

Sequencing Rationale

This fractions unit is split into three major subunits: fractions as division, adding and subtracting, and multiplying and dividing. The sequence of this unit will follow along closely with the learner outcomes. Just as Bloom's taxonomy begins with lower levels of thinking and ends with higher levels of thinking, students will begin with comprehension and application skills and end each subunit with analyzing and synthesis skills (Chiarelott, 2006, p. 60). Each fraction subunit is in place to build upon the previous material. The entirety of this unit will be taught in approximately seven weeks.

In the first unit, the main focus will be on fractions as division. Students will explore foundation topics such as what are fractions and how do they represent a division problem. Time will be devoted to learning technical vocabulary for the entire unit, as there are ample terms that are new to students. The importance of deciphering between these terms now will be valuable later, as students will use them throughout the fractions unit. Among the new vocabulary are greatest common factor, simplest form, equivalent fractions, least common multiple, and least common denominator. It is essential for students to comprehend these ideas as they will be used for the remainder of the course. The fractions as division subunit will take approximately three weeks to complete.

The second unit will concentrate on adding and subtracting fractions and mixed numbers. It is logical for this subunit to fall in line next, because just as we teach students in elementary school how to add and subtract before we teach them how to multiply and divide, the same is relevant for fractions. In this subunit, students will begin with adding and subtracting like fractions. This is the most basic form of a fraction that requires no previous knowledge other than that of adding whole numbers. The levels of Bloom's taxonomy will then follow suit as

students move on to adding and subtracting unlike fractions and mixed numbers. Subtracting mixed numbers brings an entire new set of skills to the table, where students will have to tap into their previous knowledge from the first subunit and what has already been covered in the current subunit, and combine several ideas to synthesize their work. If students can subtract mixed numbers with renaming, it will serve as evidence that fraction addition and subtraction has been mastered. This subunit will take approximately two weeks to complete.

The third and final subunit consists of multiplying and dividing fractions. This subunit is the last piece of the fraction unit because students need to bring their knowledge from the previous subunits and apply it here. Adding and subtracting (from subunit two) provides more of the foundation, while multiplying and dividing (subunit three) allow students to take that final step of culminating their understanding. The unit will open with students estimating products of fractions using prior knowledge of compatible numbers and rounding. They will then practice multiplying and dividing with combinations of whole numbers, fractions, and mixed numbers. Finally, students will end the unit by modeling both fraction multiplication and division to show their synthesizing skills. This subunit will take approximately two weeks to complete.

These three subunits fall into the most logical order because they build upon one another. You can't add fractions if you don't comprehend what a fraction is. You can't divide a fraction if you don't know how to add a fraction. Math as a content in general requires the learner to acquire basic skills before developing higher level abilities. The subunits contained within this large unit on fractions are strategically placed to allow students to work up the totem pole of fraction knowledge.

References

Chiarelott, L. (2006). *Curriculum in context*. Belmont, CA: Wadsworth.