**Data analysis: Turtle hatching rate**

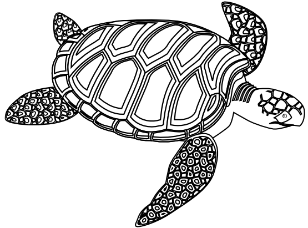
Create a graph from data

On the beaches of the Perehthian Islands in Malaysia, green sea turtles lay their eggs. Every two weeks they pull themselves to the top of the beach to dig an egg chamber up to 1.5 meters deep. The female turtle will them lay her eggs, before gently burying them and leaving the beach. To protect the eggs from rats, ants, poachers and other predators, scientist will often dig up the eggs and rebury them in a hatchery. The hatchery is a designated patch of sand that is surrounded by a fence that extends a metre below ground. It is also carefully monitored to prevent poachers stealing the eggs. Two months later, the eggs hatch and scientists release them back into the ocean.

Over 3 months, the scientists in the Perehenthian Islands recorded the number of eggs that the green sea turtles laid in each nest.

|  |  |
| --- | --- |
| Date of turtle laying | Number of eggs laid |
| May 1 | 103 |
| May 3 | 98 |
| May 3 | 102 |
| May 5 | 121 |
| May 12 | 94 |
| May 20 | 114 |
| May 20 | 125 |
| May 28 | 109 |

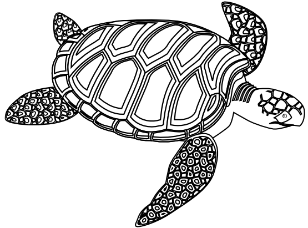
1. Use the data collected to determine the average number of eggs laid by the turtles in May.

Unfortunately, not all eggs that are reburied develop into turtle hatchlings. The scientists decided to count the number of hatchlings that emerged and compare this to the number of eggs that were reburied. Use the numbers below to determine the percentage success rate of the turtle egg survival

|  |  |  |  |
| --- | --- | --- | --- |
| Date of turtle laying | Number of eggs laid | Number of hatchlings | Percentage of eggs hatched |
| May 1 | 103 | 82 |  |
| May 3 | 98 | 48 |  |
| May 3 | 102 | 63 |  |
| May 5 | 121 | 80 |  |
| May 12 | 94 | 55 |  |
| May 20 | 114 | 82 |  |
| May 20 | 125 | 87 |  |
| May 28 | 109 | 61 |  |

In June, the hatchery developed a fungal infection that affected the survival of the hatchlings. The fungus reproduces through the production of spores. These spores allow the fungus to survive in the soil until there is enough water and nutrients to grow. To try and avoid the fungal infection, scientists on the Island built a new hatchery on another part of the beach.

Describe what precautions they should take to prevent the fungal infection from spreading from the old hatchery to the new hatchery.

The scientists recorded the percentage success rate of the new hatchery and compared this to their previous records. Their results are below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Turtle Number | Number of eggs laid | Number of hatchlings | | Percentage of eggs hatched | |
| June 5 | 103 | | 82 |  |
| June 5 | 98 | | 48 |  |
| June 8 | 102 | | 63 |  |
| June 9 | 121 | | 80 |  |
| June 11 | 94 | | 55 |  |
| June 15 | 114 | | 82 |  |
| June 15 | 125 | | 87 |  |
| Jun 20 | 109 | 102 | |  | |
| June 22 | 102 | 95 | |  | |
| June 22 | 101 | 98 | |  | |
| June 22 | 123 | 115 | |  | |
| June 26 | 91 | 90 | |  | |
| June 27 | 114 | 114 | |  | |
| June 29 | 122 | 119 | |  | |
| June30 | 112 | 108 | |  | |

Draw a scatter graph to show the percentage survival of the hatchlings in the new hatchery.

Use the graph to determine when the new hatchery was built. Write your answer below.