

19 Carbon cycle and populations – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
carbon cycle	碳循环	_____	_____	_____
photosynthesis	光合作用	_____	_____	_____
carbon dioxide	二氧化碳	_____	_____	_____
respiration	呼吸作用	_____	_____	_____
combustion	燃烧	_____	_____	_____
population	种群	_____	_____	_____
species	物种	_____	_____	_____
lag	延迟期	_____	_____	_____
exponential	对数期	_____	_____	_____
stationary	稳定期	_____	_____	_____
death	衰亡期	_____	_____	_____

Recall

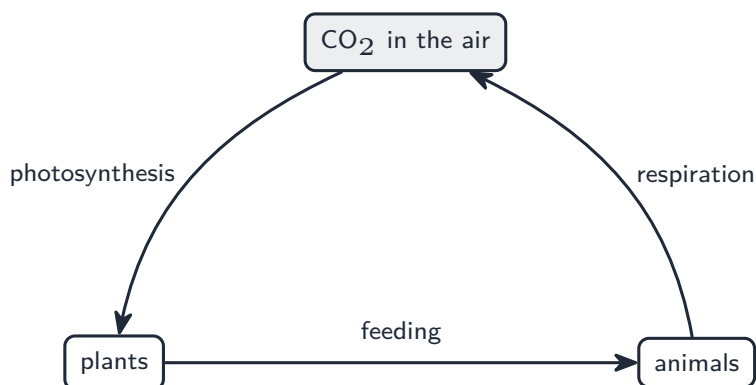
Energy flows one way and is lost, but nutrients like carbon are **recycled** — used again and again.

New ideas

Read these first, then do the Practice.

■ 1 The carbon cycle

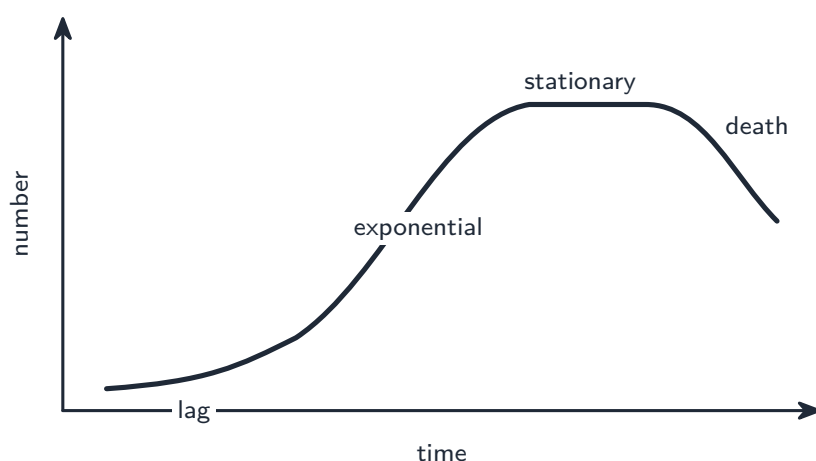
In the **carbon cycle** 碳循环, carbon moves between the air and living things:



- **photosynthesis** 光合作用 takes **carbon dioxide** 二氧化碳 out of the air;
- **respiration** 呼吸作用 and **combustion** 燃烧 (burning) return it.

■ 2 Population growth

A **population** 种群 is a group of one **species** 物种 in one area. With limited food and space, it grows in an S-shape:



- **lag** 延迟期 (slow start) → **exponential** 对数期 (fast) → **stationary** 稳定期 (levels off) → **death** 衰亡期 (falls).

Watch out: in the carbon cycle, **photosynthesis** *removes* carbon dioxide from the air, while **respiration**, **combustion** and **decomposition** *return* it — keep

the directions straight. A population grows in an S-shape: lag → exponential → stationary → death.

Practice

Try these in order.

19.6 Which process removes carbon dioxide from the air? [1]

19.7 Name two processes that return carbon dioxide to the air. [2]

19.8 What is a *population*? [1]

19.9 In which phase does a population grow fastest? [1]

19.10 What happens in the death phase, and why? [2]

19.11 Challenge. A few bacteria are placed in a flask of food. Describe and explain how their numbers change over time, naming the phases. [3]