

Contents

Foreword.....

Preface.....

Introduction.....

Chapter 1

Prenumeric Ideas.....

Foundational Ideas about Number and Numeration.....

Using prenumeric comparisons to
understand quantities and relationships.....

Comparing unlike objects.....

Notions of equality.....

Summary: Learners, Curriculum, Instruction, and Assessment

 Knowledge of Learners.....

 Knowledge of Curriculum.....

 Knowledge of Instructional Strategies.....

 Knowledge of Assessment.....

Conclusion.....

Chapter 2

The Concept of the Unit.....

Getting to Understanding the Concept of Unit.....

Challenges in making comparisons of quantities.....

Conservation and Counting.....

Development of the number line.....

Summary: Learners, Curriculum, Instruction, and Assessment

 Knowledge of Learners.....

 Knowledge of Curriculum.....

 Knowledge of Instructional Strategies.....

 Knowledge of Assessment.....

Conclusion.....

Chapter 3

Counting.....

Getting to Counting with Understanding.....

Number-word sequence can be used as a foundation for counting.....

Finger counting.....

Counting includes ordinality of number.....

From Subitizing to Counting.....

Counting On.....

Summary: Learners, Curriculum, Instruction, and Assessment.....

 Knowledge of Learners.....

 Knowledge of Curriculum.....

 Knowledge of Instructional Strategies.....

 Knowledge of Assessment.....

Conclusion.....

Chapter 4

Building Ideas about Place Value.....

Getting to Understanding the Base-Ten Number System and Place Value.....

Patterns in the number.....

Big Idea 5.....

Value of a digit depends on its place or position in a number.....

Summary: Learners, Curriculum, Instruction, and Assessment.....

 Knowledge of Learners.....

 Knowledge of Curriculum.....

 Knowledge of Instructional Strategies.....

 Knowledge of Assessment.....

Conclusion.....

Chapter 5

Looking Ahead with Number and Numeration.....

Extending Knowledge of Number and Numeration in Grades 3–5.....

 Building on student of understanding of concept of unit.....

 Building on student understanding of place value.....

Summary.....

Appendix 1

The Big Ideas and Essential Understandings for Number and Numeration.....

Appendix 2

Resources for Teachers

Appendix 3

Tasks.....

References

Accompanying Materials at More4U

Appendix 1

The Big Ideas and Essential Understandings for Number and Numeration

Appendix 2

Resources for Teachers

Appendix 3

Tasks.....

Which Snake Is Longer?.....

Cookie Comparisons

More Spoons or More Forks?

Comparing Rows of Peanuts.....

Crossing Over.....

Birds on a Branch.....

Connecting Digits to Values.....