



# Stem and Leaf

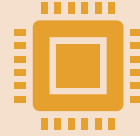
By Mark Gillan

*“Stem and Leaf diagrams group data into classes and show the shape of the data.”*

- MARK GILLAN

# Stem and Leaf diagrams

“Grouping data into classes and showing the shape of the data”



It can be difficult viewing data very quickly, especially from quite raw data.



This is where a Stem and Leaf diagram can help us.



Best way to describe a Stem and Leaf diagram is to suggest it is one of many ways of grouping data in 'classes' and showing the SHAPE of the data.

# Example

A quiz takes place within a group of people and the results for each individual is gathered.

Listing out the data can be difficult to interpret results.

Look at the table – is it easy to tell how many people scored in the 30's or 40's out of a maximum 50. How many got the same score? How many times did people score 38? What was the highest score? ... Can you tell at a glance?

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 9  | 15 | 20 | 22 | 8  | 18 | 35 | 42 | 7  | 17 |
| 24 | 38 | 12 | 44 | 25 | 38 | 42 | 29 | 11 | 5  |
| 29 | 42 | 22 | 38 | 25 | 32 | 19 | 41 | 35 | 42 |

# Data: Stem and Leaf

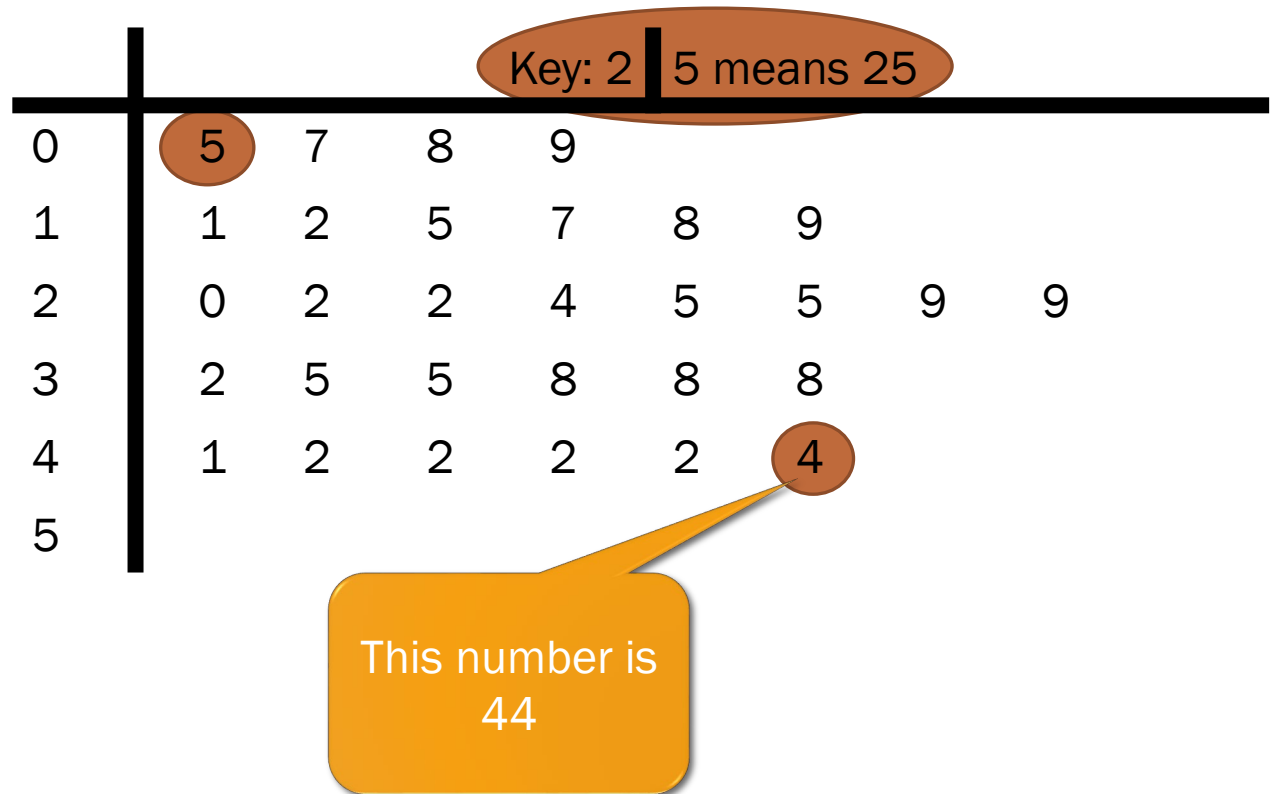
The same data displayed within a Stem and Leaf diagram.

The key shows us how to read the diagram.

5 is recorded as 05

Looking at the 4 in the first column, then across to the 4 in that same row, denotes the number 44

Numbers are usually ordered in a row, so the bottom row from the 4 is showing us:  
41, 42, 42, 42, 42, 44



# Which one is easier to use?

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|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 9  | 15 | 20 | 22 | 8  | 18 | 35 | 42 | 7  | 17 |
| 24 | 38 | 12 | 44 | 25 | 38 | 42 | 29 | 11 | 5  |
| 29 | 42 | 22 | 38 | 25 | 32 | 19 | 41 | 35 | 42 |

|   | Key: 2   5 means 25 |   |   |   |   |   |   |   |
|---|---------------------|---|---|---|---|---|---|---|
| 0 | 5                   | 7 | 8 | 9 |   |   |   |   |
| 1 | 1                   | 2 | 5 | 7 | 8 | 9 |   |   |
| 2 | 0                   | 2 | 2 | 4 | 5 | 5 | 9 | 9 |
| 3 | 2                   | 5 | 5 | 8 | 8 | 8 |   |   |
| 4 | 1                   | 2 | 2 | 2 | 2 | 4 |   |   |
| 5 |                     |   |   |   |   |   |   |   |

# Some questions

How many people scored 42 in the quiz?

**The answer is: 4**

How many people scored 35 in the quiz?

The answer is: 2

## What was the lowest score?

**The answer is: 5**

## What was the highest score?

**The answer is: 44**

|   | Key: 2 |   |   |   | 5 means 25 |   |   |   |
|---|--------|---|---|---|------------|---|---|---|
| 0 | 5      | 7 | 8 | 9 |            |   |   |   |
| 1 | 1      | 2 | 5 | 7 | 8          | 9 |   |   |
| 2 | 0      | 2 | 2 | 4 | 5          | 5 | 9 | 9 |
| 3 | 2      | 5 | 5 | 8 | 8          | 8 |   |   |
| 4 | 1      | 2 | 2 | 2 | 2          | 4 |   |   |
| 5 |        |   |   |   |            |   |   |   |

# Try this one

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| Before Mark's tuition |   |   |   |   | After Mark's tuition |   |   |   |     |
|-----------------------|---|---|---|---|----------------------|---|---|---|-----|
|                       | 2 | 1 | 0 | 0 | 4                    | 1 |   |   |     |
| 4                     | 4 | 3 | 2 | 2 | 5                    | 0 | 3 | 3 |     |
| 1                     | 1 | 0 | 0 | 0 | 6                    | 2 | 7 |   |     |
|                       | 5 | 4 | 2 | 2 | 7                    | 8 | 8 | 9 |     |
|                       |   |   |   |   | 8                    | 4 | 4 | 5 | 7 7 |
|                       |   |   |   |   | 9                    | 2 | 2 | 2 | 3   |

n = 18

n = 18

Key: 6 | 7 = 67 points

What is the highest before and after?

**Before: 75 After: 93**

How many after tuition got 78 points?

**2 people attained 78 points**

Has Mark's tuition helped?

**YES**