## Grade Four Numeracy: An Item-level Analysis – Written Response Questions (Provincial level)

**British Columbia  All Schools  FSA May/2004  FSA population (N=48,178)**

Provincial FSA Item-Level Response Reports include data for all BC students in Grade 4 who wrote a particular FSA test. Both public and independent schools are included. The FSA 2004 provincial Item-Level Response Reports display the proportion of students who made errors on each test item and a description of the misconception.

Since the English and French versions of the FSA Numeracy tests are identical, the Item-level Analysis – Written Response Questions provincial report includes all students.

| Content Area | Item # | Number(%) of Respondents | Number(%) of Score0 | Number(%) of Score1 | Number(%) of Score2 | Number(%) of Score3 | Number(%) of Score4 |
|---|---|---|---|---|---|---|---|
| Patterns and Relations | 21 | 39,928 (100%) | 4878 (12%) | 7661 (19%) | 10922 (27%) | 5476 (14%) | 10991 (28%) |
| Shape and Space | 42 | 41,261 (100%) | 3469 (8%) | 6908 (17%) | 10779 (26%) | 9515 (23%) | 10590 (26%) |

| Score Description |
|---|
| **Score 0** – did not answer or made no logical attempt<br><br>**Score 1** – made a logical start beyond just copying data, or tried to reach a sub-goal but didn't, or started an inappropriate strategy but didn't carry out.<br><br>**Score 2** – successfully reached a sub-goal but went no further, or gave the correct answer with no work shown, or used a correct strategy but did not carry it out far enough or carried out an inappropriate strategy and obtained incorrect answer, but work showed some understanding of the problem.<br><br>**Score 3** – used appropriate strategies with incorrect or no answer, or gave the correct answer with only some evidence of appropriate strategies, or implemented the appropriate strategies but did not incorporate/ignored a condition of the question<br><br>**Score 4** – appropriate strategy with correct answer or appropriate strategy with solution including only a copy or computation error. |

**General Comments - Grade 4 Numeracy Written Response Questions**

## Student Strengths

Educators on the marking committee have identified areas of student strengths in Numeracy.

When solving a Patterns and Relations problem, students demonstrated a wide variety of strategies. They were able to use patterns to solve the problem. They were able to complete the correct ratio that was required for the pattern, show most of the combinations, and vocalize thinking.

When solving a Shape and Space problem, students demonstrated strong reasoning skills and used appropriate and effective strategies.

## Implications for Instruction

The marking committee has offered the following suggestions for instruction to address the areas requiring improvement.
Students should learn to:

- Express ratios
- Organize information using appropriate strategies
- Improve adding/subtracting skills, particularly with money/decimals
- Do more multi-step problem solving

The committee also suggested that students read the questions carefully; and try to show all their work.