# GROUPED FREQUENCY DISTRIBUTIONS AND HISTOGRAMS

1) The following data shows the distribution of salaries in a company:

| Salary (£1000s): | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
|---|---|---|---|---|---|---|---|
| No of employees: | 180 | 460 | 370 | 160 | 70 | 30 | 5 |

(a) Draw a histogram to illustrate this data.
(b) Explain what the skewness of the histogram tells you about the salary structure of the company.

2) The table below shows the distribution of ages in two towns (A and B).

| Age range | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|---|---|---|---|---|---|---|---|---|
| TOWN A Pop (1000s) | 3.2 | 2.7 | 3.6 | 4.2 | 3.5 | 4.1 | 4.3 | 2.3 |
| TOWN B Pop (1000s) | 4.3 | 3.1 | 5.2 | 4.7 | 3.4 | 2.8 | 2.5 | 1.4 |

(a) Draw two histograms to illustrate the data. Use the same scales for each histogram, to make comparison easier.
(b) Into which class (10-20 or 20-30) would a person aged 20 be placed?
(c) Find an estimate of the mean age in each town.
(d) Write down a few comparisons about the distribution of ages, and suggest factors in the towns which might explain these differences.

3) The following data shows the heights (in cm) of children on their second birthday:
    86.3  77.6  79.3  84.7  92.3  85.2  79.8  93.9  85.7  76.1
    89.2  84.5  80.1  83.3  80.7  87.6  90.5  85.0  87.5  84.9
For the class intervals shown below, complete the columns for class boundaries and class width, make a tally chart and complete the frequency column, and then draw a histogram to illustrate the data.

| Class Interval | Boundaries | Class Width | Tally | Frequency |
|---|---|---|---|---|
| 75 - 80 | $75 \leq x < 80$ | | | |
| 80 - 85 | | | | |
| 85 - 90 | | | | |
| 90 - 95 | | | | |