Using Percents in the Real-World – Grade Six

Ohio Standards Connection

Number, Number Sense and Operations

Benchmark I
Use a variety of strategies including proportional reasoning to estimate, compute, solve and explain solutions to problems involving integers, fractions, decimals and percents.

Indicator 14
Use proportional reasoning, ratios and percents to represent problem situations and determine the reasonableness of solutions.

Indicator 15
Determine the percent of a number and solve related problems; e.g., find the percent of markdown if the original price was $140, and the sale price is $100.

Benchmark D
Use models and pictures to relate concepts of ratio, proportion and percent.

Mathematical Processes

Benchmark A
Use more than one strategy to solve a problem, and recognize there are advantages associated with various methods.

Lesson Summary:
In this multiple day lesson, students encounter the use of percentages in the real world. The lesson begins with finding sales tax and discounts on purchases. Using 10 by 10 grids, students represent percent to develop conceptual understanding of the real world applications and relate fractional parts to the percentages. The model helps students determine and understand the use of an algorithm for finding percent of a given number. Students use reasoning skills to estimate and show understanding.

Estimated Duration: Six to seven hours

Commentary:
Students should use a variety of methods to study percents and their relationship to fractions and decimals. Using models to determine percent of a given number help students understand percent as a ratio and develop proportional reasoning. By finding the percent of a number for real world situations, students see the relevance of the mathematics studied. A reviewer stated that using shaded models would give students "a visual concept so that they see what a percent really is."

Pre-Assessment:
This pre-assessment reveals students' prior knowledge of percent. Students describe percent, explain the reasonableness of given statements and identify the decimal form of given percents.

- Distribute Percent Pre-Assessment, Attachment A to each student.
- Have students complete the worksheet individually or with a partner
- Select students to share their responses with the class.

Scoring Guidelines:
Percent Pre-Assessment Answers, Attachment B is provided as a reference. Students ready for instruction provide explanations for percent such as "out of 100", shaded models, numbers or words. They may relate percents to equivalent fractional form or provide specific examples such as; if there are 10 pencils, five of them would be red because 50 percent is the same as a half. They also provide accurate decimal equivalencies. Provide intervention to students based on results of their work.