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- p.281 Figure 20: Taking river measurements, David Holmes and Sue Warn, *Fieldwork Investigations: a self-study guide* (Hodder Education, 2003), Figure 21: A river cross-section, David Holmes and Sue Warn, *Fieldwork Investigations: a self-study guide* (Hodder Education, 2003)
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Introduction

This book has been written to help you while you study for your geography IGCSE. The examples and case studies in the book are from around the world. Geography is about people and places and we hope that you will use your own home area as much as possible to add to the material in this book. We would encourage you also to keep up to date with geographical events – one way is through listening to the news or reading about events in newspapers or on the Internet. Geography is happening every day, everywhere and examiners love to read about new developments – so think about your own geographical location and new geographical events.

This book has been written to follow closely the IGCSE specification. It includes a number of activities to help you succeed with the written assessment and guidance for your coursework. Below are details of the exams and assessment that you will experience. Be prepared – knowing what to expect will help you succeed in your exams. Make sure you also use your teachers' experience – they are an excellent resource waiting to be tapped. Good luck and enjoy your geographical studies.

● Assessment

Scheme of assessment

All candidates will take Paper 1, Paper 2 and either Paper 3 or Paper 4.

Papers 1, 2 and 4 will consist of combined question papers and answer booklets where candidates answer in the spaces provided.

Paper 1 (1 hour 45 minutes) Candidates will be required to answer three questions (3 × 25 marks). They will choose one question out of two on each theme. Questions will be structured with gradients of difficulty, will be resource-based and involve problem solving and free response writing. This paper will mainly be concerned with Assessment Objectives 1, 2, and 3, Knowledge with understanding, Skills and analysis, and Judgement and decision making. 45% of total marks.

Paper 2 (1 hour 30 minutes) (60 marks)
Candidates answer all the questions. The paper is based on testing the interpretation and analysis of geographical information, decision making and the application of graphical and other techniques as appropriate. The questions will not require specific information about places but will require the use of a 1:25 000 or 1:50 000 topographical map and will include a full key. 27.5% of total marks.

Either
Paper 3, Coursework (School-based assessment). Teachers set one school-based assignment of up to 2000 words. (60 marks)

Or
Paper 4, Alternative to Coursework (1 hour 30 minutes) (60 marks) Candidates answer two compulsory questions, completing a series of written tasks based on the three themes:

- 1 Population and Settlement
- 2 The Natural Environment
- 3 Economic Development

The questions involve an appreciation of a range of techniques used in fieldwork studies. 27.5% of total marks.

● IGCSE Geography Revision CD Rom

The accompanying CD Rom provides invaluable revision materials and self-testing.

- Definitions of all key terms are provided.
- Topic summaries are provided, enabling quick revision of a topic.
- Multiple choice, mix and match and true or false interactive questions are provided to test yourself on key terms and geographic information.
- Images include selected artwork and photos to help you with your studies and project work.

Paul Guinness
Garrett Nagle

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Theme

1

Population and Settlement

Topics

- 1.1 Population dynamics
- 1.2 Migration
- 1.3 Population structure
- 1.4 Population density and distribution
- 1.5 Settlements and service provision
- 1.6 Urban settlements
- 1.7 Urbanisation



1.1

Population dynamics



People from around the world watching the Olympic Games in London, 2012

Key questions

- How rapidly has the world's population increased?
- What are the reasons for such a rapid increase in the world's population?
- What are the causes of a change in population size?
- What are the reasons for contrasting rates of natural population change?
- What are the causes and consequences of over-population and under-population?
- How effective are population policies in achieving their objectives?

• The rapid increase in the world's population

During most of the early period in which humankind first evolved, global population was very low, reaching perhaps some 125 000 people a million years ago. Ten thousand years ago, when people first began to domesticate animals and cultivate crops, world population was no more than 5 million. Known as the Neolithic Revolution, this period of economic change significantly altered the relationship between people and their environments. But even then the average annual growth rate was less than 0.1 per cent per year.

However, as a result of technological advance the carrying capacity of the land improved and population increased. The carrying capacity is the largest population that the resources of a given environment can support. By 3500 BCE, global population reached 30 million and by 2000 years ago, this had risen to about 250 million (Figure 1).

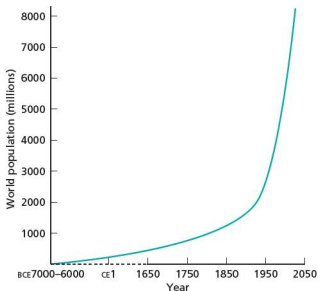


Figure 1 World population growth

Number of years to add each billion (year)

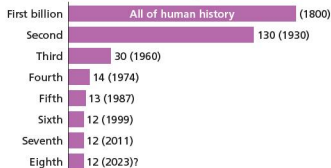


Figure 2 World population growth by each billion

Table 1 World population clock, 2012

Natural increase per ...	World	More developed countries	Less developed countries	Less developed countries (excl. China)
Year	84 303 942	1 752 056	82 571 886	76 103 575
Day	230 970	4 745	226 224	208 503
Minute	160	3	157	145

Demographers (people who study human populations) estimate that world population reached 500 million by about 1650. From this time population grew at an increasing rate. By 1800 global population had doubled to reach one billion. Figure 2 shows the time taken for each subsequent billion to be reached, with the global total reaching 7 billion in 2011. It had taken only 12 years for world population to increase from 6 to 7 billion, the

same timespan required for the previous billion to be added. It has been estimated that world population will reach 8 billion in 2023.

Table 1 shows population change in 2012, with a global population increase of 84.3 million in that year. This is the result of 140.5 million births and 56.2 million deaths. The bulk of this population increase is in the developing countries. When the number of births exceeds the number of deaths, world population increases. The greater the gap between the number of births and deaths, the greater the population increase. The very rapid growth of the world's population over the last 60 years or so, illustrated by Figures 1 and 2, is the result of the largest ever difference between the number of births and deaths in the world as a whole!

Recent demographic change

Figure 3 shows that both total population and the rate of population growth are much higher in the less developed world than in the more developed world. The fastest rate of growth is taking place in the least developed countries, which is the poorest sub-section of the less developed world. However, only since the Second World War has population growth in the poor countries overtaken that in the rich. The rich countries had their period of high population growth in the nineteenth and early twentieth centuries, while for the less developed countries rapid population growth has occurred since about 1950.

The highest ever global population growth rate was reached in the early to mid 1960s when population growth in the less developed world peaked at 2.4 per cent a year. At this time the term **population explosion** was widely used to describe this rapid population growth. But by the late 1990s the rate of global population growth was down to 1.8 per cent and by 2012 it had reduced further to 1.2 per cent. However, even though the rate of growth has been falling for three decades, **demographic momentum** means that the number of people added each year remains very high. This is because there are so many women in the child-bearing age range.

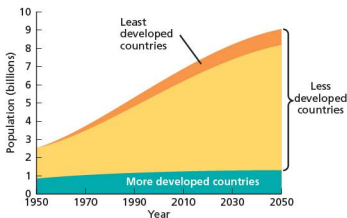


Figure 3 Population growth in more and less developed countries, 1950-2050

The demographic transformation, which took a century to complete in the developed world, has occurred in a single generation in some less developed countries. Fertility has dropped further and faster than most demographers predicted 20 or 30 years ago. Except in Africa, where in around 25 countries families of at least five children are the average and population growth is still over 2.5 per cent per year, birth rates are now declining in virtually every country. According to the Population Reference Bureau: 'Developed countries as a whole will experience little or no population growth in this century, and much of that growth will be from immigration from less developed countries.'

Table 2 shows the ten largest countries in the world in population size in 2012, and their population projections for 2050. In 2012, China and India together accounted for 37 per cent of the world's population. The USA is a long way behind, in third place. While three developed countries were in the top ten in 2012, only one, the USA, is in the forecast for 2050.

Interesting note

The Population Reference Bureau estimates that throughout the history of human population about 108 billion people have lived on Earth. This means that about 6.5 per cent of all people ever born are alive today!

Table 2 The world's ten largest countries in terms of population, 2012 and 2050

2012		2050	
Country	Population (millions)	Country	Population (millions)
China	1350	India	1691
India	1260	China	1311
USA	314	USA	423
Indonesia	241	Nigeria	402
Brazil	194	Pakistan	314
Pakistan	180	Indonesia	309
Nigeria	170	Bangladesh	226
Bangladesh	153	Brazil	213
Russia	143	Congo, Dem. Rep.	194
Japan	128	Ethiopia	166

Activities

- With the help of Figures 1 and 2, briefly describe the growth of human population over time.
- Define the term carrying capacity.
- Comment on the information shown in Table 1.
- Look at Figure 3. Describe the differences in population growth and projected growth in more developed and less developed countries between 1950 and 2050.
- Look at Table 2:
 - Show the data for 2012 on an outline map of the world.
 - Briefly describe the changes that are forecast to occur by 2050.

● The causes of a change in population size

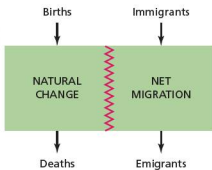
The **birth rate** is defined as the number of births per thousand population in a year. If the birth rate of a country is 20/1000 (20 per 1000), this means that on average for every 1000 people in this country 20 births will occur in a year. The **death rate** is the number of deaths per thousand population in a year. If the death rate for the same country is 8/1000, it means that on average for every 1000 people 8 deaths will occur. The difference between the birth rate and the death rate is the **rate of natural change**. If it is positive it is termed **natural increase**. If it is negative it is known as **natural decrease**. In the case given above there is a natural increase of 12/1000 (20/1000 – 8/1000). This is the current rate of

natural increase for the world as a whole – look at the birth and death rates given in Table 3. The rate of natural change may also be shown as a percentage, so in this example 12/1000 is equivalent to 1.2 per cent. Table 3 shows how much birth and death rates vary by world region.

Table 3 Birth and death rates 2012

Region	Birth rate	Death rate
World	20	8
More developed world	11	10
Less developed world	22	8
Africa	36	11
Asia	18	7
Latin America/Caribbean	19	6
North America	13	8
Oceania	18	7
Europe	11	11

Population change in a country is affected by (a) the difference between births and deaths (natural change) and (b) the balance between immigration and emigration (net migration). On Figure 4 the dividing line indicates that the relative contributions of natural change and net migration can vary over time. For most countries natural change is a more important factor in population change than net migration.

**Figure 4** Input-output model of population change

The **immigration rate** is the number of immigrants per thousand population entering a receiving country in a year. The **emigration rate** is the number of emigrants per thousand population leaving a country of origin in a year. The **rate of net migration** is the difference between the rates of immigration and emigration. Figure 5 shows some simple demographic calculations for the imaginary island of Pacifica.