

Making Place Value Explicit in Adding Whole Numbers and Decimals, 2009

Katie Radcliff

Synopsis

In this curriculum unit, we will explore addition and subtraction using the rationale that it takes an understanding of, not only a physical representation of numbers, but also a comprehension of the base-ten system in which all of our digits operate, for students to be successful life-long learners of math. By explicitly expressing to students the concept that only ten digits are responsible for creating any whole number, place value becomes an essential to their understanding of math, instead of just a vocabulary lesson. The unit is geared towards upper elementary students (4th & 5th), but contain ideas and concepts that could be modified to facilitate to a younger audience, or as remediation for middle school students. Students work with numbers using their place value components to add and subtract, as well as explore multiple ways to do these computations without relying on the standard U.S. algorithm. With this increased understanding of place value, the standard algorithm can be used as an efficient tool, without having to stand alone as the only way to process these computations. The unit contains activities that use place value ideas to reinforce base-ten concepts, as well as explore other base number systems.