

3 Species strategies and population growth

– Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English

Write it 3 times (English)

generalist

specialist

carrying capacity

Recall

You already know that populations of animals and plants change over time:

- A population can grow when food and space are plentiful.
- It cannot grow forever – something eventually limits it.
- Some animals have many young; others have just a few.

This sheet lines up how populations grow. Each idea has a short worked example.

New ideas

■ 1 Generalists and specialists

A **generalist** can live in many places and eat many foods (a raccoon), so it copes well with change. A **specialist** needs specific conditions (a panda), so it is efficient but vulnerable if its habitat changes.

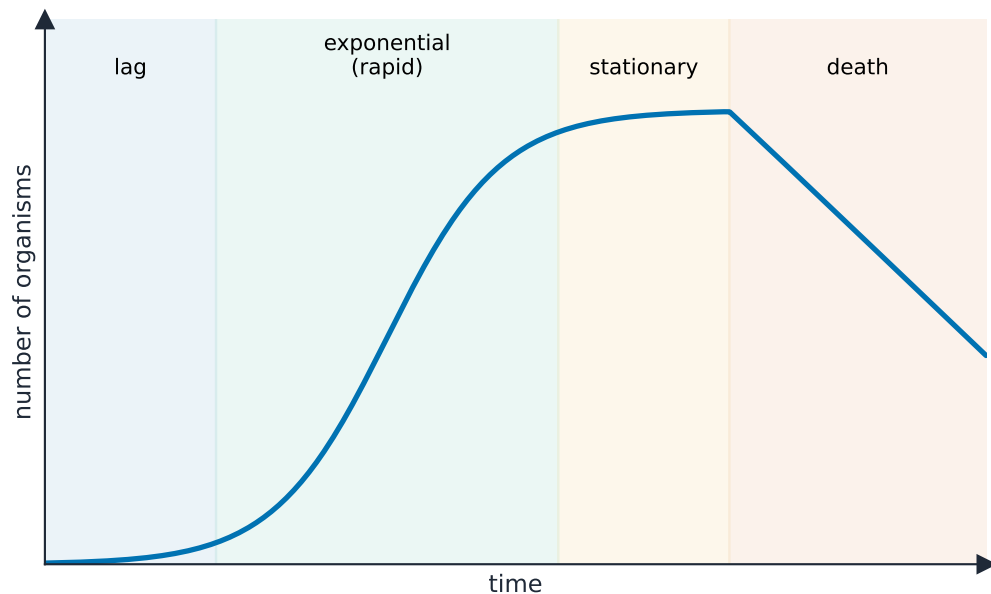
■ 2 Two reproductive strategies

- ***r*-selected** species have **many** offspring with little care (insects, weeds) – fast to grow, boom and bust.
- ***K*-selected** species have **few** offspring with much care (elephants, humans) – slow to recover from losses.

■ 3 Population growth

With plenty of resources a population grows **exponentially** (a J-shape). As resources run short, growth slows to a levelling **S-shape** at the **carrying capacity**

- the most the environment can support.



■ 4 Limiting factors

Food, water, space, disease, and predators are **limiting factors** that stop a population growing without end.

Watch out: a population can briefly **overshoot** its carrying capacity when resources are temporarily plentiful, then **crash** as those resources run out. Growth is not always smooth.

Practice

Try these in order. The methods are all above.

2.1 State the difference between a generalist and a specialist species.

[2]

2.2 State one feature of an r -selected species and one of a K -selected species.

[2]

2.3 State what “carrying capacity” means. [2]

2.4 Name three factors that can limit a population’s size. [2]

2.5 Explain what happens when a population overshoots its carrying capacity. [2]
