

2.1 Introduction to Biodiversity

Name: _____ Class: _____ Date: _____ **Total: 11 marks**

KEY WORDS biodiversity 生物多样性 • species richness 物种丰富度 • evenness 均匀度
• resilience 恢复力 • resilient 有韧性的

Objective

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

You must be able to:

- distinguish **species richness** 物种丰富度 and **evenness** 均匀度
- explain why higher biodiversity increases **resilience** 恢复力
- describe genetic, species, and habitat diversity

1 Worked examples

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.

■ Types of diversity

Biodiversity has three levels: **genetic** (variety of genes), **species** (variety of species), and **habitat/ecosystem** (variety of habitats).

■ Richness and evenness

- **Species richness** — the **number** of different species.
- **Species evenness** — how **evenly** individuals are spread among species.

A community with many species in similar numbers has high diversity.

■ Resilience

Higher biodiversity gives an ecosystem more **resilience** — it recovers better from disturbances because other species can fill lost roles.

■ A worked comparison

Community A has 10 species in equal numbers; community B has 10 species where one dominates. A has higher **evenness** and therefore higher diversity.

2 Practice

Now apply the methods above.

2.1 What is species richness? [1]

2.2 What is species evenness? [1]

2.3 Name the three levels of biodiversity. [3]

3 Exam-style questions

3.1 A community with high species evenness has individuals [1]

- | | |
|---|---|
| A | B |
| C | D |
- A all of one species
B spread fairly evenly among species
C with no genetic variation
D in a single habitat

3.2 Two communities each have 8 species. In community X one species makes up 90% of individuals; community Y is even.

- (a) Which has higher diversity? [1]
(b) Explain your answer using richness and evenness. [2]

3.3 Explain why higher biodiversity makes an ecosystem more resilient. [2]