

11. Problems with pesticides include toxicity to non-target species. Sumithion is an insecticide used to control tiger beetles, which are pests in fish farms.

An investigation was carried out into the effect of sumithion concentration on hatching success of fish eggs.

40 fertilised fish eggs were placed in containers with 250 cm³ of water and different concentrations of sumithion. The hatching success was recorded after 20 days.

The results are shown in the table.

Sumithion concentration (mg/L)	Hatching success (%)
0.0	92
0.2	85
0.4	57
0.6	42
0.8	25
1.0	25

- (a) (i) Name the independent variable. 1

- (ii) Identify one variable, not already mentioned, that should have been controlled to allow a valid conclusion to be drawn. 1

- (iii) Identify the sumithion concentration that acts as a control and describe the purpose of the control in **this** investigation. 2

Sumithion concentration _____ mg/L

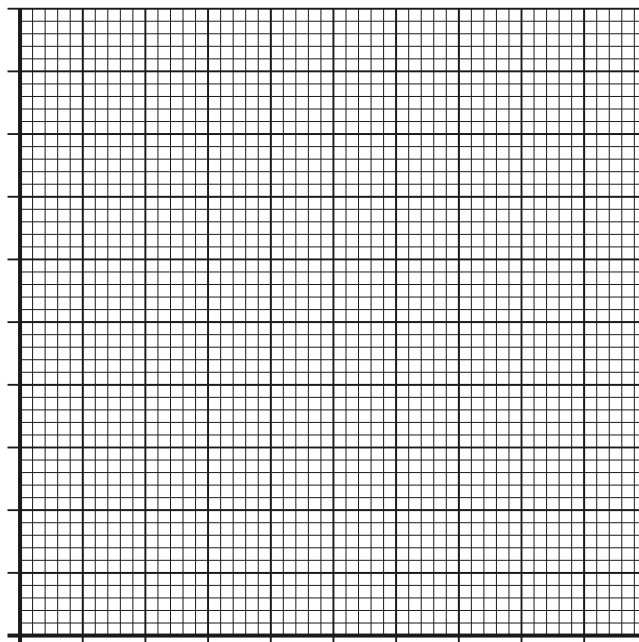
Purpose of the control _____



11. (continued)

- (b) On the grid, draw a line graph using the results in the table.
(Additional graph paper, if required, can be found on *page 30*.)

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- (c) State the conclusion from the results of the investigation.

1

- (d) State a problem with pesticide use, other than toxicity to non-target species.

1

[Turn over

