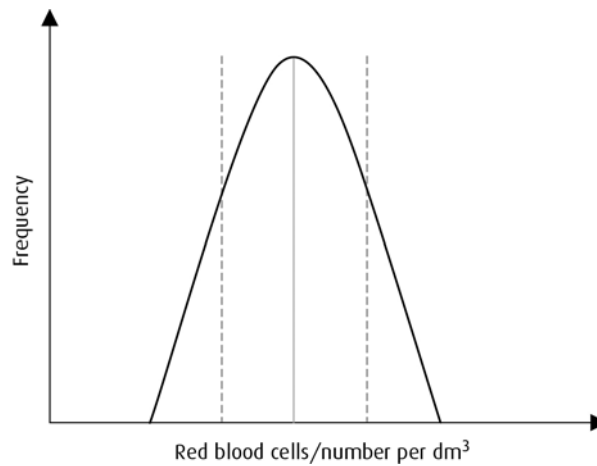


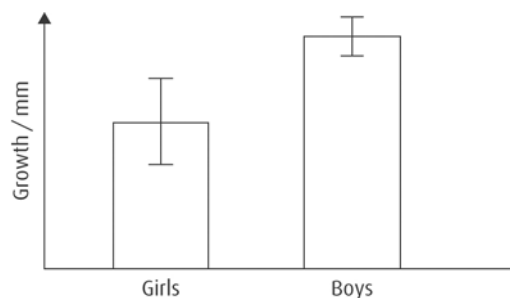
Support worksheet – Chapter 1

- 1 The graph below shows the distribution curve for red blood cell counts.



- a What is the name given to a distribution that forms a curve like this? (1)
- b 68% of the blood cell count values fall between the two dotted lines. What is the term used to describe these values? (1)
- c This distribution is the curve for a group of men. Draw an equivalent curve for women. (1)
- d How would the distribution differ for a group of patients suffering from anemia? (1)

2



- a The increases in height of 30 boys and 30 girls over a period of one year were measured and plotted as a histogram, as shown above. Error bars have been included. What do error bars tell you about the data? (1)
- b Do you think there is likely to be a significant difference between the increases in height of the boys and the girls, from the data shown in the graph? Explain your answer. (2)
- c What statistical test would you use to determine whether there was indeed a significant difference between the increases in height of the boys and the girls? (1)
- d Find the degrees of freedom for the sample of children. (1)

- 3** Two sets of plants were grown in a trial. Values were recorded from 6 plants in control conditions and from 6 plants grown with additional nutrients. The null hypothesis for the experiment was that there was no difference between the growth of the two groups of plants in the trial.

The mean values and value of t were calculated and t was found to be 2.05.

- a** Use the table of t values below and say whether the null hypothesis is supported by this result. (2)

Degrees of freedom	P = 0.05	P = 0.01	P = 0.001
5	2.57	4.03	6.87
10	2.23	3.17	4.59
15	2.13	2.95	4.07
20	2.09	2.85	3.85

- b** In a second experiment, 9 control and 8 plants with additional nutrients were used. The new value of t was 2.63. Does the new value support the null hypothesis? (2)
- c** What assumptions are made when using the t -test and why are outlying values usually discounted when calculating t values? (2)