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

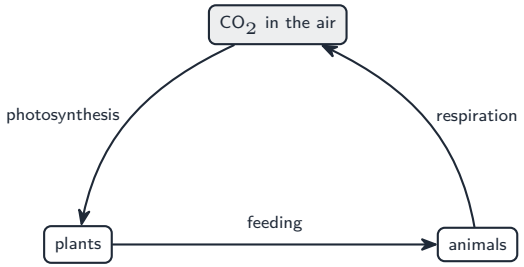
Energy flows one way and is lost, but nutrients like carbon are **recycled** — used again and again.

New ideas

Read these first, then do the Practice.

1 The carbon cycle

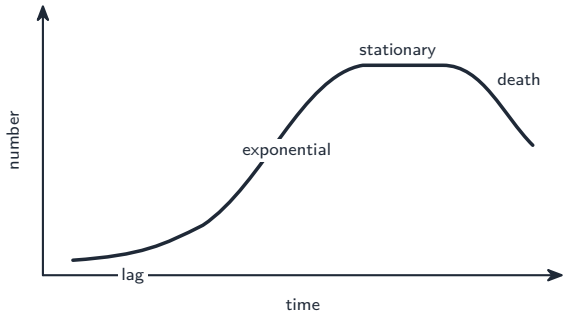
In the **carbon cycle** 碳循环, carbon moves between the air and living things:



- **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]