

## Paper 1 Human Core

### UNIT 1 Population

**Recommended Prior Knowledge** None is essential although some of the concepts will be familiar from IGCSE.

**Context** Population studies depend upon an understanding of population structure and the factors which contribute to its growth. There will be close connections with Units 2 and 3, as population change is often clearly related to migration and may impact on settlement growth, change and pattern.

**Outline** The elements of growth are the starting point. However, the appreciation that movement is an integral aspect of growth and change is essential, so the second section focuses on migration as a discrete unit. Without the link between population and resources however, the study is merely academic, so an understanding of the final section is fundamental to this unit.

Content	Objectives	Terminology	Teaching Strategies (TS) and Activities (A)	Resources
<b>1.1 Natural increase as a component of population change</b>	<p>Population distribution and density</p> <p>Knowledge and understanding of natural increase and natural decrease of population and how this leads to population change</p> <p>Understanding of replacement level to maintain populations</p>	<p><b>Distribution across an area</b> <b>Density of population</b></p> <p><b>Crude birth rate</b> <b>Crude death rate</b> <b>Fertility rate</b> <b>Mortality rate</b> <b>Natural increase</b> <b>Population change</b> <b>Migration</b> <b>Replacement level</b></p>	<p>Distinguish between these two definitions. Essential to an understanding of overpopulation and underpopulation. They are fundamental to an understanding of spatial distributions. Global distribution showing densities is the ideal starting point. Aerial photos of people sitting on a beach can be a useful teaching aid -people are rarely evenly distributed. Also introduces choropleth maps as a technique. Could also show topological map of the data.</p> <p><b>TS</b> Introduce basic terminology: birth rate, death rate, mortality rates, fertility rates and replacement level.</p> <p>Introduce the idea of overall population growth/decline through the equation <b>Pop change = Natural increase/decrease +/- migration.</b></p> <p>Spatial distribution of population growth rates, i.e. global distribution. Look at statistics to compare growth rates for different countries and groups of countries, e.g. MEDCs and LEDCs. <b>A</b> This could be an opportunity for students to practise interpretation of choropleth maps <b>June 2007 Q. 4</b></p>	<p><b>Nov 2006 Q. 3 Fig. 3</b> uses several ideas of population change, useful teaching aid. Carr p.5 - v.good definitions Prosser p.154 Chrispin pp.48-50 Very good on all definitions Witherick p.270</p> <p>Geofactsheet 175 Global population trends to 2050 Population Bomb or Birth of death?</p> <p>Guinness and Nagle pp.174-182 Bowen and Pallister pp.147-50</p>

	<ul style="list-style-type: none"> <li>• Factors that influence birth rate and death rate</li> <li>• Economic, social environmental and political factors (a long list). Ideally they should be supported by facts, countries and data, to illustrate and exemplify</li> <li>• Knowledge and understanding of contrasting population structures</li> </ul>	<p><b>Age/sex pyramid</b>  <b>Infant mortality rate</b>  <b>Life expectancy</b>  <b>Dependency ratio</b>  <b>Age-specific birth rate/death rate</b>  <b>Cohort</b></p>	<p>Explanation of birth rates and death rates. Emphasise the role of factors and the ways in which they may change over time.  <b>Note Gender</b> is also an important part of the population change argument  Contrast population decline in Scandinavia and Continental Europe with rapid increase of population in some LEDCs</p> <p><b>Structure of population</b>  <b>TS Population pyramids. Description</b> - Compare two basic shapes: the wide based-steep sided, low, narrow topped pyramid of LEDCs and the wider based, straight sided, higher, wider topped pyramid of MEDCs.</p> <p>Could also consider rural and urban pyramids and regional variations, e.g. South coast of England with an ageing population is narrow-based and relatively wide at the top.  Annotate with explanation and discuss the characteristics showing higher pyramid = longer life expectancies.  June 2006 Fig. 3 Pyramids for China, 1990 and 2004  Nov 2006 life expectancy data Fig. 4 for Q. 4</p> <p>Consider a range of different age/sex pyramids which have particular characteristics, for instance illustrating the following factors: influence of wars, baby booms, HIV/AIDS, etc. e.g. France, UK, countries in Africa. Also stage of technological development will link to the demographic transition model (DTM).</p> <p><b>Note</b> Remember to include migration as part of the reasoning.</p>	<p>Coverage on Population change and growth in:  Hart pp.127-130  Ross pp.102-7  Carr p.4, 5, 7, 12, 14  Waugh pp.357-360  Witherick pp.271-5  Prosser pp.159-161 Good on factors influencing natural change  Chrispin pp.53-4  Geofactsheet 562 Jan 2008  Population: US Update  Nagle has detail of age-specific birth rate p.229  <b>Nov 2006 Q. 9</b> BR and DR as instrumental in pop change  <b>June 2007 Q. 10 (a) and (b)</b>  Geofile 500 Sept 2005  Demographic change and population policy in India and China  Carr p.8 Fig. 2.6  Ross pp.110-111  Hart pp.132-135  Guinness and Nagle pp.183-185  Nagle p.228  Waugh pp.353-4  Prosser pp.163-4 Four very good contrasting pyramids  Chrispin p.55  The International Data Base of the US Census Bureau is an excellent resource  www.census.gov/ipc/www/idb  Geofactsheet Contemporary Population Issues: 3 Case Studies: China, Italy and India</p>
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<p><b>1.2 Demographic transition</b></p>	<p>Historical growth of population</p>	<p><b>Demographic transition</b></p>	<p>Historical perspective  <b>The demographic transition</b>  A model to show the stages in population growth over time.  <b>TS</b> Annotated diagram can be the best way to approach the model.  <b>A</b> Students should draw it for themselves. It concentrates their minds and engages them directly with the material. Pyramids to illustrate each stage plus examples of countries in each stage.  Emphasise the fact that it is a model and a simplification of reality. Application to contrasting countries, e.g. the UK and China.  Consider the usefulness and limitations of the model. (This critical appraisal is important and may be examined).  Take into consideration application to cities as well as countries and remember that the model does not have migration built in.</p> <ol style="list-style-type: none"> <li>1 <b>Compare population pyramids for each stage of the model</b></li> <li>2 <b>Consider different methods of depicting the transition</b></li> </ol> <p><b>Links to development should be considered throughout.</b></p> <p><i>Relationship to population change should be borne in mind throughout the teaching of this unit and mentioned frequently.</i></p>	<p>Wetherick p.281 Figs 21 and 22  Chrispin p.51 Fig.3.24 and p.52 Fig 3.25  Waugh p.350 - a range of countries considered  Nagle p.230</p> <p>Bowen and Pallister p.151  Limitations and good detail about each phase  Prosser p.156 fig.5.12  Guinness and Nagle p.165 fig 7.6  Hart p.131 Fig.5.16 Limitations and p.132  Ross p.108 Fig 4.10  Carr p.28 Very good on limitations – also links to development.  <b>June 2006 Fig. 6 Q. 9</b> DTM diagram – useful question</p> <p>Chrispin p.51  Nagle p.232 Pakistan  Guinness and Nagle p.171  Brazil and p.186 China  Carr pp.20-3 China and pp.23-5 Tanzania  Prosser pp.157-8 China and p.162 Botswana  Wetherick pp.275-7 India  Ross pp.116-18 China and Singapore</p>
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<p><b>1.3 Population- resource relationships</b></p>	<ul style="list-style-type: none"> <li>• Appreciation of a debate between the pessimists and the optimists, or ecologists versus economists</li> <li>• Knowledge and understanding of basic concepts relating population to resources</li> <li>• Understanding of sustainability</li> </ul>	<p><b>Ageing populations</b></p> <p><b>Carrying capacity Population ceiling Population boom and crash Famine Constraints: e.g. war, hazards</b></p> <p><b>Overpopulation Underpopulation Optimum population</b></p> <p><b>Sustainability</b></p>	<p>Stage 5 of the model. Discuss with reference to specific countries.</p> <p>This may be inserted wherever it is felt appropriate. <b>TS</b> and <b>A</b> Debate/discussion ideal on the subject of ageing populations. Suggested title: Ageing population: a blessing or a problem?</p> <p><b>Prediction of ageing populations.</b> Discussion about limited value of prediction <b>June 2007 Q. 9(c)</b> useful guide for class discussion or piece of written work.</p> <p>Malthusian theory Using a series of diagrams. By increasing the population level it can be seen that resources are exceeded. <b>Fig. 3</b></p> <p>Consider Paul Simon's view (economist and optimist) and that of Paul Ehrlich (environmentalist and pessimist) Lead into a discussion of consequences of rapid uncontrolled population increase. Limitations of the theory. <b>Solutions</b></p> <ul style="list-style-type: none"> <li>• Manage population growth</li> <li>• Increase production - land under cultivation, yield per hectare</li> </ul> <p>Introduce Boserup's more optimistic model of changing technology. Look at the graph of population in relation to GDP per person to ascertain concepts of over-, under- and optimum population. <b>TS It is important that case study material is geared to the <u>control</u> of growth and the <u>management</u> of the results of change</b> as stated in the syllabus. It is also important to understand that these are <u>relative</u> concepts; discovery of new resources/technology could relieve overpopulation whilst maintaining the same absolute numbers, but the <u>quality of life</u> would improve.</p>	<p>Carr pp.11-12 Ross p.112 Both these books are detailed on ageing populations</p> <p><b>June 2007 Q. 9(b) and (c)</b> Geofactsheet 196 The Globalisation of Ageing</p> <p>Chrispin pp.80-2 Guinness and Nagle pp.196-7 Ross pp.114-5</p> <p>Chrispin p. 83</p> <p>Chrispin pp.86-90 Chrispin pp.83-4</p> <p><b>June 2008 Q. 9</b> specifically about over/under/optimum population</p> <p>Nagle p.241 good source Waugh p.378 Carr pp.35-6</p> <p>Waugh p.374 Carr p.34</p> <p>Nagle pp.239-241 recommended</p>
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<p><b>1.4 The management of natural increase</b></p>	<p>A case study of any <b>ONE country</b>, may be an LEDC or an MEDC.</p> <ul style="list-style-type: none"> <li>• Appreciation of population change within chosen country</li> <li>• Difficulties and management solutions</li> </ul>	<p><b>Carrying capacity</b> <b>Food shortage</b> <b>Subsistence farming</b></p> <p><b>Appropriate technology</b> <b>Intermediate technology</b></p> <p><b>Desertification</b> <b>Pollution</b> <b>Quality of life</b> <b>Green Revolution</b> <b>Ecological footprints</b></p>	<p>Look at relationship between population growth and growth of food production. Compare arithmetic increase of food production with geometric increase of population (Malthus).</p> <p>Introduce idea of carrying capacity of land in relation to its population.</p> <p>History of population growth and change. Substantiate with population data. Study population structure over time. Compare age cohorts; gender. Compare BR and DR. Life expectancies. Analysis of change over time and discussion of reasons.</p> <p><b>Note</b> Death rate is a vital component of population change and is often forgotten by candidates when discussing management/policies for controlling population growth i.e. managing natural increase. This is so important because maximum marks cannot be achieved unless death rates are considered.</p> <p><b>Population policies</b> e.g. China 'one child' policy, Singapore, Russia, Germany, UK, Italy or home country. <b>Consequences:</b> especially discussion of success and/or failure e.g. gender imbalance, ageing, rural/urban migration. The controls, the changes and then how the country has managed the changes.</p>	<p><b>Nov 2005 Q. 9</b> <b>June 2008 Q. 9</b> - a popular question</p> <p>Case studies of Bangladesh - overpopulation and Canada - underpopulation. Use other local examples if more suitable.</p> <p><b>June 2005 Q. 4</b></p> <p><b>June 2008 Q. 10</b> This is an excellent question to use as a springboard for teaching this aspect of population change.</p>
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