

17 Natural selection – 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)		
natural selection	自然选择	_____	_____	_____
adapted	适应	_____	_____	_____
stabilising	稳定选择	_____	_____	_____
directional	定向选择	_____	_____	_____
disruptive	分裂选择	_____	_____	_____
bottleneck effect	瓶颈效应	_____	_____	_____

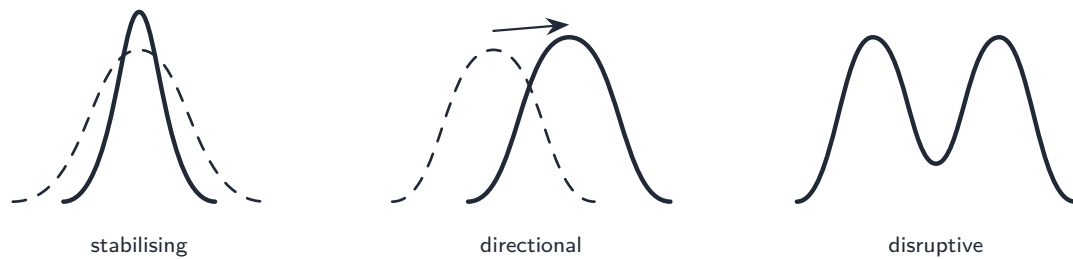
Recall

Living things produce more offspring than can survive, so they must compete. The best-suited survive and pass on their alleles.

New ideas

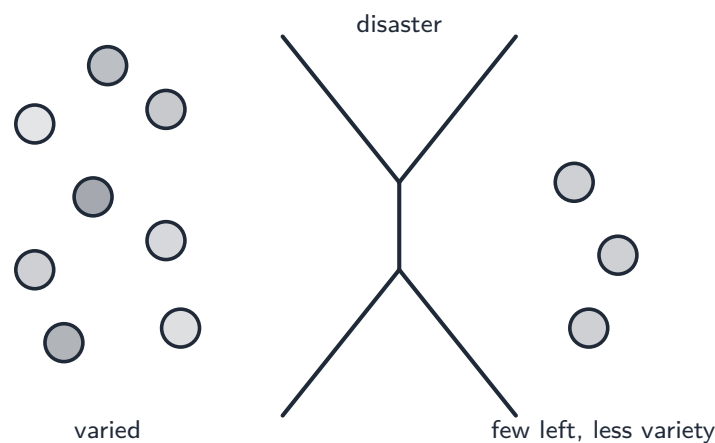
Read these first, then do the Practice.

■ 1 Natural selection and its types



In **natural selection** 自然选择, the best **adapted** 适应 individuals survive and reproduce. It comes in three forms: **stabilising** 稳定选择 (favours the average), **directional** 定向选择 (favours one extreme), **disruptive** 分裂选择 (favours both extremes).

■ 2 A bottleneck



The **bottleneck effect** 瓶颈效应 is a sudden fall in population size that leaves few survivors, reducing the variety of alleles.

Watch out: stabilising selection favours the *average*; directional shifts the mean towards *one* extreme; disruptive favours *both* extremes. A bottleneck *reduces* genetic variety, because the few survivors carry fewer alleles.

Practice

Try these in order.

17.6 In *natural selection*, which individuals are most likely to survive? [1]

17.7 Which selection type favours the *average* and removes extremes? [1]

17.8 Which selection type shifts the mean towards one extreme? [1]

17.9 What does *disruptive* selection favour? [1]

17.10 What does the *bottleneck effect* do to genetic variety? [1]

17.11 Challenge. Pollution darkens the tree bark where a moth species rests. Predict which type of natural selection acts on moth colour, and explain. [2]
