

5.2 Frequency Tables, Histograms and Frequency Polygons

→ organizing and visually representing data

A class had the following Test Scores on Chapter 4 Test (as percentages)

81, 97, 81, 82, 65, 54, 99, 56, 46, 62, 100, 85, 100, 76, 90, 72, 82, 87, 99, 74, 63, 60, 96, 82, 45

What is the range? $100 - 45 = 55\%$

Make a frequency distribution table

- Organizes data into **intervals**, each interval is the same width
- Contains the frequency or count of the **occurrences** of values within a particular group or interval
- Intervals don't include the lower boundary, but **do include** the upper boundary
 - o Ex: 60-70% (really includes values of 61%-70%)
- Most tables have between 5 and 12 intervals
 - o If you are told to have a set number of intervals in your table, find the range in the data and divide it by the number of intervals. You may need to round the answer in order to have an interval width that is manageable to work with.

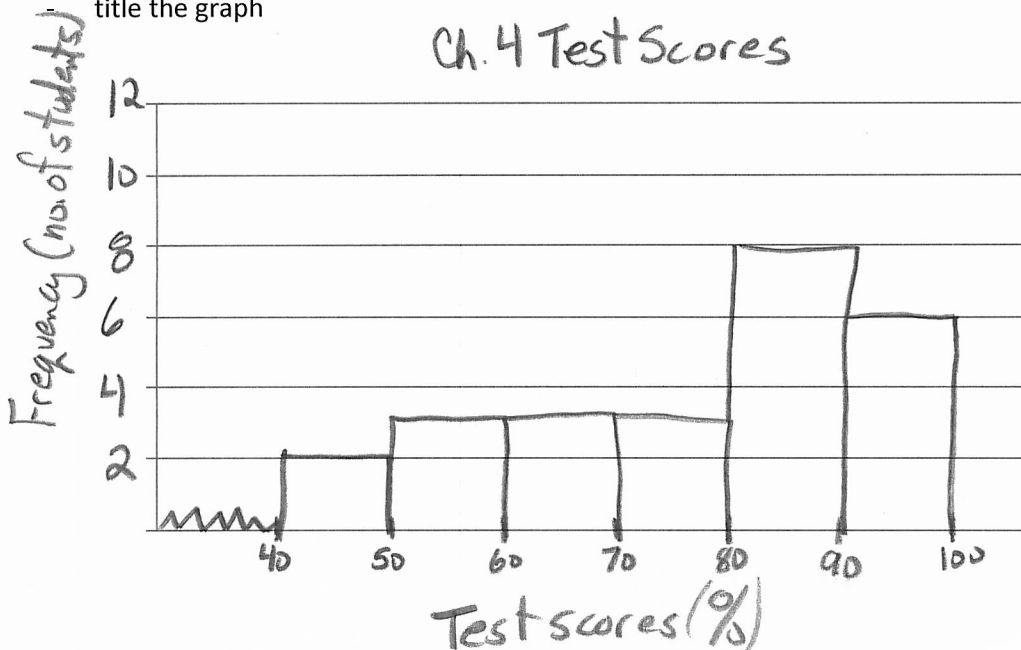
$\frac{\text{Range}}{\text{6 intervals}} = \frac{55}{6} = 9.1$ you need 9 values in your range so an interval width of 10.

does not include 50 →

Test Score (%)	Tally	Frequency (# of students)
40-50		2
50-60		3
60-70		3
70-80		3
80-90		8
90-100		6

Make a histogram to represent the data.

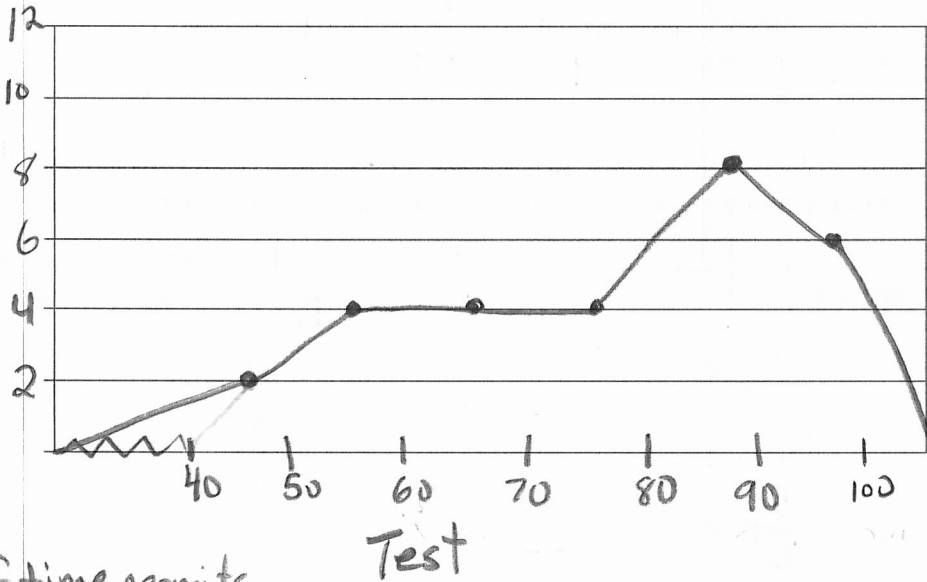
- the graph of a frequency distribution
- **equal** intervals are marked on the horizontal axis, frequencies on the vertical axis
- the height of the bar indicates the number of occurrences (a higher bar indicates a value occurring more often)
- intervals don't include the lower boundary, but **do include the upper** boundary
- bars are the **same width** and are **side by side** (no spaces in between bars)
- title the graph



Create a **frequency polygon** of the data

- looks like a line graph
- produced by joining the **midpoints** of the intervals using straight lines

Ch. 4 Test scores



If time permits

look over ex. 1 about earthquakes answer the Your Turn together.

Please read the 'In Summary' on page 220 of the textbook. Please make any additional notes below:

Answers in
teacher resource