Lesson 9.2c	**Word Problems**

Objectives	**California Standards**
Solve word problems that involve finding the percentage for a part of a whole.	**NS 1.2**: Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number. **MR 1.1**: Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns **MR 1.2**: Determine when and how to break a problem into simpler parts.

Materials
• 10 x 10 grids
• Displayable 10 x 10 grids

Note

Students will be solving word problems involving percentages. In these word problems, the total is divided up into two or three parts and they are asked to find what percent the unknown parts are. For example, in a collection of 50 red, blue, and green marbles, 10 are red and 25 are blue. They are asked to find what percent of the total are green marbles.

To do this, they can first find the percentage of the total (50) that are red and blue marbles.

Number of red and blue marbles = 10 + 25 = 35

Percentage of red and blue marbles = $\frac{35}{50}$ × 100% = 70%

Then they subtract the percentage of red and blue marbles from 100% (the total percentage) to find the percent of the total that are green marbles.

Percentage of green marbles = 100% − 70% = 30%

Or, they can find the number of green marbles first, and then the percentage.

Number of green marbles = 50 − 10 − 25 = 15

Percentage of green marbles = $\frac{15}{50}$ × 100% = 30%

When doing word problems that involve finding the percentage for a part of the whole, make sure students know which amount the whole is; that is, what is the total amount that we are finding a percentage of. You may want to call the whole the *base*. It will be the amount that goes in the denominator of the fraction.

At this level, the whole is always the greater amount, but in higher level they will be using percentages that are greater than 100%, so the whole may be the smaller number. Therefore, remind students not to simply look for the larger number as the whole.