

9-12

Notice and criticize arguments based on the faulty, incomplete, or misleading use of numbers, such as in instances when absolute and proportional quantities are mixed (as in "3,400 more robberies in our city last year, whereas other cities had

The middle of a data distribution may be misleading--when the data are not distributed symmetrically, or when there are extreme high or low values, or when the distribution is not reasonably smooth.

Both percentages and actual numbers have to be taken into account in comparing different groups; using either category by itself could be misleading.

Choose appropriate summary statistics to describe group differences, always indicating the spread of the data as well as the data's central tendencies.

Notice and criticize arguments when average results are reported, but not the amount of variation around the average.

6-8

Be skeptical of arguments in which all members of a group (such as teenagers or chemists) are implied to have nearly identical characteristics that differ from those of other groups.

Comparison of data from two groups should involve comparing both their middles and the spreads around them.

Notice and criticize the reasoning in arguments in which no mention is made of whether control groups are used or whether the control groups are very much like the experimental group.

Find the mean, median, and mode of a set of data.

3-5

Recognize when comparisons might not be fair because some conditions are not kept the same.

The mean, median, and mode tell different things about the middle of a data set.

A summary of data includes where the middle is and how much spread is around it.

K-2

Sometimes people aren't sure what will happen because they don't know everything that might be having an effect.

Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Use numerical data in describing and comparing objects and events.

Spreading data out on a number line helps to see what the extremes are, where they pile up, and where the gaps are.

Numbers can be used to count things, place them in order, measure them, or name them.

