New Senior Secondary Mathematics Curriculum

SBA

HKEAA

Nov 2008
REVIEW
**Rationale for introducing SBA**

- Improve the validity of assessment (by broadening the scope of assessment)
- Improve the reliability of assessment (by capturing student performances at different points of time)
- Have a positive effect on teaching and learning
- Recognize the professional judgment of teachers in the assessment process: enhance the professional development of teachers
Guiding Principles in Designing SBA in NSSMC

- Aligns with the curriculum aims & objectives (Further Applications and Inquiry & Investigation)
- Adopts a pragmatic approach in implementing SBA
- Emphasizes quality rather than quantity
- Avoids unduly increasing the workload of teachers & students
SBA: Assessment Tasks

- Assessment tasks will be more comprehensive and flexible than traditional exam questions:
  - Time
  - Question type
  - Coverage
  - Use of open-ended questions
  - Degree of assessing higher-order skills
  - Tools can be used
  - Ways of presenting answers
SBA in Compulsory Part: Proposed Mode

- Two assessment tasks (one in S5 and the other in S6)
  - one task on mathematical investigation or problem-solving
  - one task on data handling

- Mainly be conducted in school under the supervision of teachers
## Resources for Setting Assessment Tasks (1)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>15 tasks</td>
</tr>
<tr>
<td>2009</td>
<td>15 tasks</td>
</tr>
<tr>
<td>2011</td>
<td>10 tasks</td>
</tr>
<tr>
<td>2013</td>
<td>10 tasks</td>
</tr>
</tbody>
</table>
Resources for Setting Assessment Tasks (2)

- Learning & teaching resources from CDI
- Textbooks & reference books
- Experience sharing among teachers
- Internet resources
- Others …
SBA: Quality Assurance

- Developmental Stage
  - Detailed guidelines & SBA handbooks
  - Exemplars, examples of student performances
  - Teacher training
- Implementation Stage
  - Co-ordinators to support schools & monitor the implementation
  - Communication & experience sharing among teachers
- Post-exam Stage
  - Moderation mechanism
SBA: Moderation Mechanism

- Statistical method to moderate SBA marks with reference to students’ public examination scores
- Iron out possible differences among schools in marking standards
- The rank order of students in schools will be maintained
### Third Consultation Results

8(a) The proposed weighting of SBA is appropriate.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.1%</td>
</tr>
<tr>
<td>2</td>
<td>10.6%</td>
</tr>
<tr>
<td>3</td>
<td>20.5%</td>
</tr>
<tr>
<td>4</td>
<td>34.9%</td>
</tr>
<tr>
<td>5</td>
<td>25.6%</td>
</tr>
<tr>
<td>6</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

**Strongly Agree**
9(a) The proposed design of SBA is appropriate.

Strongly Disagree

1       6.3%
2       14.0%
3       22.1%
4       41.1%
5       15.5%
6       1.0%

Strongly Agree
10(a) My school is confident in implementing SBA in accordance with the proposed implementation schedule.

- Strongly Disagree
  - 1 3.3%
  - 2 10.1%
  - 3 17.7%
  - 4 34.9%
  - 5 29.4%
  - 6 4.6%

- Strongly Agree
11. The amount and type of effort required of teachers to implement SBA is reasonable

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>21.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>34.0%</td>
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<td></td>
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<tr>
<td>5</td>
<td>10.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. The amount and type of effort required of students to implement SBA is reasonable

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>2</td>
<td>17.8%</td>
</tr>
<tr>
<td>3</td>
<td>26.5%</td>
</tr>
<tr>
<td>4</td>
<td>37.2%</td>
</tr>
<tr>
<td>5</td>
<td>13.0%</td>
</tr>
<tr>
<td>6</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

Strongly Agree
13. Teachers in my school have confidence in authenticating students’ work within the SBA design

Strongly Disagree

1 5.1%
2 11.2%
3 23.7%
4 35.1%
5 21.6%
6 3.3%

Strongly Agree
DEVELOPMENT
The phasing in of SBA in Compulsory Part

- The Education Bureau and HKEAA would conduct a review of the NSS curriculum and assessment in the 2012/2013 school year.
- There would be no time-line for the implementation of SBA in Mathematics.
- During the transition years, the curriculum for Mathematics will remain intact and schools will be expected to conduct the SBA activities as integral parts of learning and internal assessment.
SBA HANDBOOK (Trial Version)

- Completed in 09
- Assessment Requirements
- Guidance in the Conduct of SBA
- Administrative Arrangements
- Moderation of SBA Marks
How can schools plan for SBA Implementation

- Conduct SBA as an integral part of teaching and learning and not treat it as an “add-on”
- Set up school’s own assessment plan, specify the no of assessment activities to be conducted for individual subjects
- Coordinate the conduct of the SBA across subjects so that students’ work will not be concentrated into one or two critical months
- Incorporate SBA as a part of schools’ internal assessment program and replace some of the current assessment activities, e.g. assignments, tests etc
Exemplars

1. Data Handling
   The Performance of Job Applicants

2. Mathematical Investigation
   Meshes in Number Grid

3. Problem-solving
   Tessellation
Format of Exemplar

1. Cover
   - Schools design the cover

2. Teacher Guidelines
   - For teachers’ reference

3. The Task
   - For students use

4. Assessment Marks
   - Schools decide the marks allocation according to their own situation
ASSESSMENT METHOD

- Assessment Scale
- Assessment Marks
ASSESSMENT SCALE

- Use the scale to design the task
- Mathematical Knowledge and Skills
- Mathematical Communication Skills
- Four Levels: Very good, Good, Fair, Poor
**MESHES IN NUMBER GRID**

**Assessment Scale**

<table>
<thead>
<tr>
<th>Level of Performance</th>
<th>Marks</th>
<th>Mathematical Knowledge and Investigation Skills</th>
<th>Marks</th>
<th>Mathematical Communication Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Assessment Marks

- The full mark of each task
  At the discretion of schools. However,
  The full mark of a SBA task submitted should be scaled to 20 marks, of which
  - 16 marks are awarded for the mathematical knowledge while 4 marks are awarded for the communication skills
  - “solution” and “performance” columns are for reference
  - teachers can exercise their professional judgment to modify the “performance” column to cater for the needs of their students, or convert the column into marks.
Marking Guidelines

- **Solution**
- **Performance**
  - Evidence: The meanings of $p$, $q$, $\Delta$
  - Weak: Understand one of the meanings of $p$, $q$ and $\Delta$
  - Fair: Understand two of the meanings of $p$, $q$ and $\Delta$
  - Good: Understand the meanings of $p$, $q$ and $\Delta$
  - Very Good: Understand the meanings of $p$, $q$, $\Delta$ and obtain the correct answer
Please submit your Evaluation Form

Thank you