# M1.3 – Construct and interpret frequency tables and diagrams, bar charts and histograms

## Teacher answers

### Quiz

For the below data sets:

1. Determine whether a histogram or bar chart is the more appropriate graph to plot with reasons.
2. Plot the graph.
3. Blood samples were taken from a group of patients and the frequency of blood groups is presented in the table below.

| **Blood group** | **Frequency** |
| --- | --- |
| A | 40 |
| B | 10 |
| AB | 5 |
| O | 40 |

1. Bar chart – qualitative categoric data
2. 
3. The ages of teenage boys and men attending at least one hour of gym class in a week were recorded. Process and present these data to show how the numbers doing this kind of exercise vary with age.

| **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15.7 | 56.1 | 50.1 | 34.1 | 16.4 | 44.2 | 65.5 | 45.0 | 57.4 | 22.2 |
| 31.7 | 35.4 | 17.8 | 19.2 | 32.2 | 62.9 | 77.0 | 28.1 | 33.4 | 18.8 |
| 23.6 | 25.6 | 27.7 | 48.7 | 39.9 | 30.9 | 34.4 | 77.8 | 53.7 | 52.2 |
| 27.0 | 17.2 | 43.5 | 21.1 | 54.2 | 31.1 | 24.4 | 18.1 | 34.0 | 21.5 |
| 16.3 | 25.0 | 20.6 | 19.9 | 22.7 | 64.0 | 29.9 | 24.2 | 32.4 | 17.7 |
| 36.4 | 22.0 | 21.0 | 50.4 | 18.6 | 19.6 | 49.1 | 38.6 | 49.9 | 46.1 |
| 48.8 | 31.1 | 39.8 | 57.3 | 30.1 | 33.1 | 23.5 | 36.1 | 41.1 | 43.7 |

Histogram – quantitative continuous data

Firstly decide what classes you are going to organise the data into. Create a table for these data:

| **Age (years)** | **Number of men and teenage boys** |
| --- | --- |
| 15-24 |  |
| 25-34 |  |
| 35-44 |  |
| 45-54 |  |
| 55-64 |  |
| 65-74 |  |
| 75-84 |  |

Annotating the original data table can help keep track of which data items you are assigning to which classes as well as counting up the totals:

| **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** | **Age (years)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15.7 | 56.1 | 50.1 | 34.1 | 16.4 | 44.2 | 65.5 | 45.0 | 57.4 | 22.2 |
| 31.7 | 35.4 | 17.8 | 19.2 | 32.2 | 62.9 | 77.0 | 28.1 | 33.4 | 18.8 |
| 23.6 | 25.6 | 27.7 | 48.7 | 39.9 | 30.9 | 34.4 | 77.8 | 53.7 | 52.2 |
| 27.0 | 17.2 | 43.5 | 21.1 | 54.2 | 31.1 | 24.4 | 18.1 | 34.0 | 21.5 |
| 16.3 | 25.0 | 20.6 | 19.9 | 22.7 | 64.0 | 29.9 | 24.2 | 32.4 | 17.7 |
| 36.4 | 22.0 | 21.0 | 50.4 | 18.6 | 19.6 | 49.1 | 38.6 | 49.9 | 46.1 |
| 48.8 | 31.1 | 39.8 | 57.3 | 30.1 | 33.1 | 23.5 | 36.1 | 41.1 | 43.7 |

Complete the processed data table:

|  |  |
| --- | --- |
| **Age (years)** | **Number of men and teenage boys** |
| 15-24 | 23 |
| 25-34 | 18 |
| 35-44 | 10 |
| 45-54 | 11 |
| 55-64 | 5 |
| 65-74 | 1 |
| 75-84 | 2 |

Plot the histogram:



1. Vitamin C content of fruits

|  |  |
| --- | --- |
| **Fruit** | **Vitamin C content (mg 100g -1)** |
| Apple | 6 |
| Banana | 9 |
| Lemon  | 46 |
| Kiwi fruit | 96 |
| Orange  | 53 |
| Strawberry | 57 |

Bar chart – quantitative categoric data



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