A logo with a beaker and a blue and black text

Description automatically generated with medium confidence**Name: ……………………………………………………………….**

**Results for cress experiment**

Table and graph

For each NaCl concentration, count how many of the cress seeds have germinated. Even if the seed has only split open a bit with a tiny bit of white root showing, you can count it as having germinated.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Concentration of salt solution (M) | 0 | 0.2 | 0.3 | 0.5 |
| Number of seeds germinated |  |  |  |  |
| Number of seeds NOT germinated |  |  |  |  |
| Percentage of seeds NOT germinated |  |  |  |  |

1. Plot your results and draw a smooth curved line through them.

A grid of white paper

Description automatically generated

100

90

80

70

Percentage of seeds that did not germinate

60

50

40

30

20

10

0

0.0 0.1 0.2 0.3 0.4 0.5

Concentration of salt solution / M

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Description automatically generated with medium confidenceThe graph you have drawn is called a **dose-response curve**.

1. Draw a horizontal line from the 50% point on the y-axis to your curve.
2. Now draw a vertical line down to the x-axis.

The value you reach on the x-axis is called the **LD-50**. This stands for ‘lethal dose 50’, or the amount of substance that will kill half a population.

Write down your LD-50 value: ……………………………………………………

## Questions

1. Why do we need to know how toxic something is?

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1. Why do you think scientists developed LD-50 tests?

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1. What might be some problems with using LD-50 tests?

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1. How might we measure the toxicity of a new drug molecule?

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Description automatically generated with medium confidence**Investigating seedling length**

1. Complete the table(s) below for your piece(s) of filter paper:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Concentration of salt solution (M) |  | | | | | | | | | |
| Seedling number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Length of seedling(mm) |  |  |  |  |  |  |  |  |  |  |

Total length = …………………….. mm

Mean length = ……………………………………………………………………………….

= ……………………… mm

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Concentration of salt solution (M) |  | | | | | | | | | |
| Seedling number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Length of seedling(mm) |  |  |  |  |  |  |  |  |  |  |

Total length = …………………….. mm

Mean length = ……………………………………………………………………………….

= ……………………… mm

1. A logo with a beaker and a blue and black text

   Description automatically generated with medium confidenceUse your group’s results to plot points and draw a smooth curve.A grid of white paper

   Description automatically generated

160

140

120

100

20

Concentration of salt solution / M

Mean seedling length (mm)

80

60

40

0

0.0 0.1 0.2 0.3 0.4 0.5

1. Draw a smooth line of best fit through your points.
2. Describe the pattern shown in your graph.

………………………………………………………………………………………….

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1. Describe why you think your graph looks different to the dose-response curve.

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