

Year 9  
Australian  
Curriculum  
(ACMSP282)

# Histograms & Stem-and-Leaf Plots

Solutions for  
fill-in-the  
blank  
activities  
included!!

The image shows two worksheets. The left worksheet is titled 'Histograms' and includes a 'Word Bank' with terms like 'bin', 'class', 'frequency', 'relative frequency', 'midpoint', 'range', 'width', and 'height'. It contains instructions on how to create a histogram and a 'Summary Practice' section with two tables of data. The right worksheet is titled 'Stem-and-Leaf Plots' and includes a 'Word Bank' with terms like 'bin', 'class', 'frequency', 'relative frequency', 'midpoint', 'range', 'width', and 'height'. It contains instructions on how to create a stem-and-leaf plot and a 'Summary Practice' section with two stem-and-leaf plots.

# Histograms

In a histogram there are no \_\_\_\_\_ between the columns to show that the data is \_\_\_\_\_. There is however half a column width gap between the y-axis and the \_\_\_\_\_ column.

When making a histogram data should be divided into \_\_\_\_\_.

Each column in a histogram shows the \_\_\_\_\_. Each column should be the same \_\_\_\_\_.

## Word Bank

Gaps	Intervals
Frequency	Columns
Width	First
Intervals	Evenly
Frequency	Range
Continuous	Width

## To Create a Histogram

1. Calculate the \_\_\_\_\_, and then divide it by the number of \_\_\_\_\_ you need.
2. Create a \_\_\_\_\_ table and sort the data into each interval.
3. Label the x-axis with the intervals and the y-axis with the frequency. Make sure the axis are both \_\_\_\_\_ scaled.
4. Draw \_\_\_\_\_ in each interval to represent the frequency (make sure the columns are the same \_\_\_\_\_!)

## Independent Practice

Use the below frequency tables to create two histograms in your workbook.

1)

Interval	Frequency
0-<5	5
5-<10	16
10-<15	10
15-<20	8

2)

Interval	Frequency
0-<10	15
10-<20	25
20-<30	5
30-<40	10

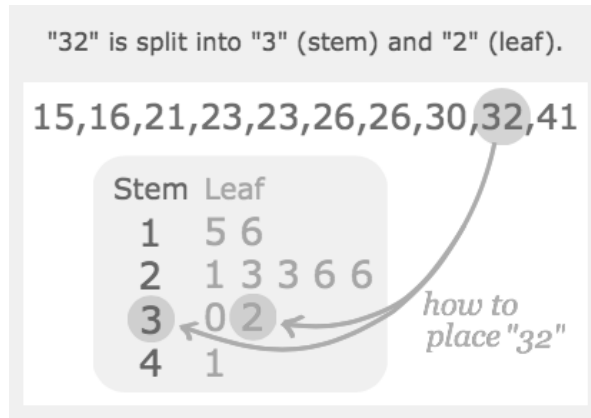
Use the following data set to create a frequency table and matching histogram with 5 intervals, in your workbook.

3) 5, 10, 24, 25, 38, 39, 34, 46, 45, 48, 49

4) 0, 1, 3, 6, 8, 12, 23, 24, 25, 19, 4, 17, 18

# Stem-and-Leaf Plots

In a stem-and-leaf plot the stem contains the \_\_\_\_\_ digits and the leaves are the \_\_\_\_\_ digits organised into ascending order. The original values can still be determined by reading the stem value first, followed by the leaf.



(Image Credit: purplemath.com)

## To create a Stem-and-Leaf Plot

- Organise the data into \_\_\_\_\_ order (from smallest to largest).
- Each data value is broken into a \_\_\_\_\_ and a \_\_\_\_\_.
- To create the stem, list the \_\_\_\_\_ digits in ascending order, with the smallest value at the \_\_\_\_\_ and the largest value at the bottom. All higher values from the smallest to the largest must be included (even if there is no data in that interval).
- For each part of the stem list the matching leaves from left to right. The \_\_\_\_\_ is always the final digit of a value.
- Don't forget to make a \_\_\_\_\_. The key explains what the stems and leaves represent.

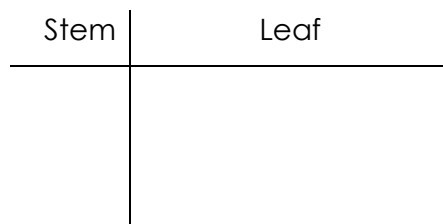
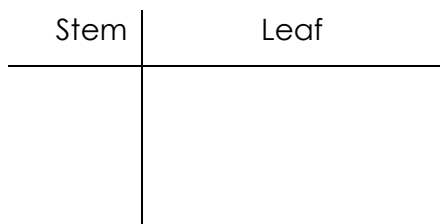
## Word Bank

Key	Leaf
Ascending	Ones
Tens	Top
Stem	Higher
Leaf	Tens

## Independent Practice

Complete the below Stem-and-Leaf plots. Do questions 3 and 4 in your workbooks.

- 1) 26, 37, 48, 33, 49, 26, 19, 26, 48      2) 67, 42, 58, , 41, 54, 65, 65, 64, 59, 53, 69



- 3) 4, 5, 5, 6, 11, 15, 20, 22, 24, 26, 30, 30, 31, 33

- 4) 20, 24, 26, 27, 44, 45, 47, 49, 51, 55, 56, 59

# Histograms - Solutions

In a histogram there are no gaps between the columns to show that the data is continuous. There is however half a column width gap between the y-axis and the first column.

When making a histogram data should be divided into intervals.

Each column in a histogram shows the frequency. Each column should be the same width.

## To create a Histogram

5. Calculate the range and then divide it by the number of intervals you need.
6. Create a frequency table and sort the data into each interval.
7. Label the x-axis with the intervals and the y-axis with the frequency. Make sure the axis are both evenly scaled.
8. Draw columns in each interval to represent the frequency (make sure the columns are the same width!)

## Independent Practice

Use the below frequency tables to create two histograms in your workbook.

1)

Interval	Frequency
0-<5	5
5-<10	16
10-<15	10
15-<20	8

2)

Interval	Frequency
0-<5	5
5-<10	16
10-<15	10
15-<20	8

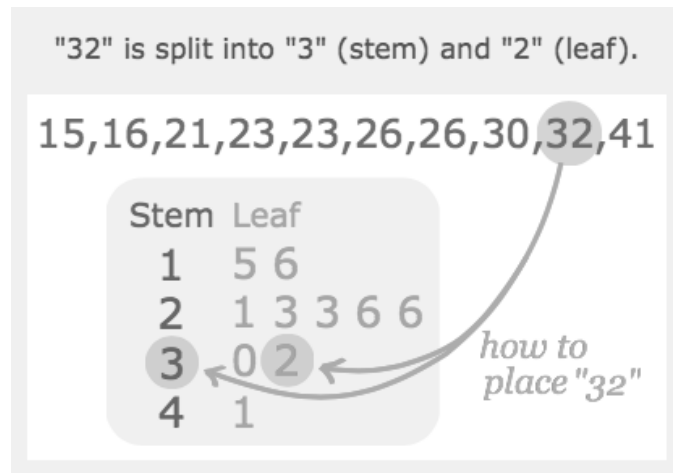
Use the following data set to create a frequency table and matching histogram with 5 intervals, in your workbook.

3) 5, 10, 24, 25, 38, 39, 34, 46, 45, 48, 49

4) 0, 1, 3, 6, 8, 12, 23, 24, 25, 19, 4, 17, 18

# Stem-and-Leaf Plots

In a stem-and-leaf plot the stem contains the tens digits and the leaves are the ones digits organised into ascending order. The original values can still be determined by reading the stem value first, followed by the leaf.



## To create a Stem-and-Leaf Plot

1. Organise the data into ascending order (from smallest to largest).
2. Each data value is broken into a stem and a leaf.
3. To create the stem, list the higher digits in ascending order, with the smallest digit at the top and the largest digit at the bottom. All tens digits from the smallest to the largest must be included (even if there is no data in that interval).
4. For each part of the stem list the matching leaves from left to right. The Leaf is always the final digit of a value.
5. Don't forget to make a Key. The key explains what the stems and leaves represent.

## Independent Practice

Complete the below Stem-and-Leaf plots. Do questions 3 and 4 in your workbooks.

1) 26, 37, 48, 33, 49, 26, 19, 26, 48

2) 67, 42, 58, , 41, 54, 65, 65, 64,  
59, 53, 69

Stem	Leaf

Stem	Leaf

3) 4, 5, 5, 6, 11, 15, 20, 22, 24, 26, 30, 30, 31, 33

4) 20, 24, 26, 27, 44, 45, 47, 49, 51, 55, 56, 59