

# Developing Conceptual Understanding Of Number

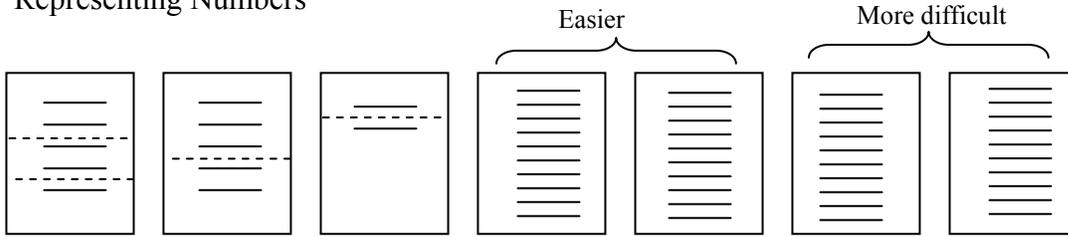
Introduction

Carole Bilyk  
[cbilyk@gov.mb.ca](mailto:cbilyk@gov.mb.ca)

Wayne Watt  
[wwatt@mts.net](mailto:wwatt@mts.net)

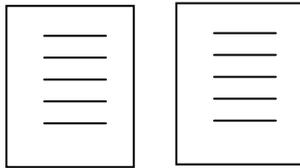


C. Representing Numbers



Applications A, B, C

Applications 1, 2



- D. Number Theory
- E. Whole Number Operations

Applications A, B, C, D, E

Applications 3, 4

- F. Geometry
- G. Decimal, Fraction and Percent

Applications A, B, C, F, G  
Applications A, B, C, D, E, F, G

Applications 5, 6  
Applications 7, 8

- H. Coordinate Geometry
- I. Pre-Algebra Patterns
- J. Perimeter and Area

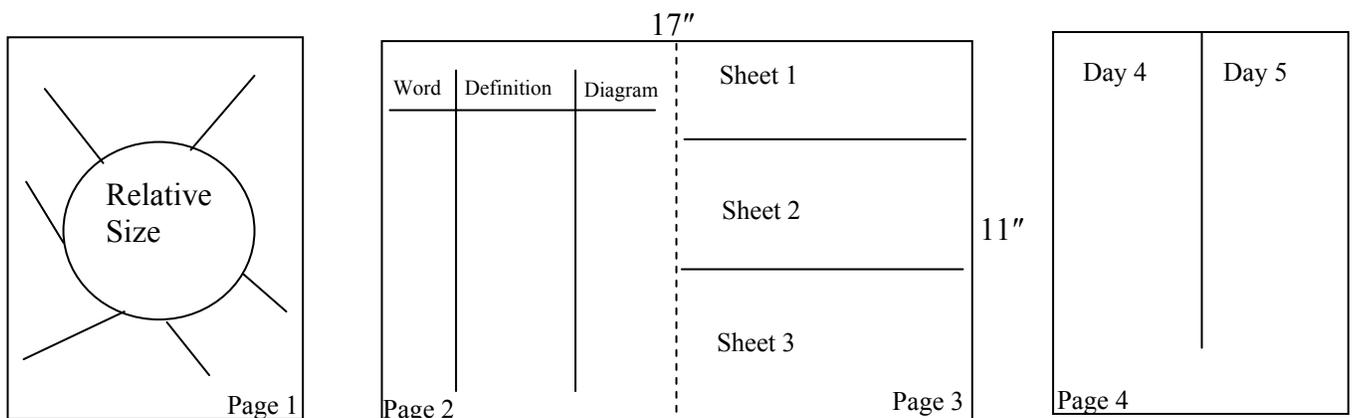
Applications A, B, C, H, I, J  
Applications A, B, C, D, E, H, I, J  
Applications A, B, C, F, G, H, I, J  
Applications A, B, C, D, E, F, G, H, I, J

Applications 9, 10  
Applications 11, 12  
Applications 13, 14  
Applications 15, 16

## Teaching Suggestions

The following suggestions are from teachers who have tried these materials in their classrooms.

- When deciding which of the last four sheets to use, consider the following options:
  - split the class into two groups – one using sheet 4 and one using sheet 6. The teacher can work with one group while the other groups works independently.
  - If the students struggled in the first three sheets, use sheet 4 and sheet 5. If the students found the first three sheets relatively easy, use sheet 6 and sheet 7.
- For each set, provide students with an 11" x 17" sheet of paper. Have students fold the paper to make an 8.5" x 11" booklet. (see diagrams below).
  - On the cover (page 1), have students construct a visual representation of the concepts with the name of the set as the central phrase.
  - On the inside of the cover (page 2), have students construct a chart using a Three-Point Approach for vocabulary. As new vocabulary is introduced throughout the set, have students add to their chart. On the facing page (page 3), have students write notes and/or answers to the questions from Sheets 1, 2 and 3 as they are discussed in class.
  - On the back (page 4), have students record their answers from the fourth and fifth sheets used. After the set is finished, students could retain the booklet for reference later in the year.



- Some questions are appropriate for students to create posters demonstrating their answers. This could be done in groups or as an individual activity.
- A classroom word wall for the vocabulary would be appropriate. Students should be encouraged to create the word wall or at the very least to determine which words go on the wall.
- Pencil and paper jottings are appropriate for some questions. This will be necessary for some students on a regular basis. Student participation is more important than an undue emphasis on mental process.

## Assessment Suggestions

- Several teachers found that students participated more readily in the discussion on sheets 1, 2 and 3 if explicit evaluation was not used.
- Some teachers used the 4<sup>th</sup> and 5<sup>th</sup> sheet for evaluation purposes. Others did not explicitly evaluate until the Applications sheets.
- Other teachers evaluated the 11" x 17" sheet of paper using a rubric emphasizing effort.

Number Sense

is not directly

taught, it is

developed.