**Temperature, Precipitation and Photosynthesis**

**Name: Date:**

**Circle the correct words in the following paragraph:**

Trees absorb light using chlorophyll in their leaves/ bark. They also absorb carbon dioxide through their leaves/ roots and water through their leaves/ roots. The trees use the light to react carbon dioxide with water to make a sugar called glucose. This sugar is used for growth. In the spring and early summer, trees grow faster, forming larger cells which make the new wood look light/ dark. In the late summer and autumn, trees grow slower, forming smaller cells which make the new wood look light/ dark. One pair of light and dark rings represents one year’s growth. In cold places, trees can grow more when summer/ winter temperatures are warmer/ colder. In dry places, trees can grow more when there is more/ less rain in the summer/ winter.

1. **Tree growth and July temperatures**

Complete the following sentence:

This graph shows that\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This sample was taken from a Scot’s pine tree growing in the U.K.



11mm

Create the following table, using a ruler to measure the ring width and the graph to convert ring width to temperature to the nearest degree. Year 1 is the first complete ring furthest from the bark – that has been measured as an example. Also calculate the average (mean) July temperature.

|  |  |  |
| --- | --- | --- |
| Year | Ring width (mm) | July Temperature (°C) |
| 1 | 11 | 24 |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |
| Average (mean) |  |  |

The tree grew most in year \_\_\_\_ and least in year \_\_\_\_.

1. **Tree growth and summer precipitation (rainfall)**

Complete the following sentence:

This graph shows that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**This sample was taken from a Bristlecone Pine tree growing in the White Mountains in California**.



\*

Create the following table, using a ruler to measure the ring width and the graph to convert ring width to precipitation (rainfall). Year 1 is the first complete ring furthest from the bark (\*). Also calculate the average (mean) summer precipitation.

|  |  |  |
| --- | --- | --- |
| Year | Ring width (mm) | Summer Precipitation (mm) |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |
| 12 |  |  |
| 13 |  |  |
| 14 |  |  |
| Average (mean) |  |  |

**Finally, draw a bar graph of summer precipitation for the 14 years:**



YEAR

Precipitation (mm)