1: Population dynamics

Syllabus ref.	Learning objectives	Suggested teaching activities
1.1 Population dynamics	Describe and give reasons for the rapid increase in the world's population	Learners should define 'population', 'population growth rate' and 'population explosion'. 'Key word anagrams' activity – learners solve anagrams and discuss the meaning of key words in pairs. Learners to build up a key word glossary with precise definitions of key words for each unit of work. This should also include command words as learners complete past examination questions. **(I)** Learners devise their own key word puzzle/game. Provide learners with key facts and figures about world population growth to illustrate the concept of 'population explosion'. Use the current world population statistics: www.worldometers.info/world-population/ and www.s-cool.co.uk/gcse/geography/population **Extension activity:** Using evidence, learners describe a line graph to show world population growth. Learners could also draw part of the graph themselves. This should include projections for future population growth. **(I)** Learners consider what the graph shows and write a question that they want to answer during the unit. Keep the questions in a list or on a question wall (see Appendix: Question wall) that can be answered as the unit progresses. **(I)** Learners work in small groups to analyse graphs or a choropleth map to show population growth in different continents. Each group considers a different continent. Present findings back to the class. Learners record main findings during presentations on a note-taking grid to understand differences in population growth in different parts of the world. Once learners have learned about reasons for population growth over a period of time, they should revisit their world population growth graph and think of reasons to explain the population explosion. These links contain ideas, strategies and resources for the whole unit: www.sln.org.uk/geography/population_and_migration.htm, www.bbc.co.uk/education/topics/zbjhfg8/resources/1 and http://handygeography.wordpress.com/tag/population/
	Understand the causes and consequences of over-population and under-population	Learners define the term 'carrying capacity' and add to their key word glossary. Introduce the concept of 'optimum population' by showing a drawing of scales in balance with population on one side and resources on the other – learners define and add to their glossary. Learners work in pairs to draw what they think the scales would look like for under-population and over-population (see www.overpopulation.org/). Show on mini whiteboards if available (see Appendix: Mini whiteboards). Discuss and define key words and emphasise the link between 'population' and 'resources'. Show learners photographs to illustrate the concepts. Learners update the key word glossary.

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		Whole class discussion of the causes of over-population and under-population in relation to resources and population growth – show as two mind maps (see Appendix: Mind maps) and reinforce through case studies later. Learners complete a card sorting activity (see Appendix: Card sorting activity) to classify causes and consequences into under-population and over-population. Record consequences in a table and self-assess as the answers are discussed as a whole class. Sort consequences into those that affect people and those that affect the environment. **Extension activity:** Consider the consequences of under-population and over-population. Learners develop ideas to produce an individual piece of writing.
1.1 Case study	Know a country which is over-populated and a country which is under-populated	Learners should know a case study of: • a country which is over-populated • a country which is under-populated. For each case study, the learners need to know the causes and consequences of under-population and over-population. Learners could use internet and textbook resources to research both of the case studies and present as articles for a geographical journal. The article could also include sketch maps to show location and description, population and other relevant data tables, population pyramids, graphs and annotated photographs to illustrate the key ideas and provide appropriate place-specific detail. **(I)** Link to 3.7 – causes of soil erosion and desertification.
1.1 Population dynamics	Understand the main causes of a change in population size	Learners define key words 'birth rate', 'death rate', 'natural increase' and 'natural decrease'. Add to key word glossary. **(I)** Revise key words so far with either a game of 'Taboo' where learners have to describe a key word using key words on a card to a partner (http://en.wikipedia.org/wiki/Taboo_(game)) and a 'heads and tails' game (see Appendix) where learners match key words and definitions. Use birth and death rates for selected countries to calculate natural increase and decrease and to understand the difference between different parts of the world and record in a table. **(I)** Use: www.s-cool.co.uk/gcse/geography/populations Learners describe what they notice about rates of natural increase in different parts of the world (see: http://esa.un.org/unpd/wpp/index.htm. – world population prospects) – Less Economically Developed Countries (LEDCs) and More Economically Developed Countries (MEDCs). Learners draw and label a Demographic Transition Model diagram (DTM) to understand how population changes over time. Show the clip here: www.bbc.co.uk/schools/gcsebitesize/geography/population/population_change_video.shtml Add an example of a

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		country to each stage. Learners complete a card sorting activity to match key characteristics to the appropriate stage of the model. This would work as a kinaesthetic activity also – each learner has a card and has to move to bases in the room appropriate to the stage of the DTM. **(I)** Define 'migration', 'immigration' and 'emigration' and add to key word glossary. Introduce and define the concept of 'net migration' balance and illustrate by asking learners to calculate for selected countries. Explain actual increase and decrease and add key words to glossary. Calculate using examples of birth rate, death rate and net migration balance for selected countries. Learners could also describe various graphs such as birth rate, death rate, natural increase, etc., for selected countries. **(I)** Use atlas map to discuss in pairs the differences in total population change in different parts of the world – choropleth maps and emphasise again the key differences between More Economically Developed Countries (MEDCs) and Less Economically Developed Countries (LEDCs). Learners could also have a blank Demographic Transition Model diagram (DTM) outline and place labels in pairs on the appropriate place on the graph to check understanding or work in groups to reproduce an accurate copy of the Demographic Transition Model diagram (DTM) from memory.
	Give reasons for contrasting rates of natural population change	Learners work in groups to list the factors which explain why birth rates may be high in some parts of the world and low in others. Discuss as a group and record ideas into a table. Then classify the ideas into social, economic, political or other factors using colour coding or a key. **(I)** Learners work in groups. They have 10 minutes to discuss the reasons for high deaths rates in certain parts of the world. They record their ideas on a large sheet of paper. Each group then moves round to the next group to add any ideas that they had not thought of and continue until they are back to their original place. Class discussion to confirm. Learners record reasons for high death rates. Repeat activity for low death rates. Classify into social, economic, political and other factors using colour coding or a key. **(I)** **Extension activity:** explain why birth and death rates vary between countries at different levels of development (see: **www.sln.org.uk/geography/Documents/Thinking/Mystery%20%20Xiao%20Ling.pdf**) Revisit the DTM and add reasons to explain each stage. Group work – learners discuss limitations and relevance of the model and write up ideas. **(I)** Briefly describe distribution of HIV from an atlas choropleth map. Learners write a short report to explain the impact on

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		death rates and life expectancy in selected countries of the world. **(I)**
1.1 Case study	Know a case study of a country with high rate of natural population growth and a country with a low rate of population growth (or decline)	Learners should know a case study of: • a country with a high rate of natural population growth • a country with a low rate of population growth (or population decline). For each case study: Provide learners with location map and population data tables. Learners use data to graph and describe the population growth of the selected country over time. Group work activity – provide resource material about the causes of the growth and the measures taken as part of relevant policies that have been put in place to control population growth. Learners highlight text. Produce a short presentation to the class and use presentation notes as revision tool. Ensure appropriate place-specific reference for each case study. **(I)** Repeat the activities for the case study of population decline and the policies used to promote population growth. **Extension activity:** Learners also evaluate the success of each policy via a class debate – reasons to support the policy/successes, reasons against the policy/problems and an overall judgement about how successful the policy has been – provide data and evidence to support.
1.1 Population dynamics	Describe and evaluate population policies	Learners have already described and evaluated two population policies as part of the case studies above – one ante-natalist and one pro-natalist. To reinforce and build on this, learners describe and explain the impact of measures on population growth through small group discussion and report writing. **(I)** Ideas such as: • Reducing poverty • Improved healthcare • Improved education • Women's rights • Family planning, etc. They could also use the following: **www.s-cool.co.uk/gcse/geography/populations/revise-it/population-growth** To reinforce the ideas, learners draw scatter graphs to deduce the relationship between birth rates and key indicators for selected countries such as GNP per capita, access to healthcare, female literacy rate, access to contraception, etc. – describe and explain the relationship shown by the scatter graphs. **Extension activity:** Learners could also use atlas maps of key indicators to reinforce the spatial relationship. **(I)** Link to 3.7 – strategies to reduce desertification – reducing population pressure.

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1.2 Migration	Explain and give reasons for population migration Demonstrate an understanding of the impacts of migration	Recap key words 'migration', 'emigration', 'immigration' and 'net migration balance' (see: **www.s-cool.co.uk/gcse/geography/populations/revise-it/migration**). Learners describe a key word and the other learner has to define it. Learners define 'international migration'. Introduce a classification of migration and complete appropriate definitions with examples to illustrate. Learners describe a world flow line map of recent migrations – describe what the map shows and categorise into those that are forced and those that are voluntary. Show a photograph that might prompt a forced migration such as a scene following a natural disaster and discuss. You could watch the video about migration trends: **www.bbc.co.uk/schools/gcsebitesize/geography/migration/migration_trends_video.shtml** Introduce a simple example of an international migration (not a case study) and ask learners to think of reasons for leaving a destination and reasons for wanting to go to a destination. Use this to reinforce voluntary migration and define 'push and pull factors' with some simple examples. Define 'internal migration' and give examples with push and pull factors. Update key word glossary. **(I)** Link to Case Study for 1.7 to describe the impacts of the migration on the destination and origin of the migrants as well as the migrants themselves.
1.2 Case study	Know a case study of an international migration	Learners should know a case study of an international migration. Further information on migration: **www.geography.learnontheinternet.co.uk/topics/migration.html** Learners produce a sketch map and locate the migration. Provide some background information/statistics/photographs to highlight/annotate to identify the push and pull factors – show as a table. Learners work in pairs to research and note-take the positive and negative impacts of the migration on the receiving and losing country and the migrants themselves. Present ideas as a table. Ensure appropriate reference to population structure. **(I)** Learners imagine they are an international migrant and write a letter home to include their reasons for the migration (push and pull) and what conditions are like for them in the host country. Another learner then writes the reply to the letter explaining what benefits/problems migrations such as these are causing back at home – opportunity for peer assessment. **(I)** **Extension activity:** Read letters and replies out and discuss at whole class level. Ensure appropriate place-specific reference for case study.
1.3 Population structure	Identify and give reasons for and implications of different	Learners define 'infant mortality' and 'life expectancy' and add to key word glossary. Learners draw and annotate a population pyramid for a typical MEDC – describe what the pyramid shows and answer questions to interpret the pyramid. Define 'population structure'.

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	types of population structure	Learners have example pyramids for the countries that they studied earlier as part of the DTM – compare the pyramids and link to DTM to explain the differences – to show examples of population structure from countries at different levels of economic development (see: http://populationpyramid.net/). Ensure learners understand the implications for each population structure in the future as well as the present. **(I)** Define 'dependent population', 'old dependents', 'young dependents' and 'economically active' and add to key word glossary. Introduce 'dependency ratio' – learners calculate examples based on population data. Learners research using ICT or textbook resources the problems of a high number of old and young dependents and the implications for governments in providing for them and display as two mind maps. Use the points on the mind map to explain and develop ideas in a short report. **(I)** Learners should know a case study of a country with a high dependent population. This can either be young or old dependents. Learners use resource materials and own research to produce a newspaper article – background about the country, fully annotated population pyramid, recap of reasons for age structure, problems and solutions including any link back to relevant population policies studied earlier. Could include relevant sketch maps, photos and statistics. Ensure appropriate place-specific reference. **(I)**
1.4 Population density and distribution	Describe the factors influencing the density and distribution of population	Learners define 'population distribution', 'density', 'dense' and 'sparse' and add to key word glossary. Learners write out a method for calculating population density (see: www.bbc.co.uk/schools/gcsebitesize/geography/population/population_distribution_rev1.shtml). **(I)** Learners use choropleth atlas map to describe the world distribution of population using key words. **(I)** Show photographs of places around the world with different population density and discuss in groups. Learners annotate contrasting photographs or sketches to show the factors that have affected the population density in each area. Feedback and categorise factors into densely and sparsely populated area. Factors can then be further classified into physical, economic, social and political factors. Reinforce ideas by comparing world distribution map with satellite image and/or other global atlas maps such as annual rainfall, vegetation, relief, climate, land use, etc. Can also use the opportunity to discuss other methods of presenting population distribution such as dot maps. Discuss and take feedback. **(I)** Take the opportunity to build on existing knowledge of world map – continents, oceans, lines of latitude and longitude – revisit and revise as appropriate. Could do this as a quiz also – show outlines of continents and learners have to name them. Learners need to know a case study of: • a densely populated country or area at any scale from local to regional

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		• a sparsely populated country or area at any scale from local to regional. Use this link for learners to identify whether dense or sparse: **www.sln.org.uk/geography/visual.htm** Learners produce a written presentation to include: location sketchmap, choropleth map of density, reasons to explain the density – both dense and sparse supported with relevant images and statistics. Ensure appropriate place-specific detail. **(I)** Factors to include physical, economic, social and political factors.

Past and specimen papers

Past/specimen papers and mark schemes are available to download at **https://teachers.cie.org.uk (F)**

1.1 Population Dynamics

2016 Specimen Paper Q1b	June 2015 Paper 12 Q1ai and ii
2016 Specimen Paper Q2	June 2015 Paper 13 Q1
Nov 2015 Paper 11 Q2b	Nov 2014 Paper 11 Q1c
Nov 2015 Paper 12 Q1	Nov 2014 Paper 12 Q1c
Nov 2015 Paper 13 Q1	June 2014 Paper 11 Q1
June 2015 Paper 11 Q1a	June 2014 Paper 13 Q1a

1.2 Migration

2016 Specimen Paper Q1c	June 2015 Paper 12 Q1c
Nov 2015 Paper 11 Q2a	Nov 2014 Paper 13 Q1
June 2015 Paper 12 Q1aiii and iv	June 2014 Paper 13 Q1b and c

1.3 Population structure

Nov 2015 Paper 11 Q1	Nov 2014 Paper 12 Q1b
Nov 2015 Paper 12 Q2	June 2014 Paper 11 Q2

1.4 Population density and distribution

2016 Specimen Paper Q1a	Nov 2014 Paper 12 Q1
June 2015 Paper 11 Q1b	Nov 2014 Paper 13 Q1c
June 2015 Paper 12 Q1b	June 2014 Paper 11 Q1c
Nov 2014 Paper 11 Q1	June 2014 Paper 12 Q1