True/False: Place Value of Whole Numbers

Adapted from Thinking Mathematically Integrating Arithmetic & Algebra in Elementary School (pages 42-46)

Standards addressed: 4.NBT.1, 4.NBT.2

True/False and open number sentences can be used to focus on place value concepts. "Students may or may not have had experience with true/false number sentences, but it is relatively easy to introduce them. Engage your students in a general discussion about true/false number sentences, what it means for a number sentence to be true, and what it means for a number sentence to be false. Provide an example, such as 8-5=3, and ask whether the number sentence is true or false. Students need to be able to defend why the number sentence is true or false." (page 15)

Possible number sentences to use:

a) 246 = 2+4+6
   Since this is not true, you will want to pull this correct number sentence: 246 = 200+40+6

   Guide your students, through questioning, other ways to display place value decompositions:
   - 246 = 100+100+10+10+10+10+6
   - 246 = (100+100) + (10+10+10+10) + 6
   - 246 = 2X(100) + 4X(10) +6
   - 246 = 2X(10X10) + (4X10) + 6
   - 246 = (20X10) + (4X10) + 6
   - 246 = 24X10 + 6

b) 47+38 = 40+30+7+8
   Guide your students, through questioning, other ways to display place value decompositions:
   - 47+38 = (4X10) + (3X10) + 7 + 8
   - 85 = 80 + 5
   - 85 = (8X10) + 5

c) 24+78 = 78+20+2+2
   Guide your students, through questioning, other ways to display place value decompositions:
   - 24+78 = 70+20+8+2+2
   - 24+78 = 70+20+10+2
   - 24+78 = (7X10) + (2X10) + 10 + 2
   - 24+78 = (9X10) + 10 + 2
   - 24+78 = (10X10) + 2
   - 24+78 = 100 + 2