

3.6 Age Structure Diagrams

Name: _____ Class: _____ Date: _____

Total: 9 marks

Objective

Build the skills to answer exam questions on **age structure diagrams**.

You must be able to:

- read an **age structure diagram** 年龄结构图 (population pyramid)
- predict future growth from its shape
- link a wide base to rapid growth

1 Worked examples

Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

■ What the diagram shows

An **age structure diagram** shows the number of people in each age group by sex, stacked youngest at the bottom. Its **shape** predicts future growth.

■ Shapes and growth

- **Wide base** (many young) → **rapid growth** (many future parents).
- **Even/straight sides** → **stable** population.
- **Narrow base** (few young) → **declining** population.

■ Reading momentum

A wide base gives **population momentum**: even if fertility drops, the large young group will still have children, so growth continues for a while.

■ A worked prediction

A pyramid with a very wide base and narrow top predicts a **fast-growing** population, typical of a developing country.

2 Practice

Now apply the methods above.

2.1 What does a wide base on an age structure diagram indicate? [1]

2.2 What shape indicates a stable population? [1]

2.3 What does a narrow base indicate? [1]

3 Exam-style questions

3.1 A population pyramid with a very wide base is likely to [1]

- **A** decline rapidly
 - **B** grow rapidly
 - **C** stay perfectly stable
 - **D** have no children
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3.2 A country's age structure diagram has a wide base and narrows sharply toward the top.

(a) Predict its future population trend. [1]

(b) Explain your prediction. [2]

3.3 Explain what population momentum means and why a wide-based pyramid causes it. [2]

4 Go further

You are now ready for the real exam questions on this subtopic:

- work through the **3.6 Age Structure Diagrams** lesson on the **Learn** page;
- read the **Age Structure Diagrams** section of the AP Environmental Science hand-out on the **Know** page.

Solutions

2.1 Rapid future growth (many young people).

2.2 Straight/even sides (a column shape).

2.3 A declining population.

3.1 B —grow rapidly.

3.2 (a) Rapid growth. (b) The wide base means many young people who will become parents, so births will stay high for years.

3.3 Population momentum is continued growth even after fertility falls, because the large group of young people already born will still reach reproductive age and have children.