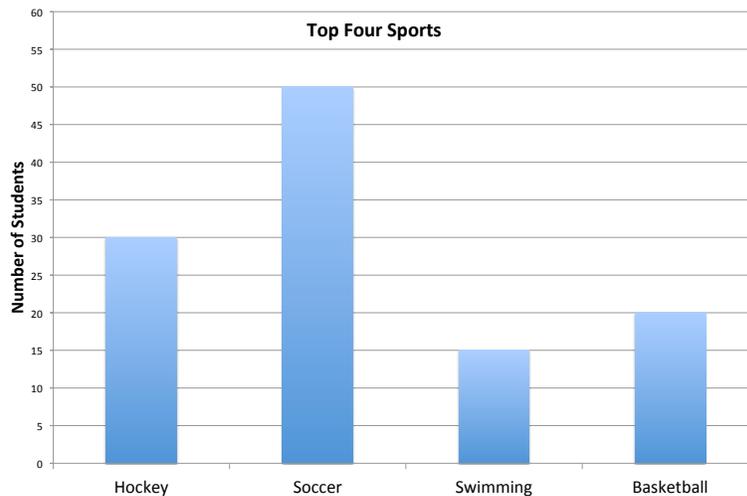# Problem of the Week
## Problem A and Solution
## Sporty Choices

**Problem**

Mr. King's class did a survey with the students of their school to determine favourite sports. They determined that the top four sports were soccer, basketball, swimming and hockey. They surveyed the students in the school again to have them choose from the four favourite sports. Here are the results:



A) How many students at the school were surveyed concerning the four sports?

B) Of the top four most popular sports at the school, what is the difference between the number of students selecting the most popular sport and the number of students selecting the least favourite sport?

**Solution**

A) Based on the chart we can determine that 30 students chose hockey, 50 students chose soccer, 15 students chose swimming, and 20 students chose basketball.

Therefore, the total number of students in the school that were surveyed is: $30 + 50 + 15 + 20 = 115$.

B) The most popular sport is soccer with 50 students. The least popular sport is swimming with 15 students.
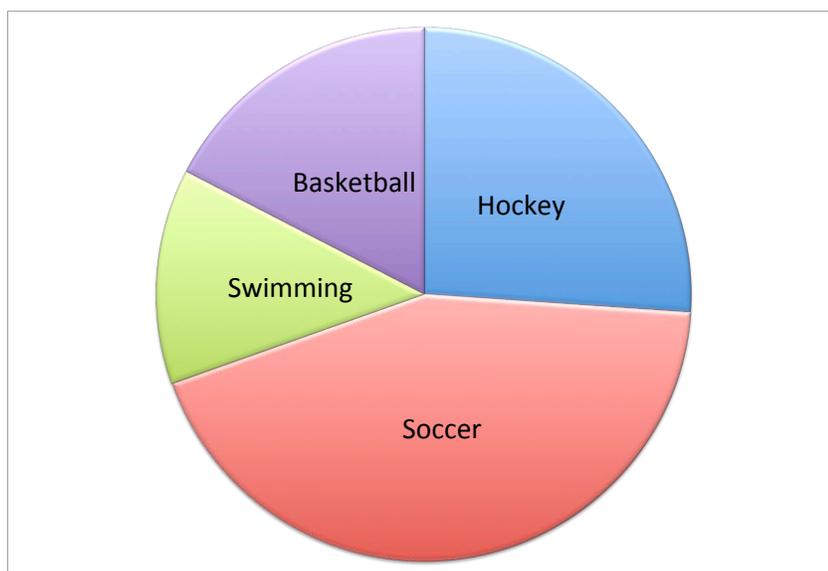
The difference between most and least popular sports is: $50 - 15 = 35$ students.

## Teacher's Notes

We use charts to visualize numeric data. The same data can be used to generate different types of charts. A column chart is a good way to identify relative sizes. It is immediately clear from the column chart that soccer is the most popular sport and that swimming is the least popular sport in this survey. Since the chart includes clearly marked grid lines, and the top of all the columns align with the grid lines, then it is also easy to determine the numbers that are being represented by the picture. Even if the columns do not align with the gridlines, we can reasonably estimate the values that the columns represent.

Other types of charts can emphasize different aspects of the data. A line chart is a good way to identify trends over time. A pie chart is a good visualization of proportion or the percentage each data point represents in the whole. Here is the same data from the original problem shown in the form of a pie chart:



Using this format, it is easy to see that, of the students surveyed in this school, close to half of them say that soccer is their favourite sport and approximately a quarter of them picked hockey.

Spreadsheet programs make it easy to generate different charts depending on how you want to present the data.