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Chapter 17 Developing Concepts of Decimals and Percents

* **Connecting Fraction and Decimals**
* Children have shown greater difficulty understanding decimals than fractions so conceptual understanding of decimals and their connections to fractions must be carefully developed
* Use familiar fraction concepts and models such as base-ten fraction models (circular disks, squares, number lines, and place-value strips)
* Extend place value system by showing them a two-way relationship - (example: 1 strip makes 10 squares, 1 square makes 10 strips, 1 strip makes 10 cubes) no smallest piece or largest piece and the role of the decimal-left of the decimal is the units
* Make connection between fraction and decimals-use base-ten blocks and place value charts (example: 2.35 is 2 wholes, 3 tenths, and 5 hundredths)
* **Developing Decimal Number Sense**
* Have students translate familiar fractions to decimals by means of base-ten model, 10 x 10 grid, circular model, or number line (example: 3/5 = 6/10 = .6)
* Approximate a decimal on a number line
* Put a list of decimal numbers in order from least to greatest
* Familiarize students with the denominator is a divisor and the numerator is a multiplier (example: ¾ is 3 X ¼ or 3 divided by 4)
* **Introducing Percents**
* Percent is simply another name for hundredths – standard denominator of 100.
* Use models such as base-ten models, 10 X 10 hundreds chart, circle graphs, 3 part model-original, increase/decrease, and final amount
* Models provide main link among fractions, decimals, and percents
* Recall that decimal point identifies units
* Use realistic percent problems and explore percent relationships in real contexts
* Limit percents to familiar fractions (halves, thirds, fourths, fifths, and eighths)
* Do not categorize or label problems types
* Use terms part, whole, and percent
* Require students to use models or drawings to explain solutions
* Encourage mental computation
* Estimation- substitute close percents that are easy to work with and select numbers that are compatible with the percent involved to make calculation easy to do mentally
* **Computation with Decimals**
* Estimation is very important-students should become familiar with estimating decimal computations well before that learn to compute with pencil and paper
* Begin computing with estimation and then move to the challenge of figuring out the exact answer with addition and subtraction and multiplication and division
* Addition and Subtraction-compute numbers in like position values
* Division estimates generally come from thinking about multiplication
* Once estimates are made let students use their own method to determine exact answer.

**Main idea to remember is to use models!**