

## UNIT 4 Population Change

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

**Context** Population studies depend upon an understanding of its structure and the factors which contribute to its growth. There will be close connections with the Settlement Dynamics unit as population change 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. Without the link between the 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
Population Growth (1.1)	<ul style="list-style-type: none"> <li>Knowledge and understanding of natural increase/decrease of population</li> <li>Understanding of replacement level to maintain populations</li> <li>Factors that influence birth rate and death rate.</li> </ul>	<p><b>Crude Birth rate</b>  <b>Crude Death rate</b>  <b>Fertility rate</b>  <b>Mortality rate</b>  <b>Natural increase</b></p> <p><b>Replacement level.</b></p>	<p><b>TS</b>            Introduce the idea of overall population growth/decline through the equation  <b>Pop change = Natural increase/decrease +/- migration.</b></p> <p><b>Bath tub analogy.</b> Taps=birth rate plughole =death rate. Level up/down according to the ratio. Overflow=migration. Always a great success!</p> <p>Introduce basic terminology: birth rate, death rate, mortality, fertility rates, fecundity rates and replacement level.</p> <p>Spatial distribution of 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.            A This could be an opportunity for students to practice interpretation of choropleth maps</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>NB. Gender</b> is also an important part of the population</p>	<p>Carr p.5-v.good definitions            Prosser p.154            Chrispin p.48-50 Very good on all definitions            Witherick p.270</p> <p>Guinness and Nagle p.174-182            Bowen and Pallister p.147-50            Coverage on Pop change/growth in:            Hart p.127-130            Ross p.102-7            Carr p.4, 5, 7, 12, 14            Waugh p.357-360            Witherick P.271-5            Prosser P.159-161 Good on factors influencing natural change.            Chrispin p.53-4            Nagle has detail of age-specific</p>

	<ul style="list-style-type: none"> <li>Knowledge and understanding of contrasting pop structures</li> <li>Historical growth of population</li> </ul>	<p><b>Age-sex pyramid</b></p> <p><b>Demographic transition</b></p> <p><b>Infant mortality rate</b></p> <p><b>Life expectancy</b></p> <p><b>Dependency ratio</b></p> <p><b>Age specific birth/death rate cohort</b></p>	<p>change argument</p> <p>Contrast Scandinavia and Continental Europe-pop decline with LEDCs - rapid increase of pop.</p> <p>Could also consider rural and urban pyramids and regional variations. Eg.South coast of England with an ageing population is narrow- based and relatively wide at the top.</p> <p><b>Structure of population</b></p> <p><b>TS Population pyramids. Description-</b>Compare two basic shapes wide based-steep sided, low, narrow topped pyramid of LEDCs and the wider based, straight sided, higher, wider topped pyramid of MEDCs.</p> <p>Annotate with explanation and discuss the characteristics showing higher pyramid= longer life expectancies.</p> <p>Consider a range of different pyramids which have particular characteristics illustrating the following factors for instance: Influence of wars, baby booms, HIV/AIDS etc. e.g. France, UK, African states. Also stage of technological development.</p> <ul style="list-style-type: none"> <li><b>NB</b> Remember to include migration as part of the reasoning.</li> <li><b>Ageing populations</b></li> </ul> <p>Historical Perspective</p> <p><b>The demographic transition</b></p> <p>A model to show the stages in population growth over time.</p> <p><b>TS.</b> Annotated diagram can be the best way to approach the model.</p> <p><b>A.</b> Students should draw it for themselves. It concentrates their minds and engages them directly with the</p>	<p>birth rate p.229</p> <p><a href="http://www.census.gov/ipc/www/dbpyr.html">http://www.census.gov/ipc/www/dbpyr.html</a></p> <p>Carr P.8 Fig. 2.6 Ross p.110-111 Hart p.132-135 Guinness and Nagle p.183-185 Nagle p.228 Waugh p.353-4 Prosser p.163-4 Four very good contrasting pyramids Chrispin p.55</p> <p>Carr p.11 and 12 Ross p.112 Both these books are detailed on ageing populations</p> <p>Witherick p.281 Fig. 21,22 Chrispin p.51 Fig.3.24 P.52 Fig 3.25 Waugh p.350-a range of countries considered Nagle p.230</p> <p><a href="http://www.uwmc.uwc.edu/geography/Demotrans/demtran.htm">http://www.uwmc.uwc.edu/geography/Demotrans/demtran.htm</a></p> <p>Bowen and Pallister p.151 Limitations and good detail</p>
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<p>Migration (1.2)</p>		<p><b>Pro-natalist Anti-natalist policy</b></p> <p><b>Migration</b></p>	<p>material. Emphasise the fact that it is a model-simplification of reality, application to the UK and China. Consider the pros and cons 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> <p><b>A. Compare pop pyramids for each stage of the model See fig 1 .Describe and explain main features</b></p> <p><b>B. Consider different methods of depicting the transition. Discussion point. See Fig 2.</b></p> <p>Ideally case studies will fit <b>all aspects</b> including migration and where the case study fits into the demographic transition As it is likely that one study does not cover all in the same detail it is advised that one MEDC and one LEDC is considered. Ideally one country with a pro-natalist and one with anti-natalist policy</p> <p><i>Relationship to population change should be borne in mind throughout the teaching of this unit and mentioned frequently.</i></p> <p><b>Definition of migration</b> to exclude holidays and commuting i.e. movements of less than one year ( correctly termed circulation rather than migration). Migration should involve a more or less permanent change of residence.</p> <p><b>TS. Pattern of migration</b>-global, continental, national scales. Ie. Macro-meso and micro scales. Good introduction is via a world map.</p>	<p>about each phase Prosser p156 fig.5.12 Guinness and Nagle p.165 fig 7.6 Hart p131 Fig.5.16 Limitations p.132 Ross P.108 Fig 4.10 Carr P.28 Very good on limitations-links to development too.</p> <p>Chrispin P.51 Nagle p.232 Pakistan Guinness and Nagle p.171 Brazil and China p.186 Carr p.20-3 China and Tanzania P.23-5 Prosser p.157-8 China and Botswana p.162 Witherick p.275-7 India Ross P.116 – 18 China and Singapore</p> <p>Carr p.50 Bowen and Pallister p.156 Chrispin p.60 Waugh p.361 Prosser P.165-177 Hart p.142-144 Waugh p.368</p> <p>Bowen and Pallister p.166 Fig. 1</p>
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<p>Population and Resources (1.3)</p>	<ul style="list-style-type: none"> <li>• Appreciation of a debate between the pessimists and the optimists/ecologists v economists</li> <li>• Knowledge and understanding of basic concepts relating population to resources</li> <li>• Understanding of sustainability</li> </ul>	<p><b>Carrying capacity</b> <b>Population ceiling</b> <b>Population boom and crash</b> <b>Famine</b></p> <p><b>Over population</b> <b>Under-population</b> <b>Optimum population</b></p> <p><b>Sustainability</b></p> <p><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 pop. Can be related to predator-prey relationships in animals or insects. Introduce idea of carrying capacity of land in relation to its population. Via a series of diagrams. By increasing the population level it can be seen that resources are exceeded. <b>Fig.3</b></p> <p>Malthusian theory</p> <p>Consider Paul Simon's view (economist and optimist) v. Paul Ehrlich (environmentalist and pessimist) Lead into a discussion of consequences of rapid uncontrolled pop increase. Limitations of the theory <b>Solutions</b></p> <ul style="list-style-type: none"> <li>• Manage pop growth.</li> <li>• Increase production-land under cultivation/increase yield per acre.</li> </ul> <p>Introduce Boserup's more optimistic model of changing technology.</p> <p>Look at the graph of pop in relation to GDP per head to ascertain concepts of optimum, over- and under – population. <b>TS. It is important that the 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 over-population whilst maintaining the same absolute numbers, but the <u>quality of life</u> would improve.</p>	<p>Waugh p.374 Carr p.34</p> <p><b>Nagle p.239 - 241</b> <b>Recommended</b></p> <p><b>Fig.3</b> Chrispin p.80-2 Chrispin p.82 Guinness and Nagle p.196-7 Ross p.114-5</p> <p>Chrispin p. 83</p> <p>Chrispin p.86-90 Chrispin p.83-4</p> <p>Nagle p.241 good source Waugh p.378 Carr p.35-6</p> <p>Case studies of Bangladesh-overpopulation and Canada Under-population. P.377.</p>
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