0	1

Lichens are plants that grow on rocks or tree bark. They absorb rainwater in order to grow. Air pollutants dissolved in rainwater can damage lichens, and prevent them from growing well.

Lichens are therefore good indicators for levels of air pollution.

0	1	.	1

Name the pollutant that dissolves in rain water to causes damage to lichens.

[1 mark]

Invertebrates that live in water can also be used as pollution indicators.

0	1	.	2

Give an advantage and a disadvantage of using invertebrates as indicators of water pollution. **[2 marks]**

Advantage

Disadvantage

0	2	.

The table shows the type of invertebrates and their tolerance to pollution.

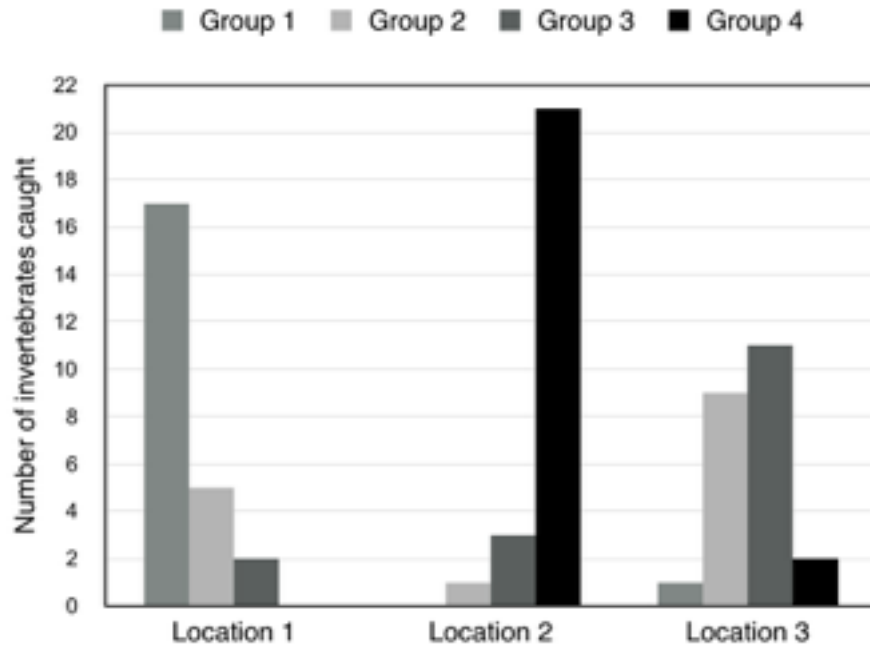A high tolerance to pollution indicates a species that can live in polluted water.

Table 1

Group	Examples of invertebrates	Tolerance to pollution
1	Mayfly Nymph, Caddisfly Larva, Riffle Beetle	Low
2	Sowbug, Cranefly, Mussel	Moderate
3	Midge Larva, Leech, Planaria	High
4	Blood worm, Aquatic worms, Rat-tailed maggot	Very high

A stream was sampled in three locations to determine the level of pollution in the water using **Table 1** above.

The number of each group of invertebrates was recorded and a graph produced of the results.

The graph is shown on the next page.

0 2 . 1 Place the locations in order of amount of pollution, most polluted first

[1 mark]

Most polluted   _____

_____

Least polluted   _____

0 2 . 2 Give reasons for the order of location in your previous answer. **[2 marks]**

_____

_____

The population size of any species may be affected by changes in the environment.

0 2 . 3 Suggest one change in the environment, other than pollution, that would affect the population size of a species. **[1 mark]**

_____