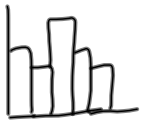
chapter 2 Statistics 1

Section 2.7 Histograms



PROJECT MATHS
Text & Tests 5
LEAVING CERTIFICATE
HIGHER LEVEL
STRAND 1
PROBABILITY & STATISTICS

One of the most common ways of representing a frequency distribution is by means of a **histogram**.

Histograms are very similar to bar charts but there are some important differences:

- there are no gaps between the bars in a histogram
- histograms are used to show **continuous data**
- the data is always **grouped**; the groups are called classes
- the **area** of each bar or rectangle represents the frequency.

Histograms may have equal or unequal class intervals.

For our course, we will confine our study to histograms with **equal class intervals**.

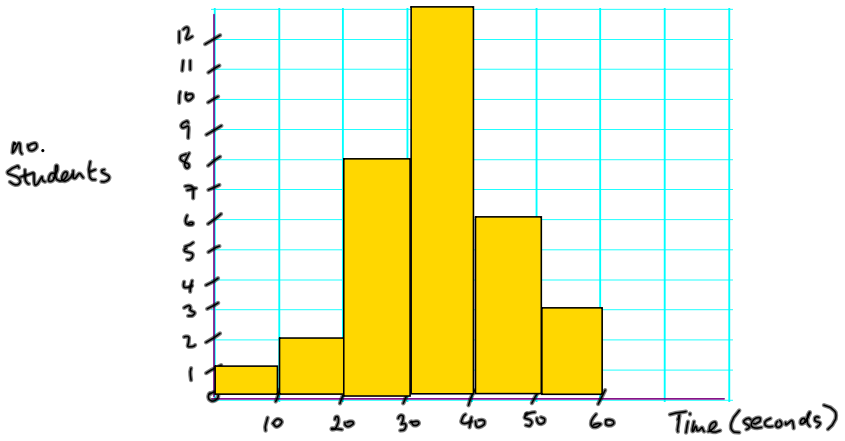
When the class intervals are equal, drawing a histogram is very similar to drawing a bar chart.

Example 1

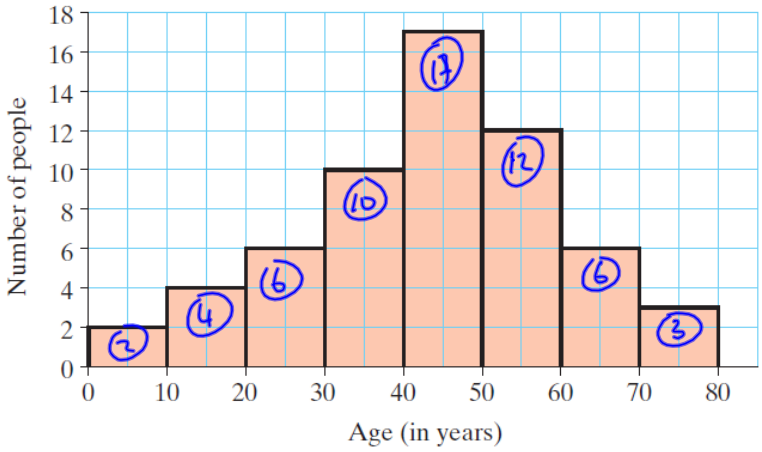
The frequency table below shows the times taken by 32 students to solve a problem.

	Time (in secs)	0–10	10–20	20–30	30–40	40–50	50–60
x							
y	No. of students	1	2	8	12	6	3

(i) Draw a histogram to represent this data.
(ii) Write down the modal class. 30–40
(iii) In which interval does the median lie? $\left(\frac{32+1}{2} = 16.5\right)$ 16.5th person is in group (30–40)



2. The histogram below shows the ages of people living in a village.



If there were 4 people in the (10–20) year age-group, answer the following questions:

(i) How many people were aged between 30 years and 40 years? 10
(ii) Which is the modal class? 40–50
(iii) How many people were aged under 30 years? 12
(iv) How many people lived in the village? 60
(v) Which interval contains 20% of the people surveyed? [20% of 60 = 12] (50–60)
(vi) In which interval does the median age lie? (40–50)