

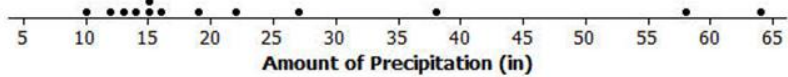
Lesson Summary

The **median** is the middle value (or the mean of the two middle values) in a data set that has been ordered from smallest to largest. The median separates the data into two parts with the same number of data values below the median as above the median in the ordered list. To find a median, you first have to order the data. For an even number of data values, you find the average of the two middle numbers. For an odd number of data values, you use the middle value.

Problem Set

- The amount of precipitation in each of the western states in the United States is given in the table as well as the dot plot.

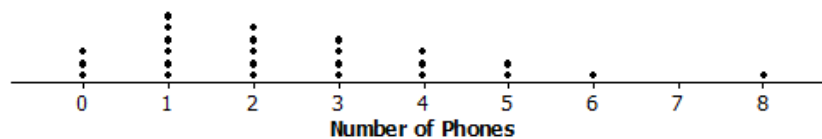
State	Amount of Precipitation (inches)
WA	38.4
OR	27.4
CA	22.2
MT	15.3
ID	18.9
WY	12.9
NV	9.5
UT	12.2
CO	15.9
AZ	13.6
NM	14.6
AK	58.3
HI	63.7



Source: <http://www.currentresults.com/Weather/US/average-annual-state-precipitation.php>

- How do the amounts vary across the states?
- Find the median. What does the median tell you about the amount of precipitation?
- Do you think the mean or median would be a better description of the typical amount of precipitation? Explain your thinking.

2. Identify the following as true or false. If a statement is false, give an example showing why.
- The median is always equal to one of the values in the data set.
 - The median is halfway between the least and greatest values in the data set.
 - At most, half of the values in a data set have values less than the median.
 - In a data set with 25 different values, if you change the two smallest values in the data set to smaller values, the median will not be changed.
 - If you add 10 to every value in a data set, the median will not change.
3. Make up a data set such that the following is true:
- The data set has 11 different values, and the median is 5.
 - The data set has 10 values, and the median is 25.
 - The data set has 7 values, and the median is the same as the least value.
4. The dot plot shows the number of landline phones that a sample of people have in their homes.



- How many people were in the sample?
- Why do you think three people have no landline phones in their homes?
- Find the median number of phones for the people in the sample.

5. The salaries of the Los Angeles Lakers for the 2012–2013 basketball season are given below. The salaries in the table are ordered from largest to smallest.

Player	Salary
Kobe Bryant	\$27,849,149
Dwight Howard	\$19,536,360
Pau Gasol	\$19,000,000
Steve Nash	\$8,700,000
Metta World Peace	\$7,258,960
Steve Blake	\$4,000,000
Jordan Hill	\$3,563,600
Chris Duhon	\$3,500,000
Jodie Meeks	\$1,500,000
Earl Clark	\$1,240,000
Devin Ebanks	\$1,054,389
Darius Morris	\$962,195
Antawn Jamison	\$854,389
Robert Sacre	\$473,604
Darius Johnson-Odom	\$203,371

Source: www.basketball-reference.com/contracts/LAL.html

- Just looking at the data, what do you notice about the salaries?
 - Find the median salary, and explain what it tells you about the salaries.
 - Find the median of the lower half of the salaries and the median of the upper half of the salaries.
 - Find the width of each of the following intervals. What do you notice about the size of the interval widths, and what does that tell you about the salaries?
 - Minimum salary to the median of the lower half:
 - Median of the lower half to the median of the whole data set:
 - Median of the whole data set to the median of the upper half:
 - Median of the upper half to the highest salary:
6. Use the salary table from above to answer the following.
- If you were to find the mean salary, how do you think it would compare to the median? Explain your reasoning.
 - Which measure do you think would give a better picture of a typical salary for the Lakers, the mean or the median? Explain your thinking.