

**Measures of Central Tendency:**  
**Mean, Median & Mode**

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Example: The scores are:  
100, 78, 93, 84, 91, 100, 82, 79.

☐ The mean of the scores is another name for their average. Just add them up and divide by the number of scores:

☐  $\text{mean} = (100 + 78 + 93 + 84 + 91 + 100 + 82 + 79) / 8 = 88.375$

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Example: The scores are:  
100, 78, 93, 84, 91, 100, 82, 79.

☐ The median of the scores is "the number in the middle" when the scores are sorted in order. In the example:

100 100 93 91 84 82 79 78

• If there is an even number of scores (as in the example) there is no number in the middle so the two numbers in the middle are averaged:  
 $\text{median} = (91 + 84) / 2 = 87.5$

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**☞ The mean of the numbers can be misleading. If I tell you the mean income in my neighborhood is 1 million dollars a year you might think that I am wealthy. But maybe the neighborhood is a poor one with one very rich person making many millions of dollars a year. The average will be large because one number is very large.**

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**Example: The scores are:  
100, 78, 93, 84, 91, 100, 82, 79.**

**☞ The median and the mean together give a better idea of the spread of the numbers. If there were one really wealthy person then the median income would be quite low. In the example the median is quite near to the mean, which suggests that the spread is probably evenly balanced.**

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**Example: The scores are:  
100, 78, 93, 84, 91, 100, 82, 79.**

**☞ The mode of a set of numbers is the number that occurs most often.**

**☞ In this example: mode = 100**

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Example: The scores are:  
100, 78, 93, 84, 91, 100, 82, 79.

- ▣ The mode may help to correct false impressions if you know the mean and the median but don't actually see the data.
- ▣ For example, if I tell you the mean of four numbers is 50.5 and the median is 50 you may think that the four numbers are close to one another, like the numbers in your example. In fact, however, I am thinking of: 101 99 1 1

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101 99 1 1

- ▣ The mean is  $(101 + 99 + 1 + 1)/4 = 202/4 = 50.5$  and the median =  $(99+1)/2 = 50$ . But the mode here is 1. If you know that, you will know that 1 is repeated more than once in the data and, since the mean is near 50 with only four numbers, that might give you the idea that the data include several large numbers and several small numbers rather than four numbers close to one another.

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