

Using the Earth's resources and obtaining potable water – GCSE CS Chemistry1. **No.4**

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Tap water must be safe to drink.

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1

What name is given to water that is safe to drink?

[1 mark]Tick (✓) **one** box.

Ground water

☐

Potable water

☐

Waste water

☐

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2

Water is sterilised to make the water safe to drink.

Which **two** of the following are used to sterilise drinking water?**[2 marks]**Tick (✓) **two** boxes.

Carbon dioxide

☐

Electrolysis

☐

Filtration

☐

Ozone

☐

Ultraviolet light

☐

A student investigated the mass of dissolved solids in samples of river water, sea water and tap water.

This is the method used.

1. Weigh an evaporating basin.
2. Measure 100 cm^3 of river water.
3. Pour the river water into the evaporating basin.
4. Heat the evaporating basin until all the water has evaporated.
5. Weigh the evaporating basin and dissolved solids.
6. Calculate the mass of dissolved solids in the water.
7. Repeat steps 1 to 6 with sea water and then with tap water.

0 4 . 3 Which is the most suitable equipment to measure 100 cm^3 of water?

[1 mark]

Tick (✓) **one** box.

Beaker

☐

Conical flask

☐

Measuring cylinder

☐

0 4 . 4 Table 3 shows the results.

Table 3

Type of water	Mass in grams		
	Evaporating basin	Evaporating basin and dissolved solids	Dissolved solids
River	112.1	113.1	1.0
Sea	110.5	114.0	X
Tap	115.3	115.4	0.1

Calculate value X in Table 3.

[1 mark]

X = _____ g

0 4 . 5 Identify the variables used in the investigation.

Draw one line from each variable to the example of the variable.

[2 marks]

Variable

Example of variable

Control

Mass of dissolved solids

Mass of evaporating basin

Room temperature

Dependent

Type of water

Volume of water

Table 4 shows the mass of different types of ions dissolved in 1 dm³ of sea water.

Table 4

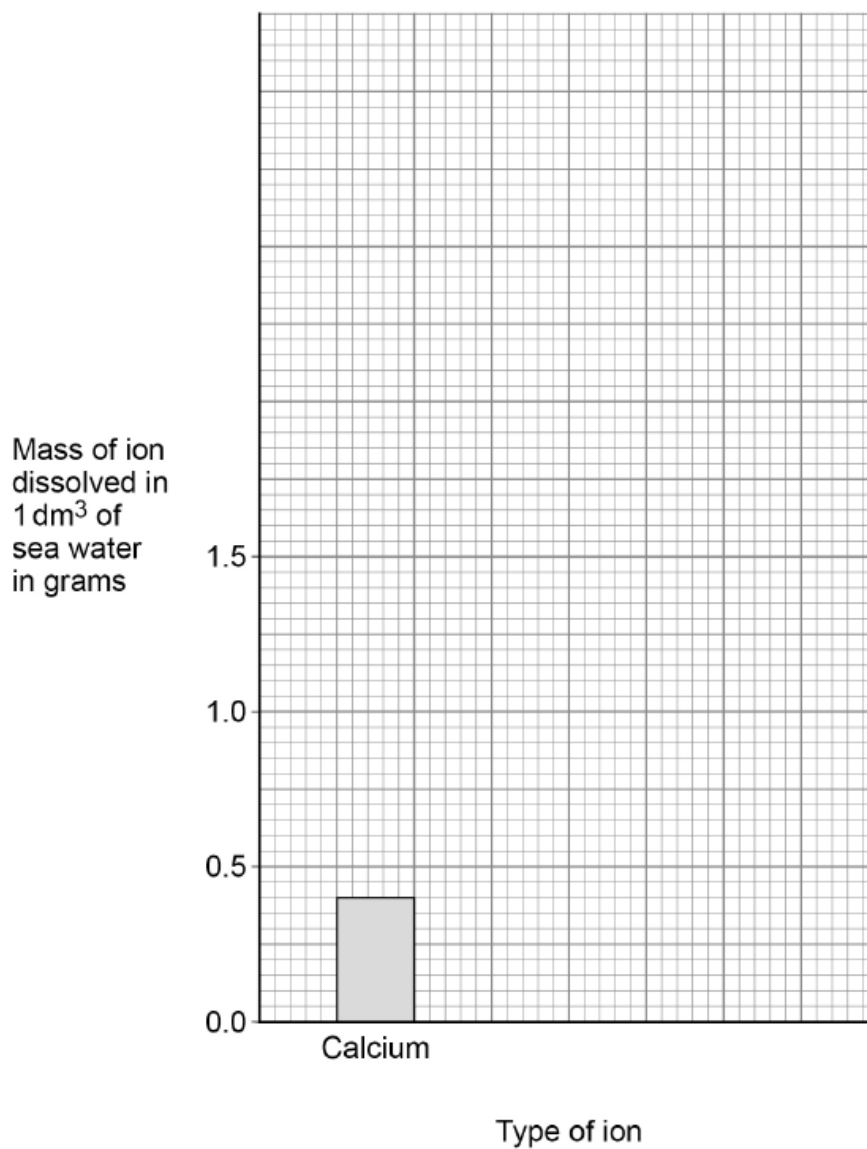
Type of ion	Mass of type of ion dissolved in 1 dm ³ of sea water in grams
Calcium	0.4
Magnesium	1.3
Sulfate	2.7

0 4 . 6

Complete **Figure 3**.

You should:

- complete the scale for the y-axis
- plot the data from **Table 4** as a bar chart.

[3 marks]**Figure 3**

2. No.5

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Life cycle assessments (LCAs) are used to assess the environmental impact of different products.

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212 million kilograms of aluminium is used for packaging in the UK each year.

68.0% of aluminium packaging is recycled.

Calculate the mass of aluminium packaging that is recycled in the UK each year.

[2 marks]

Mass of aluminium recycled = _____ million kg

0 5 . 2

Drinks cans are made from aluminium.



An aluminium can has a mass of 15.8 g.

1000 g = 1 kg

Calculate the **whole number** of aluminium cans that can be made from 4.00 kg of aluminium.

[4 marks]

Whole number of cans = _____

0 5 . 3

Table 5 shows three methods used to dispose of wood and steel after use.

Table 5

	Percentage (%) of material disposed of by each method		
	As waste	Recycled	Burnt
Wood	58	36	6
Steel	15	85	0

Evaluate the sustainability of the disposal of wood and steel.

[4 marks]
