

Exercise walk-through

Populations ■ 19.4

eXercise

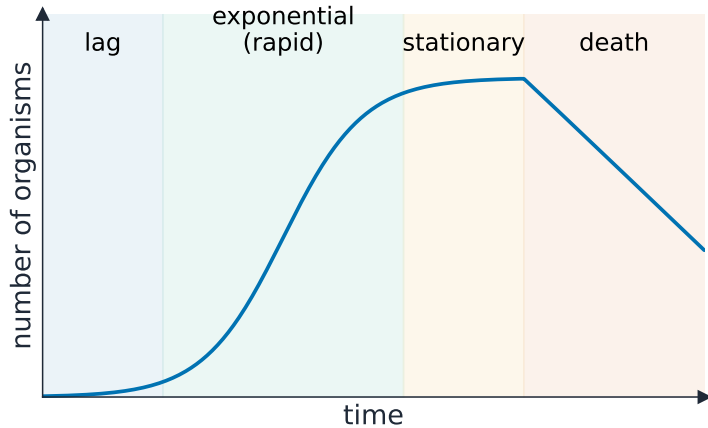
You must be able to

- define population, community and ecosystem
- describe the factors that affect population growth
- name and explain the phases of the S-shaped growth curve

Method — Population growth

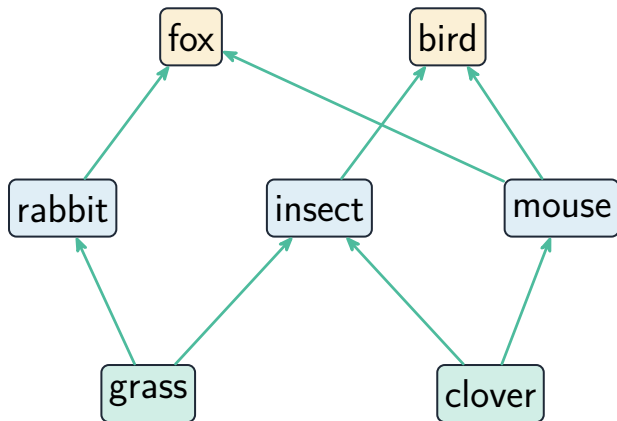
- **population:** one species, one area, one time.
- growth depends on food, competition, predation and disease.

Method — Population growth



An S-shaped growth curve: lag, exponential, stationary, death

Method — Population growth



Populations interact in a food web

Practice 2.1 ■ 1 mark

Define a population.

Solution 2.1

Worked steps

a group of organisms of one species, living in the same area at the same time **B1**.

Practice 2.2 ■ 1 mark

Name the phase of fastest growth.

Solution 2.2

Worked steps

the exponential (log) phase **B1**.

Exam-style 3.1 ■ 1 mark

In the stationary phase of population growth:

A the population is growing fastest

B births roughly equal deaths

C the population is dying out

D there are no organisms

Solution 3.1

Method: Population growth

A the population is growing fastest

B births roughly equal deaths



C the population is dying out

D there are no organisms

Worked steps

B. In the stationary phase births roughly equal deaths.

Exam-style 3.2 ■ 2 marks

A population grows in a place with limited resources.

- (a) State two factors that limit population growth.
- (b) Explain why the population enters a death phase.

Solution 3.2

Method: Population growth

Worked steps

- (a) any two of: food supply; competition; predation; disease **B1 B1**.
- (b) food runs out (or wastes build up / disease spreads) **M1**, so deaths exceed births and numbers fall **A1**.