

Human populations and urban systems · supported focus

Supported focus · HL

Supported scope

- Supported HL focus. First assessment 2026; current SL/HL brief acquired. Remaining guide, assessment and practical requirements retain their recorded holds.
- State model conditions and distinguish fictional data from measurements.

Ess Population · 1.1

Reasoning

A city can grow because people move into it even when births equal deaths. Population change has several flows. Start with a prediction. State the quantities or features you would compare, then decide what evidence could distinguish two explanations.

Ess Population · 2.1

Reasoning

Population change depends on births, deaths, immigration and emigration. Urban systems exchange energy, materials and waste with a wider region. A sustainability indicator measures a specified feature rather than total wellbeing. immigration: Movement into a population; indicator: A measure of a specified condition.

Ess Population · 3.1

Reasoning

Compare rates with a common denominator and interval. An average can hide unequal access to services. At HL, evaluate how economic incentives, legal responsibilities and ethical priorities change an urban management proposal. Use published demographic and city-service data with dates and definitions. Protect privacy when collecting local opinions. Compare the same geographical boundary rather than mixing an urban core with a whole metropolitan region.

Ess Population · 4.1

Reasoning

State the known values and their units. Choose the relation because its assumptions fit this case, then rearrange before substitution. Known: a city has 10,000 people; births 150, deaths 100, immigration 300 and emigration 200 in one year. Change = $150 - 100 + 300 - 200 = 150$. Growth percentage = $150 / 10,000 \times 100 = 1.5\%$.

Ess Population · 4.2

Reasoning

A population of 2,000 grows by 40 in a year. Find percentage growth. Use the same sequence: known quantities $\rightarrow$ model $\rightarrow$ relation $\rightarrow$ substitution $\rightarrow$ unit and interpretation.

Ess Population · 5.1

Reasoning

A projected population is conditional on assumptions. Urban growth does not automatically mean improved health, income or environmental quality for every resident. Return to the original observation. Explain what the result supports, which conditions it assumes, and one way to test a competing explanation.

Ess Population · 5.2

Reasoning

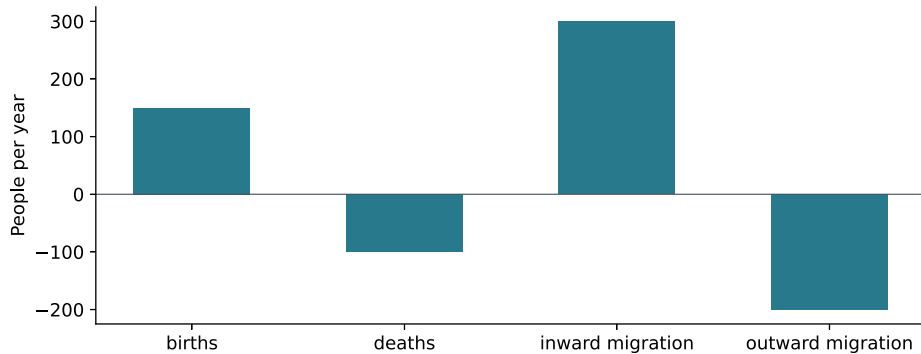
Population growth depends only on births and deaths. This claim is false: A projected population is conditional on assumptions. Urban growth does not automatically mean improved health, income or environmental quality for every resident.

Ess Population · 5.3

Reasoning

Population, urban systems and indicators: Compare rates with a common denominator and interval. An average can hide unequal access to services. At HL, evaluate how economic incentives, legal responsibilities and ethical priorities change an urban management proposal.

Ess Population · diagram



- Original teaching diagram: Population, urban systems and indicators
- Use the labels and the stated model together.

Ess Population · original transfer

Your turn

A fictional town starts at 5,000. Births 80, deaths 60, immigration 150 and emigration 70 occur in one year. Find final population and growth percentage.

Ess Population · transfer reasoning

Method and interpretation

Change = $80 - 60 + 150 - 70 = 100$; final 5,100; growth 2%. Projecting this rate assumes stable rates and constraints; one year does not establish that assumption.

Check yourself

- Explain immigration using the stated model.
- Explain indicator using the stated model.
- Change one value in the original transfer; explain which assumption still matters.