**Finding the Inter-Quartile Range**

Example – The weights, in grams, of nine potatoes are

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 262 | 234 | 208 | 248 | 239 | 210 | 206 | 227 | 254 |

Find the range, median and interquartile range of the data.

* The data must be in order

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th |
| 206 | 208 | 210 | 227 | 234 | 239 | 248 | 254 | 262 |

**Range = Highest – Lowest**

= 262 – 206

= 56g **\*The range includes all the data\***

**Median = Middle Value**

* Median = ½ way value

n = 9 ½ x n = ½ x 9 = 4.5 🡪 5th term Median = 234g

OR ½ x (n+1) = ½ x 10 = 5 🡪 5th term Median = 234g

**Inter-Quartile Range (IQR) = Upper Quartile (UQ) – Lower Quartile (LQ)**

* Lower Quartile = ¼ way value

n = 9 ¼ x (n+1) = ¼ x 10 = 2.5 🡪 2nd term + 3rd term LQ = 208+210 = 209

 2 2

* Upper Quartile = ¾ way value

n = 9 ¾ x (n+1) = ¾ x 10 = 7.5 🡪 7th term + 8th term UQ = 248+254 = 251

 2 2

IQR = UQ – LQ

 = 251 – 209

 = 42g **\*The IQR includes the central half of the data\***