

Frequency Distribution

- Lower class limits
 - The smallest numbers that can belong to each of the different classes
- Upper class limits
 - The largest numbers that can belong to each of the different classes
- Class boundaries
 - The numbers used to separate the classes, but without the gaps created by class limits
- Class midpoints
 - The values in the middle of the classes Each class midpoint can be found by adding the lower class limit to the upper class limit and dividing the sum by 2.
- Class width
 - The difference between two consecutive lower class limits in a frequency distribution

Procedure for Constructing a Frequency Distribution

1. Select the number of classes, usually between 5 and 20.
2. Calculate the class width.

$$\text{Class width} \approx \frac{(\text{maximum data value}) - (\text{minimum data value})}{\text{number of classes}}$$

3. Round this result to get a convenient number. (It's usually best to round **up**.)
4. Choose the value for the first lower class limit by using either the minimum value or a convenient value below the minimum.
5. Using the first lower class limit and class width, list the other lower class limits.
6. List the lower class limits in a vertical column and then determine and enter the upper class limits.
7. Take each individual data value and put a tally mark in the appropriate class. Add the tally marks to get the frequency.