Instructional Flow — Unit 6 — Other Operational Systems

I. Finite Operational Systems: Exploration and Connections

- investigating patterns and applications of finite operational systems
- introducing informal examples of modular arithmetic through exploration
- comparing strategies for solving problems

II. Modular Arithmetic: Addition and Multiplication

- formalizing student understanding of congruence in modular arithmetic
- exploring addition and multiplication in modular arithmetic
- making connections between operations in the real number system and in modular arithmetic

III. Modular Arithmetic: Properties

- developing an understanding of properties
- exploring patterns in tables to help identify properties
- making connections between properties in the real number system and in modular arithmetic

IV. Modular Arithmetic: Subtraction and Division

- extending and applying students' understanding of operations and group properties in modular arithmetic to include subtraction and division
- using tables for subtraction and division in modular arithmetic to check for group properties
- making connections between properties in the real number system and in modular arithmetic for subtraction and division

V. Other Operational Systems

- investigating operational systems without numbers
- applying student knowledge of operations and properties in modular arithmetic to other operational systems

VI. Bases

- comparing number systems with different bases
- representing numbers in various bases
- converting between number systems