

19.4 Populations

Name: _____ Class: _____ Date: _____ **Total: 7 marks**

KEY WORDS population 种群 • resources 资源 • death phase 衰亡期 • competition 竞争
• stationary phase 稳定期

Objective

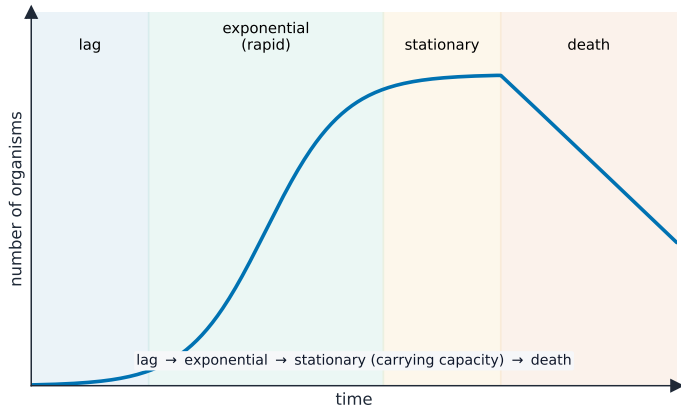
Build the skills to answer exam questions on **populations** 种群 — the terms, and the **S-shaped growth curve** S 形增长曲线.

You must be able to:

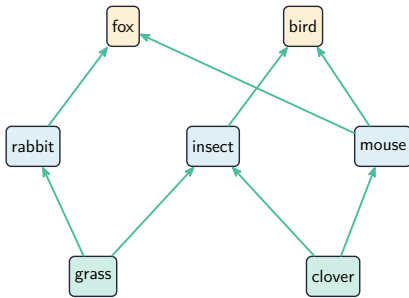
- define population, community and ecosystem
- describe the factors that affect population growth
- name and explain the phases of the S-shaped growth curve

1 Worked examples

■ Population growth



Four phases: lag (slow), exponential (fast), stationary (births ≈ deaths), death (numbers fall)



Populations interact in a food web

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

2 Practice

2.1 Define a population. [1]

2.2 Name the phase of fastest growth. [1]

3 Exam-style questions

3.1 In the stationary phase of population growth: [1]

- **A** the population is growing fastest
- **B** births roughly equal deaths
- **C** the population is dying out
- **D** there are no organisms

3.2 A population grows in a place with limited resources.

(a) State two factors that limit population growth. [2]

(b) Explain why the population enters a death phase. [2]

Solutions

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

2.2 the exponential (log) phase.

3.1 B. In the stationary phase births roughly equal deaths.

3.2 (a) any two of: food supply; competition; predation; disease.

(b) food runs out (or wastes build up / disease spreads), so deaths exceed births and numbers fall.