

3 Human 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)
age-structure diagram	年龄结构图	_____
total fertility rate	总生育率	_____

Recall

The human population has grown very fast, but not evenly everywhere:

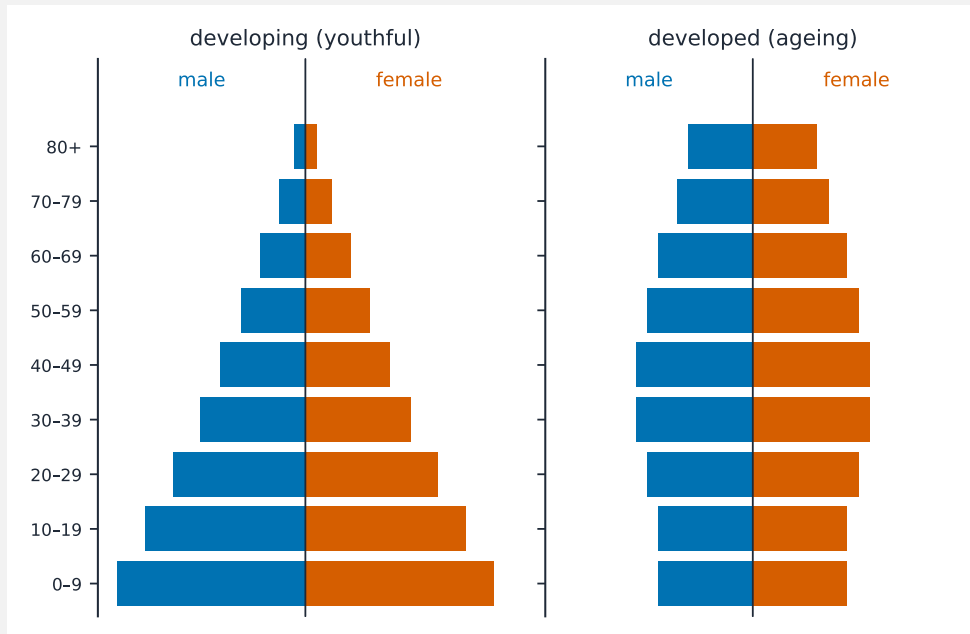
- Some countries have many young people; others have an ageing population.
- Birth rates are higher in some countries than others.

Each idea has a short worked example before the Practice.

New ideas

■ 1 Age-structure diagrams

An **age-structure diagram** 年龄结构图 shows how many people are in each age group. A **wide base** (many children) predicts rapid growth; even bars predict a stable population.



■ 2 Total fertility rate

The **total fertility rate** 总生育率 (TFR) is the average number of children per woman. A **replacement level** of about 2.1 keeps a population steady; above it grows, below it shrinks.

■ 3 Doubling time (rule of 70)

A population's doubling time is found from the **rule of 70**: divide 70 by the growth rate (as a percent).

Worked example. A country grows at 2.0% per year, so it doubles in about $\frac{70}{2.0} = 35$ years. At 3.5% it would double in only 20 years.

■ 4 The demographic transition

As a country develops, its growth changes in stages: (1) high birth and death rates, (2) death rate falls (fast growth), (3) birth rate falls (slowing), (4) both low (stable).

Watch out: a falling **growth rate** does not mean the population is shrinking –it is still growing, just more slowly. The population only shrinks when births fall below deaths.

Practice

Try these in order. The methods are all above.

2.1 State what a wide-based age-structure diagram tells you about a population. [1]

2.2 State the replacement-level total fertility rate and what it means. [2]

2.3 A population grows at 1.4% per year. Use the rule of 70 to find its doubling time.[2]

2.4 A population grows at 5.0% per year. Find its doubling time. [2]

2.5 Name two factors that tend to lower a country's birth rate as it develops. [2]
