stcp-GilchristSamuels-12

The following resources are associated:

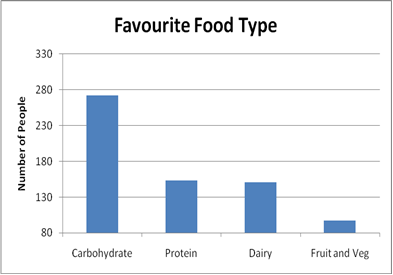
3. Descriptive Statistics workshop

**Activity 1**

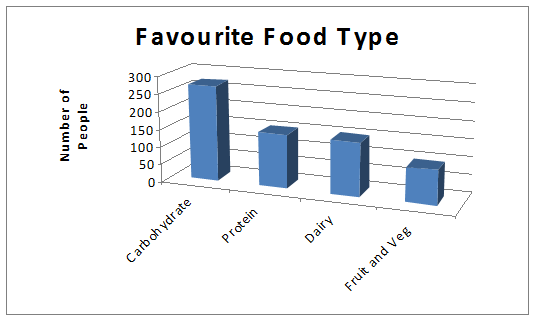
**(Chart Choice and Layout for Qualitative Data)**

Consider the four charts below. Each has at least one aspect that could be improved. Spend no more than one minute on each discussing what the **main** improvement is that could be made.

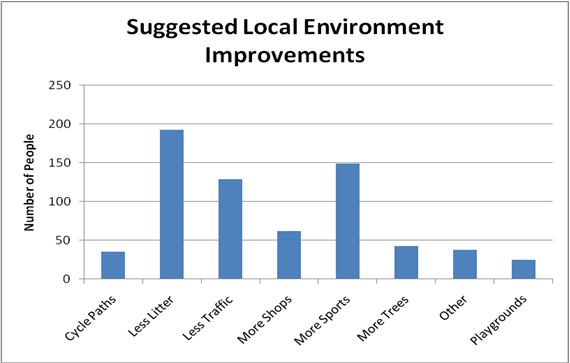
**Chart 1**



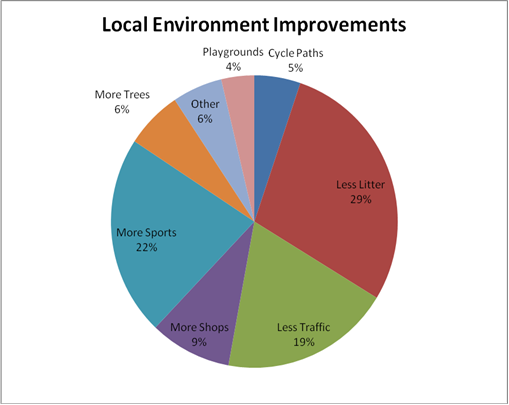
**Chart 2**



**Chart 3**



**Chart 4**



**Activity 2**

**(Frequency Distributions and Choice of Mean, Median or Mode)**

The following three data sets were analysed and a histogram (or bar chart) is shown for each data set.

**In each case, discuss whether the mean, median or mode provides a better indicator of the average**.

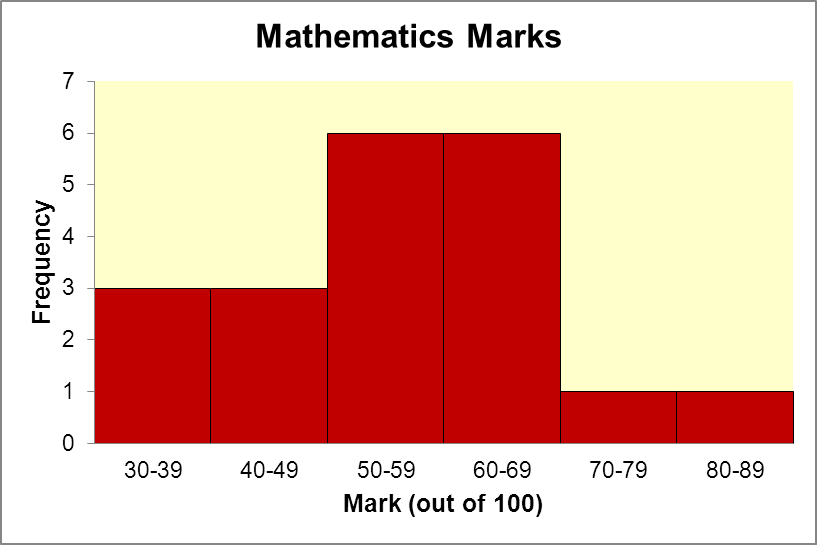
1. The marks (out of 100) for a mathematics exam for 20 students (ordered by size) were:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 30 | 35 | 37 | 40 | 40 | 49 | 51 | 54 | 54 | 55 |
| 57 | 58 | 60 | 60 | 62 | 62 | 65 | 67 | 74 | 89 |

Mean = 55.0

Median = 56.0

Mode = both 50-59 and 60-69



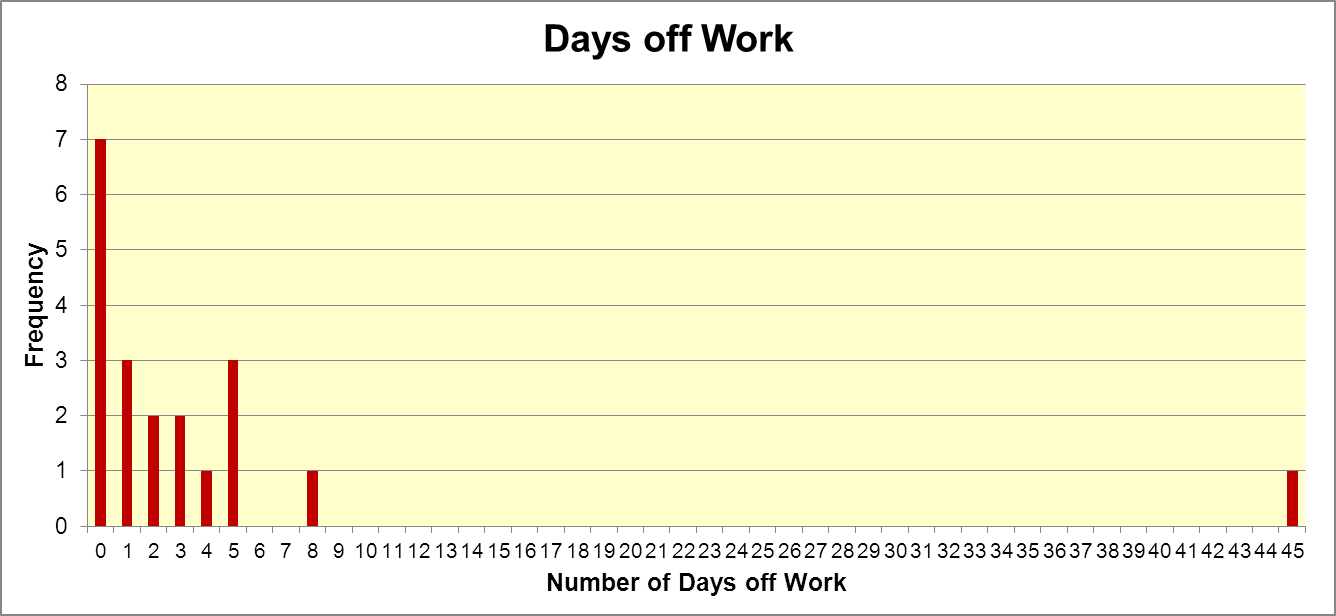
1. The numbers of days work missed by 20 workers in one year (ordered by size) were:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 2 | 2 | 3 | 3 | 4 | 5 | 5 | 5 | 8 | 45 |

Mean = 4.3

Median = 1.5

Mode = 0



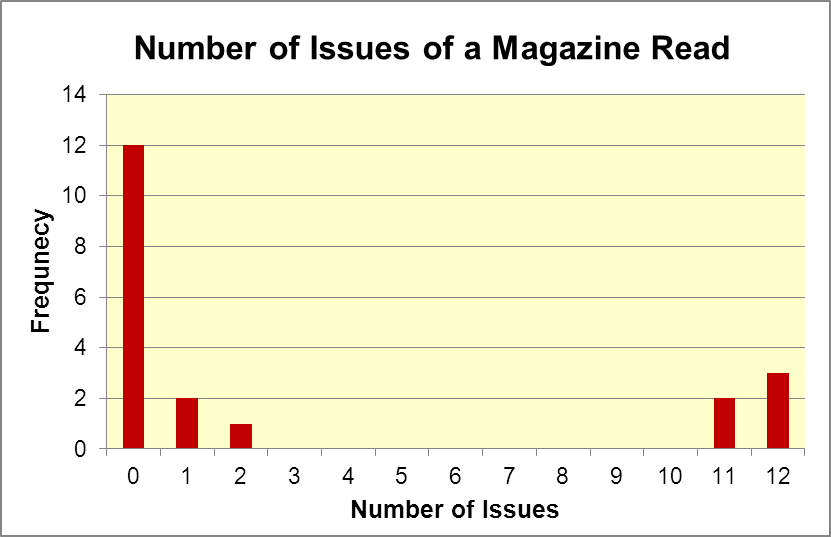
1. The number of issues of a particular monthly magazine read over a year by 20 people were:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 11 | 0 | 0 | 0 | 2 | 12 | 0 | 0 |
| 12 | 1 | 0 | 0 | 0 | 0 | 12 | 0 | 11 | 0 |

Mean = 3.1

Median = 0

Mode = 0



**Activity 3**

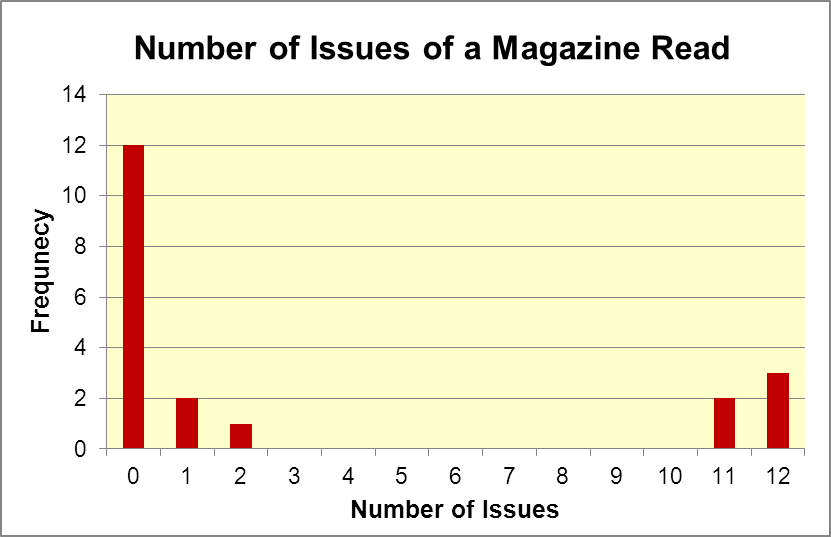
**(Measures of spread for a smaple data set)**

Calculate the lower quartile and upper quartile for Data Set 3:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 11 | 0 | 0 | 0 | 2 | 12 | 0 | 0 |
| 12 | 1 | 0 | 0 | 0 | 0 | 12 | 0 | 11 | 0 |

Draw the range, standard deviation and inter-quartile range on the chart below, using:

* Mean = 3.1
* Standard deviation = 5.1



Discuss in small groups which measure of spread you think is the most useful.