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Tributyltin (TBT) is used on the hulls of ships. It is toxic to most marine life.

A biology student investigated the effects of different concentrations of TBT on the reproductive rate of dog whelks.

Dog whelks inhabit rocky seashores and feed on mussels, barnacles and limpets.

The research method is described below:

Five 50 litre glass aquariums containing sea water with different concentrations of TBT were set up next to a large window as shown in the table below:

	1	2	3	4	5
Concentration of TBT ngL^{-1}	0	3	6	9	12

10 male and 10 female whelks collected from a shore close to a busy port, were placed in each aquarium.

Each aquarium contained the same number of live mussels.

The water is collected from the same shore and is constantly filtered, aerated and maintained at 10°C .

The aquariums were inspected daily, and any hatchlings removed and counted.

The investigation ran from January 1st to December 31st in one year.

Evaluate the student's methodology to determine if this approach would produce reliable results.

Your response should demonstrate:

- reasoned judgements about the outlined methodology and/or conclusions about the effectiveness and reliability of this methodology.

[9 marks, plus 3 marks QWC]
