Population

Planning for the Population Change enquiry

In this enquiry, students are asked to find out what is happening to the rate of growth of world population. As part of the brief, they are given data on changes in birth rate and death rate in 10 countries for the period 1980 to 2010. These 10 countries have been chosen to give a good cross section of the countries in the developing world – that part of the world which has the fastest rising population at the present time, and the part upon which the world’s future population level depends more than any other.

The students have been set two enquiry questions:

1. What is happening to the rate of population growth in these 10 countries?
2. Does the level of wealth of a country help to explain the rate of change of its population?

Through graphing and interpreting the data provided and answering the two enquiry questions, students should be able to attempt a prediction of the future population trends for the whole world. They should refer back to the UN’s three scenarios that were presented in Unit 3: Enquiry worksheet 7 and the line graph they drew. (If necessary, the graph can be seen at http://en.wikipedia.org/wiki/File:World-Population-1800-2100.svg.)

Set up

Students will need large amounts of graph paper and up to ten different coloured pens or pencils.

It is suggested that students work in groups, with different members of the group taking responsibility for the graphs of the different countries. However, comparison between the countries is easier if all graphs are drawn to the same scale. To save time, and especially with moderate and lower ability students, it might be advisable to produce copies of the graph paper with the axes drawn and labelled already. More able students should be challenged to draw their own axes.

It is advised that teachers keep clear records of the ways in which different students contribute to group work. If their work is to form part of a summative assessment of their level of attainment, written records will be invaluable in support of any judgements made.

Notes on some anomalies that might be encountered

The 10 countries were selected to be both familiar to students but also representative of some key aspects of the developing world. Where they deviate from the general pattern, they can often provide particularly useful insights. The following are some of the anomalies that might need some discussion:

- Afghanistan has the highest birth rate at the start of the period. This might be due to the traditional society or to disruption caused by the war with Russia. Note, however, that during the war between the NATO forces and the Taliban, the birth rate is shown to have fallen considerably. Ask the students, ‘Might this be due to a more liberal attitude to family planning?’ If so, ‘Will it last when the NATO forces leave?’
Afghanistan’s death rate fell steadily throughout this period, despite the continued conflict. This shows that natural causes of death are more important than war-related deaths and that the country’s medical and hygiene systems were greatly improved by foreign forces and NGOs during both the Russian and NATO occupations.

Bangladesh may be one of the poorest countries in the group but it has made massive reductions in both birth rate and death rate during this period.

By 1980, China had already been operating population control policies for almost 20 years. Access to medical help had already been greatly improved by the Communist government.

Both China and Jamaica have death rates that hover around 6–7. This is about as low as a death rate can ever go because everybody dies sooner or later.

Kenya and Nigeria have both reduced their birth rates, but far more slowly than the countries of Asia and South America. This is largely because they are still mainly rural, and children are economically useful in a farm-based economy.

South Africa is the only country that has seen a significant increase in death rate. This is largely due to the HIV/AIDS epidemic in southern Africa as a whole.
Assessing Population Change

The National Curriculum Programme of Study (PoS) for Geography includes the following Aims:

The national curriculum for geography aims to ensure that all pupils:

- develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes
- understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time
  - collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes
  - interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photographs and Geographical Information Systems (GIS)
  - communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.


This piece of work allows students to meet many of these aims at a number of different levels. The following aspects of the Programme of Study can be achieved by students in the ways illustrated.

<table>
<thead>
<tr>
<th>Programme of Study</th>
<th>Opportunity for Attainment</th>
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<tbody>
<tr>
<td>Develop contextual knowledge of the location of (globally significant) places.</td>
<td>Students study ten globally significant countries and compare their birth rates, death rates and rates of population change.</td>
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<tr>
<td>Develop knowledge of the defining … human characteristics of (globally significant) places and how these provide a geographical context for understanding processes.</td>
<td>By comparing the birth rates, death rates and rates of population change of ten globally significant countries, students can try to understand the reasons for the key characteristics of each and the differences between them.</td>
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<tr>
<td>Understand the processes that give rise to key … human geographical features.</td>
<td>Students develop their understanding of the present situations in each country and the processes that have led to these situations.</td>
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<tr>
<td>Understand how these processes are interdependent and how they bring about spatial variation and change over time.</td>
<td>Having developed their understanding of the present situations in each country, and the processes that have led to these situations, students attempt to develop predictions of possible alternative futures.</td>
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<td>Communicate geographical information in a variety of ways, including through … numerical and quantitative skills and writing at length.</td>
<td>The work is based on interpretation of numerical data and the use of a variety of quantitative skills. Communication skills are developed through group work and extended writing in the form of a final report and conclusions.</td>
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