3 areas

Statistics

- Collecting data
- Average & Range
- Presenting data

Data : a piece of information

① Numerical

- Discrete : Can't be every number in range. [often whole no., or rounded] eg.. your shoe size
- Continuous : Could be any no. in range. [your height]

② Categorical

- Ordinal : you can order it. (☑ good ☐ ok ☐ poor)
- Nominal : no order to it (☑ male ☐ female)

Census : - get information from everybody in the population

Sample : - some people are asked.

- Be fair – not bias

Reasons for Bias

- leading questions, poor question
- Small Sample (1000 people is good)
- not random

  Random : everybody has equal chance of being surveyed

  eg.. draw names from a hat

Averages and spread

Type of Average

① **Mean** $\bar{x} = \frac{\Sigma fx}{\Sigma f}$

② **mode** most frequent

③ **median** middle

eg.. mean of 2, 4, 6 = ?

$\bar{x} = \frac{2+4+6}{3} = \frac{12}{3} = 4$

need to get mean from frequency table also

eg. mode of 2, 3, 2, 6, 2, 1 = ?

mode = 2

eg. median of 2, 8, 6, 1, 5 = ?

Reorder (lowest to highest): 1, 2, (5), 6, 8

median = 5

relate to Spread of numbers

④ **Range**

⑤ **I.Q.R.** interquartile range

eg. what is the range and interquartile range of : 1, 2, (3), 4, 5, (6), 7, 8, (9), 10, 11 ?

Q_1 Q_2 Q_3

Range = 11 – 1 = 10

IQR = $Q_3 - Q_1$ = 9 – 3 = 6

⑥ **standard σ deviation**

need to be able to use calculator to get (σ) the standard deviation

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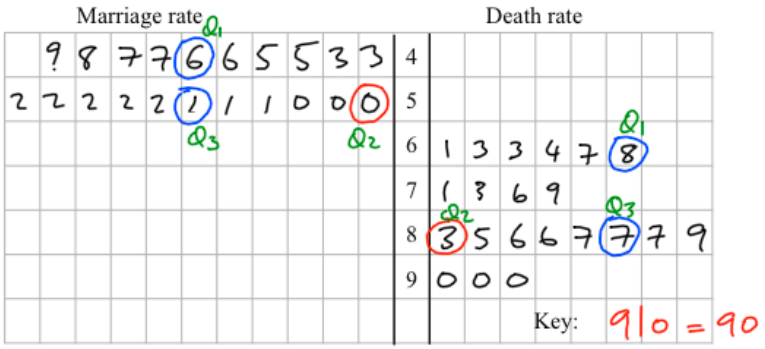
(a) Complete the back to back stem and leaf plot below to show the marriage rate and death rate in Ireland during the period covered in the table above.



median marriage rate = Q_1 = 50

I.Q.R. marriage rate = $Q_3 - Q_2$ = 51 − 46 = 15

Range of marriage rate = highest − lowest = 52 − 43 = 9