and authentication purposes, candidates are required to keep good custody of all their work in SBA until the publication of the HKDSE examination results.

Private candidates need not complete the SBA component. Their subject result will be based entirely on their public examination results.

The detailed requirements, regulations, assessment criteria, guidelines and method of assessment are provided in the SBA Handbook for HKDSE Integrated Science published by the Hong Kong Examinations and Assessment Authority.

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**- End of Appendix 11. Thank you very much! -**