

TAKE IT TO THE MAT

A NEWSLETTER ADDRESSING THE FINER POINTS OF MATHEMATICS INSTRUCTION



Southern Nevada Regional Professional Development Program
March 2004 — Middle School Edition

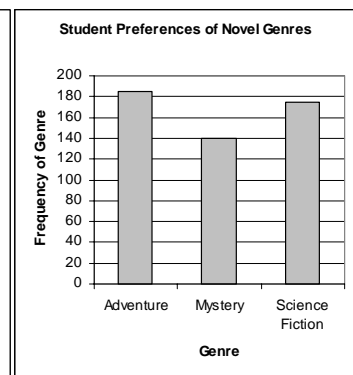
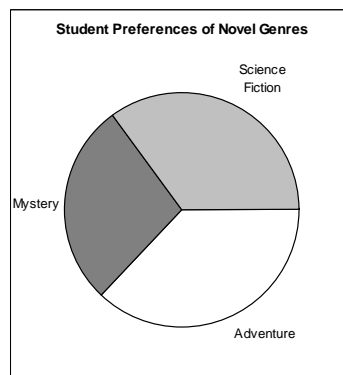
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Over the past five months, we have been comparing sets of numerical data. To round out the year, *Take It to the MAT* will address the comparison of categorical data.

A survey is conducted to determine students' preferences of novel genre. Respondents were asked, "Which of these is your favorite genre of novel: adventure, mystery, or science fiction? Choose only one." The results of the survey are shown in the table at right.

	Students
Adventure	185
Mystery	140
Science Fiction	175

What can we determine from the table? Adventure seems to be the most popular, just edging out sci-fi. However, the frequencies are large and it may be difficult to get a good feel for the *relative* popularity of the different genres? How can we display this information in a graphical format to get the big picture? Two ways: *circle graphs* and *bar graphs*.



Recall that the circle graph is appropriate when comparing part to part or part to whole. The bar graph only allows us to compare part to part, at least for now.

The graphs give us a picture of what's happening. The fact that adventure is most popular genre is clear in the bar graph, but not the circle graph. However, from both graphs we could see that the differences in popularity among the three genres are not large.

What is more interesting about this survey is that the gender of the students was recorded along with their preferred genres. What can we say about males and females and their preferred genres? How could we graphically represent this data in order to answer the question quickly?

	Male	Female
Adventure	80	105
Mystery	20	120
Science Fiction	100	75

A *double bar graph* is the solution. We will plot two bars for each genre, one for males and one for females.

Looking at just the blue (left) bars, science fiction is most popular among males. Focusing on the red (right) bars, more females like mystery than the other two genres.

It's also clear that females prefer both adventure and mystery when compared to males. Or is it? We'll talk about that next time.

