

# 3.1 Generalist and Specialist Species

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

Total: 10 marks

**KEY WORDS** generalist 广食性 • specialist 狭食性 • niche 生态位

## Objective

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Build the skills to answer exam questions on **generalist and specialist species**.

**You must be able to:**

- distinguish a **generalist** 广食性 from a **specialist** 狭食性 species
- link each to a broad or narrow **niche** 生态位
- predict which copes better with change

## 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.

### ■ Generalists vs specialists

- A **generalist** has a **broad niche** — eats many foods, lives in many habitats (e.g. raccoon, cockroach).
- A **specialist** has a **narrow niche** — depends on specific foods or conditions (e.g. panda eating bamboo, koala eating eucalyptus).

### ■ Coping with change

**Generalists** tolerate environmental change well because they have alternatives. **Specialists** are more vulnerable — if their one resource declines, they cannot switch.

### ■ Stable vs changing environments

Specialists often thrive in **stable** environments (efficient at their niche); generalists do better in **changing** or disturbed environments.

### ■ A worked prediction

If a forest is disturbed, a generalist raccoon adapts easily, but a specialist panda struggles because its bamboo may be lost.

## 2 Practice

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Now apply the methods above.

**2.1** Does a generalist have a broad or narrow niche? [1]

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**2.2** Give one example of a specialist species. [1]

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**2.3** Which type copes better with environmental change? [1]

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## 3 Exam-style questions

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**3.1** A specialist species is most vulnerable to [1]

- **A** a stable environment
  - **B** loss of its specific resource
  - **C** having many food options
  - **D** abundant resources
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**3.2** A panda eats almost only bamboo, while a raccoon eats many foods.

(a) Classify each as generalist or specialist. [2]

(b) Explain which is more likely to survive habitat disturbance. [2]

**3.3** Explain why specialists can outcompete generalists in a stable environment. [2]

## Solutions

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**2.1** Broad.

**2.2** Any one: panda (bamboo), koala (eucalyptus).

**2.3** Generalists.

**3.1 B** — loss of its specific resource.

**3.2** (a) Panda = specialist; raccoon = generalist. (b) The raccoon (generalist) — it can switch foods/habitats, while the panda depends on bamboo and cannot adapt easily.

**3.3** In a stable environment the specialist is highly efficient at using its particular resource, so it outcompetes the less-efficient generalist for that niche.