

Stem Leaf Diagrams

Ex 1 Exam Marks

45	57	63	50	57
48	71	65	57	63
44	58	61	70	49

15 data items

4		5 8 4 9	→	4		4 5 8 9
5		7 0 7 7 8		5		0 7 7 7 8
6		3 5 3 1		6		1 3 3 5
7		1 0		7		0 1

$$\text{Key } 4|8 = 48$$

$$\text{Median} = 57$$

$$\text{Range} = 71 - 44 = 27$$

Ex 2 Weights in kg

75	57	93	60	72
84	71	80	75	68
88	78	61	70	

14 data
items

5	7
6	0 8 1
7	5 2 1 5 8 0
8	4 0 8
9	3

→

5	7
6	0 1 8
7	0 1 2 5 5 8
8	0 4 8
9	3

Key $6|1 = 61 \text{ kg}$

Median 73.5 kg

Range $93 - 57 = 36 \text{ kg}$

Mode $= 75 \text{ kg}$

Ex 3 Heights in cm

175 157 143 160 159

164 171 164 175 183

188 170 175

13 data items

14	3
15	7 9
16	0 4 4
17	5 1 5 0 5
18	3 8

→

14	3
15	7 9
16	0 4 4
17	⑤ 1 5 5 5
18	3 8

Key $16|4 = 164 \text{ cm}$

Median $= 170 \text{ cm}$

Mode $= 175 \text{ cm}$ (3 times)

Range $= 188 - 43 = 45 \text{ cm}$

Summary

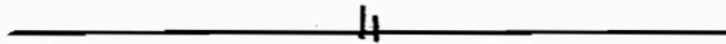
1. Decide what needs to form the stem.

Identify the highest and lowest data items and make sure stem is long enough to include both.

2. Go through the data adding leaves to the appropriate row of the stem.

3. Redraw the diagram ordering the leaves in each row.

4. Add a key.



Stem Leaf Diagrams

Exercise (1)

1. 15 students took a maths test. Construct a stem leaf diagram to represent their scores:

43	37	59	45	56
62	45	65	51	50
32	58	45	62	43

From your diagram find:

- The modal score
 - The median score
 - The range
2. 20 adults were weighed with their weights recorded in kg. Represent their weights on a stem leaf diagram:

83	77	69	65	76
61	72	65	65	80
95	82	75	62	73
91	88	82	66	65

From your diagram find:

- The modal weight
- The median weight
- The range

3. 18 adults were measured with their heights recorded in cm.
Represent their heights on a stem leaf diagram:

183	157	169	156	176
181	176	165	169	180
175	182	175	152	177
181	174	176		

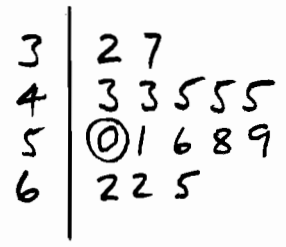
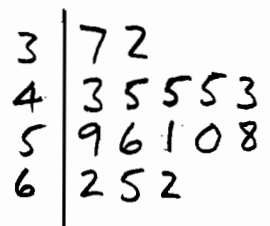
From your diagram find:

- d. The modal height
- e. The median height
- f. The range

STEM LEAF DIAGRAMS

EXERCISE

- 1) 43 37 59 45 56
- 62 45 65 51 50
- 32 58 45 62 43



Key 4/8 = 48

Mode = 45

Median 15 items $15 + 1 = 16$ $16 \div 2 = 8 \Rightarrow 8^{th}$ item

Median = 50

Range = Highest - Lowest
 = 65 - 32
 = 33

STEM LEAF DIAGRAMSEXERCISE

2) Weights in kg

83 77 69 65 76

61 72 65 65 80

95 82 75 62 73

91 88 82 66 65

6	9 5 1 5 5 2 6 5
7	7 6 2 5 3
8	3 0 2 8 2
9	5 1

6	1 2 5 5 5 5 6 9
7	2 <u>3 5</u> 6 7
8	0 2 2 3 8
9	1 5

key $7/3 = 73 \text{ kg}$

Mode = 65 kg (occurs 4 times)

Median 20 items $20+1=21$ $21 \div 2 = 10.5$ item 10.5

Median = 74 kg

Range = Highest - Lowest

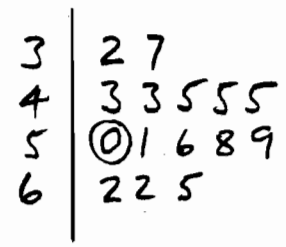
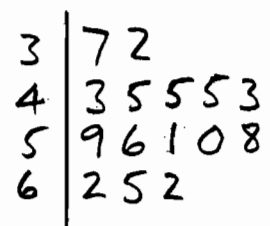
= 95 - 61

= 34 kg

STEM LEAF DIAGRAMS

EXERCISE

- 1) 43 37 59 45 56
 62 45 65 51 50
 32 58 45 62 43



Key 4 | 8 = 48

Mode = 45

Median 15 items $15 + 1 = 16$ $16 \div 2 = 8 \Rightarrow 8^{th}$ item

Median = 50

Range = Highest - Lowest
 = 65 - 32
 = 33
