

# 5.12 Introduction to Sustainability

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 10 marks

## Objective

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Build the skills to answer exam questions on **sustainability**.

**You must be able to:**

- define **sustainability** 可持续性
- distinguish **renewable** 可再生 and **nonrenewable** 不可再生 resources
- explain **sustainable yield** 可持续产量

## 1 Worked examples

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Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

### ■ Sustainability

**Sustainability** means meeting present needs **without** reducing the ability of future generations to meet theirs —living within the planet’s limits.

### ■ Renewable vs nonrenewable

- **Renewable** —replenished naturally on a human timescale (sunlight, wind, trees if replanted).
- **Nonrenewable** —finite, formed over millions of years (fossil fuels, minerals).

### ■ Sustainable yield

The **sustainable yield** is the amount that can be harvested **without** depleting the resource —e.g. catching only as many fish as are replaced by reproduction.

### ■ A worked idea

Harvesting trees no faster than they regrow keeps the forest productive indefinitely —a sustainable yield.

## 2 Practice

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Now apply the methods above.

**2.1** Define sustainability.

[1]

**2.2** Classify each: (a) coal, (b) wind. [2]

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**2.3** What is a sustainable yield? [1]

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### 3 Exam-style questions

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**3.1** A nonrenewable resource is one that [1]

- **A** is replenished quickly
- **B** takes millions of years to form
- **C** never runs out
- **D** is only sunlight

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**3.2** A forest is harvested for timber.

(a) Explain what "sustainable yield" means for this forest. [2]

(b) State what happens if harvest exceeds the sustainable yield. [1]

**3.3** Explain why fossil fuels are considered nonrenewable even though they form naturally. [2]

### 4 Go further

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You are now ready for the real exam questions on this subtopic:

- work through the **5.12 Introduction to Sustainability** lesson on the **Learn** page;

- read the **Introduction to Sustainability** section of the AP Environmental Science handout on the **Know** page.

## Solutions

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**2.1** Meeting present needs without reducing future generations' ability to meet theirs.

**2.2** (a) nonrenewable; (b) renewable.

**2.3** The amount that can be harvested without depleting the resource.

**3.1 B** —takes millions of years to form.

**3.2** (a) Harvesting trees no faster than they regrow, so the forest stays productive indefinitely. (b) The forest is depleted (declines/degraded).

**3.3** They form over millions of years —far slower than we use them —so on a human timescale they cannot be replenished and are effectively finite.