



How to Make Sense of Percentages

NOTE: A link to the student version of this “How To” can be found in the student edition at point of use. It can also be found in the Student Resources menu at the top of the screen.

You may want to coordinate with the math teacher to discuss the concept of percentages with your students. The students will have an easier time understanding percentages if they have a basic understanding of ratios and fractions. Percentages are a special type of ratio in which the second number is always 100. Percentages may be expressed as a fraction or as a decimal. For example, $30\% = \frac{30}{100} = 0.30$. If students have difficulty envisioning percentages as ratios or parts of something compared with the whole, have them practice coloring in squares on a 100-square grid (like the one shown in figure 1 in the student version of *How to Make Sense of Percentages*) using sample problems such as the following:

1. One hundred dogs are in a kennel. Fifteen of those dogs are black labs.
 - a. What percentage of the dogs are black labs? (*15 squares colored in, or 15 percent*)
 - b. What percentage of the dogs are other breeds? (*85 squares left blank, or 85 percent*)
2. Mr. Jones has a garden of 100 square feet. He has planted tomato plants on 33 square feet of space.
 - a. What percentage of his garden did he plant with tomato plants? (*33 squares colored in, or 33 percent*)
 - b. What percentage of his garden is left to be planted with other plants? (*67 squares left blank, or 67 percent*)

Once students understand that a percentage is a certain number out of 100, move on to the later part of the How To, which helps students understand how to calculate percentages when there is not exactly 100 of something.

The answers to the questions at the end of the student version are as follows:

- a. 10 total pieces and 30 percent are red
Number of red pieces: 3
- b. 70 total pieces and 50 percent are red
Number of red pieces: 35
- c. 300 total pieces and 65 percent are red
Number of red pieces: 195