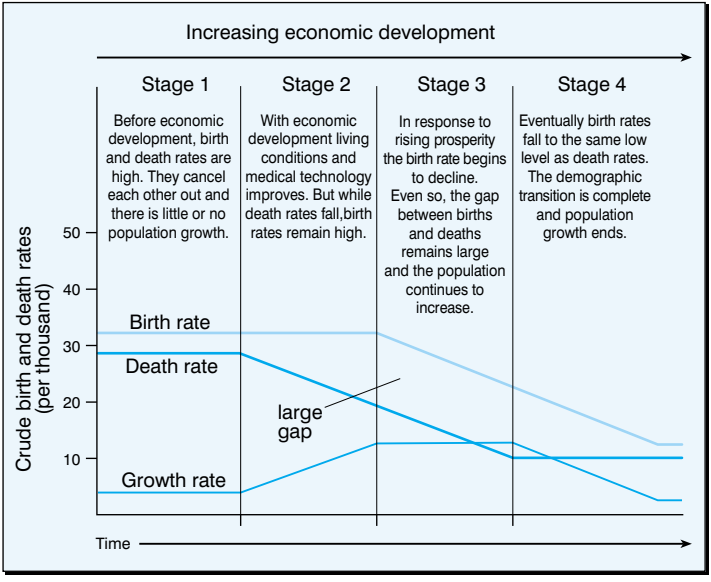
Population density

- **Population density** is the number of people per unit area. It is calculated by dividing the total population by the area. The average population density of the world is low. The global pattern of population density is very uneven. Around 20% of the world's population lives in less than 10% of the land.
- Physical factors determine population distribution. Climate is an important factor. There tends to be denser population where climate favours agriculture. Very dry and cold areas can support only a sparse population. Outside the Tropics mountains are sparsely populated. Fertile soils and water encourage high population densities. Inaccessibility makes rainforests sparsely populated.
- Human factors can attract population to inhospitable areas such as deserts, e.g. mineral exploitation. Population is greater in highly industrialised regions. Dense population can be supported by technologically advanced societies. The regions of highest population density tend to be those which have the longest history of settlement.

Birth and death rates

- The world population is growing at an ever increasing rate. This is likely to continue until 2050. Population change is the number of births minus the number of deaths plus or minus the number of people migrating. The difference between the **crude birth rate** and the **crude death rate** is the **rate of natural increase**.
- **MEDCs** have gone through four distinct stages of population change. This is called the **demographic transition**. It is not clear whether **LEDCs** will follow the same pattern.
- Birth rates are highest in LEDCs, averaging 28 per 1,000 compared with 12 per 1,000 in MEDCs. Death rates vary more than birth rates. In LEDCs they vary from 5 to 20 per 1,000. In MEDCs the average is about 10 per 1,000.

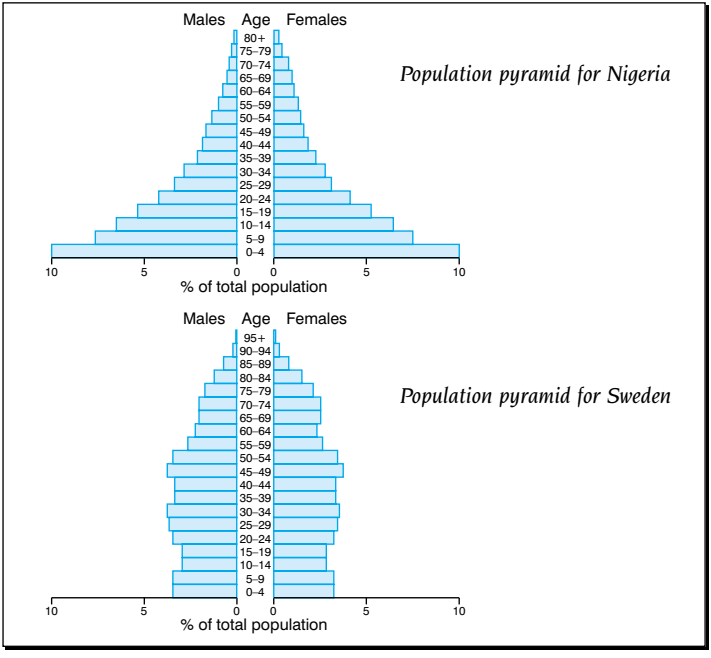


The demographic transition

- The **birth rate** is higher where there is a high proportion of women of reproductive age (15–49). High **infant mortality rates** encourage parents to have more children. The knowledge and use of **contraception** affects birth rate. Birth rates remain high if children are needed to work in agriculture or to look after their parents in old age. Birth control programmes can be important.
- **Death rates** increase where there is a larger proportion of older people. Poor diet, housing conditions and healthcare can increase the death rate. Constant pregnancies can increase the death rate among women. In MEDCs modern living can increase the risk of death from cancer, heart disease and traffic accidents.

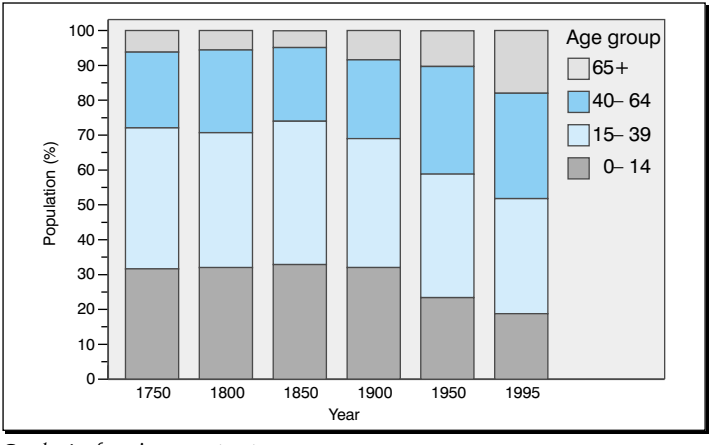
Population structure

- **Population structure** can be shown on an **age–sex pyramid**. Births, deaths and migration patterns can affect the shape of the pyramid. The population pyramid for a LEDC has a broad base and steeply sloping sides. This shows the young nature of the population because of the high birth rate. The steep sides reflect the high infant mortality rate and the low **life expectancy**. The pyramid for a MEDC has a narrow base and straight sides. Low birth rates over a long period mean that there are relatively few young people. Death rates are high only in extreme old age.



Population Distribution (4)

- The structure of a country's population has an important effect in future years. In an LEDC the youthfulness of the population means that there will be a large number of potential parents. This can keep the birth rate high. Unless the birth rate falls a decline in **infant mortality** will increase the width of the pyramid base. The country will then experience an ever increasing rate of population growth.
- Countries such as Bangladesh have set up government birth control programmes. The age of marriage has been raised and contraceptive education is more widely available. The education of women has been encouraged. The higher the level of female literacy the lower the birth rate tends to be.
- In MEDCs higher living standards and better healthcare have increased life expectancy. There is an increased need for state pensions and a greater pressure on medical and welfare services. This puts pressure on the working population to support the increasing proportion of older people, e.g. tax raises. In both LEDCs and MEDCs there is an increasing dependency population.



Sweden's changing age structure

Population distribution (1–4)

1 Why is population density expressed per unit area? (1)

2 France has a population of 56,000,000 and an area of 547,026 km^2. What is its population density? (1)

3 Why are some parts of the desert in the Middle East densely populated? (1)

4 The crude birth rate in Australia is 19/1000. The crude death rate is 8/1000. What is Australia's rate of natural increase? (1)

5 Why may this figure not give a true picture of the population change in Australia? (1)

6 What stage of the demographic transition do many of the LEDCs appear to be passing through? (1)

7 Why is the rate of natural increase greater in LEDCs than it ever was in the MEDCs? (1)

8 What is meant by the 'greying of the population'? (1)

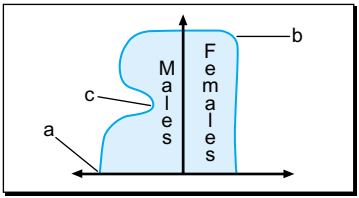
9 Why are government sponsored birth control programmes not always successful? (2)

10 Why is most of Western Europe densely populated? (3)

11 State two features of the growth in world population. (2)

12 Why does there appear to be a link between the level of female literacy and the birth rate? (2)

13 State three reasons why a country may have the following shape to its population pyramid. (3)



SCORE

1 In order to compare countries/areas of different sizes. (1)
Population density is usually expressed per square kilometre.

2 102 persons per km^2. (1)
Remember to give the units.

3 They are important oil producing regions. (1)
The money from oil allows the lack of water to be overcome.

4 11/1000. (1) Remember that birth rates and death rates are expressed as a rate per 1,000.

5 It does not include the figure for migration. (1)

6 Stage 2 (1). The stage of high birth rate and declining death rate.

7 The death rate in LEDCs is declining at a much greater rate than it did at the time of the greatest population increase in MEDCs. (1) This is because LEDCs have much better healthcare compared to say England in the nineteenth century.

8 The ageing of the population. (1)

9 Low levels of literacy mean that family planning education may not be understood. (1) There may be social or religious objections to contraception. (1)
High infant mortality is also significant.

10 The climate is generally moderate allowing efficient agriculture. (1) Industry has developed because of the availability of raw materials and technological know-how. (1) The area has a long history of settlement. (1)

11 It is growing (1) at an ever increasing rate. (1)

12 Educated females understand birth control methods better. (1) Females have greater career hopes. (1) The low status of women in many LEDCs is a very significant contribution to high population growth rate.

13 **a)** A reduced birth rate. (1)
b) Relatively large proportion of older people. (1)
c) The out migration of young males. (1)

TOTAL