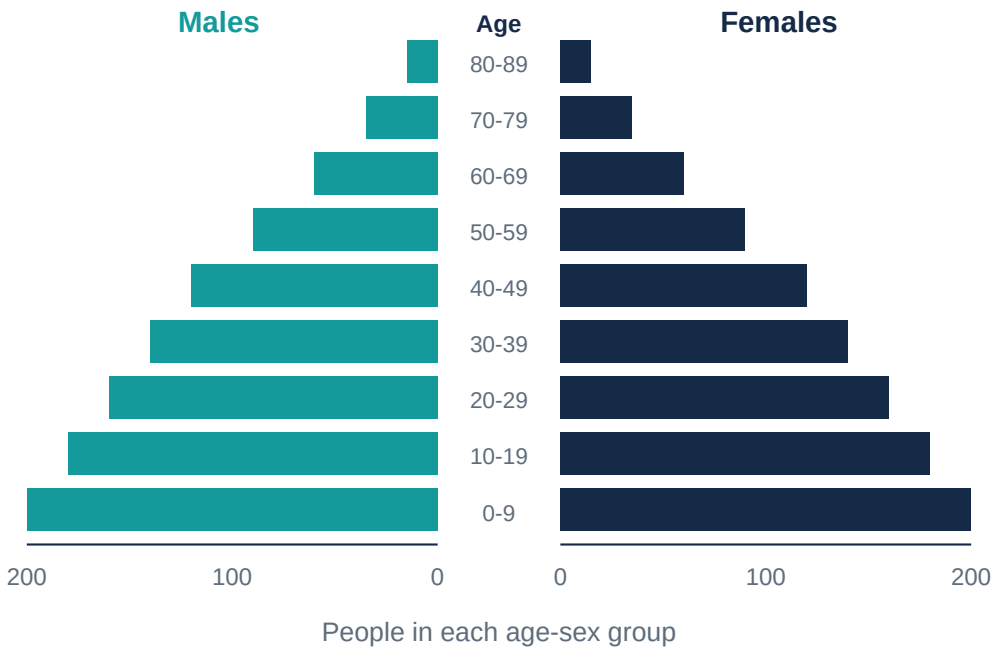
Read the population snapshot

An age structure diagram shows how many people, or what proportion of a population, belong to each age group. It usually separates males and females on opposite sides.

1. CHECK AGE, SEX AND UNITS



2. READ ONE BAR BEFORE THE WHOLE SHAPE

Invented population: 2,000 people, with 1,000 on each side. The youngest group contains 200 males and 200 females, so there are 400 people aged 0-9. Age increases upward; bar length shows the number, not the age. Left-hand values are positive counts, not negative people.

3. COMPARE LIKE WITH LIKE

A cohort is a group born during the same period. Here, each band spans ten years and there are no people aged 90 or above. Check band widths and any open-ended oldest group in real charts. If the axis uses percentages, check whether the denominator is the whole population or each sex separately.

Core interpretation and younger age groups: College Board, EIN-1.A.1-2.
Age structure and population growth: OpenStax, Biology 2e 45.5.

Scope: College Board AP Environmental Science CED, Topic 3.6, p. 70.

Use shape to infer likely change

Look at the youngest groups relative to the middle-aged groups. A shape suggests growth potential; it does not prove an exact annual growth rate or determine the future.

1. COMPARE THREE IDEALIZED POPULATIONS



Each bar: % of the whole population. Males left; females right. Nine ten-year age bands run from 0-9 at the bottom to 80-89 at the top. No people aged 90+ in these models.

2. BROAD BASE: GREATER GROWTH POTENTIAL

Many children may enter reproductive ages later. If survival and reproduction remain favorable, births can exceed deaths and the population can expand.

3. BALANCED AGE GROUPS: SLOWER CHANGE

Nearly vertical sides across younger and middle ages often suggest slow growth or approximate stability. The oldest groups usually taper.

4. NARROW BASE: POSSIBLE FUTURE DECLINE

Fewer children than middle-aged adults can mean fewer future parents. Sustained low fertility can contribute to decline, but migration can alter the trend.

Growth patterns inferred from shape: College Board, EIN-1.A.1-2.
Idealized age distributions: conceptual reference, OpenStax, Biology 2e 45.5.

Scope: College Board AP Environmental Science CED, Topic 3.6, p. 70.

Connect the shape to an explanation

Use three steps: identify a pattern, explain its mechanism, then qualify the prediction. A large young population creates different future needs from a large older population.

1. EXTENSION: POPULATION MOMENTUM

Large young cohort → Many enter reproductive ages → Many potential parents

Growth can continue after fertility falls to replacement level because many people are entering childbearing ages. Fewer children per woman does not immediately mean fewer births overall. This is an age-structure effect, not a guarantee of growth under every condition.

2. CALCULATE A SHARE FROM PAGE 1

Ages 0-9: 200 males + 200 females = 400 people

$$\frac{400}{2{,}000} \times 100 = 20\% \text{ of the whole population}$$

Ages 0-19 include two bands: 2 x (200 + 180) = 760 people, or 38%. This measures age composition. It is not a birth rate, fertility rate or annual population growth rate.

3. CONNECT AGE GROUPS TO PLANNING

More children can mean more demand for schools now and jobs later. More older adults may need more age-related health care. Environmental pressure also depends on consumption per person, technology and resource management.

Avoid overclaiming: migration, changes in fertility and mortality, and unusual past events can reshape a pyramid. A bulge is evidence of a relatively large cohort, not proof of one particular cause. Use additional data before naming the cause.

Population momentum: UN DESA, World Population Prospects 2024, summary.
Reading age distributions: OpenStax, Biology 2e 45.5.

Scope: College Board AP Environmental Science CED, Topic 3.6, p. 70.