

Exercise walk-through

Generalist and Specialist Species ■ 3.1

eXercise

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

Method — 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).

Method — Coping with change

Generalists tolerate environmental change well because they have alternatives.

Specialists are more vulnerable — if their one resource declines, they cannot switch.

Method — Stable vs changing environments

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

Method — A worked prediction

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

Practice 2.1 ■ 1 mark

Does a generalist have a broad or narrow niche?

Solution 2.1

Method: Generalists vs specialists

Worked steps

Broad **B1**.

Practice 2.2 ■ 1 mark

Give one example of a specialist species.

Solution 2.2

Worked steps

Any one: panda (bamboo), koala (eucalyptus) **B1**.

Practice 2.3 ■ 1 mark

Which type copes better with environmental change?

Solution 2.3

Method: Coping with change

Worked steps

Generalists **B1**.

Exam-style 3.1 ■ 1 mark

A specialist species is most vulnerable to

- A** a stable environment
- B** loss of its specific resource
- C** having many food options
- D** abundant resources

Solution 3.1

- A** a stable environment
- B** loss of its specific resource
- C** having many food options
- D** abundant resources



Worked steps

B — loss of its specific resource.

Exam-style 3.2 ■ 2 marks

A panda eats almost only bamboo, while a raccoon eats many foods.

- (a) Classify each as generalist or specialist.
- (b) Explain which is more likely to survive habitat disturbance.

Solution 3.2

Method: Generalists vs specialists

Worked steps

(a) Panda = specialist; raccoon = generalist **B1 B1**. (b) The raccoon (generalist) — it can switch foods/habitats, while the panda depends on bamboo and cannot adapt easily **M1 A1**.

Exam-style 3.3 ■ 2 marks

Explain why specialists can outcompete generalists in a stable environment.

Solution 3.3

Method: Stable vs changing environments

Worked steps

In a stable environment the specialist is highly efficient at using its particular resource, so it outcompetes the less-efficient generalist for that niche **M1** **A1**.