



When a stem-and-leaf diagram has too few stems but fairly long leaves on some stems (Fig. 1), it will be hard to read the diagram. In such a case, we can break each stem into two halves, one for the leaves 0 to 4, and the other, for the leaves 5 to 9. The resulting diagram is called a stem-and-leaf diagram with **split stems** (Fig. 2).

Example 4 Construct a stem-and-leaf diagram with split stems for the following stem-and-leaf diagram, which shows the lengths of grass in a field.

Stem-and-leaf diagram for the lengths of grass

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

Key: 0 | 2 means 2 cm.

Fig. 1

Solution The required diagram is shown below.

Stem-and leaf diagram for the lengths of grass

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

Key: 0 | 2 means 2 cm.

Fig. 2



Discuss

Which diagram, Fig. 1 or Fig. 2, do you prefer? Why?