Sustainability - The Outlook for Someday

How might we promote a message of sustainability so that we contribute as active and caring members of our global community?

Walt create tally charts and use the information in dot plots and stem and leaf plots

Success Criteria: I can use bundles for a tally of four and the fifth one is a diagonal strike line going through four-lines that are previously drawn. Eg (Shown below)

I can use the information to plot in a graph. I know dot plot is drawn using a number line. Stem and leaf plot is drawn using place value numbers in a stem then the leaf is used to put the remaining number. Eg 45 will be represented as 4 in a stem side and 5 will be in the leaf side.

Video on Tally chart

Make a tally chart using a frequency table

1 What frequencies are represented by tally counts of

a  **b**  **c** 

d 

2 The weights of 24 soccer players were recorded to the nearest kg and the following data was obtained:

52 64 66 66 73 44 79 51 47 50 70 43 46 58 55 69 60 71 61 52 67 52 64 67

Construct a stem-and-leaf display of the data. (Your stem labels will be 4, 5, 6, 7.)

3 Construct a frequency table with headings 'score', 'tally', 'frequency' for the data.

7 8 8 5 6 8 5 4 9 7 7 7 11 6 8 5 7 9 10 3
8 9 6 5 4 8 8 8 10 2 6 6 7 6 6 5 8 9 8 8

a What is the frequency for a score of 8?

b How many scores are there?

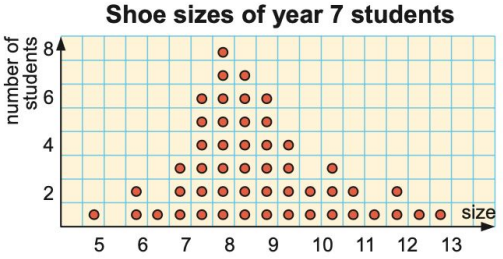
c What fraction of the scores are 7's?

d What fraction of the scores are less than 6?

4 Convert the following dot plot into a frequency table.

Use headings of 'shoe size', 'tally', 'frequency'.

Why is this graph called a vertical dot plot?



Watch this Video on dot plots

View the example

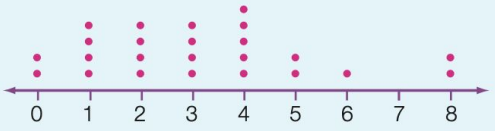
Dot plots

A **dot plot** is a very simple statistical graph where, for each data value, a dot is placed on a scale. When drawing a dot plot it is important to space the dots evenly to give an accurate picture of the data set. A dot plot can be used for categorical or discrete data such as car colour or the number of people who live in each of the houses on a street.

Worked Example 5 WE5

Draw a dot plot to illustrate the following data that represents the number of pets owned by each student in a class.

2, 5, 8, 6, 2, 4, 3, 4, 2, 1, 8, 3, 4, 0, 3, 1, 0, 3, 5, 1, 4, 2, 1, 4

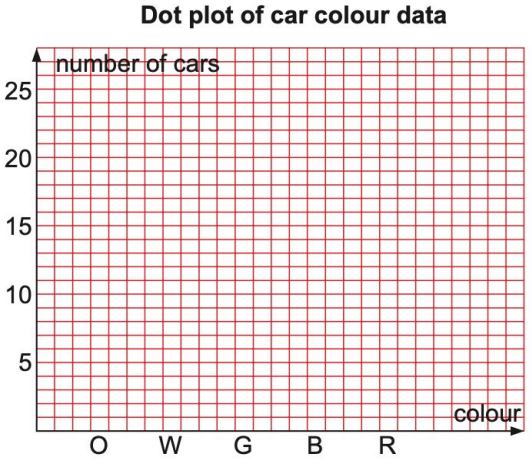
Thinking	Working
1 Identify the lowest and the highest values and make these the end points of a scale.	
2 Complete the plot by marking a dot for each of the data values, being careful to space them evenly.	

Draw dot plots

5 Jodie noticed the colour of cars passing her in the street. She used a code to record the colours where R = red, B = blue, G = green, W = white and O = other colours.

Jodie's results were recorded for a sample of 50 cars.

BGWWR OGWRW OOBBG
OGRWR WWWGB BBGGW
WWWOG WOBWW RWWRB
BBBWR



a Complete a dot plot of the data using a grid like the one shown alongside.

b What fraction of the cars were painted **i** white **ii** red **iii** red or blue?

6 Two year 7 classes do the same spelling test out of 10 marks. Their results were:

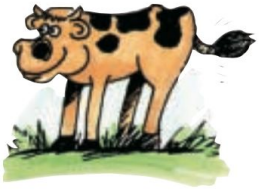
Class 7A 8 7 6 9 10 9 7 9 8 5 9 8 7 7 7 9 4 8 7 9 9 6 7
Class 7B 7 3 8 6 6 6 7 5 6 10 2 5 7 8 8 6 4 5 5 7 6 6

a Draw separate dot plots for each class.

b State the highest and lowest mark for each class.

c Which class performed better at the test?

7 The weights of 30 calves were obtained to the nearest kilogram 4 weeks after birth. The weights were:



48 50 60 60 55 49 60 64 58 66 62 63 68 43 67
59 73 80 50 74 53 57 57 77 67 47 68 81 59 69

a Construct a stem-and-leaf display of the data.

b What fraction of the calves weighed more than 70 kg?

8 **a** Copy and complete the given frequency table.

b Which score occurred most frequently?

c The **range** of a set of scores is the difference between the largest and smallest scores. What is the range of the scores?

d What fraction of scores are
i 12's **ii** less than 10?

Score	*Tally*	*Frequency*
7	|||	
8	𝍸 ||	
9	𝍸 𝍸 |	
10	𝍸 𝍸 𝍸	
11	𝍸 𝍸 ||	
12	𝍸 |	
13	||||	
14	|	
	Total	

Challenge

1 Use a vertical dot plot to display the data on the ages of children at a party:

12, 11, 17, 12, 14, 13, 11, 12, 15, 13, 12, 14, 11, 14, 12, 10, 12, 11, 13, 14

a How many attended the party?

b How many were aged 12 or 13?

c What percentage were 13 or more years old?

2 Draw a horizontal dot plot of the number of goals thrown by a netballer during the 23 match season. The number of goals scored per match were:

17 22 18 23 20 20 19 20 21 26 23 22 20 24 20 19 19 23 22 17 19 21 21

a How many times did she score 20 or more goals?

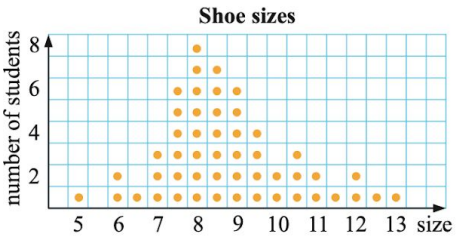
b In what percentage of games did she score 22 or more goals?

3 The given vertical dot plot shows shoe sizes for students in year 8.

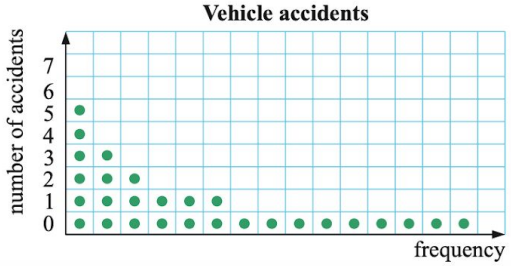
a How many students are in year 8 at the school?

b How many have shoe sizes 9 or more?

c What percentage have shoe sizes of 8 or more?



4 Below is a horizontal dot plot of the number of vehicle accidents each day in the city square over a one month period.



a What was the month?

b What is the most frequent score?

c On how many occasions were there at least two accidents?

d On what percentage of days were there no accidents?

Extension

5 Two year 8 mathematics classes sat for the same mathematics test out of 20 marks. Their results were:

Class 8P: 19 20 11 15 16 17 17 14 16 17 20 18 17 16 15 15 16 16 17 16

Class 8Q: 14 13 16 17 20 13 16 15 18 12 13 14 17 14 12 13 13 14 10

a Draw separate dot plots for each class.

b State the highest and lowest marks for each class.

c Which class performed better at the test?

Check Your Answers

1 **a** 9 **b** 13 **c** 16 **d** 27

2

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

3

Score	*Tally*	*Frequency*
2	|	1
3	|	1
4	||	2
5	𝍸	5
6	𝍸 ||	7
7	𝍸 |	6
8	𝍸 𝍸 |	11
9	||||	4
10	||	2
11	|	1
	Total	40

a 11

b 40

c $\frac{3}{20}$

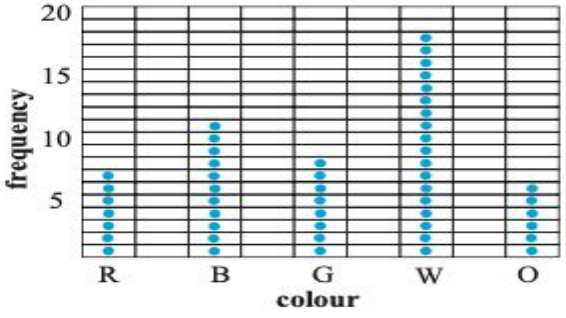
d $\frac{9}{40}$

4

Shoe size	*Tally*	*Frequency*
5	|	1
$5\frac{1}{2}$		0
6	||	2
$6\frac{1}{2}$	|	1
7	|||	3
$7\frac{1}{2}$	𝍸 |	6
8	𝍸 |||	8
$8\frac{1}{2}$	𝍸 ||	7
9	𝍸 |	6
$9\frac{1}{2}$	||||	4
10	||	2
$10\frac{1}{2}$	|||	3
11	||	2
$11\frac{1}{2}$	|	1
12	||	2
$12\frac{1}{2}$	|	1
13	|	1

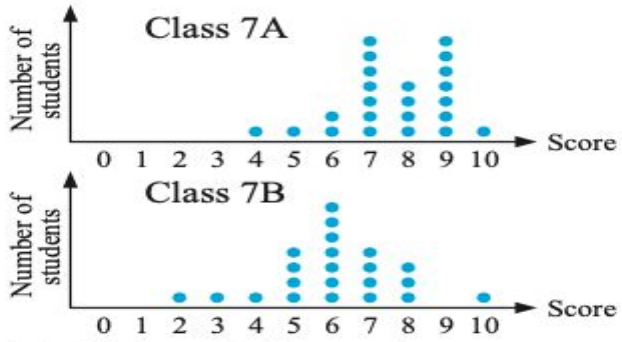
Called a vertical dot plot as dots are used to represent each student wearing a particular shoe size and the dots are arranged vertically.

5 **a** Dot plot of Car Colour Data



b **i** $\frac{9}{25}$ **ii** $\frac{7}{50}$ **iii** $\frac{9}{25}$

6 **a**



b 7A: highest 10, lowest 4
7B: highest 10, lowest 2

c 7A performed better

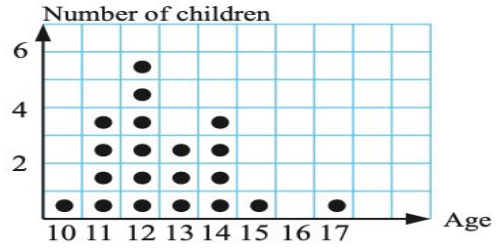
7 **a**

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

b $\frac{1}{6}$

Challenge and extension answers

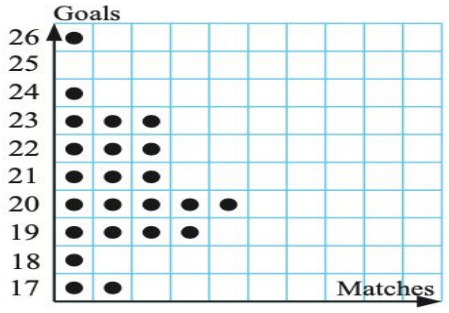
1 **a** 20
b 9
c 45%



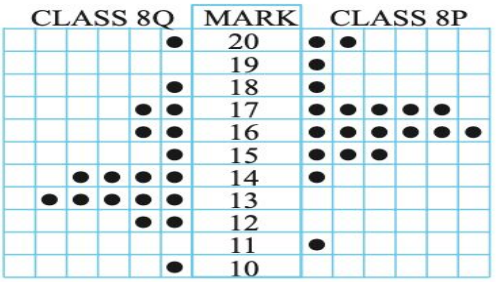
2 **a** 16
b ÷ 35%

3 **a** 50
b 22 **c** 74%

4 **a** February
b 0 **c** 7 days
d ÷ 54%



5 **a**



b 8P, 20 and 11; 8Q, 20 and 10 **c** 8P