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SPECA

GCSE Combined Science (AQA Trilogy) · Chemistry

Using Resources · Tiered Worksheet

Section A: Foundation

Sustainability and potable water

1) Explain what is meant by sustainable development. **[2]**

2) Give one example of a natural product that has been supplemented or replaced by an agricultural or synthetic alternative. **[1]**

3) Distinguish between a finite resource and a renewable resource, giving one example of each. **[2]**

4) Define potable water. **[2]**

5) Explain why potable water is not chemically pure water. **[1]**

6) Describe the main stages used to produce potable water from a fresh water source in the UK. **[3]**

7) Explain when desalination might be used instead of the usual fresh-water treatment route, and describe one method of desalination. **[2]**

Waste water, life cycle assessment, and recycling

8) Explain why sewage and industrial waste water need to be treated before being released into the environment. **[2]**

9) Describe, in the correct order, the stages of sewage treatment. **[4]**

10) Define life cycle assessment. **[2]**

11) Explain why life cycle assessment is not a fully objective process. **[2]**

12) Give one advantage of reusing a glass bottle compared with recycling it. **[1]**

13) Explain how metals can be recycled. **[2]**

14) A company advertises its shopping bag using a life cycle assessment that only considers the manufacturing stage, ignoring use and disposal. Explain why this could be misleading. **[2]**

Section B: Higher (in addition to Section A)

Alternative metal extraction methods

15) Explain why alternative extraction methods such as phytomining and bioleaching are used for some metal ores. **[2]**

16) Describe how phytomining is carried out. **[2]**

17) Describe how bioleaching is carried out. **[2]**

18) Give one way phytomining and bioleaching differ from each other. **[1]**

19) Describe one way the metal compounds obtained by phytomining or bioleaching could be processed to obtain the metal itself. **[2]**

20) Evaluate one advantage and one disadvantage of using bioleaching instead of traditional large-scale mining. **[2]**

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