**Problems: Interpreting data : The scientific method**

1.- A student did an experiment to find the effect of oxygen on the uptake of bromide ions by the roots of barley plants. The temperature was kept at 17ºC. Here are the results:

|  |  |
| --- | --- |
|  | Uptake (relative units) |
| Oxygen present | 100 |
| Oxygen absent | 10 |

a.- Why was the temperature kept at 17ºC?

b.- What effect does oxygen have on the uptake of ions by the roots?

c.- What do the results suggest about the way ions are taken up by the roots?

2.- Scientists carried out an experiment to find the effect of cooking a finely shredded cabbage on the amount of vitamin C in it. They putt he cabagge in boiling wáter and boiled it for 10 minutes. They found the vitamin C content at intervals, expressing it as a percentage of the amount in the uncooked cabbage. The results are shown below:

|  |  |
| --- | --- |
| Time after putting the cabbage in the wáter(min) | Vitamin C content (%) |
| 0 | 100 |
| 0.5 | 66 |
| 1 | 55 |
| 4 | 49 |
| 7 | 43 |
| 10 | 37 |

a.- Plot the results in a graph.

b.-Suggest why the vitamin C content of the cabbage falls.

c.-How could you test your suggestion?

d.- What advice would you be give to a chef about cooking vegetables?

3.- Since 1850 there has been an increase in the amount of carbon dioxide in the atmosphere. The table shows the estimated amounts of carbon dioxide in the atmosphere.

|  |  |
| --- | --- |
| Year | Carbon dioxide (parts per million) |
| 1850 | 270 |
| 1900 | 285 |
| 1960 | 315 |
| 1980 | 335 |
| 2030 | 600 |

a.- Plot the points on a sheet of graph paper. Use the grid to help you and label the axes.

b.- Finish the graph by drawing the best curve through the points.

c.- Use your graph to find the estimated amount of carbon dioxide in the atmosphere, in the year 2000.

4.- This chart shows how many pairs of shoes of each size were sold in a shoe shop one Saturday. Use the chart to answer these questions:

a.-What was the most popular shoe size?

b.-How many pairs of shoes were sold on this Saturday?